APPLYING RESPONSIVE WEB DESIGN IN
A SMALL BUSINESS - CASE:
SATAKUNNANKADUN SAUNA

Ángel López García

Bachelor’s thesis
May 2013
Degree Programme in Media
This thesis was created for Innolink Research Oy. The thesis is based on a project that involves the creation of a responsive website for Satakunnankadun sauna, which is a small business owned by Innolink Research Oy. The objective of the thesis is to prove that by applying responsive web design on a small business website such as Satakunnankadun Sauna, it is possible to increase the amount of customers and revenues.

The project consists of planning, developing and launching a responsive website. The thesis includes a quantitative research based on Web Analytics data. The theoretical section explores the fundamentals of responsive web design and it also explains the planning and development process of a website. The empirical part consists of statistical data on revenues, web traffic and usage on mobile devices such as smartphones and tablets.

The results suggest that it is possible to improve revenues in a short time by applying responsive web design practices in a small business website; they also suggest that the use of mobile devices in Finland is increasing progressively, which means that designing for mobile platform is highly recommended.

The findings indicate that there is a great opportunity for small businesses to benefit from the latest web practices such as responsive web design, in terms of revenues and customers. It is just a matter of time to see small businesses risking and investing a little more on new practices, especially on web, because web capable devices are invading the market like never before.

Key words: responsive web design, mobile devices, web design
5.2.1 Data on web traffic

5.2.2 Data on mobile

5.2.3 Data on revenues

6 RESULTS

7 CONCLUSIONS

8 REFERENCES
ABBREVIATIONS AND TERMS

CSS
CSS stands for Cascading Style Sheets. The styles define how to display HTML elements. (W3Schools: CSS Introduction, 2013)

HTML – Hyper Text Markup Language
HTML is a language for describing web pages. (W3Schools: HTML Introduction, 2013)

HTML5
HTML5 will be the new standard for HTML. The previous version of HTML, HTML 4.01, came in 1999, and the web has changed a lot since then. HTML5 is still a work in progress, but the major browsers already support many of the new HTML5 elements and APIs. (W3Schools: HTML5 Introduction, 2013)

JavaScript
JavaScript is a lightweight programming language (W3Schools: Java Script Introduction, 2013)

jQuery
jQuery is a lightweight, "write less, do more", JavaScript library. The purpose of jQuery is to make it much easier to use JavaScript on a website. jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish, and wraps them into methods that can be called with a single line of code. (W3Schools: JQuery Introduction, 2013)

Modernizr
Modernizr is a small JavaScript library that detects the availability of native implementations for next-generation web technologies, i.e. features that stem from the HTML5 and CSS3 specifications. (Modernizr, 2013)
1 INTRODUCTION

The Internet has revolutionized the computer and communications world like nothing before. The Internet is at once a world-wide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals and their computers without regard for geographic location. The Internet represents one of the most successful examples of the benefits of sustained investment and commitment to research and development of information infrastructure. (Internet society, 2012)

During the last years, Internet usage has increased rapidly. The estimated number of Internet users had reached 2.08 billion by the end of 2010, compared to 1.86 billion a year earlier. With the world's population exceeding 6.8 billion, nearly one person in three surfs online. (The Independent, 2011) But not only have the number of Internet users increased, also the number of new web capable devices.

The rise of new devices with different screen sizes and resolutions has made it necessary to think of a new way of designing for the web because it is not enough to plan for and design a website the same way as it has been done before, even if it does not seem so significant yet.

During the last years a new approach on web design has got designers’ attention and it is called responsive web design, a fairly new practice that allows a website being capable of responding to the environment it is encountered in, providing the same user experience, no matter which device, screen size or resolution the website is viewed from. (Lynda, 2012)

Even though responsive web design seems to be the right way to go when designing for the web in some cases, not everyone is aware of that. Some companies are willing to invest in order to have the latest trends in web for their own products or services, but some other companies, especially small ones, are still skeptic about responsive web design either because of lack of information on the topic or unwillingness to invest more than usual.
The main goal of this thesis is to prove that by applying responsive web design on a small business as Satakunnankadun Sauna, it is possible to increase the amount of customers and therefore to increase revenue for the business. The thesis is based on a testing period of time used on Satakunnankadun sauna new responsive website.

