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Redesigning Restaurant Website in Responsive Framework

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<p>The principle aim of this thesis is to demonstrate how an old fashioned, and difficult to operate website was re-conceptualized, re-designed, and developed as a completely responsive, modern web application using contemporary design practices.</p> <p>Modern design practices include user centric design principles and design based on the end user's resources, upon which the product will be used. In case of website design the resources in question are web browsers in desktop computers, laptops, tablet PCs and mobile devices. There are various technology frameworks to facilitate the design process. Responsive website design focuses on making browsing easier in devices with different screen sizes. Bootstrap framework developed by Twitter, Inc. is the framework used in this project for responsive static design.</p> <p>The project consisted of different stages of research and development. The project at large encompasses the mobile first principle, the content first principle, usability hacks, easy navigation rules and aesthetics.</p>	
Keywords	Website, Design, Responsive, Mobile, Usability

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## List of Abbreviations

CMS	Content Manage System
HTML	Hyper Text Markup Language.
CSS	Cascading Style Sheets
UI	User Interface
UX	User Experience
WWW	World Wide Web
PSD	PhotoShop Document
CPU	Central Processing Unit
Web app	Website Application
Native app	Native Application
iOS	iPhone Operation System
PC	Personal Computer
URL	Uniform Resource Locator
Inc.	Incorporated

## 1 Introduction

Most of the website views are coming from small mobile screens followed by tablet PCs and other middle ranged devices. People are using websites for complex tasks such as online financial transactions, consulting services, match-making, games, etc. Because of this the development of usage patterns for website design is being rethought.

Responsive web design is based on mobile first principle where the design is first produced primarily for small screens and scaled towards bigger screens. This way users will find the website well suited on whatever the size of the screen they are viewing the website from. There are various frameworks to facilitate such design processes.

Because of the versatile nature of modern websites, managing and delivering their contents has to be well planned. The content first principle states that the content is the most important and the first priority of any system. To maneuver the best design practices one has to face limitations raised by size of the devices. Therefore the contents have to be systematically categorized, organized and presented in the easiest and simplest way possible at the users' first glance.

This study was a project endorsed by Ask Me International. The project consisted of redesigning and developing a restaurant website which was lacking responsiveness. The whole process included producing the wireframes, designing mockups based on the brand identity of the business, converting the mockup into a static HTML website and further development. The usability was carefully devised and closely inspected in order to make the website easier to access and interact with.

## 2 Contemporary Practices in Good Website Design

### 2.1 Responsive Website Design

According to Marcotte (2011) the beauty of web is in its content and design. Web is the digital online version of the art. And screens are canvas for the design. [1]. There are always boundaries and maximum possible dimensions for any art. Unlike the fixed canvas on real life, the digital version or web has flexibility of canvas or the browser size. This flexibility may exist because of users' interactions with the browser simply by changing the size of the browser or by changing the source screen to view the web content. In both the cases, it is likely to have different dimensions of the canvas.

When the designers design the websites, they take reference of a certain size of screen. This will create a problem in browsing if the sizes do not match. The term Responsiveness represents the action to solve this kind of situation. Although responsiveness with respect to different browsers or screen sizes has been part of the design world for already some time, proper responsiveness is a new topic.

Previously, responsiveness was managed by increasing or decreasing of the content's size proportionally to the canvas size. This behavior used to stretch or shrink the content in reference to the screen size. In many cases, this factor was not considered during the development and as a result websites used to appear only partially visible in the full screen and users had to scroll right or left to view all the contents.

The following figure shows the screenshot of a FM radio's website. The screenshot on the right shows that when the size of the browser is reduced, the page does not fit proportionally and only some part of the page becomes visible. This makes users to scroll right and left in order to view the entire page properly. This may lead users to leave the page as it will confuse them, especially when they try to scroll on smaller devices such as mobile.



Fig. 1. Responsiveness test on a FM radio's website using different browser sizes.



Fig. 2. Responsiveness test on a FM radio's website with FM player on top-right on small browser size.



Figure 2 is the screenshot of the FM radio's website in a small browser which has FM player tools on top-right corner of the page highlighted with red circle. It is clear from the screenshot that decreasing the browser size even more will make the player hidden. When users come to a radio's website to listen the radio, it is annoying if the player is hidden.

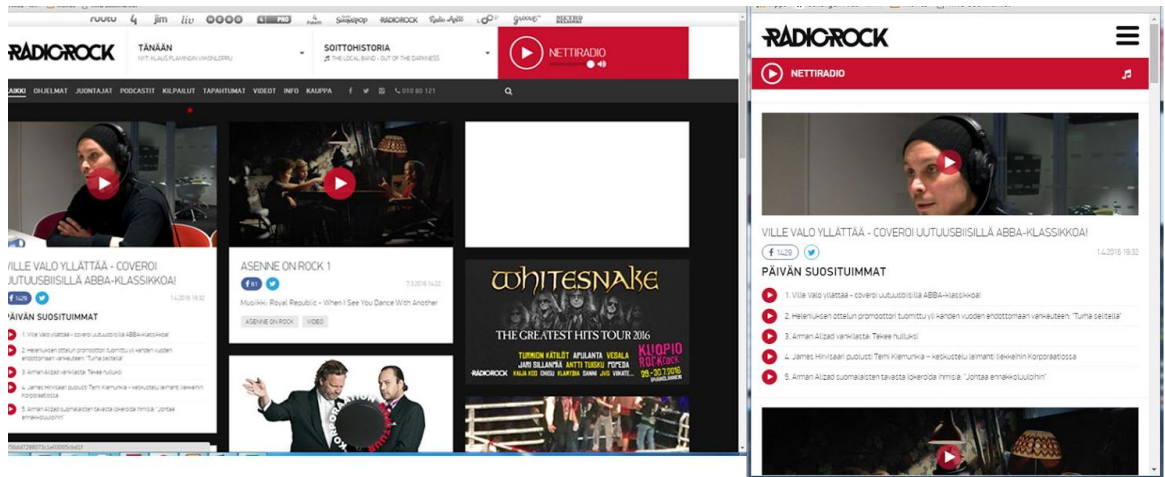


Fig. 3. Screenshot of the FM radio's site when it has been designed to responsive.

Figure 3 shows the screenshot of FM radio's website from two different screens. On the left, it shows how the website appears in bigger screen and on the right it shows the behavior of the website and its contents on smaller device. It is clear that on a smaller screen, contents change their position to fit properly and font sizes increase to make them easily readable. In the bigger size screen the radio player is on top-right, however on decreasing the browser size or in smaller screen, the player appears full-screen-width on top-second layer.

Furthermore, on the mobile view, the navigation menu switches to hamburger style navigation menu and the logo stays as it is but all the navigation menus and links go hidden and get displayed on clicking the hamburger style navigation menu. This gives users easy scrolling feature for viewing the desired content and takes out the confusion that may appear because of too many links on the first page, especially in smaller devices such as mobile. Figure 4 illustrates the good example of mobile navigation.

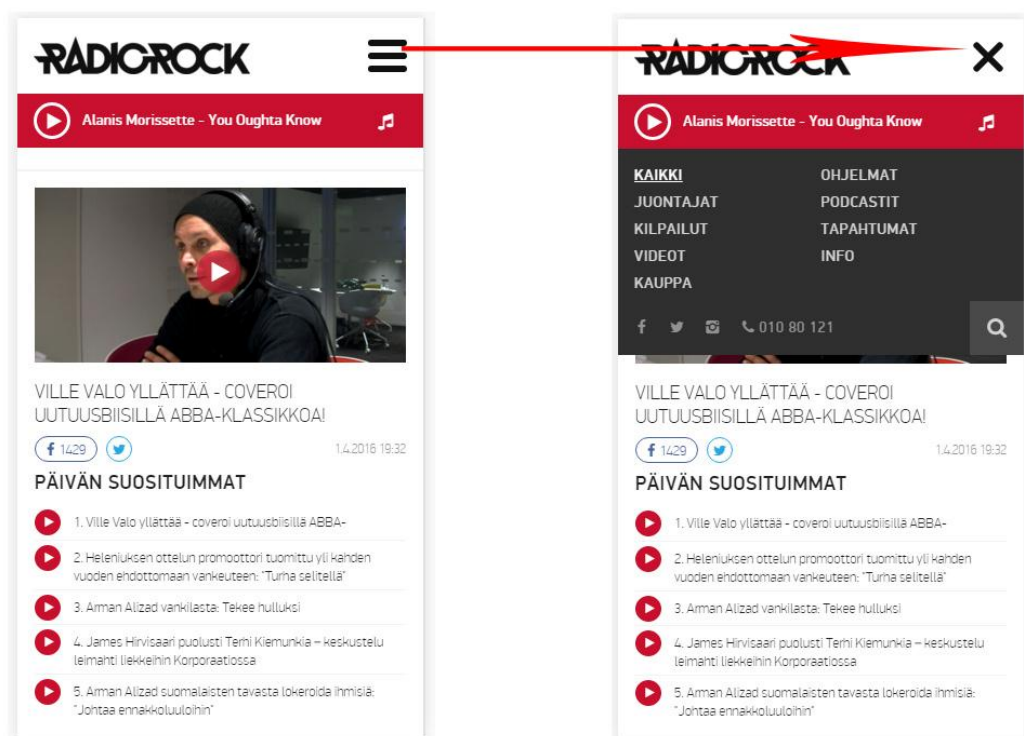


Fig. 4. Responsive test on iPhone 6 screen.

