HAAGA-HELIA
University of Applied Sciences

Best Practices in Web-Store Design

Silviya Belahcen

HAAGA-HELIA
University of Applied Sciences

Degree programme

Abstract

Date of presentation

Author or authors Silviya Belahcen	Group or year of entry 2011
Title of thesis Best Practices in Web-Store Design	**Number of pages and appendices** 61 + 2
Supervisor or supervisors Seija Wolfer, Markku Somerkivi	

Abstract

The purpose of this thesis was to identify current problems of existing web-stores, find solutions and extract the best practises that can be applied to specifically web-store design.

Exploratory research method was applied on this study. The study was carried using literal/ online sources and a survey. Survey was sent to all students of HAAGA-HELIA University of Applied sciences and 301 responces were received.

The study revealed that the core problems with web-store design are that the industry's focus is on development and forgets some fundamental rules, such as usability studies. In addition the study stresses on how important and vital users' opinions are for the success of a web-store. Further more, survey results revealed dissatisfaction of users with some common web-store design practices, such as advertising and subscription practices.

The results of the study were the discovered best practices for web-store design. The study concludes that due to the growing user needs demand, further studies on web-store design need to be conducted.

Keywords
web-store, web-shop, online shopping, design, business, development, users, customers, clients

Table of contents

Web-stores – combining two worlds; from Pizza Hut in 1994 until the peak time of 2011, when businesses are fighting for a place not only on the physical markets, but a place on the constantly growing online markets.

1 Introduction

Web-store business is a tricky rapidly developing business because no matter how good ideas you might have, there is no certainty that you are the only one who possesses them. The competition on the online market is so tough that some web-stores have the lifetime of a mayfly.

There are few concepts that every businessman should grasp before entering the world of online retail.

First - is to know the history. It is a cliché to say that by looking back you can go forward, but in this case it is true. Retail business has a long track of history, beginning somewhere around the First Babylonian Dynasty, going through countless amount of changes through the years and coming to present days – online retail. The noun retail has been officially recorded in 1433, coming from the old French word retaillier, with a meaning of "sale in small quantities" and it has been used ever since (Wikipedia, cited 23.4.2011). The first online shop opened in 1994 – online pizza shop Pizza Hut, followed by amazon.com (1995) and eBay (1996). These first retailers put the beginning of a new era – the web-stores era. When a business expanded in the past 10 years, a common practice was to open a web-store for that business and that was a good idea, since the physical stores that existed were often too far away for many customers and that prevented them to use that business's services. This is an example of the business markets of the USA, when numerous retailers would open big shops – megastores, outside the cities and the way to reach them was to drive there with a car. Before these megastores became popular in the States, the popular choice of people was to shop from small neighbourhood specialized shops i.e. bread from the bakery, meat from the meat market etc). In the past 3-5 years it is common that businesses open first a web-store and later expand to having physical store(s) or just keep and/ or broaden the

range of products or services that the online shop has to offer. Keeping just an online shop has a remarkably cheap upkeep compared to physical shops.

Second is the constant development of the business, its rules and always aiming for the top. Customer needs change. Businesses change to meet these needs. Businesses need to adapt to that new environment and history has shown that non-versatile businesses fail in their attempts to keep on in the competition for a market leader. And in 2011it is very hard to be the One. In the past, the products and services were limited – long distances to reach them, which made them more expensive and unaffordable to some. People still believed in TV shopping. Many businesses depended on offering not the best service but the only service and same applied for products. Today, no educated and informed person can be caught in not having an opportunity to choose from a variety of products and services, which can be even tailored to suit a single person's needs, if necessary. This is what online shopping has brought to the table – variety and the option to choose. Borders do not matter, when using web-stores; one might live in Europe and order freely from the USA or Asia or Australia, without having to go through much trouble. It is easy and it is fast and the concept B2C – business-to-customer can be viewed by its direct meaning, because the business actually delivers to the customer's door.

Third and most important is to know your customers and how to attract them to visit the web-store. Users usually know what they want or are able to circle around an idea of what is close to what they want – it can be something they saw or something they imagined, or are just browsing the web-stores to see what is new and compare prices. Offering the clients what they want is difficult but not impossible. There are numerous ways to find out what a person wants and needs; targeting the customer groups is one way, conducting interviews, surveys and tests is another, the list is long and further in the research would be explained in more detail – how to learn your customers (users).

1.1 Web-stores in general

Amazon.com, Inc did something impressive in the mid 1990's. It managed to grow more than 600 USD in revenues in 1998, after just three years being on the online

market, and managed to overcome two giants in book retail business, such as Barnes & Noble and Borders Books & Music.

The founder Jeff Bezos took a risk and one year after amazon.com, Inc was found; he published the web-site. He was one of the first businessmen to take the first step from e-commerce to e-business. At first the site was neither attractive nor welcoming to users. It took the investment of Tom Alburg to bring the then amazon.com to a more attractive state, which attracted clients from all around the USA. Book purchases started and the company grew to its present state of one of the most popular vendors in the world.

"There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things" - Niccolo Machiavelli. (Niccolo Machiavelli quotes, cited 23.3.2011)

Today anyone can purchase anything online. Addresses on the network have even become aliases used in everyday language; i.e. sentences such as: "Use Google to find what you are searching for." or "I used Google." are replaced with "Google it!" or "I Googled it.", respectively. The same principal applies to most of the most popular web-sites used worldwide: facebook, YouTube, Twitter, MySpace etc. (list of most popular web-sites: http://mostpopularwebsites.net/, 18.4.2011, 14:34pm). This shows us not only the popularity of these web-pages but also the dependency between them and users. Researchers have shown that facebook has over 500 million active users, where for one month on facebook are spent 700,000,000,000 minutes by all its users (http://www.facebook.com/press/info.php?statistics, 18.4.2011, 16:41pm). The time spent is used for different purposes but most commonly to escape from everyday life, postpone chores, or just random browsing to find interesting news, advertisements, updates, gossip etc and that is no wonder because in facebook there are more than 900 billion objects that users can interact with within the social network. Social media gives a great opportunity for web-store popularization.

Further in the research, a survey shows that people are starting to use the social media to find web-stores and also to compare with friends within the network, which web-stores they use.

1.2   Web-store design

Web-design is one of the most discussed topics in the technology field. There are still a lot of problems to be solved with web-design. "Overall, this issue of design is a fundamental problem that industry doesn't quite know how to get their heads around", said teacher and a blogger Jason Hong in an article in his blog, July 2010 (cited 25.4.2011). It seems that companies are focusing on one side of development and ignore some fundamental industry rules. It is common that companies come up with great designed and easy to use products that have faults in the software or great softwares, which cause their users nightmares because they are unable to use them. This void still hasn't be filled. Breaking the web-design in smaller parts is a way to solve the problem with the void. I.e. web-store design as part of web-design – it is still a very broad definition but it is a start. Web-stores have a very specific purpose on the internet and it is to provide products and services to customers – basic retail operations conducted online. Web-store design has to fit that purpose, in order to be functional.

In web-store design – business, engineering and design have to work together, regardless of what the separate professionals in these fields think. If this bond between the three is not working, the end product will most likely fail to be useful. Compromises must be done – designers must be involved from the beginning, business must be explained to the engineers and engineers must be able to incorporate the design and business together in a functional web-site – the web-store.

I Theory

2 Problems and solutions

Problems on the web are a constant. One problem gets solved and another arises, that is inevitable. Usually, these problems have to do with users and technology, which have to be treated equally carefully. The user problems have to do with what kind of people use the web-store, their perception and memory.

2.1 User perception

People have different perception about different things and problems arise because of that. Pages that have been designed without enough research and testing can cause a lot of trouble to users. I.e. excellent built system with great database integration but does not serve the user needs by introducing: pop-up adds and offers, pop-up windows, moving objects, mixing fonts and colours, music, links that do not look like links or text that looks like a link, unclear language and notation of interface's buttons, text and text fields, menus etc. These are all part of the problem with human perception that has to be taken under consideration when designing web-stores.

Pop-up adds and offers, as well pop-up windows and moving objects are a common way to introduce the web-store visitors to new products, discounts, sister web-sites and other things that the founders of the web-store might think of as good marketing. That is wrong. Imagine being in a physical shop and a big red carton ad that tells you there is lunch across the street with 50 % discount is pushed in front of you from the sales person but what you are buying is medicine - a bad idea. There is time and place for everything. If the marketing policy of the physical store is to advertise the restaurant across the street, then after the purchase the sales person will hand you a flyer or politely put one in your bag with purchased goods. So why not implement the same technique in the web-stores? Let the user finish his purchase or browse through the store and on the check out point offer him the discount or other add that might interest him.

People get confused by anything that just pops-up out of nowhere. A very small amount of users like surprises on the web or don't mind that the window that they want to open has been replaced with an advertisement and the desired one is in a different window or a tab. Here, it has to be noted that some users don't necessarily use tabs and might close the windows all together with the ease of one click – that is a loss of at least one client. The pop-ups can be managed (disabled/enabled) from the browsers but that does not mean that when designing, we should assume that the user would know that.

Mixing fonts and colours, another technique wrongly understood by many to be a fancy way to build your interface, can confuse and distract the user from his primary goal – to purchase from the web. Colours on the web carry a big influence to web-store's success. A table with meaning of colours can be found in Appendix 1. The emotional connection of people and colours, or with other words what people feel, when surrounded by a certain colour; i.e. white carries usually the meaning of sterile, therefore hospitals are associated with it, warm colours are associated with the sun, summer and they tend to make you feel warm, brighter nuances of colours are associated usually with the day and darker with the night. If designing a web-store for a shop that sells baby supplies, perhaps the brighter and more tint warm colours are the best to use because they will have a better emotional connection with the buyer than if store was dark and cold in colour range. Developers have to be thoughtful who they design for. Most adults would leave an overcrowded page, loaded with pictures, colours and text and the reason would most likely be confusion or misleading information, or just being lost. Music, another trouble maker used to fancy up some web-stores, is a very personal thing therefore can never be universal. Besides that, from technical point of view, the load time for such a web-store must be much longer than one that has more simple features. Users search for simplicity, flexibility, variety of products and services, not a web-page circus, where everything is trying to get your attention.

Interfaces that use blurry labels as type of styling can be misleading and frustrating to many users. In web-design, as non-universal it can be, there must be some techniques that have to be generalized. The idea of slightly blurry text i.e. this is blurry text or this too is blurry text is just bad, as there is the possibility that someone might enjoy having

some effect on the web-page, in a web-store that is definitely not recommended, attractive nor welcoming. When entering a web-store most users have in mind purchasing something, meaning spending their money, which cannot be handled carelessly. A web-store using distractive styling could be considered to be unreliable or as a joke, so the chance of somebody actually purchasing something is going closer to zero.

Language and notation must be clear. Web-stores are considered to be easy to use because usually the buying or browsing process ends with success. That does not mean that the web-stores are actually easy to use. Many online retailers use their own way of expression, which might not be so well introduced outside the company, the city, the country; having multi-international web-stores that operate worldwide requires a good language base. English is the most common language on the web followed by Chinese and Spanish. A well known fact is that English differentiates even between the countries with native speakers, so when designing and deciding on naming the most popular words should be selected and the ones that origin from slang or dialect should be left out. Another problem with languages on the web is translation of pages, which always causes problems. Languages are not as compatible, as we would like them to be translating them has its difficulties i.e. some words that do not exist in other languages. Web-stores depend on the translation option in order to realize their business abroad.