In the thesis, responsive web design fundamentals and web planning and development process are fairly explained, as well as the process of building a particular responsive website for a client from start to launching phase.

The research for this thesis is based on a quantitative method that applies Web Analytics to get data. The main focus is to compare statistical data from revenues, web traffic and target market obtained before and after applying responsive web design on Satakunnankadun Sauna website. The data used for the thesis has been collected for a period of thirteen weeks between February and May 2013.

The commissioner of this thesis is Innolink Research Oy, the owner of Satakunnankadun Sauna. Satakunnankadun Sauna started operating in 2008 and it is a registered business under Innolink Research Oy (Y-tunnus 1044664-7)
2 THE COMPANY

Satakunnankadun Sauna is a private sauna place located in Satakunnankatu 24, 33100 Tampere. It has been operating since 2008 and it is owned by Innolink Research Oy Y-tunnus (1044664-7).

2.1 Brief history

Before 2008, Satakunnankadun sauna was a private sauna for the private use of Innolink Research Oy. During 2008 and 2012 Satakunankadun sauna was under the management of Juvenes-yhtiöt Oy. Due to low revenues, Innolink Research Oy decided to quit co-operating with Juvenes-yhtiöt Oy by the end of December 2012 and started managing the sauna place independently.

2.2 Earlier management

Juvenes-yhtiöt Oy is a multi-industry enterprise that offers high-quality restaurant and café services, meeting and event catering, sauna facilities, campus stores and kiosks, and printing and publishing services. (Juvenes-yhtiöt, 2012)

In 2008 Juvenes-yhtiöt Oy started managing Satakunankadun sauna as Innolink Research Oy remained as the owner; the management tasks included housekeeping, billing and reservation tasks, online promotion and maintenance. Online promotion for sauna places managed by Juvenes-yhtiöt Oy is held under their corporative website and it is limited to a single descriptive page.
As showed in the image above, accessing to the description of a sauna place can takes quite a few navigation steps. Online presence remained minimalistic, relying basically on the service itself.

2.3. Infrastructure

Satakunnankadun Sauna has capacity to host up to 30 guests. The facilities consist of sauna, a restroom, conference room and a kitchen.

2.4. Main goals

Satakunnankadun Sauna managers intend to improve the service in order to increase the amount of customers and therefore to obtain higher revenues. Their main goals are:

- To develop a new image for the service
- To reach bigger markets, especially younger crowds such as students, associations, clubs, etc.
- To promote the service in an economical and efficient way.
- To develop a user-friendly online platform for potential customers.
2.5. Target market

The target market for the service is people between 20-45 years old. One of the recent decisions was to approach to a younger market, which represents an important part of the potential customers.

Previously the main focus has been on companies and their workers. The new challenge is to attract also young crowds such as students, student unions, clubs or associations, etc.

2.6 Competitors

Spending enough time on the competitors helps to understand vulnerabilities and any opportunities for differentiation. (Goodwin 2009, 197)

Most sauna rental places in Tampere are related to other larger businesses such as companies, hotels or leisure businesses. Some of small private saunas are managed by bigger associations or groups. The benefit of it is that they can have a stronger presence in media and among businesses. The downside of it is that the sauna business needs to share revenues with the managing association or group.

In Tampere, the main sauna business groups are HSM Saunat and Juvenes Yhtiot Oy. There are also sauna places in hotels such as Holiday Inn, Cumulus hotel, Scandic hotel, etc, but their use is usually meant for customers.

Most important private saunas that work independently in Tampere are:

- Klingendahlin sauna
- Löylymestarit
- Sorin sauna
- Villa Vintti (H. Liljeroos Oy)
- Pikkupalatsi
- Pisparanta- sauna ja kokoustilat
- Koskikeskuksen sauna
3 BACKGROUND

The competence in technology is so hard and intense that makes producers to look for better, faster and easier ways to get consumers. Technological innovations and improvements just seem to keep going on and the market is constantly delighted by the new devices that arrive.