## 2.2 Mobile First Principle

Mobile is the screen of this era. The growth of mobile users is rapid. For any business the key formula is to supply according to demand of the customer. According to Facebook statistics there are daily 934 millions of active mobile users. In web technology and website industry, the first users that should be kept in mind are mobile users. In the past, when most of the users focused mainly on desktop browsers, the theory behind the designing was mainly targeted to desktop screens. Viewing any web material in a mobile

device was in many cases impossible. Plugins such as Flash player made it impossible to browse various contents from mobile. As the Wroblewski has stated (2011), those who dared to use a mobile for such purpose, used to have really painful time. [2]. Figure 5 illustrates the overall browsing of internet from mobiles and desktop's screens.

**Forward Projection: Mobile Web Browsing vs. Desktop Web Browsing**  
(2007-2015)

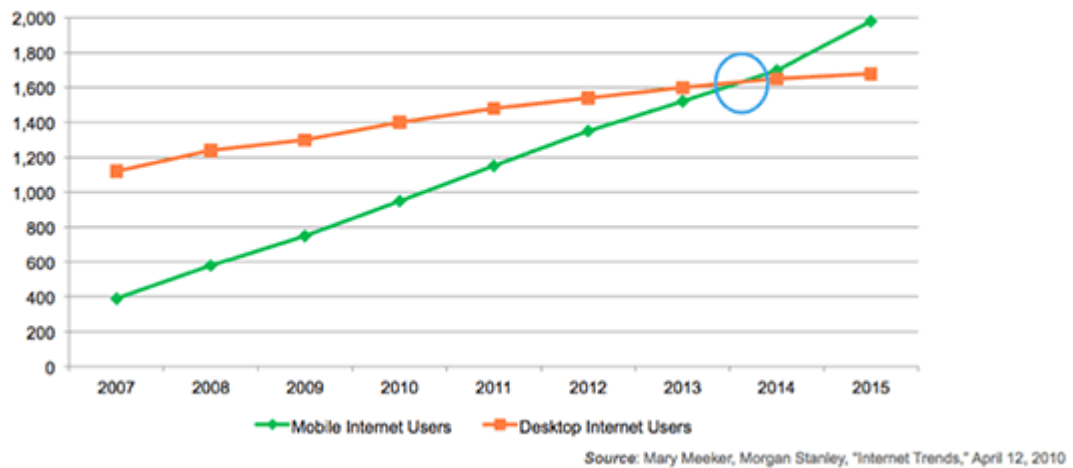


Fig. 5. Mobile vs desktop uses graph. [Mary Meeker, Morgan Stanley, 2010]

All these scenarios lead to only one idea – mobile first. Mobile should be the first thought when developing any web material now. This is the demand of this generation and it is the responsibility of designers and developers to fulfill.

Focusing on mobile also gives the opportunity to innovate new ideas and new ways to let users perform their work. [2]. The idea of mobile first is designing the website for the mobile before any other devices such as desktop or other larger screen. It involves targeting the small mobile devices first thought regarding both the user interface and its functionality.

The mobile first design will not change viewing on desktops, it rather makes it user friendlier by re-configuring its components. [3] [4]

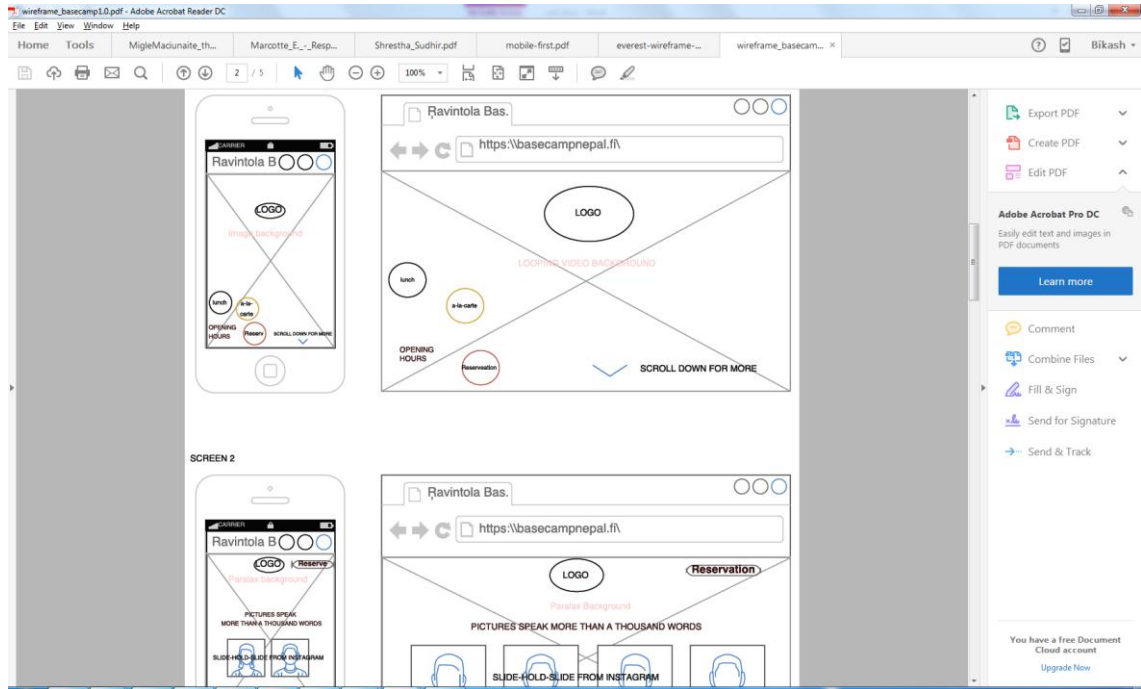


Fig. 6. Wireframe for a website with mobile first principle

Figure 6 shows the wireframe of a website with mobile first principle taken into action. The wireframe gives the view of a website in mobile first and a similar view in desktop screens. This way it secures the functionality and design of the website in mobile and gives users a good experience.

Mobile first principle is not only about designing the website for smaller screens, but implementing the possible software and hardware integration option that mobile or smaller devices may have. For example, desktops have keyboard and mouse, which provides users an easier and a more flexible way of reaching the content. In mobiles everything is accessed by tapping and touching the screen. Mobile first principle should figure out the solution for letting user easy access to typing or performing touches and taps on icons and features.

In the following figure there are two different screenshots of same website's form, one taken from desktop browser and another from mobile browser. The field highlighted with red is a number input section. In desktop, users can simply type the numbers from keyboard, but in mobiles it is easier for users to simply see the number input option. This will speed up the process of inputting numbers in mobile devices. This is a good example of mobile first approach in terms of functionality.

Likewise, different plugins such as Flash player do not work in some mobiles. With the mobile first principle, when assuring plugins which are functional in mobile browsers, are functional in desktop browsers as well.

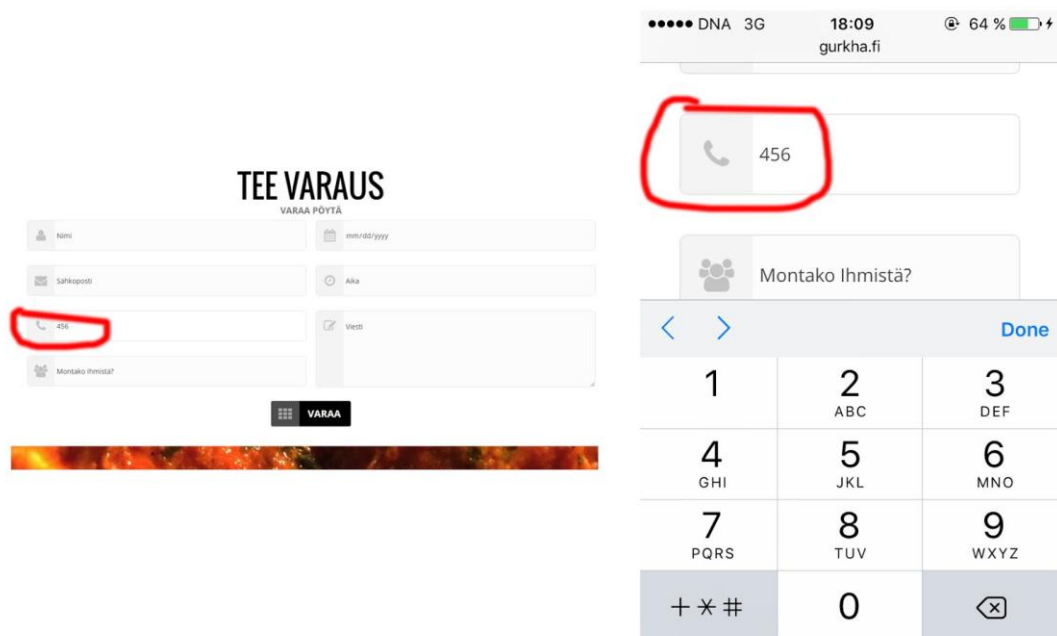


Fig. 7. Screenshot of website's form in desktop and mobile browsers.