2.2 User's memory

Users cannot be expected to remember every single thing, while browsing the web for/or web-stores. It is well know that most people actually skim through the web-pages and most common thing is that they miss the main idea, which the developers meant to be read and understood. What is clear to the engineers usually is as unclear to users; that is why users have to be considered during the first steps of the design process, which has to be considered from the beginning of the engineering process. If the user has to remember a lot of things from the web-store, such as number of the item or the path to reach the item; there is a long timeframe between finding the item(s) and check out point then most likely the user is to forget something, if not all. The following diagram shows how a basic user's searching for and purchasing item(s) in a web-store works:
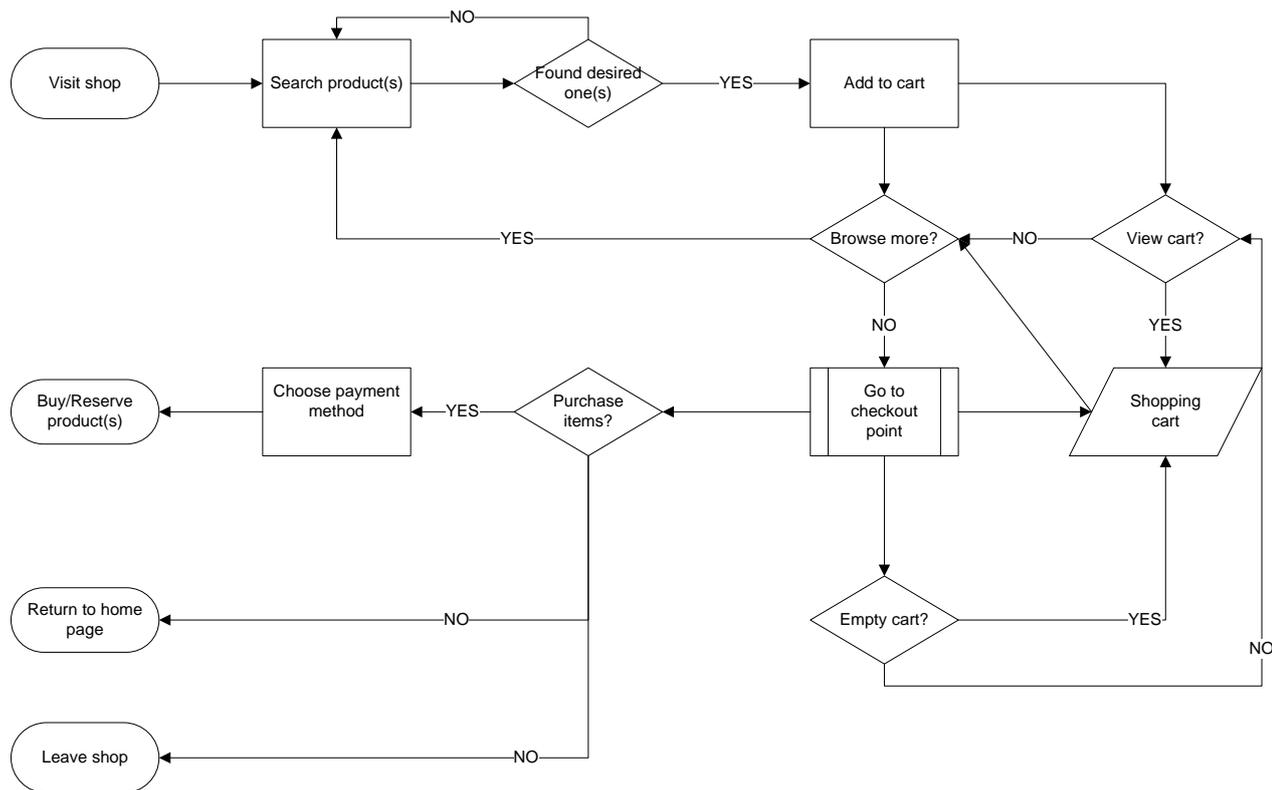
Diagram1 – purchasing process in a web-store

From the diagram can be seen how many checkpoints a customer has before actually deciding should he buy the item or no. Between these points there is a lot that can go wrong. Problems than can occur:

- Unavailable web-address. It is common that web-stores go through re-construction and updating, sometimes the URL is not working or the browser cannot open the web-store. That can cause a lot of frustration to users, so when updating the web-store a note must be left that says i.e. "Site under construction. Welcome back on xx.xx.xxxx", which will explain to the users what is really going on and save them the next few minutes to few hours wondering why nothing is working. Problems with URL and browser unavailability are also very common, so updating (even better creating from beginning) a web-store that meets these requirements and works on every level is a must.

- Searching for desired product and not being able to find it. In many cases the web-store is not responsible for product unavailability for two reasons – store does not sell them or store has run out of them. Problem occurs when advertisement clearly states

that product is in web-store now and users cannot find it. Solution is to optimize the search option having various search criteria and having a notification after search has completed that will inform the users if such item has expired, run out, unavailable or no such item found – that will save time and frustration to both users and customer services responsible.

- Adding to cart is usually an easy option, since the common notation for it has become a picture or a graphic of a physical cart. Sometimes, it can be difficult to remove item from cart, since the developer have thought of the perfect option where the customer does purchase everything that has been added. Freedom of choice has to be introduced and clear notation of add and remove from cart to reduce confusion among users.

- Various choices are to be made after items are added in cart – should the user browse more for anything else he might need, should the user view the cart to decide if all items are to be purchase or should the user empty the cart. The systems implemented within the web-store have to be able to support any of user's decisions, if they do not do so the shopping result might be unsuccessful.

- The payment methods create a lot of problems to users. Some web-stores do not support the banks or cards that customers are holders of or the contracts between the web-store and the banks' credit cards require the users to pay additional fees to complete the transactions. User must be informed from the front page of every web-store of the payment options that it provides. That is by integrating the payment options in one of the pages lower corners and representing them with small icons. Each icon should be a link to the payment agreement that is carried between the company and the web-store. Using company logos for the icons is wise that way customers will be able to recognize the logo.

- Between the processes in the process diagram should exist any information about the item(s) being purchased that cannot be accessed by the user. Everything regarding that item has to be on maximum one click away from each page the customer is on. I.e. from adding the item in cart to choosing payment methods, the information details of

the selected item must be accessible, so no confusion is created. The general information of the item i.e. name and number of item or ISBN of book should be details that are visible on every page between the pages of adding item and confirmation details page.

It is good to think of web-store shopping process considering what a person would do in a physical shop because at the end both shops have the same goal – the customer to come out happy with purchased goods or at least to have signed for a shop card/ registered in the web-store, which will allow him to shop with discounts, reach different products that are offered only to shop registered customers, sometimes even get better deal on the payment methods etc.

What physical shops have as an advantage is that people are passing them by in their daily routines; i.e. on the way to/from work, school or other everyday life activities of the average person. It is hard to ignore the storefronts while passing them by, they are always trying to catch walking by people's attention, using various marketing tricks. Usually each shop has his trade mark and tries to advertise it as much as possible, in order to attract more clients. With time customers learn to recognize it and search for it, when shopping. Huge signs notify customers when the sales period has started or when the new products and services are available. Shopping malls have begun to create campaigns, in which every single shop in the building takes part. Some shopping malls even have their trade mark shopping campaigns such as Finnish best known retailer Stockmann and their Hullut Päivät campaign, which comes in spring and in autumn every year. The discounted goods can be found both online and on a printout provided by the company just days before the actual sale (and again only customers holding a Stockmann card are entitled to the printout and they receive it via mail). The company has shown such consistency throughout the years by selling quality products and services, as well keeping the same campaign twice every year that it is one of the most trusted companies in the entire country. People can count on them and that is highly valued. All these tricks for attraction that are used by the retailers are not just happening by accident. Shop owners and business developers have invested a lot in marketing research to understand human behaviour, i.e. about 80 percent of the information that we receive visually is connected to colour, thus the big colourful signs, flags and other

notifying us for discounts and other benefits offered by different shops. Everything is intended to stimulate the customer to shop. 'Reminders to shop' are sent daily via mail, e-mail and sometimes phone calls to customers of different retailers. They can be discount cards, catalogues, offers, subscription magazines and letters. This is done so the customers never forget that the shop is still there and it has goods to offer; which is another benefit that physical shops have been practising for quite some time now. The same should be integrated in web-stores because user's memory cannot be trusted to remember every single shop's products and services and their details. A good practise that is new to web-stores is the integration of tracking systems that are able to provide valuable information about the customer's shopping and browsing habits within the store and therefore recommending him goods that are similar to his previous purchases. I.e. if a person purchases a laptop from a certain brand, products from the same brand that compliment the laptop can be offered; in the long run, if the customer becomes a frequent customer more advanced rules can be applied in order serving in customer's best needs.

"Your website is your "storefront." You should put as much thought into your virtual storefront as you would to the front window display at a traditional store on Main Street. Your website needs to attract customers and keep them coming back for more." (Infusionsoft, INTERNET MARKETING, 30 things you can do today to start seeing results tomorrow, A Guidebook to Small Business Success, cited 23.4. 2011). Web-stores unlike physical stores are impossible to be passed by on the way to work but to be visited during work hours has become a common practise. As there is a common expression that there is no better marketing than people talking. That can lead to the businesses to succeed or collapse.

People usually would ask first from internet or friends and family. Often people also consult with their friends before deciding on buying something. With the growing markets, the marketing of each business faces ever challenging tasks to keep people informed and interested to buy. People on the other hand have evolved to a state that they don't blindly trust every advertisement seen on TV, heard on the radio, or seen on a billboard on the highway. Products and services are objects of wide discussions also on internet. In social media can be observed i.e. how many people like that product or

how many people are satisfied with that service, so the pressure on companies is on – the need of quality products and services on affordable prices is a must to offer.

Web-stores are easier to locate, since the only thing a user needs is the web-store's name to load it in Google – the search engine gives results in less than a second. What is left to users is to choose the correct address. Of course there is the problem with fake web-stores, which share the same or similar name but users of the web are left with the duty to learn who is the fake and real store with some help from their browser – which can detect if the web-address that has been loading is streaming any spam or malicious spyware and web-stores' policies – which have to make clear any legal issue concerning the services they provide.

2.3 Misunderstanding the business and its rules

That is a fundamental mistake in web-store design. As any store, web-stores must serve as a positive tool for the development of that business. If a company has a bad web-site/store, their business might hang in the balance – it is a thin line between success and failure. Misunderstanding in its nature is a key to failure, therefore must be treated carefully.

In present days it is common to outsource the web-store design and development to another company, which might be on the other side of the world. Understanding each other is a necessity in these kinds of operations.

When designing a web-store for any business – the client opinion is very valuable but more valuable is to understand their business – know what they do, how they do it, where it is done, and most importantly why do they do it. During an interview with the ICT director of Suomalainen Kirjakauppa, which took place in November 2010, something about SK's policy on software design for the company stood out. As many companies in present days – web-design is outsourced to other companies, which is a great way to lower the expenses and internal problems with having a whole design unit on your own (that is of curse if the product that is received meets the requirements). The advantage in SK's policy is the way they see the final goal – they decide what is needed

as a product within the company, after which they invite the developers from the out-sourcing company to discuss the needs of the company, how company operates and what their policy is. By introducing themselves, as a company – Suomalainen Kir-jakauppa – and what they stand for, they make sure that they won't be misunderstood in the future. Second, very important step is to introduce to the developers, who the final users are – the customer of SK and what are his needs. That way both company's team and the outsourced development team sit on one side of the table and think of their common customer. This practice has been very successful, when the designing process of new cash terminals was ongoing. The approach itself is very interesting be-cause it is not common. We can see that there are roughly three steering group mem-bers – outsourcing team, retailer and retailer's client. The usual problem that arises when having such steering group members is that the outsourcing team (company, business, service etc.) is mainly concerned with the welfare connection with the retailer, which is normal because the retailer is their client – clients must be happy. This causes problems because the end users won't be only from the retailer's side but mainly from their customer's side. By integrating new policy of having one goal from the beginning, to see the big picture, is of great importance on the road to success.

A good strategy for web-store design begins with the requirements analysis for the web-store, where deciding on who your target groups of customers, understanding their needs, preferences and their differences and target platforms or what kind of software and hardware is to be used for the future product by the users. The gathered information is used for the analysis of user needs. This step includes the conduction of interviews, tests and surveys which will help determining, if the original targets were accurate or reachable. This is essential for the success of the businesses, since it gives a very early estimate of how users will behave after the web-store is already launched. Early estimations should be a more popular choice of the strategy, since strategies can-not be built based on assumptions.

After having a successful requirements analysis completion it is time for the conceptual design, where creation of use-cases and performance requirements takes place. Use-cases show how users would interact with the future web-store. They help the engi-neers understand how the users would behave and therefore create solutions that not

only work properly but are usable. If the use-cases are wrongly developed i.e. some of the requirements were misunderstood or the early estimations were unclear to what is expected, the development during the mockup and prototypes stage would go wrong or the users of the future web-store might have problems with using it. It is of great importance to have a correct use-case design. The information architecture of the actual web-store is designed during the conceptual design stage.