Not so long ago, Internet usage was limited to desktop computers or laptops. Now people are able to access to Internet from their mobile phones, from tablets or even from their TV. The diversity of devices to get online has been rising. In 2012, over half of Facebook's traffic was on mobile, over 40% of new tweets were created on mobile and 10% of global web traffic was on mobile. (LukeW, 2012)

![Figure 1](image)

FIGURE 1. Device share of page views in Europe (December 2012)
(Smart Insights, 2013)

It has been predicted, that global mobile data traffic will increase 13-fold between 2012 and 2017, (CISCO, 2013) and it has been forecasted mobile phones will overtake PCs as the most common web access devices worldwide by 2013. (Slideshare, 2011)
As standards in screen sizes and resolutions have changed dramatically, web design practices have a need to change as well. In the past designers would create sites with fixed width meaning that the website was locked into a specific width regardless where it was viewed from. In fact, that is still the standard layout technique for the majority of existing websites online. However, during the last years the rise of mobile computing has deeply changed the way how we design sites.

**Focus on mobile**

When focusing on mobile, there are many ways to go such as designing a separate mobile website, building native apps, making a responsive website that will adapt to different screens or creating separate mobile websites with their own custom-designed templates. So many choices that come naturally because they offer so many great features for instance: geo-location, HTML5, responsive design, etc. (McGrane 2012, 34)
Responsive Web Design as a solution

It is possible to benefit from Responsive Web Design because of its capability to respond to different environments, by developing one set of code that will adapt to different screen sizes and progressively enhance for different device capabilities. This practice will also help to avoid having to support dozens of different devices and form factors. (Lynda, 2012)

3.1. Responsive Web Design

The term “Responsive Web Design” was first brought by Ethan Marcotte who identifies three fundamental techniques for responsive design. Fluid grids for flexible layouts, media queries to help to adapt content to specific screen sizes and flexible images and media that respond to changes in screen sizes as well. Fluid grids expand and contract the design to fit the browser window, flexible images can be resized and cropped as the window gets smaller or larger, and media queries detect screen size at certain points and restructure the content to fit. (Lynda, 2012)

3.1.1 Fluid grids for flexible layouts

Providing enhanced flexibility of the layouts and design in order to make it usable on different screen resolutions is one of the most important elements of responsive web design. The fluidity of the web design improves the navigation placement on the site in accordance with the screen size. Moreover, the columns in a responsive web design also scales as per the screen size or the browser size. (Sigma Infotech, 2012)

3.1.2 Flexible images and media

Use of images and media can be a problem when viewing in a device with smaller screen size. To overcome this problem, responsive web design comes to the aid of the designers by allowing having adjustable images that fit different screen sizes and devices by using for instance: CSS cropping and hiding tricks or having multiple versions of the image on the server, and then dynamically deliver the appropriate sized version. (Sigma Infotech, 2012)
3.1.3 Media queries

Media queries allow designers to build multiple layouts using the same HTML documents by selectively serving style sheets based on the user agent’s features, such as the browser window’s size. Other parameters are orientation (landscape or portrait), screen resolution, color, and so on.

Media queries are not specifically a mobile solution or a tablet solution, though they are often associated with them as such. Instead, media queries and responsive design allow us to think outside of the constraints of a screen size or resolution and start building websites that flexibly adapts to all the different mediums. (Six Revisions, 2011)

Building a responsive website can be a difficult task, especially when it is the first time designing one. A good way to start is to get to know the content for the website; this will help to think about the content strategy.

3.2 Content strategy in responsive web design

One of the most important things when designing a responsive website is to think about the content and how it is going to be displayed across different platforms and screen sizes. The continuous development and production of devices and operating systems makes it necessary to place content strategy as a prior step before building a website.