There's a debate about native mobile applications and web applications. They both have their good and bad sides. Native mobile applications are specially crafted for the particular operating system, for example all Apple products have iOS and most of the other devices now have Android system. Similarly Nokia/Microsoft has its own Windows System. The benefit of native application is that it has direct access to mobile's other software such as camera, microphone, notification setting, and other applications. This provides a whole new platform to have smooth user experience with various functionalities,

which may lack on the web applications. In addition, there's a good chance of earning some royalties by selling the app on app stores.

But on the other hand, if we think about development and back-end part, it is not an easy job to think about all the platforms and develop the native apps for all of them. The apps also need to be updated on all platforms when changes are implemented. Also, from user's point of view, it is not possible to download an application all the time when new updates are available.

Let's take an example of a restaurant's web presence. It's almost impossible for a user to download the mobile application for every single restaurant he or she would like to visit or eat at. Building a mobile app for a restaurant is very rare and so is using it for something practical. On the other hand, making a web application for them solves all the issues and makes it easy to access it just with an url.

### 2.3 Content First Principle

The content is the soul of websites. The previous chapter described the mobile first principle. The mobile first principle it gives content many challenges as well as opportunities. Moving to mobile is changing the size from bigger to smaller. With less space, there's a big question of what to display, where and which information to display, and which should be left out. It leads us to the content first principle.

Current technologies have almost everything people need in different individual platforms. For every single task there are different applications or websites. The trend of displaying everything possible on one single page is old and useless. Users want to see the thing they require the most and they want to find it in a very short time after opening the application. Once users enter into the site, they will get frustrated if the content confuses them. This often leads them to get distracted and leave the site.

The pages on a site should be self-evident. Websites are mostly medium for one-to-one relation with users. Most of the websites have no manuals or directions how to use or how to find the contents. This is another reason users should be able to perceive information directly.

Let's take an example of a restaurant's website. The targeted users for restaurant's website are people who will come to eat in that restaurant. The main reasons users come to restaurant's website is to either check the restaurant's menu or to do the reservation. Secondary reasons can be to check locations, restaurant's pictures, food pictures, other users' reviews etc. Traditionally, restaurants' websites exhibit lots of long descriptions about their background and their kitchen, which is simply irrelevant for the immediate need, but might be of interest when waiting for the food.

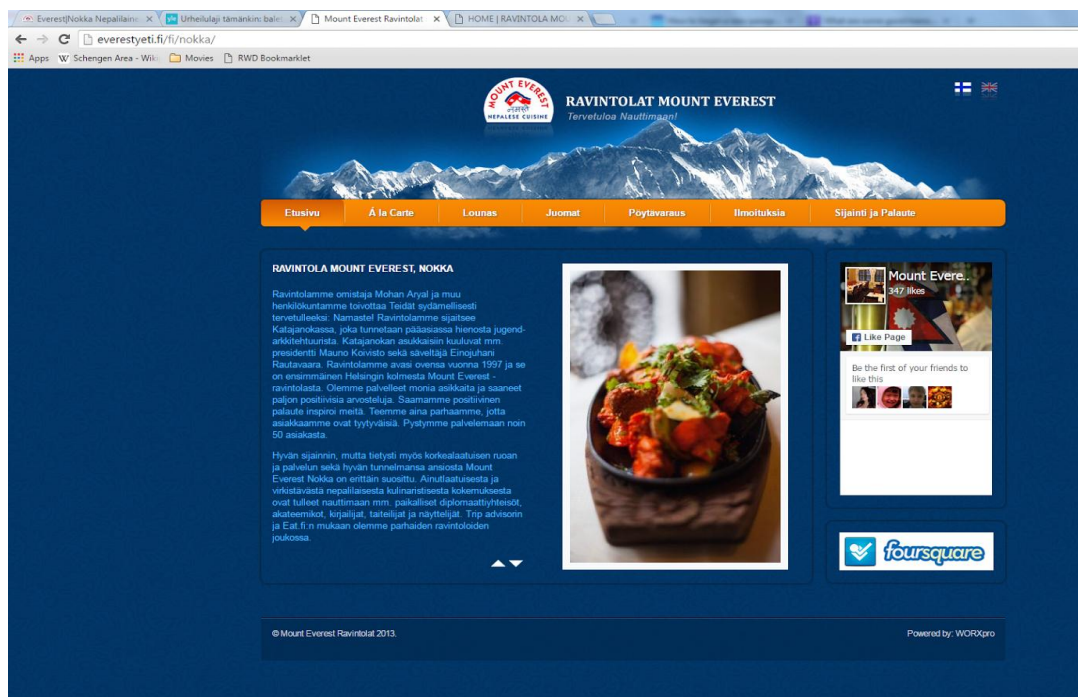


Fig. 8. Screenshot of the first page of restaurant site.

Figure 8 shows how the website is lacking important content on the first page. The website is wasting the primary part of the page with irrelevant text and content. It takes users several clicks to actually get into the menus and reservation page. The site also appears unpleasant in mobiles as it is not responsive. This will annoy users and probably they will just give up before reaching to the actual content. These areas of the first page can be used to display important parts of the website.





Fig. 9. Screenshot of the first page of the restaurant's modern website.

Figure 9 is the screenshot of a restaurant's website. The website is made with content first principle. The first page has nothing except three simple icons which are the links to the main content for this restaurant's website. In this site users immediately see the required content at first glance after entering the website. This way they do not spend time thinking or figuring out where the contents can be. This will keep user inside the page, also, the first page of this website is fully occupied with beautiful pictures. It is said that a picture speaks more than a thousand words and in this way it will not only give a very good impression but also makes users crave for food.

Depending on the goal behind a site's functionality, there may be a situation where it's very hard to display the major contents at first glance. A good example can be online stores. They usually have broad contents and each item has its own importance. In this kind of situation a proper guided text, and good flow of the content makes it easier for users to go through the websites.



Krug (2006) has written that, the goal should be for each page to be self-evident, so that just by looking at them average users will know what it is and how to use it. Sometimes, particularly if the design is on something original or groundbreaking or something very complicated, to reach self-explanatory is enough. On a self-explanatory page, it takes a little thought to “get it”—but only a little. The appearance of things, their well-chosen names, the layout of the page, and the small amounts of carefully crafted text should all work together to create near-instantaneous recognition. [5]

### **3 Usability**

#### **3.1 Defining Usability**

Usability is an essential factor when it comes to any products or services. In case of websites, good usability is the key to deliver the content to its targeted users. 5] Humans perceive primarily on visual cues. When it comes to a website or any software, people use their common sense to find the most out of given options. Avoiding a situation where users have to think is something that decreases the chance of bad usability. Besides that, there are often many situations where signs or textual information are missing. For example, if there is a button, but it is not apparent what the button does, users need to guess before making it work. Usability is not rocket science. It’s a practical way of finding the best possible way to make machines to work as easy as possible with minimum errors.

In figure 10 the tree diagram shows the place where usability stands. In fact, usability is not itself a broad solution of system acceptability. Technologies have their limitations. In each design and development process, there is a situation where designers and developers have to think about social acceptability of a system and its practical acceptability. When a system is socially acceptable, practical acceptability should be further analyzed on various factors such as its cost, compatibility, reliability and usefulness. Usefulness, which is the issue when determining whether the particular system is good enough to perform and achieve the desired goal for the specified target group. Usefulness is further divided into two categories: utility and usability. [6]. Utility is about the functionality of the system and what it can do. Usability is about how well a user can use the functionality.

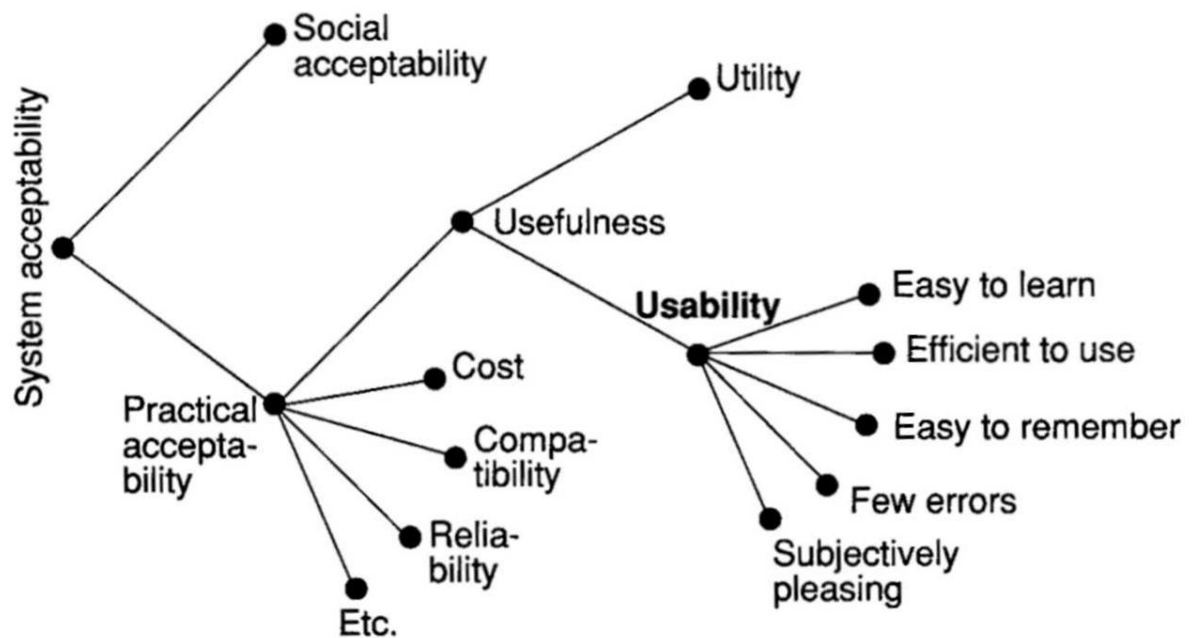


Fig. 10. A model of the attributes of system acceptability. [Jakob Nielsen, 1993:p-25]