After the concepts are clear and finalized, web-store is ready to go into next stage the actual development of the mockups and prototypes. The layout of the pages is designed, as well structure and some solutions. This stage includes mainly development of non-functional designs, which are later used for the actual web-store design. Some software products are actually able to transform a non-functional design to actual HTML document, which is very useful in many cases where HTML is not used for the mockups. The stage is very important because designers can test and correct the design to meet perfectly the needs of the users.

When the non-functional designs are approved to be ready for implementation the production stage begins. During the production the non-functional designs become functional – software development. The web-store becomes a functional web-site.

After the web-store is functional – fully implemented and there is nothing else left for the designers and developers to do, it is ready to step in prelaunch phase which is part of the launching stage. During that phase quality assurance testing takes place. If the site passes that testing it is ready to be launched. After 'going live' or the so called post launched phase the web-store would go through post launch testing and analysis.

During each stage it should be stressed on the usability of the web-store. It has to have main priority during the development processes because without the pervasive usability, web-stores are unusable – the whole idea of losing time and money investing into a new web-store just to see it fail is wrong. Investing in few extra stages or expanding some stages to complete the usability analysis and testing would save businesses more money on the long run than not investing in these extra tests.

2.4 Attention to user's opinions

User tests are very important when it comes to creating successful web-design, therefore web-store design. User tests consist of surveys, tests and interviews. Surveys are the most popular method to learn what any person might think of any product or service since the marketing researches have been using them for quite some time now. They can be made on the phone, sent by mail, sent by post, using online survey systems or having a personal survey. Last one takes place at user's home, usually concerning disabled people, or at a shopping centre where information is gathered on place via paper leaflets which customers can fill at will. Surveys are a very easy way to find out what a wide range of users or employees might want to share with the company. In many cases they are anonymous since the researchers are not usually interested who is answering it but what type of person and what opinions, questions and answers would come up as a result of the survey. Being anonymous is an advantage because many users and employees feel safe to say freely what they really think about the business, company, and web-store. Surveys can collect general or more specific data depending on the range of questions. They can be conducted before or during the requirements analysis to determine whether the future web-store development should take place or be terminated. Once the web-store is launched to public, surveys are excellent choice to gather feedback. Even though being such a popular method to learn about the users, it is not always used. Many businesses do not wish to invest extra in the development or do not want to spend extra time on conducting these surveys. That is a fundamental mistake.

Surveys are a good choice of learning and understanding potential users, helping to build their background during the research phases of a project but they are not enough. Based on the information gathered and analyzed from the survey, developers can start creating scenarios. Scenarios are profiles of potential users developed to help understanding specific details. These details are helping the design process later on because sometimes from scenarios new ideas are born – something that has not been considered during the early stages. I.e. the user might want to access the web-store during night hours due to his changing work shifts, so the upkeep and maintenance of the

web-store must be carefully planned to meet these requirements. An example scenario can be found in Appendix 2.

According the authors of the book Usability for the Web, normally four scenarios would work well for a start of a web-site. Since web-stores have a different purpose on the net rather than just inform and connect, four scenarios are not enough. Depending on how big the future web-store will be the following must be taken under consideration: the central focus of sales, the target groups, in how many countries would it operate and how many nationalities should it serve. The needs of the different users must be met.

Unlike surveys and scenarios which take place during the requirement analysis place interviews and focus groups can take place also later on during the development process. Interviews are a great way to get more detailed information about users because a small group of users is usually set to be interviewed. During an interview only one participant is interviewed and his answers are related to only him because he has not been influence by any other opinions. That carries quite some risk because sometimes users can change their opinion for the better during group discussions. Focus groups on the other hand are based on a group discussion which can lead to great new ideas but also can be quite tricky. Sometimes person might agree to some decision or comment when actually he doesn't (groupthink issue). The information validity is questionable sometimes because users are not always put in their normal environment, so the interviewers have to be careful and to know how to avoid some situations, such as groupthink.

These inquiry methods are great way to collect users' opinions in later stages of development such as mockups and prototypes, even when the web-store is published.

Cognitive walkthroughs are a type of inspection evaluation method. A walkthrough is typically conducted on a ready product designs. It is a method where the test users are walked through the design and the results are recorded and analyzed. This method specifically helps developers to see what the designed product is lacking, what kind of problems users might have with the labelling, text, fonts and colours, navigability issues.

Companies famous with their constant spot on designs are Apple Inc, Google, and facebook. Apple is a great example of a company constantly having great designs not only in software but also in hardware. Apple is the only company on the technological market that has been compared to a church – called the white church or the church with white walls with Steve Jobs as a shepherd of the whole Apple society. It makes people wonder – what is Apple doing so well? Some say it is courage and vision, some say that they are waiting the opportune moment to come up with a better version of existing products or fearlessness of thinking outside the box. What stands out above those is – listening. Listening to what people have to say and predicting what might the users need based on already existing products.

Apple has always been a creator of people centred products and services and that is what makes them stand out from the crowd. When creating their web-interfaces; they include users that will later on use the software or web-store i.e. when creating their softwares iMovie or iPhoto they include people that will actually use and benefit from having a program that meets their needs. Apple's products are proven to increase the level f interest of students on future – going to college, on using different applications and formats and being more active in the class work sessions. Example of which is the Green County School in North Carolina, which had a rate of students going to college 26 percent in 2002 and 90 percent in 2010. The school managed to get their percentage rate so high through introducing a Mac computer to every student between the sixth and twelfth grade.

It has been argued that Apple is not a pioneer on the market but Apple is the pioneer in constantly coming up with great designs company. They do not always come up with the perfectly engineered products, as one of the most discussed technology topics of 2010 suggests – the problems of iPhone with reception bar and voice call, but they still make it as a leader on the markets with their products, which are followed by loyal and devoted customers.

Apple's policy leads to the thought: not considering the users in web-design is gambling – they might like it, they might not mind it but they might as well hate it. So why risk it?

2.5 Safety

Many users are afraid to purchase online because they do not want to leave their credit card details. Even though all the legal information regarding customer's safety and protection is stated clearly in the terms and conditions of use but statistics show how rarely people actually read them thoroughly trough, or read them at all. In April 2010, a publication came out that a British game store actually put an "immortal soul clause" which grants the company the soul of the user purchasing online. The clause was added due to April's full day but it made a point that many people don't read the terms and conditions of many things they sign. 7500 people checked the box agreeing with the terms and conditions. The clause:

"By placing an order via this Web site on the first day of the fourth month of the year 2010 Anno Domini, you agree to grant Us a non transferable option to claim, for now and for ever more, your immortal soul. Should We wish to exercise this option, you agree to surrender your immortal soul, and any claim you may have on it, within 5 (five) working days of receiving written notification from game-sation.co.uk or one of its duly authorised minions." (7,500 Online Shoppers Unknowingly Sold Their Souls, cited 25.4.2011)

It is important to let the users know that reading the terms and conditions are for their safety and wellbeing. Terms and conditions, privacy policy and payment policy links should be found on every page. That way the customer can access the needed information at any time during browsing, buying or returning products.

2.6 Complexity

In web-design simplicity is considered a big plus. Users are not thrilled to use very complicated pages, users do not like when they don't know what things mean and they feel uncomfortable with inaccurate information, unclear language and abbreviations that might vary between pages. Problem arises from there that reaching simplicity is harder than having complexity. Both developers and designers sometimes get lost in their own ideas of what to put in front of the user. Sometimes, every single idea that the designer had appears on the screen and then the simplicity is gone, in many cases

also aesthetics and design idea are gone too. Users cannot be hold responsible for mis-interpreting the language of the labels, buttons, links and other interactive components of the web-store. Designers have to think before deciding on placing abbreviations on the web-store pages because not everybody would bother to check what they mean through FAQs or Google. Users rather decide to leave the pages before they start to stress over what is this suppose to mean. The usability consultant and writer of the books "Don't make me think" and "Rocket surgery made easy" pinpointed the issue of users: "Don't make me think", users do not want to wonder if they should or shouldn't click a button or a link, they shouldn't wonder if the button is actually a button.

Warren Weaver, a mathematician and scientist, looked at the problem complexity as organized complexity, where everything is in certain order and disorganized complexity, where things are in rather random order. The same way web-stores can be addressed – organized and disorganized; starting from the code level and all the way to the user interface there is room for mistakes regarding also complexity. Even the 'guru' web-developers have been beginners once, when their code and web design weren't as clean, organized and efficient. It takes time to excel these skills and to understand the importance of simplicity.

A rule which is well known among designers is the KISS principle, where KISS stands for "Keep it simple, stupid" or "Keep it simple and straightforward" or "Keep it simple and short". (Wikipedia, cited 3.4.2011)That self-explanatory technique is very useful when had in mind. The moment a designer starts wondering should he put that extra textbox because it might make the interface fancier or easier to use, repeating the KISS principle might help because it will immediately remind him what the primary goal is – simplicity.

Web-store design should aim to provide the user with the product he searches for in the first place he searches for it, to be as clear and straightforward as possible, keep the consistency between pages. If the web-store requires integration of complicated rules, methods and algorithms, than keep them organized because organized complexity is controllable, where disorganized is not.

2.7   Forms

Designing forms for the web is a whole separate subcategory of web-design. They have their own purpose on the web and that is to be the place where users can fill or update the required information and details then send it for processing.

Web-stores require user's information. When necessary users can be identified, therefore receive the benefits they are entitled to or consequences for their actions. Problems with forms do not come from misunderstanding their purpose but from simply not understanding users. Examples of bad forms on the web are countless, so are the books written on usability. Even with all the available information, faults are the common practice of today's form design.

A well built and designed web-store must have well designed forms that are usable. I.e. on the registration page a user mustn't spend more than several minutes. The following list provides the tasks each designer should check out while planning on designing a form.

- Ask the user only the necessary information.

- Break bigger forms into sections to keep the clarity.

- Label your fields clear. I.e. first name and last name are often confused, because some users consider their surname to be the first name and that is not what the form usually requires. Given name and surname suggest to the user which name they have to put and where. Prices must also be accurate. If the web-store uses "price from" or "up to percent" should be visible to customers in order avoiding misunderstandings.

- If given populated dropdown lists in the address(s) fields, make sure that they are correct and fluent else the user would not be able to complete the registration.

- If necessary make two different registration forms for private and corporate clients, so users don't get confused which of all the fields they have to fill.

- Asterisk denotes that the field is compulsory, but that is not information that all users have to necessarily know, so just put it somewhere in plain text: "Asterisk (*) denotes compulsory fields" or just make it "All fields are compulsory"

- If a user has not filled a compulsory field, make sure to display a message which field was not filled and why. Don't let this be job for the user.

- If sessions are used, enough time has to be given to the user; as well informing the customer that after certain time, that page will expire and all unsaved data will be lost.

- The less the user has to think over the registration page or other form the better.

3 Good practices used

3.1 Analytical

3.1.1 Surveying

Surveys are great as a practice to learn the future users' opinions of the web-store both before and after it has gone live. They provide a good base of data to be analyzed and turned into knowledge of the users. Survey systems are very popular in the internet because they are proven to serve as good decision making tools. Survey providers offer a variety from free and simple to very advanced and pricy systems, where the combination of free and advanced and pricy and simple is also possible. These systems are used to gather, analyze and summarize data that has been entered.

An option to advance a web-store is to have own survey system. It is more expensive to integrate or to invest in own system, but in the long run it will pay back, since the updates of the survey can be done internally within the company. Every web-store has, or should have, a feedback option where the users can freely express their opinions. Feedback is a type of mini survey, so the integration of more advanced one would not be that difficult. Depending on how advanced the survey systems is the analysis of the results can also be done internally. However, the trend of outsourcing is gaining more

and more popularity because in some cases it is cheaper to outsource than to hire qualified personnel.

The positive side of having own integrated survey system is that businesses can be alike but very different in the same time. Two companies can be in the same business – i.e. selling furniture online, but the business rules, priorities, policy, and ethics etc. of each business are different. Using a generalized survey would not give as good results as one that has been tailored for your business.