There are preliminary steps to consider before creating the content strategy, they can help to get a better understanding of the user and its environment, and they are:

- Conducting a user research - to fully understand how people interact with the content on mobile. It is easier to identify user behavior based on how user can find, read, and take decisions over content.
- Conducting a competitive review - to have a better idea of what is happening around. Doing research on mobile sites from competitors can help to understand what works and what does not work.
• Reviewing on what devices are in the market - especially at those where the users are most likely to access the content from, for instance: Smartphones (iPhone, Android, Windows) and tablets (iPad, Android).
• Evaluate content from competitors - based on availability, reading experience, global navigation, etc. (McGrane 2012, 85-88)

Once the user’s preferences and behavior have been reviewed as well as the surrounding market, it is easier to know where to go in the design. Usually the desired state for the content includes making all content available, providing well-written content that provides value to the reader, keeping the content written and structured for flexibility on different screen sizes) and making sure that the Content Management System (if there is one) has been tweaked to adapt to multiple platforms. (McGrane 2012, 92-93)

After recognizing content strengths and weaknesses, it is easier to write the content based on: an inventory to gather all content by categories to make it easier to handle, and an audit to evaluate the content based on criteria such as length, clear language, structured content, up-to-date content and useful content. (McGrane 2012, 96, 101)

3.3 Web planning and development

The planning and development process is usually a step-by-step plan that encompasses the life cycle of a project from a start to finish. It comprises a series of phases, each having specific activities and deliverables. (Felke-Morris 2013, 434)

Depending on the scope and complexity of a particular project, some steps can be completed in short or long time. In the current project, the size of the website is relatively small compared to other websites. By using the Website Development Cycle, it is easy to define the steps to follow in the development process.
Every project starts from a conceptualization phase, goes through various phases until the evaluation phase. In some cases, it is necessary to go back to the conceptualization phase to reformulate the whole process.

3.3.1 Conceptualization

The conceptualization phase is used to determine what the motivation for the website is and what opportunities there are for the website; also to determine the site’s intended audience. An important task during conceptualization is to determine the site’s long-term and short-term goals or mission. (Felke-Morris 2013, 435)

3.3.2 Analysis

Analysis phase involves meetings with the client, in this case Satakunnankadun Sauna management personnel, to determine tasks such as: functionality requirements, content requirements, compare the Old Approach to the New Approach, review the competitor’s sites, estimate costs and do a cost/benefit analysis.
While determining functionality requirements for a responsive website, browser support was taken into consideration. Many HTML5 and CSS3 new elements implemented in the website such as form attributes, date pickers, opacity, etc, are most likely to run without a problem on the latest versions of browsers such as Chrome, Opera or Firefox. On the other hand, on older versions of browsers, support is poor for instance on Internet Explorer 6, 7 and 8. (FindmebyIP, 2013)

The solution to browser support conflict is to add extra code that can help to optimize a website for older browsers; the sources used in this project to solve browser support issues were jQuery and Modernizr.

3.3.3 Design

The design phase is divided into three main tasks. The first task was to create an organizational structure and create a sitemap. The second task was to create a prototype to help visualize sample web page mock-ups or wireframes. The last task was to design a page layout to determine the visual aesthetic and layout with wireframes and sample mock-ups; items such as the site color scheme, the size of logo graphics, button graphics, and text were determined as well. (Felke-Morris, 437)

3.3.4 Production

During the production phase, the work must be completed as scheduled. The use of web authoring tools can increase productivity and facilitate the creation of pages; in this case Adobe Dreamweaver was used. (Felke-Morris, 438)

3.3.5 Testing

After production, the website needs to be published to a test web server. Some considerations to follow are: to test on different browsers and browsers versions, to test with different screen resolutions, to test using different bandwidths, to test from another location and to test using mobile devices.
Usability testing

Usability is the measure of the quality of a user’s experience when interacting with a website. It is about making a website that is easy, efficient, and pleasant for visitors. Testing how actual web page visitors use a website is called usability testing. It can be conducted at any phase of a website’s development and it is often performed more than once. (Felke-Morris, 441)