The term usability is not a single property of user interface. It combines of several factors. A system should be easy to learn. The navigation should be clear and self-explanatory. Once the user learns the system, it should be efficient to use and easy to remember for future use. According to Nielsen (1993) a system should be satisfying to its user with as few errors as possible. If these factors are addressed properly in designing the system, it is supposed to have good usability. [7]

### 3.2 Mobile Usability

Mobile devices presents usability of internet sites new challenges. Their design should be targeted to the mobile devices. The history of mobile device usability has not reached its maturity since the increase in use and the potentials of web-based solutions has gained popularity in the last few years.

Unlike the native apps, which are precisely made for specific mobile operating system, it is very challenging to design responsive websites. Websites used to be viewed in bigger screens carefully in peace. In mobiles, it is not just the challenge of screen size or displaying content but also the challenge of giving the user exact content fast and taking into account the how the mobile device is held (vertical or horizontal). Furthermore, there are limitations in mobiles when compared to PCs, in a mobile users do not feel comfortable on jumping back and forth into different tabs; this is a challenge for websites.

Figure 11 shows the screenshots of two different web pages of a restaurant. On the left side, it shows how the site's first page is displayed on iPhone 6 screen. By clicking the "Reserve" floating icon on the left-center of the page, it opens a pop-up reservation form. The picture on the right displays the screenshot of the reservation form. This is a good approach to mobile usability.

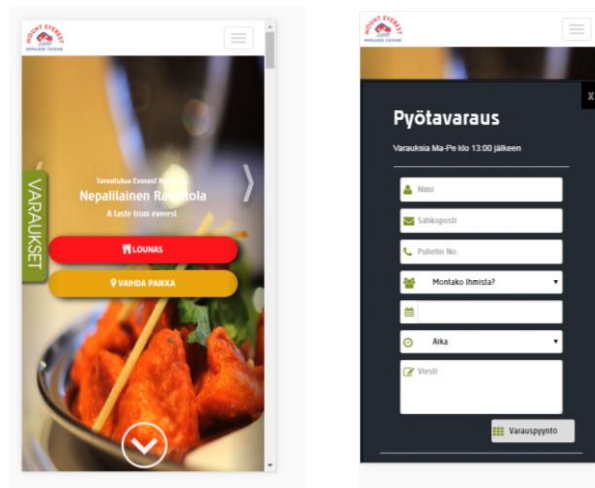


Fig. 11. Screenshot of first page and reservation form for a restaurant.

Keeping users on the same page by allowing them to perform each action on a single page, provides users more confidence in using the page. It allows users to investigate the other pages, after they have executed the tasks they started with. [8]

Another challenge of mobile screen arises when displaying a lot of content. The mobile users are always in a hurry, and they can easily get anxious if they have to suffer searching the content. Mobile device usage is often secondary while doing primarily something else. In previous chapter the importance of displaying content on the same page was discussed, but displaying a huge amount of content on the same page is not an easy job. Websites such as news, online blogs, etc., have a lot of content. Users will easily get tired if they have to scroll around one by one to find the content.

In the following picture, the headlines of latest news are listed, on clicking them viewers will be taken into the actual news page for that heading. The right side in figure 12 is the screenshot of the actual news page displayed after clicking the headline links. The top third level of the news page shows the viewer where they are on the page. They can simply click on upper hierarchy to go back to the main page.

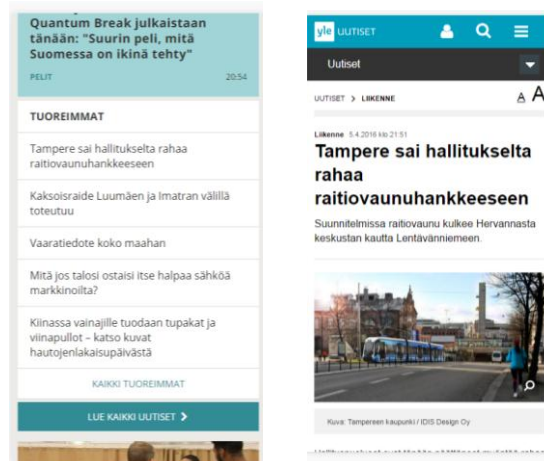


Fig. 12. Screenshot of front page and news section of YLE website.

Mobile usability gives the users what they are looking for in a short time with good user experience. It keeps users on the same page and lets them enjoy the web content on the palm of their hand.

Usability testing is an integral part of the design process to guarantee the quality of the product. It helps designers to ensure that the product is, theoretically, error free and easy to use. The test itself should contain a mechanism of taking feedback from user samples taking into account their similarity with the real users. The feedback is implemented immediately wherever applicable.

## **4 Application**

### **4.1 Project Description**

The purpose of for this thesis is to change a non-responsive website of the Everest Nepalese restaurant into a modern responsive website. In the project, Bootstrap is used. Apart from just converting the site to responsive, this project also aims to enhance usability of the website. The usability is assured by executing usability testing with users. The feedback from users is taken into consideration when designing and developing the website.

The main part of this project is to find out the reasons why users visit the restaurant's website, what their expectation from the website are what the devices they are using and what activities they want to achieve on the website.

To answers all these questions, Ask Me International executed a research on restaurants' websites in Finland. The investigation lasted for several months. According to the research, less than 10% of the total views of sites in a month were from desktop or other bigger screens; more than 80% of the visits were from mobile phones and remaining visits came from tablets (for instance iPads) and other mediums. The investigation justified the necessity to target mobile devices when developing websites. This ensures that users will get an easy and smooth experience browsing through the website regardless of the device they use. Another outcome of research was, more than 90% of viewers spent less than a minute on websites. This gave the idea about what to display in the first to catch users' attention and make them attracted to get more into the site.

## 4.2 Old Website's Problem

Nowadays customers want to see the restaurant's menu from mobile, book a table, share the pictures in social media such as Instagram, and view the reviews on TripAdvisor and eat.fi. This is difficult to do from an old website. Similarly, in the lack of a proper booking system bookings are done through third party API and the restaurant has to pay the commission to them. Because of all these issues, the customers are getting derailed from the websites. The old website of Everest Restaurant was previously built with old technology. It was targeted for certain screen sizes, mainly for Personal Computers and laptops. As a consequence the website was very difficult to view on smaller screens. Everest has three different restaurants in different locations. They have different menus and prices. Because of difficulties in proper separation of those sites, the owner has faced many problems in dealing with the customers' misunderstandings.

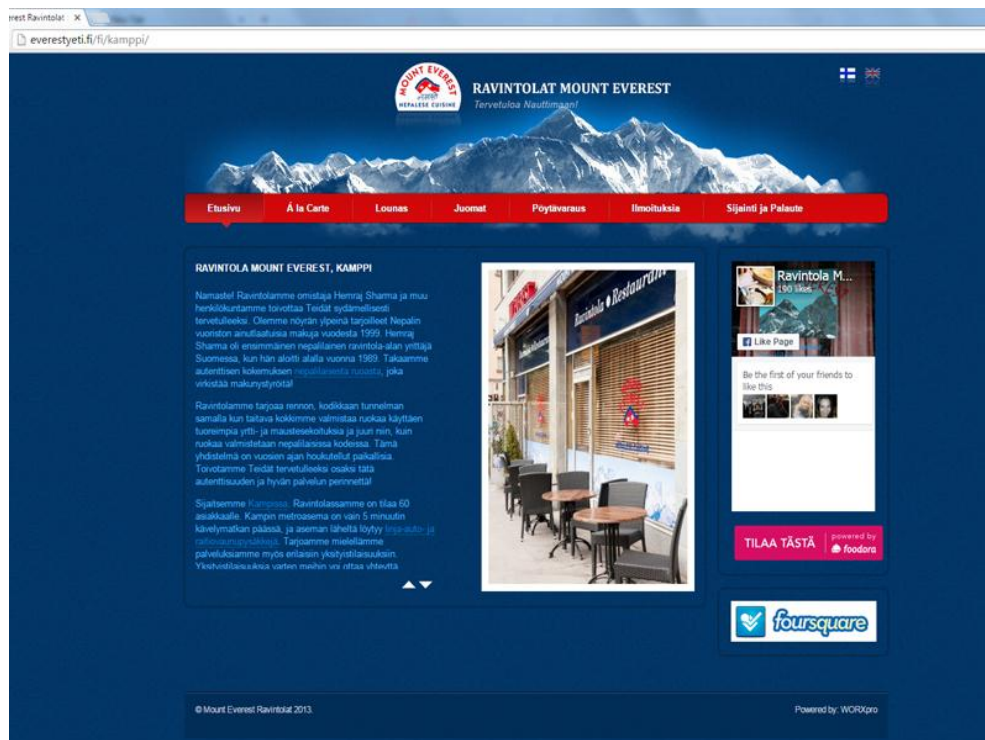


Fig. 13. The Everest Restaurant's Old website's first page in desktop.