3.1.2 Competitive analysis

Competitive analysis is based on analyzing competitors' strengths and weaknesses. The practice is widely used in web-design in general because it gives new businesses or businesses that want to advance in their practice a good idea of already exists and how it can be improved. Traditionally, the analysis will begin with the market and market leaders, followed by pricing of services and products and user interfaces.

Competitive analysis does not equal copying, so designers must be careful not to copy any text or design elements directly because copyright laws are very strict. If copyrights do not apply, there are also patents and intellectual properties that might apply.

Every designer starts learning by looking at other designs, it is the core concept of learning, before he can come up with something of his own. In web-store design it is especially important to evaluate competitor's web-store. That way the good ideas can be grasped, transformed to suit own web-store and applied to own design. It is sort of a tolerated and legal stealing but that is what competition is all about. The practice also helps reducing the faults on the web i.e. if one designer has used too small font in one web-store, the one doing competitive analysis on that store would change the font to something more readable and practical. That applies to every interactive part used in user interfaces, structure of original site can be kept but colours, font, size of objects can be adjusted to be more user friendly.

3.1.3 Designing for

3.1.3.1 Users

The definition of usability according ISO is "the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use." (ISO standards, cited 12.4.2011) Usability is the science that explores the options to improve human-computer interactions to meet the goal of the definition.

Designing for users is important part of usability and there are several techniques used to meet the necessary requirements. Target groups are from huge importance when thinking and designing for users. Customers can be divided into groups according to their: age, gender, education, work, marital status, disability, political view, nationality, language, culture, religion. These groups can become target groups of businesses and web-stores can be designed to meet the needs of these groups.

Each group has different requirements when it comes to web-design. Age and gender are the two of the most popular ways to divide the users because in statistics these two groups have the most value for businesses (counting in general worldwide, people are mainly interested to know the numbers about these two.) Being the most popular does not make them the most important. Religion and political view of end users should have the greatest influence in web-store design, being two of the most discussed topics worldwide. Ignorance is unacceptable. Both topics are storming through the web-space and more and more people get involved in these discussions. The terms of being religiously and politically correct are changing constantly worldwide, so keeping up to date with the current situation is required. Religion and political view are so personal and sometimes unpredictable. Depending on the web-store the target groups mentioned above have different importance. If a web-store does not support certain group i.e. language, it should be mentioned in the web-store.

Each target group can be combined with others in order mining deeper into human behaviour and establishing new rules, which will help the development of better supporting systems and design for the web-stores. These studies are usually created by professionals in the area and should there be an uncertainty whether using a certain word or a colour in a web-store, these professionals are to be referred to for consolation.

Scenarios, just like target groups, help developers to understand and learn the users. Scenarios contain rather full description of background data of a specific user; such as name, address, personal and work life, hobbies and frequent activities. Possessing such information helps designers understand what would he be using in the web-store and how would he react in different situation. That helps mapping user's behaviour, therefore create designs that would fulfil the web-store's purpose. The user in scenarios can be real life or fictional person.

3.1.3.2 Platforms

Users are different, so are their choices. Platforms have to be considered in web-store design because there is variety of operating systems and web-browsers that different users prefer. The most secure way is to update a web-store to support all operating systems and web-browser, which is not always possible. A good way to start s to support the most common operating systems: Microsoft Windows, Mac, Linux; most common browsers: Internet Explorer, Mozilla Firefox, Google Chrome, and Safari. Because every browser appears differently on different platforms, testing the combinations is a must.

If there should be just several combinations supported by a web-store, the target groups can help to decide on what kind of operating system or browsers the web-store should work. It is known that Mac is the market leader in business environments, Windows is the leader in home editions and Linux is the leader among IT professionals. A survey can be done to estimate how the operating systems and browsers are distributed between the groups and who is the leader for each group.

The information gathered would help improve load, response and download time, or at least to be able to announce to the users what is the average time; as well fixed width and height pages leave too much white space around the web-page or the opposite happens scrolling becomes necessary.

3.2 Technical

3.2.1 Clear notation

Users don't read thoroughly every single line of a web page, what they do is skim through the pages searching for whatever that it is on their mind. Making it easy for users to read, understand and navigate through the pages of web-stores is very important. The design of the pages has to help users and pursue them to purchase the products and services offered. Naming the components on the pages is very important. They need to carry universal and easy to understand names or sentences that do not leave anybody wondering what the designer intended to say. Using animations and extra "enter" or "click here" button and links are unadvisable because that creates an extra step for the user to reach the desired destination, besides users might consider a web-stores that support them to be unreliable.

Text used on the different pages in the web-store must be consistent, legible and readable. Labels, buttons, menus, text fields, pictures should follow some order of hierarchy that is also kept throughout the pages.

Labelling should be short, precise and consistent through different pages in a web-store. The font's size and type have to compliment the web-store, depending on what kind of store it is but they should be used thoughtfully as many font styles are simply unflattering to use i.e. Comic Sans, called also a font fiasco in design. Spacing between letters and words must be enough so the words are readable but do not get lost in space. Buttons must look like buttons – a clickable object. As in labelling naming the button should make sense i.e. verbs are a good choice for button names, since they suggest to the user that he has to do something like "Buy", "Sell", "Add", "Remove".

Links are usually blue coloured and underlined words/sentences. Some designers use different colours than blue to denote links or they use blue for regular text, which can be of great confusion to users. If something is not broken, than it does not need fixing – using the links as they are best known (blue and underlined, sometimes in italics) does not need changing i.e. other bright colours might remind to users that is a link but shades of colours would be seen just as a colourful text.

Contrast used in design is also very influential. There are two classic mistakes that have to be avoided: using same colours nuance/ similar colours or two very contrast colours of each other bright colours. First one is very hard for the user to read because the two colours are blending with each other creating optical illusion, which can actually cause headache to the user. I.e. white and light gray are incompatible and if user wants to change the font, which is highly unlikely, he would require some additional knowledge and plug-ins to do so. Second one is also hard to read but for a different reason – it is hard to look at two bright colours, especially when text is in bright colour over a bright coloured base. I.e. bright yellow over bright red is perhaps the worst combination, colours can be very tricky and optical illusions such as text moving, spinning, disappearing and reappearing are possible. That will frustrate the user and the chance of him leaving the web-store in a matter of moments is inevitable.

3.2.2 Storyboarding

Storyboarding is used during the creation of the mockups and prototypes. It is an effective technique that helps both designers and clients to visualize what the user would do when using the web-store. Storyboarding is also used when creating movies, video clips, as well in theatre, novels and comics books.

This technique can be a great way to interact with the customer (one that has ordered the creation of the web-store). Storyboarding is expressed by series of pictures, which allows all sides – customers, developers, designers and business can express how they see the user will be using the web-store. The more realistic the approach is the better the final result will be.

3.2.3 Breadcrumbs

Breadcrumbs are a navigation technique; gotten its name from the famous Brothers Grimm's story Henzel and Gretel, who used breadcrumbs to find the way home. The breadcrumbs in web-design use the same approach – they give the users a path that they can follow to go back to home page or pages that are preceding the page they are currently on. Good implemented breadcrumbs would show the path to home page even if the current page has been access directly from a search engine. This will allow the users to browse more the web-store.

3.2.4 User centred updates

User centred updates introduce nothing new to web-development but as a practice they are not used as common as they should. These updates play the role of notifications and gather information about the users by collecting data about their browsing and shopping habits within the web-store. Once a customer has registered and logged in the web-store, algorithms can be used to track and record the necessary data. Data mining techniques and softwares can be used to analyze the data and provide the business with valuable information that will improve the quality of services provided by the web-store. Once the tracking systems are integrated and begin to work, updating information to directly to customers can start. Subscription letters, which are one of the most popular ways to advertise on the web, especially when comes to web-stores, are considered disturbing therefore ignored by majority of users as the survey later on confirms. Another fault of subscription letters is that many of them end up in the spam folder of users, which is usually emptied without even opening it.

What the user centred updates request is that the customer logs in the web-store and he can see according his previous shopping choices, what the web-store has to offer, as updates. A more advance and intelligent system would also allow the users to limit the circle of interests and choose what kinds of updates to be received i.e. in technology web-store a customer that purchases variety of HP products would receive an update for the newest HP products or similar other brand products. This applies to every

web-store that exists irrelevant to what they sell. This option would help the customer to personalize it, to have it closer to his own needs.

Updates should not come as pop-up windows or ads rather as upon logging in a message could be displayed: "Dear Customer, Welcome to web-store! Would you like to check your updates?" and as option "Yes", "Later" and "No".

Similar techniques are used by Google – tracking, facebook – updating.

3.2.5 Search option optimization

Search option optimization regards the web-store internally. The search option of every web-store should work with no errors and it has to support various search options:

- By letters – first or last letters of a word.

- By numbers – ISBN, different codes that might be regarding a product or a service.

- By word combinations – searching for more two or three key words at the same time.

- Capital and lower case letters should not matter.

These three give the user a wide enough range to find desired products and services. Search option is considered the most helpful thing in every web-store because it usually works fast and accurate.

3.2.6 Search engine optimization

The search engine optimization regards the web-store as externally. The optimization places the web-store more often as a result in search engines, such as Google. That is important for any business because search engines are the most used web-sites in the network. Until recent years many people in the states thought that they have to first open Yahoo and then type in yahoo's field for browsing the web-address they wanted.

Competition on the web is tough and this optimization allows web-stores to compete at one more level with the competitors.

3.2.7 Phone optimization

Optimizing the web-stores to be phone friendly is a necessity. In today's rapid technology development – mobiles are taking such a big place in lives of people. Apple's latest advertisement even shows how the new and improved iPhone 4 has can be used also for browsing and shopping. Having such a market leader advertising in worldwide, the demand of people wanting web-stores to be phone friendly would grow rapidly. Other smart phones are also very popular, so it is not the brand of Apple that dictates the flow but the needs of the customers that are growing every day.

A good competitor is the one that know in what to invest and investing in this optimization definitely pays off

3.2.8 Payment integration

Payment integration exists in any web-store but it not every web-store offers enough payment options to customers. Every web-store support the following: credit cards, debit cards, PayPal and bank payment.

Credit cards such as Visa, Master Card, American express and Diners Club are used worldwide, many users and potential clients posses at least one. Problem with credit cards is that some companies' contracts with the banks require additional payments, which come as additional fees to users i.e. Kilroy travels requires 11€ extra if payment is done with one of the mentioned above cards.

Debit cards, such as Visa Electron, are not usually preferred by companies due to being sometimes slow with its connection to the bank; as Visa Electron requests first from the bank the amount of money available and after authorizes the transaction. Many web-stores use sessions, and that slowing down can complicate the transactions processes and the whole shopping process as well.

PayPal and bank payment, basically, mean the same thing. PayPal was introduced to the public first. Later on banks began to integrate the an online payment option to their systems, which allowed the users to access their bank account and pay while online shopping without receiving bill details and later pay the bill. This technique took one step off the payment chain that is so popular – paper bills.

Payment integration is of huge importance for the success of any web-store. The more options there are, the more clients would be able and would like to shop from that particular web-store.

3.2.9 Outsourcing

Outsourcing is a very common practice in any business. If a company does not want to complete a task or a project, or want to downscale on personnel or departments - outsourcing come handy.

In web-store design, the role of outsourcing is regarding whether the company decides to outsource the whole project – creating the web-store or some parts to be done outside the company. If a project is voted to be outsourced than it is better that whole project is completed as a whole with some supervision than having things done half-half.

3.3 Aesthetics

3.3.1 Grid 960 system

Grid 960 system is a system is a type of a layout tool used in web-design. Using grids to design is a very easy way to create an ordered and eye flattering design. That is due to the technique that grids use, which is alignment. A common thing for humans is to try and create order because the human eye send information to the brain, which creates patterns for memory and pattern for ordered information is easier to create, than one

for unordered. Since people are so obsessed with seeing order, offering a web-page that clearly has a flattering order is a benefit.

The number 960 was chosen because it can be divided by the following numbers 2, 3, 4, 5, 6, 8, 10, 12, 15, 16, 20, 24, 30, 32, 40, 48, 60, 64, 80, 96, 120, 160, 192, 240, 320 and 480. That gives designers a great base to work with. The 960 Grid systems (960 GS) is usually used using 12 or 16 column grids. The grid with 12 columns uses 60 pixels for each column. The size of the columns after is increased by 80 pixels. The grid with 16 columns uses 40 pixels for each column. The size of the columns after is increased by 60 pixels. The gutter space for both column grids is 20 pixels, which is the space between the columns.