Figure 13 shows how the first page of the old site looks on the desktop screen. Some spaces on the left and right margin are left without any content. There is a long text on the first page, which is annoying. According to the research, none of the users want to read long texts on a restaurant's website. The front page should be used to display the important content of the site.

Figure 14 is the screenshot of A-la-carte page. It is one of the most viewed pages of the restaurant's website. The old site has a nice category system, which allows users to view the desired menu properly. However, in a mobile screens, it is difficult to scroll, zoom in and out and move around the page to find the proper item and its price. This leads to users being annoyed and results in the users leaving the website.

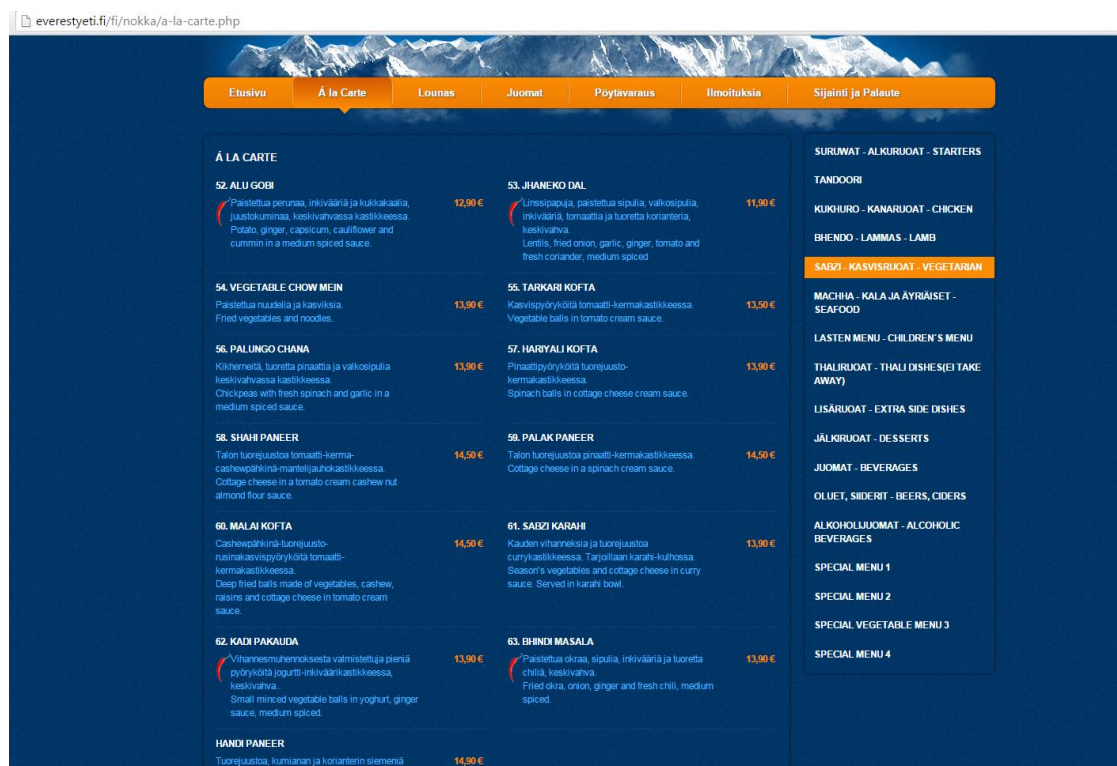


Fig. 14. Screenshot of A-la-carte page.



Likewise, reservation or table booking system is very badly placed on the site. It asks users to put a lot of data forcing them to type more.

Fig. 15. A screenshot of table reservation page section.

Figure 15 shows the screenshot of table reservation section of the old site. There is a date selection tool but it does not work perfectly and people have to place the date manually. In addition, users have to input the time and number of guests manually. This may seem just a little bit of work, but it takes time and allows for mistakes. The mistakes in date, time or number of people, when reserving a table may lead to misunderstanding between customers and restaurant staff which are not pleasant for either party.

#### 4.3 Goals

The main goal of the project is to make website responsive and implement the important part of the websites such as booking, viewing menus as easy to use possible. The principles of mobile first and content first have been applied to obtain the project goals.



Restaurants are the synonyms for foods. Food menus are the most necessary content on restaurant websites. Everest restaurant has more than 100 varieties of items on its menu and more than 70 items on its A-la-carte section. Displaying all the items is a huge challenge and it is even more challenging to display them properly in mobile screens.



Fig.16. Screenshot of A-la-carte in mobile

Figure 16 is the screenshot of A-la-carte section of the new website in iPhone 6. The left side of a figure is a screenshot of the list of the categories on A-la-carte menu and the right side of the figure is the screenshot when the starter category is clicked. Because of the huge number of the items on A-la-carte, it will be very difficult for the users to scroll through all the items to find a particular one.

To solve this issue all the food items under A-la-carte menu are put into different categories, and instead of the items, categories are listed on the page. This helps users to find the categories they are interested in and only view the list of items from their interested category. This will not only give the easiest way to view the menu but also take helps the customers to choose what they want to eat.

When it comes to restaurant websites, it is more about pictures than texts because food looks more appealing in pictures. People share their pictures in Instagram and tag their friends on their pictures. In the Ask Me's research, both the owners and staff in the restaurants agreed that many customers take a picture each day, but they are unaware of

where their pictures are being shared. Implementing Instagram pictures taken by customers in that restaurant to display on the page is another goal of this project.

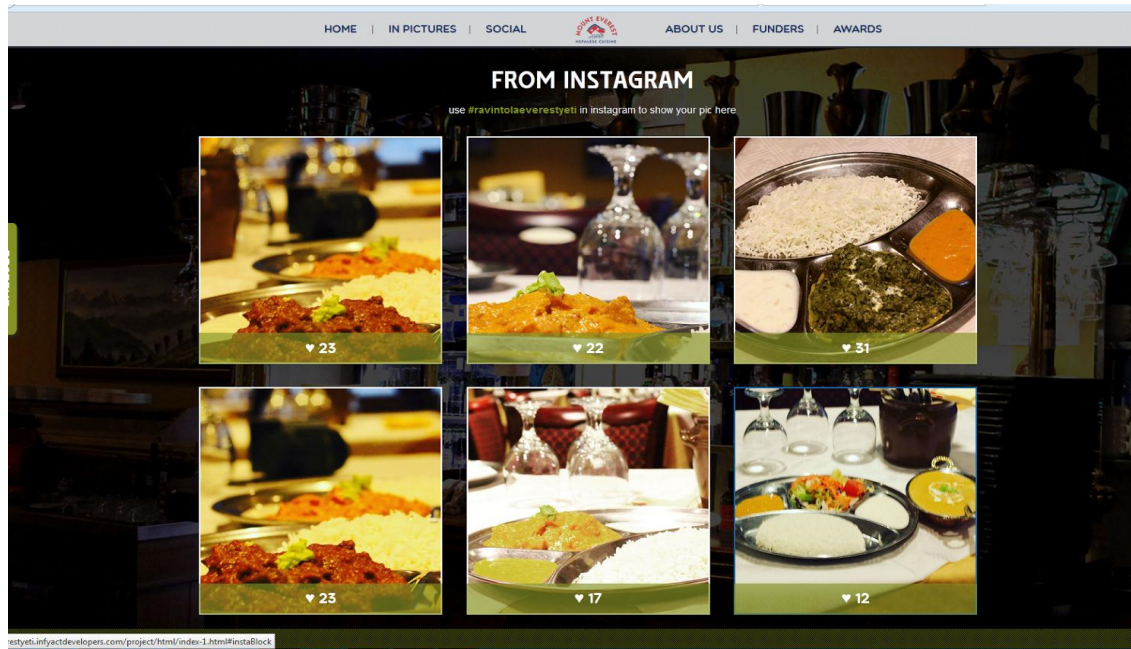


Fig. 17. Instagram pictures embedded with restaurants hashtag

The image above, Figure 17, shows six Instagram pictures with restaurant's hashtag #everesthelsinki. When users upload pictures in their Instagram with this hashtag, it automatically appears on the website. It displays the number of likes and on clicking the pictures it further shows a popup with details.

The restaurant is also in favor of the tourists, and most of them search social websites such as TripAdvisor, Yelp and eat.fi. Implementing the social websites' widgets in a restaurant website will keep the users on the website. Thus, another goal of the project is to embed the most used social media such as TripAdvisor and eat.fi onto the website.