The following two pictures show how the grid actually works on pages:
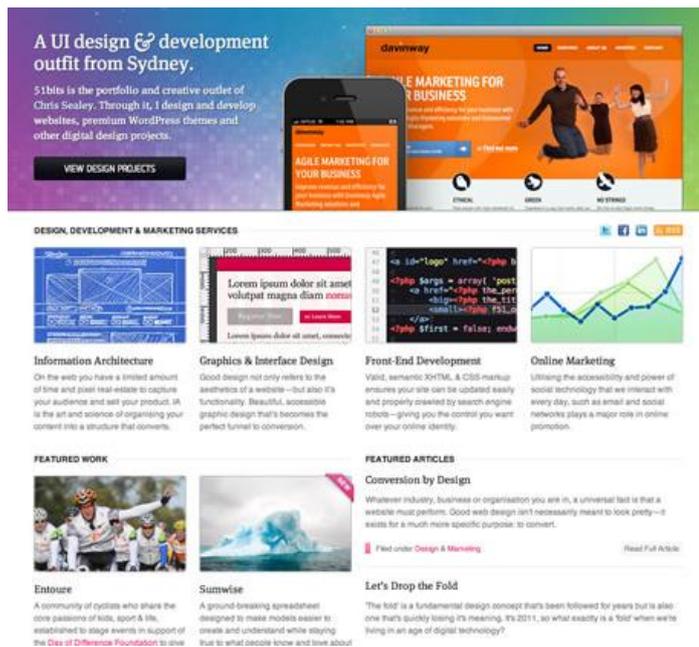
Picture 3.1.1.1 a web-site designed with the grid 960 system.

Picture 3.1.1.2 how the 12-column grid is applied.

There are contra-arguments that the system is very limiting and it is getting old because of the modern monitors but because it uses such a flexible number, 960, it still widely used and the majority of designers, both professionals and amateurs are satisfied with it. The system's developer is Nathan Smith and the download of 960 GS files is free; as well applying 960 GS in web-design.

The 960 GS can be of great advantage to web-store design. The 960 GS is a quick theme builder and it integrates simplicity at its finest. Web-store design requires that simple, organized look that will allow users to think less and find items easier because the picture that is sent to the brain would be analyzed faster than one that is chaotic.

3.3.2 The golden ratio

The golden ratio is the most popular formula used in mathematics, architecture, medicine, dental medicine, art, book design, music, perceptual studies and nature known for centuries. It has been speculated that the Stonehenge (3100 – 2200 BC) has the proportions of the golden ratio, which proves how old the technique is. Other significant for our history monuments have also been constructed according this formula i.e. The Parthenon (468 BC to 430 BC). A list of works created with the golden ratio can be

found in Appendix 4. In present days the ratio has also been used in modern architecture and art; as well it is used from wide range of beauty professionals, i.e. plastic surgeons use the ratio to correct the proportions of the face, dentist use it to calculate the ideal teeth proportion.

Formula of the golden ratio:
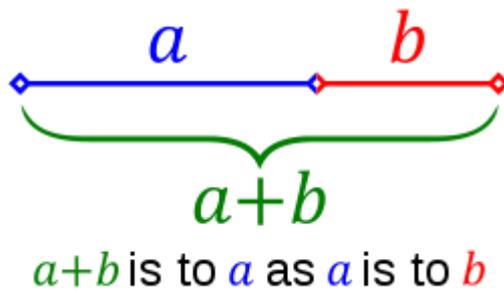
Picture 3.3.2.1 this is the formula of the golden ratio, as given by Wikimedia.

The golden ratio is denoted with Φφ (Phi), which is a letter from the Greek alphabet; φ = 1.6180339887498948482…, also used as 1.61 – known as the golden number or divine number.

Golden ratio is another practice that web-store design can benefit from. Similar to 960 GS, golden ratio can be applied in the design in the form of a grid. Knowing already the number to use, 1.61, the division becomes extremely easy. For a test it can be used again the number 960 for the pixels of the page, as in the grid system. Equation would look like that:

940/ 1.61 = 583, 85 (leaving 20 pixels, 10 from each end of the page)
940 – 584 = 356 (using a whole number is much easier when using CSS style sheets)

This two numbers 584 and 356 would be 'a' and 'b', respectively, as shown in the diagram above. They can be used to create the main content and secondary content on one page. Further in the design each number can be divided again by the number 1.61 to figure out the perfect height and width of the different components on the page. That way the designers would ensure that the content show on the page is eye pleasing. The golden proportion allows web-stores lacking much colour to be more eye-catching and pleasing. I.e. it is common in web-stores to use pictures and videos which compli-

ment the products or services offered. Using the 960 GS the alignment of these pictures and videos can be in perfect symmetry and their width and height can be in the most eye pleasing proportion – the golden ratio proportion.

The following pictures have been created with the free trial version of Phi Matrix design and analysis software. They are examples of the golden ratio grid applied on several web-stores:

Apple Inc:

Inward grid:
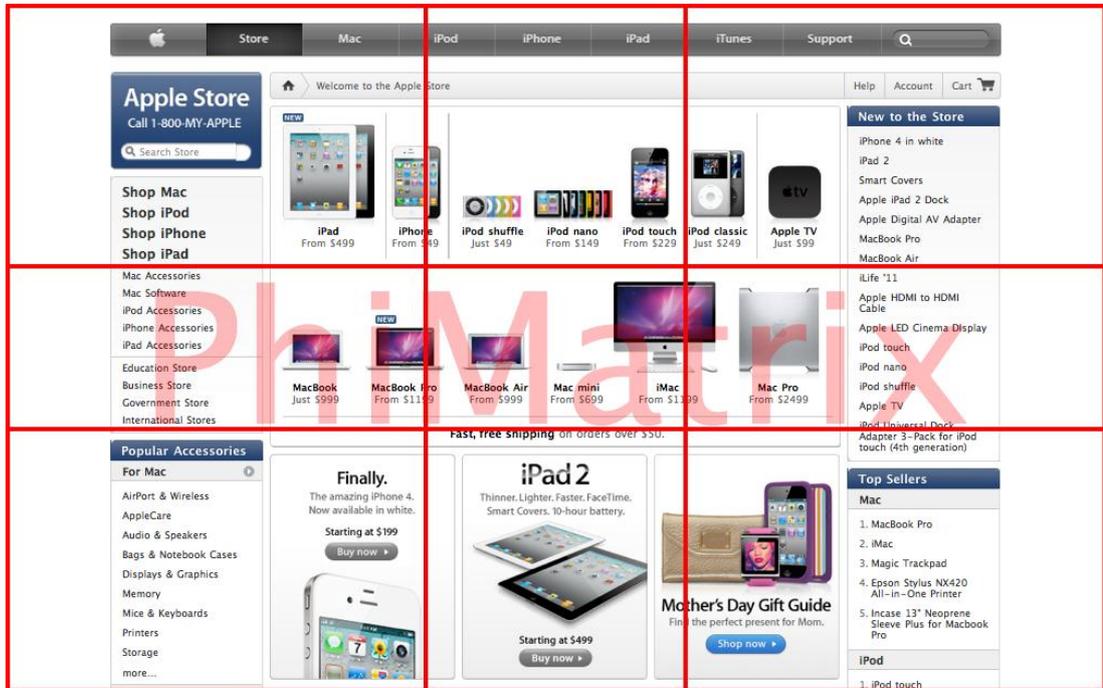
Outward grid:

Inward grid

Golden diagonals, golden triangles, golden rectangular and golden spiral:

Ellos:

Outward grid:

Suomalainen Kirjakauppa:

Inward grid:

Verkkokauppa:

Outward grid:
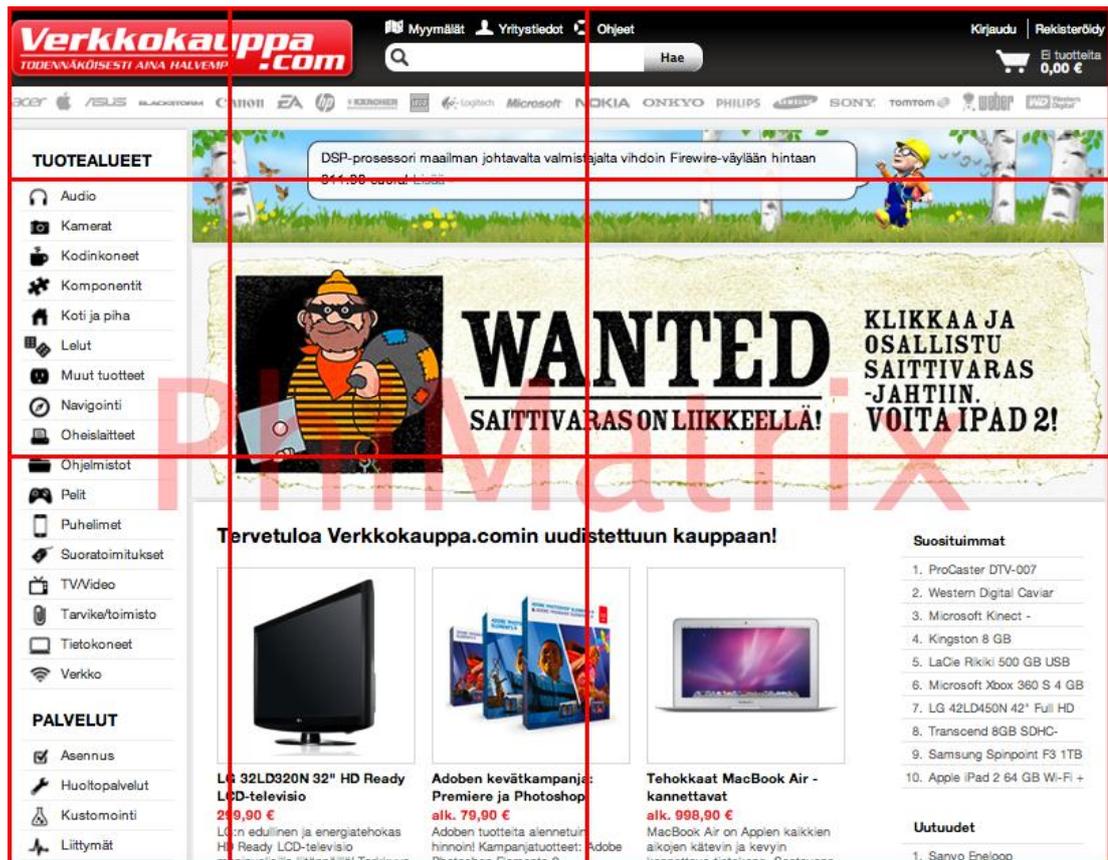
3.3.3 The rule of thirds

The rule of thirds is a simplified version of the golden ratio and it is commonly used in design, art and photography. This simpler version used by dividing a picture (which can also be a web page) into nine equal rectangular shapes using two parallel vertical lines and two parallel horizontal lines.

The rule of thirds uses symmetry to place objects and it might limit the web-store pages' design, since one of the rectangular would be in a perfect centre. In more simple designs the technique is very helpful because symmetrical designs provide balance on the pages, so the end result would be pleasing.

The following pictures show how the rule of three can be applied in web-store design:

Apple Inc:
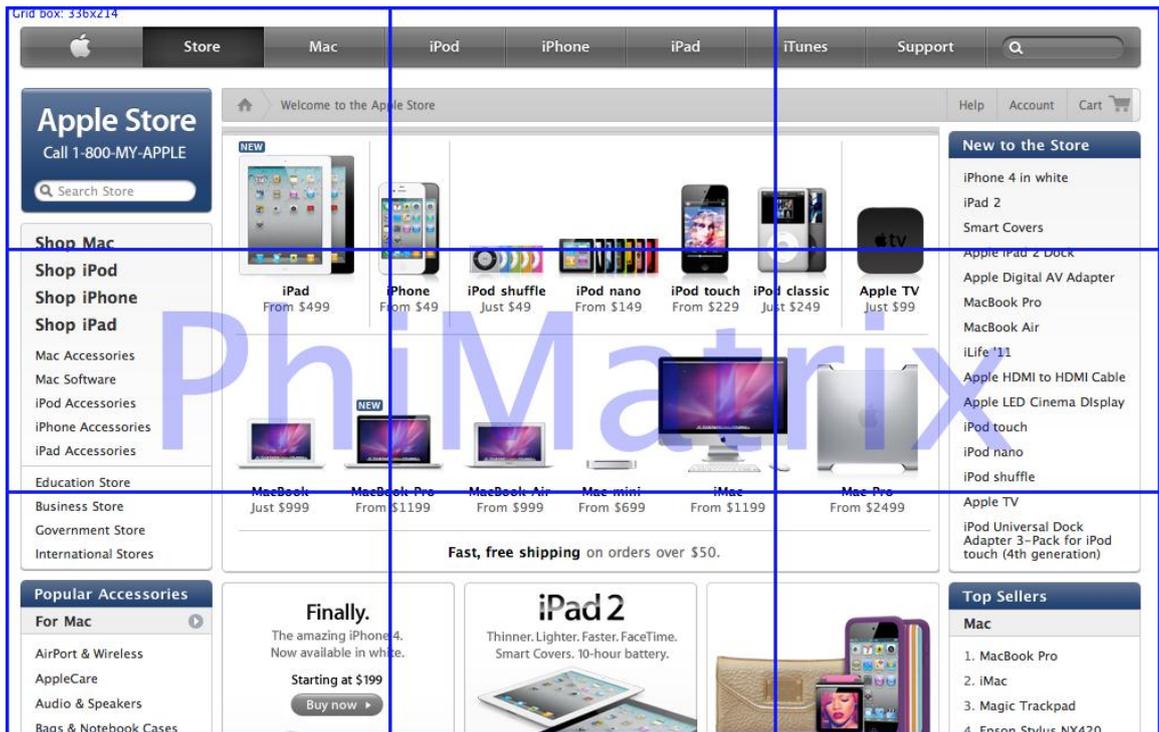
Verkkokauppa:

Finnmatkat:

4 Survey

This study is a quantitative descriptive survey. Quantitative research requires large and representative data sample; where results can be illustrated with tables and pictures. Quantitative research answers the questions what, where, how much and how often. Quantitative research identifies the existing situation and the resulting material is intended to describe, compare, contrast and explain the current situation.

The reason quantitative research was chosen is the potential number of respondents is large and data-processing would be possible only using statistical methods.

This survey is based on the finding of the research. The purpose of the survey was to prove or contradict existing believes and practices in web-store design. The survey was

sent to all students of HAAGA-HELIA University of Applied Sciences and 301 responses were received.

4.1 Survey structure

As this research has limited scope, one of web-store design, the questions were limited to fit that scope. The questionnaire contains selection, multi-selection and open ended questions. Open questions are used in the study to give the respondents freedom to express any other comments regarding some questions and the survey.

Survey was originally designed on paper and later on implemented in the online surveying system. The survey was also tested before it was launched by three people, two with IT background and one without. The reason for this pre-test was to understand and find if there were any misleading or difficult questions. As there were several misleading questions found, the survey was restructured and corrected. The final survey structure is as follows:

- Background of the users - background of users is essential for the results of this survey because it show in what different groups of people are interested in and how this affects their choice of web-stores. The background questions in the survey are from question 1-5 including.

- Basic knowledge and usage of web-stores of the users – basic knowledge of respondents' is important information for the final results of the survey. These questions target to collect data on users' behaviour on the web and their habits on online shopping. Basic knowledge questions are questions 6-10 including from the survey questionnaire.

- General satisfaction with web-stores – the questions target respondents' general view and satisfaction from using different web-stores and their determination to use web-stores. The general satisfaction questions are questions 11-14 including from the survey questionnaire.

- Safety and payments – these questions regard what the web-stores have to offer users. The questions are 15-18 including from the survey questionnaire.

- Respondents opinions on different design elements (pop-up ads, offers and windows, moving objects, colours and contrasts, overcrowded pages, music). Questions are 19-25 including from the survey questionnaire.

- User opinions on technical details of web-stores (language used, location of product information, notation of names, labels, buttons, links, navigability, safety, control, search, optimization). Questions are 26-37 including from the survey questionnaire.

- Aesthetics – question 38 from the survey questionnaire.

- Surveying - question 39 from the survey questionnaire.

- Last comments (for all users and users that do not use web-stores) – questions 40-42 including from the survey questionnaire.

4.2 Time of research

This survey took place between 16.3.2011 – 16.4.2011.

The results analysis took place between 16.4.2011 – 1.5.2011.

4.3 Validity and reliability of the survey

This survey was sent via e-mail and to all respondents, the students of HAAGA-HELIA University of Applied Sciences. The system used for creation of the survey and collecting the data results is the Webropol Surveying System. For valid and reliable results, the survey required a sufficient amount of respondents in order having a large enough sample size. Complete number of respondents was 301 and there were additional 151 visitors, who did not respond to the survey. All answers could be used but due to respondents not giving answers to every question the results could suffer certain

deviations from if all questions were answered by the respondents. That, however, should not affect the quality of the survey and the research.

The responses analysis and graphic creation was done using Webropol reporting services and MS Office tools, such as MS Word and MS Excel. The analysis has been done in cross tabulation and generalization of the results from the responses. Testing focuses on whether certain pre-existing results from the research meet the results of the survey.

5 Survey results

The results of the study have been described using tables, graphs and descriptions. The results will be looked at according the structure of the survey questionnaire, mentioned in point 4.1.

5.1 Background

Majority of respondents of this survey study do not have any IT background, as the following diagram shows. They have answered with "Yes" for IT background and "No" with non-IT background. The answers were measured according the number of respondents.
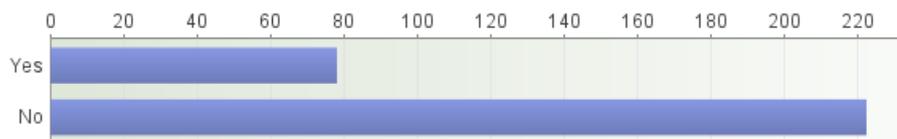
Graph 5.1.1 background of respondents.

The information given us from the graph shows clearly the dominant type of respondents, with –non-IT background. These results prove that the answers given further in the survey would have significance in interpretation what opinions the basic user in the web has. The number of respondents with IT background is also significant, which would help the interpretation of the technical details, further more with the opinions stated in the open-ended questions.

Majority of respondents were between the age of 18 and 23 with 46, 5 % and minority of respondents were between 37 and 43 with only 3%. The following graph represents the age of respondents compared to number of respondents.
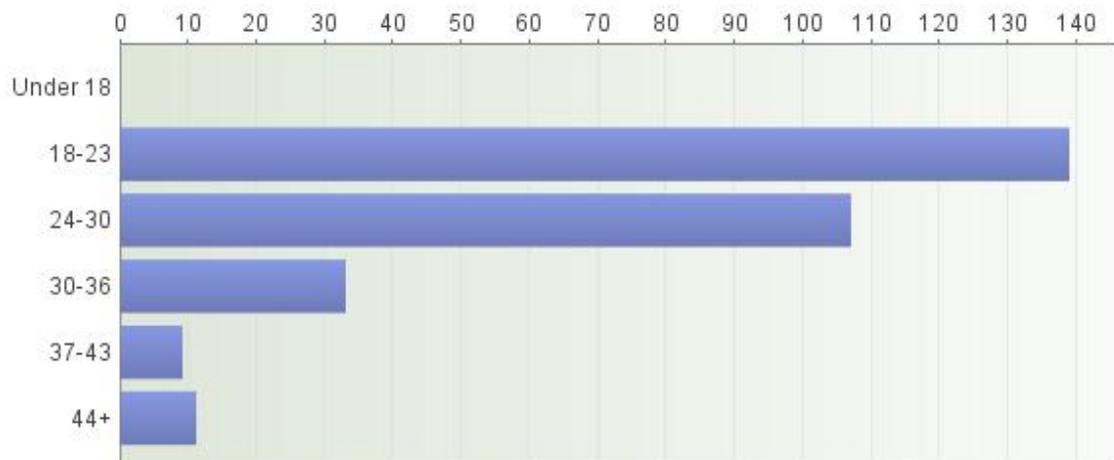
Graph 5.1.2 Age of respondents.

The graph above shows us the two dominant age groups, age 18-23 and age 24-30. Due to a technical fault, the age 30 was entered twice in two different age groups. Due to this fault there might be some significant deviations in the data. However, the data could still be used for targeting age group of 18-23 after reviewing the rest of the survey data.

The majority of respondents were female with 70, 8% and male respondents 29, 2%, which shows that this survey result might be used for further researches on targeting female group, when designing web-stores. With such significant number the female group is dominant respondent.

Dominating country of origin of respondents was Finland (233), followed by Russia (11) and Vietnam (6), Germany (5), USA (4), Morocco (3), The Netherlands (3). Other nationalities taken part of the survey are as follows (number in brackets stands for number of respondents): France(2), Hungary (2), Kenya(2), Nigeria(2), Armenia (1), Australia (1), Austria(1), Bangladesh(1), Cameroon(1), China(1), Estonia(1), Ethiopia(1), Israel(1), Italy(1), Lebanon(1), Moldova(1), Mozambique(1), Nepal(1), Poland(1), Singapore(1), Spain(1), Ukraine(1), and Uzbekistan (1).

Since the research and the survey took place in Finland, it was expected the majority of respondents to country of origin Finland. The survey though was sent to all students of HAAGA-HELIA University of Applied Science, both Finnish and International. The expected results certainly were different from the ones received. The significance of this result is important for the Finnish market share and Finnish customers worldwide.

Respondents' highest level of education has the answer High School as dominating answer with 59, 9%. The following graph shows the level of education of respondents.
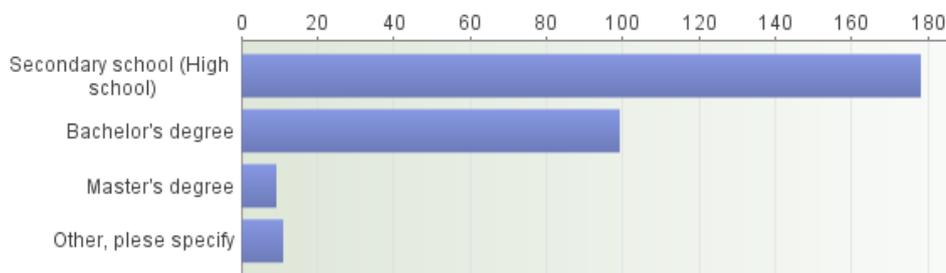
Graph 5.1.3 highest level of education of respondents.

Having the gender with such dominating results in 18-23, the results of the highest education level received are not surprising.

The respondents answered with "Other" have the following level of education: Vocational degrees (3), Doctor´s degree (1), BTEC National Diploma in Constration, United Kingdom (1), and Technical superior diploma of hotel & restaurant management (1). The rest three answers in this option were equal to High School level.

The following table shows the general statistics between questions 1, 2, 3, and 5. Question 4 was excluded from this statistics due to its non-numerical nature.

Question	Count	Average	Confidence interval	Standard deviation
1.	300	1,74	1.69 – 1.79	0,439367
2.	299	2,816054	2.7 – 2.93	0,998124
3.	298	1,291946	1.24 – 1.34	0,455422
5.	297	1,505051	1.42 – 1.59	0,731165

Table 5.1.1 general statistics of respondents' background

Count column represents the number of respondents.

Average column represents the mean of the values.

The confidence interval shows in which interval the mean is in 95% confidence.

The standard deviation measures the dispersion of the values around the mean.

5.2 Basic knowledge and usage of web-stores of the users

From all respondents 9, 1 % does not use web-stores at all. These respondents were asked to answer just the last 3 questions, which regard the reasons one might not use web-stores and any other comments they might want to share.

The rest 90, 9% of the respondents are using web-stores. The monthly web-store visit has the dominant 47, 1 % it is followed by the yearly visit with 24, 6%, weekly – 22, 8% and daily with 5, 5%.