The following figure shows TripAdvisor and eat.fi widget embedded on the website. The recent reviews from customers appear on the site automatically. This will let the new users to know how other people have experienced the restaurant.

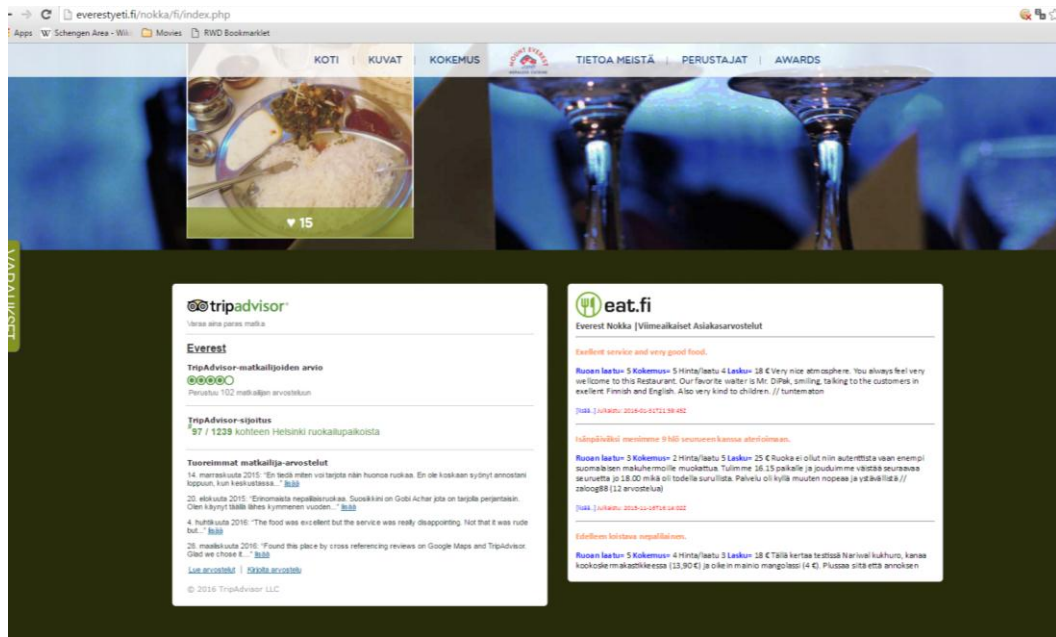


Fig. 18. TripAdvisor and eat.fi widget implemented in website.

#### 4.4 Methodology and Design Process

This project is about re-designing the website Restaurant Everest to be responsive and to enhance the appearance, efficiency and ease-of-use using principles of content and mobile first. The main target of the project is to make the website easily viewable on any size of screens. There are different frameworks to design and develop site responsiveness such as Foundation, Material design and Bootstrap to mention some of them. Bootstrap framework is used for this project.

The client meetings for eliciting the requirements for the re-design of the website were initially carried out. After that different levels of mockups and wireframes were produced. When the site architecture was designed, user testing was performed.

The wireframes are the pre-building block of any products/services. These give an easy approach to change or edit the overall design structure in just a few clicks. The wireframes were designed after meeting the client and presenting them a sitemap. The sitemap alone was not enough to get the proper architecture of how website is going to look.

A color profile based on the brand of the customer was created. The images of probable alternative looks were created by using Adobe Photoshop and Illustrator based on the wireframes. After careful examination and matching with color profile one of the images was selected as a mockup.

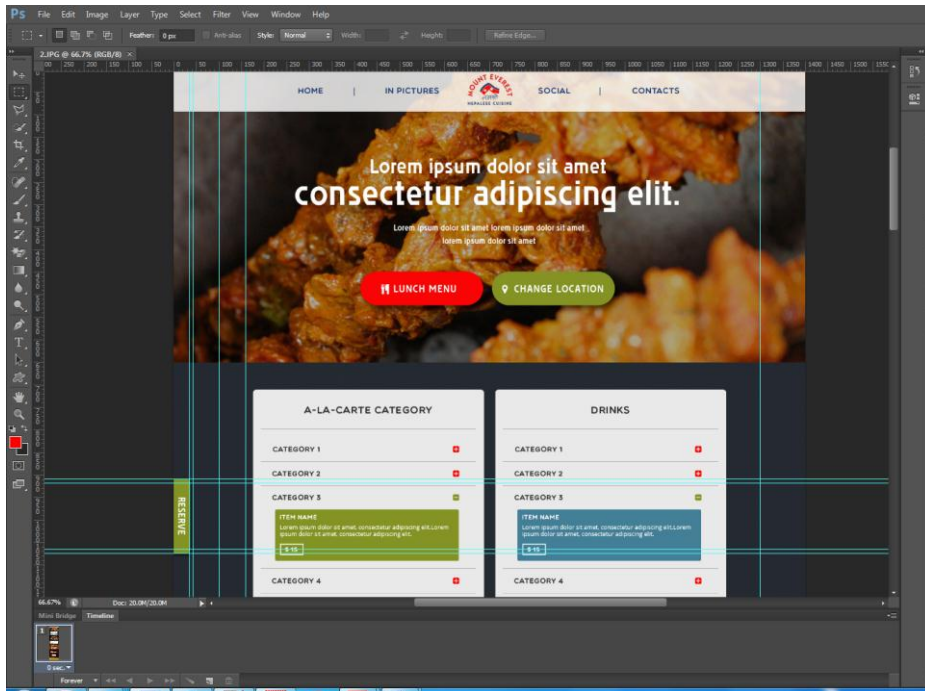


Fig.19. Mockup being built in Adobe Photoshop.

The mockup was converted into a static website using Bootstrap framework and HTML5, CSS3, and Javascript. Responsiveness of the website is the key element for choosing such technology stack. There might be some impediments in the functionality of the website which should be determined through thorough testing procedures.

#### 4.5 Usability Test

A usability test was run on four different participants for testing the usability of the Everest's new website. Specifically, how to find the Lunch Menu, how to view the A-la-carte and Drinks menu and how to do a table reservation. The test procedure included face-to-face meeting with users and they were provided with mobile phones and laptops to test performing the same given task on two different devices

Before the usability test, a test plan was developed and a pilot was tested. Based on the pilot test, the test plan was revised to ensure the success of the usability test. In the usability test, the usability of the website was evaluated so that the participants performed specific test tasks given to them. The participants were asked to think aloud while doing the test tasks. The think-aloud technique is used to extract information about the users' thought processes during the tasks. The participants' background information, retrieval habits, and satisfaction with the evaluated service were studied with questionnaire and interview. [9]

The participants (see Table 1) were all real customers of the restaurant. The customers were chosen to have different backgrounds in order to make the test more inclusive.

Table 1. Background information of the participants.

	<b>Participant 1</b>	<b>Participant 2</b>	<b>Participant 3</b>	<b>Participant 4</b>
<b>Age</b>	38	19	31	23
<b>Gender</b>	Female	Female	Male	Female
<b>Occupation</b>	Shopkeeper	Student	Entrepreneur	Practical Nurse
<b>Education</b>	Collage Uni	High School	-	Bachelor
<b>Internet usages</b>	Daily	Daily	Daily	Daily
<b>Mobile</b>	Daily	Daily	Daily	Daily

The test tasks were given to each participant after they were familiar with thinking-aloud and had understood the purpose of the usability test. Tasks (See Appendix 1) were given in two parts, 1 - 3, and then 4 - 6. When the participants were done with a task, they moved onto the next one. The end of the task was determined by the reactions of participants and their thinking aloud activity. Luckily every participant enjoyed the test and continued till the last task.

Participants were interviewed after the test is over. Semi-structured technique was used in the interview (see appendix 2), so the questions were asked based on UI and functionality.

From the test following strengths were mentioned:

- i. The UI of the website is easy to follow.
- ii. The design is simple but attractive.
- iii. The functionality of the website is clear and easy to access.
- iv. Website has all the essential elements that are needed on a restaurant's website.
- v. Website is responsive.
- vi. Implementation of Instagram on the site is good.

The most essential problem areas were:

- i. Language selection is not possible from other pages once it is selected in the beginning.
- ii. Booking availability.
- iii. Map keeps on scrolling on mobile.

In more detailed about the user interface:

The concept of the website UI was quite familiar to 3 of the participants, mostly because they had used similar other single page scrolling websites in past. They found everything clear and easier in this test as they liked the way everything is reachable from the first page. One of them was not experienced with this kind of website earlier, and it took some time for him to understand it better. In the end, everyone seemed to be happy with a very clear UI and they all agreed to use it in future and recommend it to their friends.

In more detail about the functionality

All the participants told that after the first use, they were already familiar with every aspect of the website and found it very smooth and easy to use. However, participants also found the reservation a bit confusing because the way reservation works now is a bit confusing. First it sends the reservation request to the restaurant, and is confirmed only after confirmation is sent back from restaurant management. This makes the user to wait without any certainty. The implementation of social media is very good. Participants liked the Instagram picture implementation and review embedded on the website. The website

is very responsive. Participants liked the responsiveness on mobiles and enjoyed scrolling around. But, language selection was not possible from other than the front page. During test, two of the participants commented that language selection should be possible from other pages too.