Close to half of the respondents use web-stores monthly, 22, 8% weekly and 5, 5% daily, which creates a very dominant group of users that are using web-stores rather often. That proves the importance of integrating tracking systems in web-stores because these users are returning latest within a month to browse or purchase more products or services. As mentioned in point 3.2.4 User centred updates, having that option could increase the sales by offering impeccable customer services due to the excellent knowledge of their customers.

The majority of respondents have also shown that they would prefer using a web-store (62, 3%) over visiting a physical store (37, 7%). The respondents also prefer the usage of search engines, such as Google to locate web-stores 65, 4% have answered with preference search engine to 34, 6% with preference to typing the web-address to locate desired store.

These survey results prove that users are willing to use more web-stores than going to physical store, so the web-stores should be constantly upgraded to more user friendly state because that is a growing tendency in present days.

The most used types of web-stores used by the respondents are shown in the graph bellow:
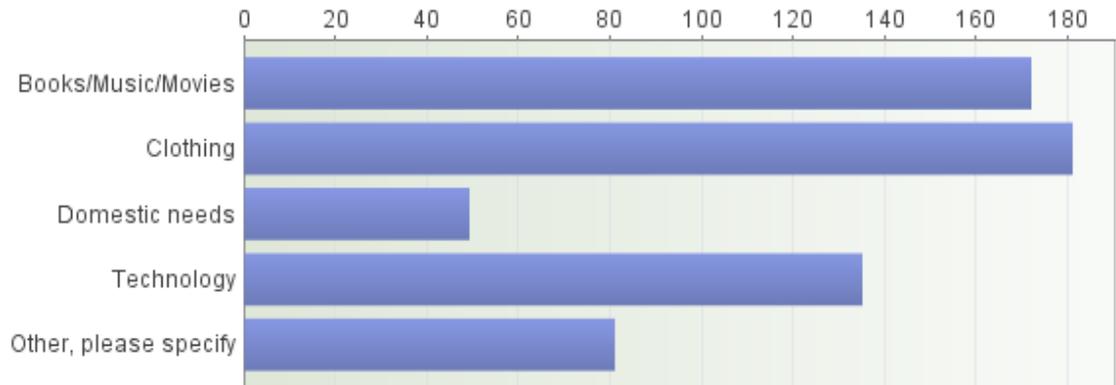
Graph 5.2.1 preferred web-stores.

The clothing markets are growing, so is the demand for clothing web-stores, followed by the books/music/movies. The results are not surprising having in mind that many items that can be found online, regarding these two markets, are much cheaper than the ones found in physical stores. That is due to the warehousing of products, which is done abroad.

It is interesting to note that technology has lesser percentage than clothing, even though the pricing for technology in web-stores is going constantly down due to the ever growing competition between businesses; as well the growing need for domestic needs purchased online. If this tendency continues, the web-stores will become inevitable part of the daily and weekly purchasing process.

Other types of web-stores that are used by respondents are as follows: travel agencies (19), cosmetics (17), sport supplies (13), pet accessories and food (5), games (4), food (3), contact lenses (2), housing (1)

5.3 General satisfaction with web-stores

Following is a table with the general satisfaction of respondents with web-stores. In the table the values from 1 to 5 stand for: 1 – not satisfied, 5 – extremely satisfied.

Value	1	2	3	4	5	Total	Average
Number of respondents	1	9	48	170	59	287	3.97

Table 5.3.1 general satisfaction with web-stores

From the table above can be clearly seen that respondents are generally happy with the services provided by the web-stores they use.

60, 7% of the respondents have show that they are not willing to browse one web-store until they find the desired item but they would try another, 39, 3% are determined until desired item is found. If the desired item was not found, majority of users would still return to the web-store as 90% of the results show; 10 % of the respondents would not.

The data shown above shows the significance of web-stores to have excellent navigability and search option integration. It is important the users to be able to find what they are searching for, so they do not need to additionally call to the shop or go to visit the physical shop (if one is available). Even though that 90% have replied that they would return to the web-store again, if previous experience was unpleasant (assuming that not being able to find an item is unpleasant). That however, cannot be a motto of a shop that customers would return again no matter what the service is because the data shown above describes one case, not continuous miss happenings in one web-store.

Respondents' opinions on how long are they determined to search for one item vary from few seconds to 3 months. This data should be divided into two groups of data - how long person is ready to search for one item and how long a person is ready to wait for an item to be sold from the web-store/available. As the data that varies between several seconds and 1 hour would fall into the first group and the one that varies between 1 day and 3 months falls into the second group.

According to the usability expert Jacob Nielsen the search for one item should not be more than 10 seconds in response time from the system. Anyhow, majority of users are determined to search as long as it is needed to locate the desired product or services. That depends on how much vale that product has for certain user and even though many are determined to browse even for an hour, the products should be located as fast as possible. The response time is important, of course, but the fine organization of one web-store and excellent implemented search option with various ways to locate an item is as important.

As for the second group that would wait for months for that product to come, web-stores should inform their clients what and when to expect. Assuming that the new iPhone 4 is out in the States but not yet in Europe, web-store operating in Europe should announce the coming of the product, if possible before it has come on the market.

From the information gathered from the open-ended questions, one new matter had aroused: browsing web-stores has become a hobby to some and therefore spending time browsing for items gives pleasure to some users.

5.4   Safety and payments

83, 3% of the respondents of this survey consider online shopping to be safe, giving as a reason the terms and conditions, good customer service, security policy of web-stores, using familiar sites and as long as they do not ask personal information. However, 16, 7 % of the respondents do not consider online shopping safe.

The safety issues arise from the payment details as many users do not wish to leave their information on the web.

PayPal and bank payments are the most popular choices as shown from the survey results, due to not leaving any information to be stored in web-stores' databases or the reason that many of the respondents do not posses and credit card or the extra fees

that some credit cards have. In second place come the credit cards, which are preferred because the web-stores have made the respondents feel safe enough, so they feel free to leave their credit card details.

5.5 Respondents opinions on different design elements

Subscription letters that are incorporated in web-store design as an extra step during registration or payment process are considered to be useless and 90 % of the respondents ignore them. The rest of the respondents find them to be a subject of interest and importance. This information leads again to the issue of user centred updates. They could work better than subscription letters because they are not sent via e-mail or mail, therefore no spam, and they will be shown only when the user logs in the web-store.

The following tables, where the values from 1 to 5 stand for: 1 = not disturbing at all and 5 = extremely disturbing, show how respondents feel about the following:

Pop-up ads and offers:

Value	1	2	3	4	5	Total	Average
Number of respondents	5	13	31	63	182	294	4, 37

Table 5.5.1 pop-up ads and offers

Pop-up windows:

Value	1	2	3	4	5	Total	Average
Number of respondents	4	5	18	75	182	284	4, 5

Table 5.5.2 pop-up windows

Moving objects:

Value	1	2	3	4	5	Total	Average
Number of respondents	7	24	50	102	95	278	3,91

Table 5.5.3 moving objects

Mixing fonts and colours on pages:

Value	1	2	3	4	5	Total	Average
Number of respondents	18	46	77	85	52	278	3,38

Table 5.5.4 mixing fonts and colours

Overcrowded pages:

Value	1	2	3	4	5	Total	Average
Number of respondents	6	8	48	97	120	279	4,14

Table 5.5.5 overcrowded pages

Music:

Value	1	2	3	4	5	Total	Average
Number of respondents	7	35	46	73	121	282	3,94

Table 5.5.6 music

Web-stores' different marketing policies and design components to attract customers are not always well accepted by the customers. As shown from the 6 tables above, many things are considered to be extremely annoying by majority of respondents, such as pop up ads, offers and windows, overcrowded pages and music. These elements can cause huge distraction from the shopping process and therefore the user could leave the page.

Some elements, such as moving objects and mixing colours and fonts are not considered extremely disturbing but still dominant part of the respondents has graded those 4 in the scale 1 to 5.

Web stores are considered to be easy to use, according to 95, 2 % of the respondents, the rest 4, 8% do not find web-stores easy to use.

5.6   User opinions on technical details of web-stores

The following tables, where the values from 1 to 5 stand for: 1 = not important at all and 5 = extremely important, show how respondents feel about the following:

Language used:

Value	1	2	3	4	5	Total	Average

Value	1	2	3	4	5	Total	Average
Number of respondents	6	5	9	92	171	283	4,47

Table 5.6.1 language used in web-stores

Easy to locate products:

Value	1	2	3	4	5	Total	Average
Number of respondents	2	2	6	79	187	276	4,62

Table 5.6.2 easy to locate products

Have clear notation of page components:

Value	1	2	3	4	5	Total	Average
Number of respondents	3	6	24	108	136	277	4,33

Table 5.6.3 clear notation

Navigability:

Value	1	2	3	4	5	Total	Average
Number of respondents	5	9	56	106	100	276	4,04

Table 5.6.4 navigability in web-stores

Feels safe:

Value	1	2	3	4	5	Total	Average
Number of respondents	4	6	14	62	189	275	4,55

Table 5.6.5 safety in web-stores

Feel in control:

Value	1	2	3	4	5	Total	Average
Number of respondents	2	3	8	56	205	274	4,68

Table 5.6.6 feel in control

Receive bonuses:

Value	1	2	3	4	5	Total	Average
Number of respondents	34	48	96	78	28	284	3,06

Table 5.6.7 receive bonuses

It is important for the user to understand what he is buying and what he is paying for, therefore using clear language and notation, as well navigability or knowing where the user is and where he came from, are very important in web-store design.

87, 4% of the respondents consider web-stores to be easy to use, where 12, 6% consider them complicated. The search option was found handy by 86, 7%, the rest 13, 3% of respondents do not find web-stores' search option to be helpful. 72 % of respondents would use web-stores that do not have search option and 28% would not use the services of these web-stores. The data once again proves the high importance of an excellent integrated search option in web-stores.

There is a common demand for users to register before purchasing items from web-stores but 26, 8% of the respondents show that they would not register and 73, 2% would register if necessary.

Registering can be very frustrating to user. Going through the path of enter all you data, log in to the e-mail, confirm that the person is who he say he is and after that reaching the home page of a web-store, again, after browsing for a long time to locate the desired item. This process must be simplified, so the frustration around it would decrease. As well for the browsing, after registering the web-store should return the user to the state, where he was requested to register. An idea to simplify the process is that chain stores or web-stores belonging to the same alliance can share one database, so users can log in with the same id to every web-store.

Majority of respondents do not use their phones to browse web-stores – 86%, the rest 16% use their phones for browsing web-stores. Even though the market of smart phones and the demand of users is growing, this survey shows that the dominating part of users do not use their phones to browse web-stores, main reason was that many do not possess a phone that allows them to use such features.

5.7 Aesthetics

The following tables, where the values from 1 to 5 stand for: 1 – not satisfied, 5 – extremely satisfied, show how respondents feel about the aesthetics of the web-pages of web-stores:

| Value	1	2	3	4	5	Total	Average
Number of respondents	4	10	66	162	48	290	3,83

Table 5.7.1 aesthetics of web-stores

As seen from the table, aesthetics are considered quite important to many users, so web-stores should research more on that matter.

5.8 Surveying

Many of the respondents even though have responded to this survey; do not fill surveys regarding web-stores usually. According to the respondents completing survey is loss of time and things usually do not change even if strong opinions were shared with the web-stores. This information is not good for web-store development because without the users, the web-stores could never improve to meet their needs. Many web-stores should change their policy and if a survey is published, to make sure that the results from it will affect the web-store in some way. Also whatever happens, the users must be informed.

5.9 Reasons not to use web-stores

The following graph shows the results from the survey, where respondents have chosen what could be the reasons not to use web-stores:
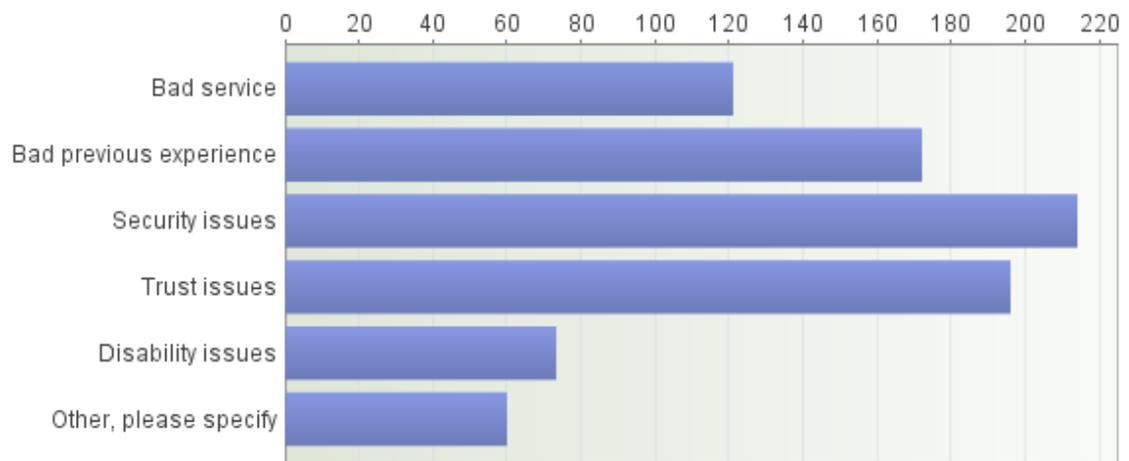
Graph 5.9.1 reasons not to use web-stores.

From the graph above can be seen clearly that users' main issues with web-stores are security and trust. That is due to the countless number of fake stores existing in the web.

New rules on how security can be improved in web-stores should be created. The data of customers must be protected and the customers must know that in order to trust the online retailers. The reason that this two issues have the largest number of choice among respondents have to do also with not having much knowledge of the security policy of the web-stores, which leads to another problem – users do not read the terms and conditions and policies of web-stores. It can be safe to assume those users do not know that it is easier to commit a fraud in a physical shop than in an online shop. Web-stores can track where information comes from and security systems are constantly upgraded to fight the different treats. Where as in physical store with fake documents is much easier to be a victim of some kind of fraud.

It is interesting to note that bad previous experience and bad service fall back from security and trust. That proves that as long as users feel safe, they might still use a certain web-store's service even if they do not like it. That is interesting because in this day with the variety of products and services, there are still shops that perhaps provide the only or the cheapest service or product.

Disability issues should have stronger affect on web-store design. Every web-store that wishes to have a broad target groups, should implement options that serve disabled

users. Enabling font change, sound equipping the web-pages, even voice recognition system could be a bonus. These are not new techniques, i.e. the voice recognition was implemented in mobile phones awhile ago, when people could call somebody by saying the name of the person and a phone would dial. That, in more advanced stage, should be implemented in web-stores.

Other problems arose from costing for delivery and any other extra fees, bad reviews from friends and family, no options or information for payment or products choice.

5.10 Survey results summary

The survey research was carried out to find the user experience with web-stores. The surveys target group were the students of HAAGA-HELIA University of Applied Sciences. The survey was sent to all students and in response there were 301 answers. The dominant response groups were age – 18-23, gender – female, country of origin – Finland and had no IT background.

The respondents had a good general idea of web-stores and how to manage with the shopping process in one. As well, they had expressed valuable opinions on what kind of faults existing web-stores have and therefore the data can be used for web-store improvement.

Even though each respondent did not answer all the questions from the survey, the survey is still considered to be valid and reliable due to the large number of respondents.

Results from the survey proved that the extracted best practices for web-store design could benefit in the success of a web-store.

6 Conclusion

The IT industry that is having trouble to wrap its head around the problems in human-computer interaction, should take the road of acceptance that only technology can create perfect working hardware and software but in order to improve the web-store development, something else is needed.

The research also proves the importance of the opinion of users to some extent. Users have a lot to say and can influence the design towards a better stage but in many cases they are not familiar with some already pre-existing rules that work in their benefit. These rules, such as security matters and trust have to be introduced to users in a better way. Policy and terms and conditions should have a more significant place in a web-store than the bottom of the pages and certainly have to be explained why it is important to read them.

Web-store design is a constantly developing and evolving topic. This research could serve as a base for a further research in mining for new design principles to be applied in web-stores. Also the marketing policies of web-stores could benefit from researching deeper in the design rules of the web and pinpoint the rules that can apply to their own stores.

Bibliography

7,500 Online Shoppers Unknowingly Sold Their Souls, cited 25.4.2011) URL: http://www.foxnews.com/scitech/2010/04/15/online-shoppers-unknowingly-sold-souls/ (cited 26.4.2011)

Apple Store user interface, URL store.apple.com (cited 27.4.2011)

Biometrics catalogue, URL: http://www.biometrics.gov/Documents/glossary.pdf (cited 3.5.2011)

Brinck, Tom & Gergle, Darren & Wood, Scott: Designing web-sites that work, Morgan Kaufmann Publishers, 2002

CSS Colours Tutorial, URL: http://www.w3schools.com/CSS/css_colors.asp, (read 2.2.2011)

CSS3 Info, URL: http://www.css3.info/, (read 2.2.2011)

Ellos user interface, URL: www.ellos.fi, (cited 27.4.2011)

Finnmatkat user interface, URL www.finnmatkat.fi, (cited 27.4.2011)

Grid 960 System, URL: http://960.gs/ (cited 6.4.2011)

Grid 960 System, URL: http://sixrevisions.com/web_design/the-960-grid-system-made-easy/ (read 6.4.2011)

Grid 960 System, URL: http://www.designinfluences.com/fluid960gs/ (read 6.4.2011)

Hayashi, Sakawa: Web Design 100, Hidetoshi Kita, 1998

HTML Tutorial, URL: http://www.w3schools.com/html5/default.asp, (read 2.2.2011)

HTML Tutorial, URL: http://html5doctor.com/ (read 2.2.2011)

iOS Usability Tips and Resources for iPhone and iPad Apps, URL:
http://designshack.co.uk/articles/layouts/ios-usability-tips-and-resources-for-iphone-
and-ipad-apps (read 6.3. 2011)

ISO standards, URL: http://www.4feets.com/2009/04/standardized-approaches-to-
usability-iso-9241/, (cited 12.4.2011)

Kalakota, Ravi, Dr. & Robinson Marcia: e-Business, roadmap for success, Addison-
Wesley, 1999

KISS Principle, Wikipedia, URL: http://en.wikipedia.org/wiki/KISS_principle, (cited
3.4.2011)

Krug, Steve: Don't make me think, Second edition, New Riders, 2006

(Niccolo Machiavelli quotes, URL
http://www.brainyquote.com/quotes/quotes/n/niccolomac131418.html, cited
23.3.2011)

Niederst, Jennifer: Learning Web Design, O'Reilly, 2001

Nielsen Jakob: Designing Web Usability, New Riders, 2000

Nielsen, Jakob & Loranger Noa: Prioritizing Web Usability, New Riders, 2006

Phi Matrix software, URL: http://www.phimatrix.com/ (used between 3.4 and 28.4)

RS Web Solutions, URL: http://www.rswebsols.com/tutorials/web-design/web-
design-and-search-engine-optimization-the-basics (read 3.1.2011)

Sensible rocket surgery, URL:
http://www.sensible.com/rocketsurgery/RSME%20sample%20chapter.pdf (cited
6.4.2011)

The golden ratio, URL: http://en.wikipedia.org/wiki/Golden_ratio (cited 12.3.2011)

The golden ratio, URL: http://net.tutsplus.com/tutorials/other/the-golden-ratio-in-web-design/ (read 1.4.2011)

The golden ratio, URL: http://designshack.co.uk/articles/graphics/applying-the-golden-ratio-to-your-web-designs (read 1.4.2011)

The principles of beautiful web-design, URL: http://blogs.sitepoint.com/principles-beautiful-web-design/ (cited 15.4.2011)

The Psychology of colour, URL: http://designfestival.com/the-psychology-of-color/ (read 24.3.2011)

Verkkokauppa user interface, URL: www.verkkokauppa.com (cited 27.4.2011)
Wonder branding: marketing to women with Michele Miller, URL:
http://michelemiller.blogs.com/marketing_to_women/2005/12/your_brain_on_s.html (read 3.2.2011)

Appendices

Appendix 1 Colour interpretation table:

Colour interpretation table		
Colour	**Meaning and associations**	**Suitable for**
White	In Western cultures white represents purity, perfection, cleanness, light In eastern cultures funerals; more specifically in China and Japan – white associates with death and mourning, India – unhappiness	In design, perhaps a web-store that sells medical supplies could benefit of having a white and white shades design ornaments to compliment the overall web-store design
Black	In Western cultures it is associated mainly with death, funeral, evil and dark but it has also adopted the meaning of elegance and class, power and strength. In Eastern cultures it is accepted to be the colour of bad luck and unhappiness – Thailand, in China it is colour for young boys.	Black is a very strong colour and its usage has to be carefully chosen. Web-sites that sell art might incorporate a great black background colour, which can create depth to the overall design.
Yellow	In western cultures – summer, sun, light, hope, joy, taxis. In Egypt – mourning, China – royalty, Japan – courage, India – merchants, Buddhism – wisdom	A web-store that provides food (fresh fruits, fruit baskets) or children toys shop can benefit from using yellow as a background colour or a highlight colour. It is proven that it can stimulate mental activity if overused – it can cause anxiety. Mixing it with black would remind warning sign!
Orange	Europe – creativity, harvest, protest Hinduism – sacred colour	The orange colour has a feeling of warmth and energy because it is often associated with the sun and the fruits orange, which are associated with the summer. A web-store providing vacations or plane tickets could benefit using orange or orange tints and shades in their web-design
Red	Europe – danger, love, passion China – bridal colour, luck, happiness and joy India – purity Israel – sacrifice	Red is commonly associated with fire and love or with danger and stop sign, with revolution, war and history. All the associations awake strong feelings in the one that sees it. Web-stores looking to awake these strong feelings can benefit from using red as a dominant colour on the web-pages. To be careful with it because the contrast it creates with other colours can be extremely unflattering and hard to read or stare at.
Green	Europe – spring, nature Japan – life USA – money (dollars) Islam - hope	The green colour is colour of nature. It is a very suiting colour for the eyes because it is from the cold range of colours, which are proven to calm the eyes and the person staring at it. Web-stores that can benefit from using green are stores providing nature products or products for nature, spa centres and tourist agencies.
Blue	Europe – ocean, sea and water, bridal tradition China – immortality Iran - mourning Royalty – the blue blood	Blue is considered to be a safe and peaceful colour. It can be used by web-stores that provide equipment for bathrooms and restrooms, sea (over sea) cruises web-stores.
Purple	Europe – dignity, royalty Thailand – mourning	The colour is often associated with mystery and psychic abilities. Web-stores providing some mystical artefacts could benefit from it.

Appendix 2

Survey full questionnaire:

1. Do you have any IT background (i.e. BIT/TIKO student)
2. Age
3. Gender
4. Country of origin:
5. Highest level of education
6. Do you use web-stores?
7. How often do you use (visit) web-stores?
8. Would you choose a web-store over a physical store?
9. Do you use search engines(i.e. Google)or type a web-address to locate web-store/product
10. What kind of web-stores do you use?
11. How satisfied are you with the services provided by the web-stores you use?
12. Are you determined to browse one web-store until you find the desired item, or try another?
13. If you cannot find the desired item, would you return again to the same web-store another time?
14. How long is too long for 1 item search?
15. Do you consider online shopping safe?
16. Do web-stores you use make you feel safe?
17. How do you feel about the payment methods? i.e. what is preferred method PayPal, Credit card etc. and why
18. How do you feel about online subscription letters? i.e. are they a subject of interest or you just ignore them and why
19. Pop-up adds and offers
20. Pop-up windows
21. Moving objects
22. Mixing fonts and colours on pages
23. Overcrowded pages
24. Music
25. Do you find it easy to browse web-stores in general?
26. Have clear language used
27. Be easy to locate product information
28. Have clear notation of names, labels, buttons, links
29. Know where you are
30. Feel safe
31. Feel in control of the purchase process
32. Receive bonuses and benefits
33. Do you think web-stores are complicated?
34. Do you find the search option helpful?
35. Would you use a web-store that does not have search option?
36. If the web-store requires you to register before purchase, would you do it?
37. Do you use your phone to browse web-stores?
38. How important is to you, the web-store pages to be aesthetically well designed?
39. Do you usually complete surveys or questionnaires or send feedback to web-stores if asked to?
40. What is a reason(s) not to use web-stores?
41. Could you please explain your last answer?
42. Any other comments?