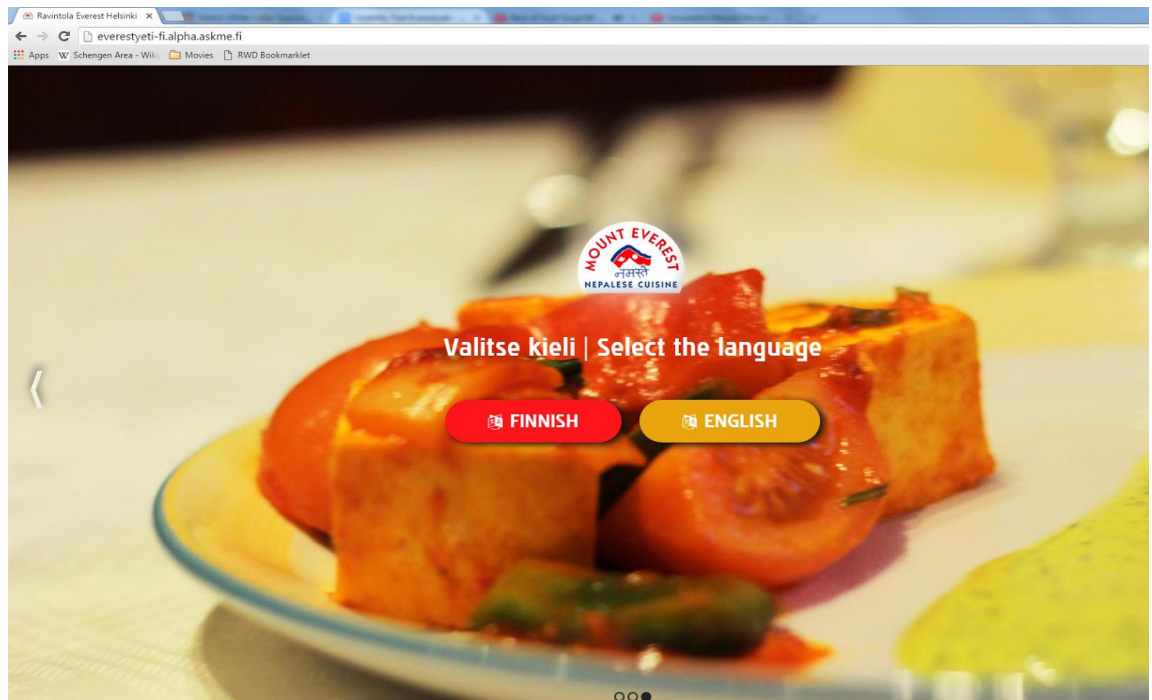


Fig. 20. Language selection option in the first screen.

Figure 20 is the screenshot of the first page of Everest's new website. The reason for not giving an option of language selection on other pages is mainly because the page is in directive order, meaning users are directed with option by option onto the main page. The options are very simple and clear so that there is less possibility of a user making a mistake.

The following figure is also a screenshot of the first page of Everest's new website. According to user's feedback a slight change is made by changing the word "Finnish" to "Suomi".



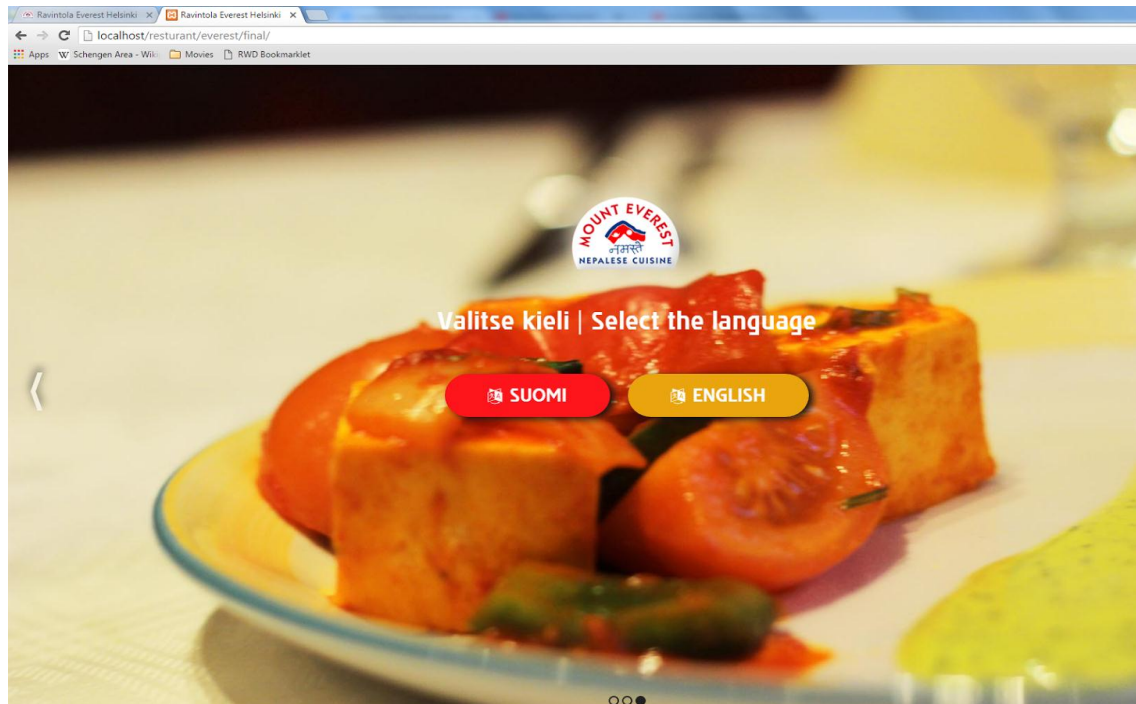


Fig. 21. Language selection option in the first screen updated.

During task 6, participants commented on the Google map section on the mobile version of the site. All the participant were stuck on scrolling inside the map. The problem is fixed and the issue is solved already.

Based on the testing user feedback and self-observation after testing many rounds, it is clear that the user interface of the website is now clear and easy to follow. However, a few minor errors were seen on the website. They were fixed immediately after the test. The main problem, which is about the reservation remains for future development.

#### 4.6 Development

The design produced was then sent for production and a suitable development framework. In this case PHP MySQL under Apache to, was chosen to be deployed by the production team. Detailed instructions and definitions of design patterns and particulars were handed over in a manual.



The development process took about a two months to produce the alpha version of the website, which then was checked for consistency with the designs. Then the alpha version was returned to the developers with remarks and change requests. After that the beta version of the website was received for customer review.

After the launch of the website some errors and bugs such as flickering of the pages, sudden disappearance of pop-ups, responsiveness issues in iOS, alert notification in reservation forms, typography errors, navigation scrolling errors etc. were detected. Those errors were corrected using troubleshooting methods and code corrections.

The final product was delivered to the customer delayed by a week which was due to the unexpected bugs and errors which were later fixed after re-examination of the website. Although the final product was expected to be flawlessly functional and fast, it was monitored for a week to ensure the quality and to keep it under watch for unexpected behaviors. The customer was frequently contacted via phone and visited in person to collect any feedback he might have. Most of the feedback was positive and satisfactory. The customer was also given a guided tour of the admin panel of the website to empower him for using such technology.

## **5 Discussion and Conclusion**

The website, after numerous reviews, was a success. It fulfilled the requirements of responsiveness, and the implementation of the social aspect such as posting images through, for instance, Instagram to the restaurant site as well as addition of the reviews of global food review applications such as TripAdvisor and eat.fi. Although the technical aspect of the whole work was predetermined, during the process there were challenges such as formatting the existing data so as to use it in new implementation. To tackle this

challenge the project had to spin around dissecting and mapping the raw data and converting it into usable and updated format. Practical difficulties arose when the customer wanted to make changes in the existing data.

One interesting observation made during the project was the customer's hesitance towards implementing new technology. This can be explained with understanding their familiarity with the technology they had been using for a while. Although, after several conversations and presentations they were more than happy to give it a go. What it meant to the customer was that the upgrade was going to make their business look smarter and help them serve their customers better.

Another interesting observation made during the project was that the frequency of the end users' interaction with the website radically escalated. This can be explained with understanding the surprise they must have had when their old familiar website suddenly was upgraded into an interesting package of action-provoking service hub. What it meant to end user was that the website was easily accessible on all their phones, laptops, iPads, and good old desktop computers and the reservation, review, picture sharing, feedback etc. systems were all visible like never before.

All in all, the website is now fully live and already in use by the customer. All the aspects of the website are working properly and users are giving very positive feedback.

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## Appendix 1. Usability Testing Tasks

<p><b>Task 1:</b> <b>Go to the site</b> <a href="http://www.everestyeti.fi">www.everestyeti.fi</a></p>
<p><b>Task 2:</b> <b>Go to the desired location</b> I. Choose your language II. Choose the location you want to view</p>
<p><b>Task 3:</b> <b>View the Lunch Menu</b> I. Click on Lunch Menu button ( Lounas) in Finnish. II. View the Menu for different date by selecting the date button.</p>
<p><b>Task 4:</b> <b>View A-la-carte / Drink</b> I. Click on down arrow in the bottom-center of the page/ or scroll down II. Select the different categories in A-la-Carte /Drinks</p>
<p><b>Task 5:</b> <b>Reserve a table</b> I. Click on Reserve/Varaukset button II. Fill the form III. Click on “Send Request” button</p>

**Task 6:**

**Scroll Around**

- I. scroll down and see the different section

**Appendix 2: Interview Questionnaire.**

UI:

I. Is the UI clear?

Functionality:

II. Were all the functions easy to understand/ follow?

UX:

III. Do you have any suggestions to improve the website?

Other:

IV. Would you use the site in future for performing similar tasks?

Debrief:

I. Do you have some thoughts or comments that you would like to share?

II. Do you still have some questions?

### Appendix 3. Task Time and Completion Rate.

Task times, number of problems per task, and task completion of the participant 1 in two different devices, mobile and laptop are described in Table 3 and 4. The following codes are used to describe task outcomes:

- A** – Task was performed successfully
- B** – Moderator helped in task performance
- C** – Task failed
- D** – Task was suspended
- E** – Task was not tested (e.g. user got to leave, or got bored.)

Table 3. Device, Task times, number of problems per task and task outcomes of Participant 1

Test task	Participant 1 Mobile		
	Task Time	Number of Problems	Task Outcome
i. Go to the site	0:48	0	A
ii. Go to desired location	0:10	0	A
iii. View Lunch Menu	0:05	0	A
iv. View A-la-carte/ Drinks	0:41	0	B
v. Reserve a table	0:58	0	A
vi. Scroll Around	1.04	0	A

Table 3. Device, Task times, number of problems per task and task outcomes of Participant 1

Test task	Participant 1 Laptop		
	Task Time	Number of Problems	Task Outcome
i. Go to the site	0:37	0	A
ii. Go to desired location	0:06	0	A
iii. View Lunch Menu	0:03	0	A
iv. View A-la-carte/ Drinks	0:08	0	A
v. 5. Reserve a table	0:51	0	B
vi. 6. Scroll Around	0.31	0	A

The table 3 and 4 shows the statistic from only one participants; 1. However, generally after analyzing the statistic from all the 4 participants, all the tasks were completed successfully.

The most time consuming task seemed to be booking a table. It is mainly because it has a form to fill-up. 2 of the participants got really lost on finding reservation icon on the left corner. They looked on navigation, they scroll down but they didn't notice the floating reservation icon. But in the mobile they seem to notice immediately. Another longest task was simply going to the site. The url was everestyeti-fi.alpha.askme.fi , which took time for users to type, depending on their speed some were quick and some took bit longer. Similar was with filling the form in table reservation.

Finding lunch menu and reservation form was the quickest task. But finding A-la-carte/Drinks confused them a bit. Almost all the participants searched A-la-carte in the navigation and after not getting it there, they scroll down. But in mobile, a navigation was a hamburger toggle navigation because of which participants seemed to immediately scroll down which result them finding it quicker.



Test also gave the idea about typing is faster in laptop whereas scrolling is faster in mobile.

One problem every participants suffered from was scrolling inside a map from mobile. This was corrected immediately after the test was over.

**Appendix 4: Usability Test Forms.**

Everest Yeti Ask me

---

BACKGROUND QUESTIONNAIRE

**Background Information**

Age: 19

Gender:  Male  Female

**Occupation: Education:**

<input type="checkbox"/> Entrepreneur	<input type="checkbox"/> Comprehensive or elementary school
<input type="checkbox"/> Employer	<input checked="" type="checkbox"/> High school
<input checked="" type="checkbox"/> Student	<input type="checkbox"/> College / University degree
<input type="checkbox"/> Retired	<input type="checkbox"/> Else:
<input type="checkbox"/> Unemployed or on leave _____	

**Mobile/computer Usage**

What is your knowledge about mobile/computer technology ? ( On scale 0 - 10)

5

**Which mobile do you use?**

iphone

Samsung

HTC

Motorola

Sony

Other, which? \_\_\_\_\_

**How often do you use any websites?**

Daily or nearly daily

Few of times a week

Few times a month

More rarely than few times a month  Never

Everest Yeti Ask me

---

**Why do you use website mostly?**

- Information retrieval
- Electronic chores such as banking
- Reading and sending email
- Electronic shopping
- Reading the news
- Socializing (e.g. IM, Facebook)
- Entertainment
- Online booking / Shopping

**Have you ever visited restaurant's website? If you have, why have you visited it for?**

No

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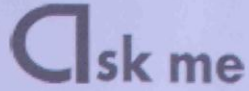
---

Everest Yeti



**USER SATISFACTION QUESTIONNAIRE**

Evaluate the following statements by checking the correct answer.	Strongly disagree	Disagree	I don't know	Agree	Strongly Agree
The content of website were clear to me.				✓	
It was difficult to understand the structure of the website.	✓				
The appearance of the website was pleasant.					✓
Navigations of the website were clear and easy.				✓	
Finding content were easy.				✓	
Booking a table was easy.				✓	
Viewing Lunch Menu was easy.					✓
Viewing A-la-carte and drink were easy.					✓
Using the website was frustrating.	✓				



Everest Yeti

---

How you want to grade for usability of the website. (on scale a from scale 1 to 5=best)?

5

Which overall grade do you give to website. (on scale a from scale 1 to 5=best)?

5

In your opinion, what was good about the this website?

It's visually pleasing, nice colours etc.

---

In your opinion, what was bad about the <sup>website</sup> ~~Sound app~~?

Map in the mobile keeps scrolling.

---

*Thank you! Your responses will be processed confidentially.*

19-01

Participant ID (anonymous code):

[https://docs.google.com/document/d/1Gcl5oD6z9nq6hl-idPqdf8-NXP\\_mQuTOVR3ZTrxNVVedit](https://docs.google.com/document/d/1Gcl5oD6z9nq6hl-idPqdf8-NXP_mQuTOVR3ZTrxNVVedit)



Everest Yeti Ask me

---

BACKGROUND QUESTIONNAIRE

**Background Information**

Age: 31

Gender:  Male  Female

**Occupation: Education:**

<input checked="" type="checkbox"/> Entrepreneur	<input type="checkbox"/> Comprehensive or elementary school
<input type="checkbox"/> Employer	<input type="checkbox"/> High school
<input type="checkbox"/> Student	<input type="checkbox"/> College / University degree
<input type="checkbox"/> Retired	<input type="checkbox"/> Else:
<input type="checkbox"/> Unemployed or on leave _____	

**Mobile/computer Usage**

What is your knowledge about mobile/computer technology ? ( On scale 0 - 10)

9

**Which mobile do you use?**

iphone

Samsung

HTC

Motorola

Sony

Other, which? \_\_\_\_\_

**How often do you use any websites?**

Daily or nearly daily

Few of times a week

Few times a month

More rarely than few times a month  Never

[https://docs.google.com/document/d/1O\\_TJfn5cuV4u5cH1U5SpvDz7-2Vx4-01...](https://docs.google.com/document/d/1O_TJfn5cuV4u5cH1U5SpvDz7-2Vx4-01...)

23.3.2010 Everest Yeti user test background question - Google Docs

Everest Yeti **Ask me**

---

**Why do you use website mostly?**

- Information retrieval
- Electronic chores such as banking
- Reading and sending email
- Electronic shopping
- Reading the news
- Socializing (e.g. IM, Facebook)
- Entertainment
- Online booking / Shopping

**Have you ever visited restaurant's website? If you have, why have you visited it for?**

I have \_\_\_\_\_

For many reasons such as \_\_\_\_\_

table booking and checking \_\_\_\_\_

opening time \_\_\_\_\_

[https://docs.google.com/document/d/1O\\_TJfq5oyVAw5pHUUSnrvPq7e8YrAs81mNhh8OcZ5P0/edit](https://docs.google.com/document/d/1O_TJfq5oyVAw5pHUUSnrvPq7e8YrAs81mNhh8OcZ5P0/edit)

Everest Yeti



**USER SATISFACTION QUESTIONNAIRE**

Evaluate the following statements by checking the correct answer.	Strongly disagree	Disagree	I don't know	Agree	Strongly Agree
The content of website were clear to me.				X	
It was difficult to understand the structure of the website.		X			
The appearance of the website was pleasant.				X	
Navigations of the website were clear and easy.					X
Finding content were easy.					X
Booking a table was easy.				X	
Viewing Lunch Menu was easy.					X
Viewing A-la-carte and drink were easy.				X	
Using the website was frustrating.	X				<del>X</del>



Everest Yeti Ask me

---

How you want to grade for usability of the website. (on scale a from scale 1 to 5=best)?  
4

Which overall grade do you give to website. (on scale a from scale 1 to 5=best)?  
4

In your opinion, what was good about the this website?  
Design

---

In your opinion, what was bad about the <sup>WEB</sup> Sound app?  
X

---

*Thank you! Your responses will be processed confidentially.*

3108  
Participant ID (anonymous code):

[https://docs.google.com/document/d/1GcI5oD6z9nq6hl-idPqdf8-NXP\\_mQuTOnVR3ZTrxNVA/edit](https://docs.google.com/document/d/1GcI5oD6z9nq6hl-idPqdf8-NXP_mQuTOnVR3ZTrxNVA/edit) 2/2