A usability test is conducted by asking users to complete tasks on a website, such as placing an order, looking up for the phone number of a company, or finding a product. The exact tasks will vary depending on the website tested. (Felke-Morris 2013, 441)

3.3.6 Launch

The client needs to approve the test website before the files are published to the live site. Sometimes approval can take several face-to-face meetings. (Felke-Morris, 441)

3.3.7 Maintenance

A website is never finished. There are always errors or omissions that were overlooked during the development process. Clients usually find many uses for a website once they have one and request modifications, additions, and new sections; this is called site maintenance. (Felke-Morris, 442)

3.3.8 Evaluation

During the evaluation phase, it is time to review the goals set for the website in the conceptualization phase and determine whether the website meets them.
When building a responsive website, there were few things that made the process smooth and quick; these were good planning, an effective content strategy and clean coding work. The schedule estimated a period of 5 weeks to produce a simple responsive website from the beginning until the end. During this time there were specific tasks for each week and they went as it follows:

- **Week 1:** Content strategy, setting up breaking points for screen sizes, creating basic and clean HTML code, including HTML5 features.
- **Week 2:** Styling HTML pages with CSS. A common style sheet and 3 others style sheets for each screen size breaking point.
- **Week 3:** Editing images and media. Making images for different screen sizes.
- **Week 4:** Adding forms, creating databases and using browser optimization tools.
- **Week 5:** Adding sliders and image galleries with jQuery.

### 4.1 Content strategy

The content strategy for Satakunnankadun Sauna website started by making a full content inventory, then giving the inventory a hierarchy to make it easier to structure and design the content. It is usually suggested to start with a mobile wireframe and then expand to a desktop version; this can be more effective because it makes the designer to focus on the content and how the content must be presented.

By working on the mobile space first, the designer is forced to design on a narrow linear space; these restrictions will help to define what is really important on the site and how the content should be presented. This approach also allows the designer to think how mobile device capabilities can help to create better experiences with that content.
4.2 Responsiveness

Essentially HTML, CSS and JavaScript form the backbone of most responsive designs. As with all web design, Responsive Design starts with HTML. Clean and well structured HTML helps to create content that is meaningful and easier to manipulate based on context. Planning the site semantics by using IDs and classes attributes can help to make the site more responsive.

In the project HTML 5 tagging was applied. HTML5 includes few features that help sites being more functional across multiple devices, for example: the new Form elements allows to create forms that take advantage from mobile device interfaces and facilitate making phone calls, selecting dates or sending e-mails without requiring extra mark-up or scripting.

CSS plays a major role when creating responsive design. CSS media queries make it possible to apply different styles based on factors such as screen size, orientation or resolution; this allows changing layout and typography to a design that is more suited to the context in which it is viewed. CSS-based graphics can also help to reduce the amount of resources requested by the page by replacing icons or images.

JavaScript was primarily used to control resource loading, supply the correct images and media based on the needs of different devices, as it was on the images gallery and the image slider shown in the website.

4.3 Web development

The main motivation for the creation of Satakunankadun sauna website was the company’s need for a new website that helps the functionality of their service in order to reach customers in a more efficient way. After holding the necessary meetings, it was decided that the new website should be clean, easy-to-use and based on responsive web design; this last feature allowed making decisions on targeted screen sizes.
4.3.1 Screen sizes

Setting up break points for screen sizes is an important part in a responsive website planning process, especially when there are many screen sizes and different devices in the market. The most useful approach would be to focus on the screen sizes regardless the specific devices because it can be time consuming and the amount of devices will most likely increase during the years.

In order to set up break points for the design, it is suggested to choose the biggest and the smallest screen the site will be designed for. In this case, the design had 4 breaking points set for 4 screen sizes: Mobile phones, Small tablets for example: Kindle Fire 7, Tablets and desktop computers. The sizes given were:

- For large screen size: minimum 861 pixels, no maximum
- For tablets: minimum 651 pixels, maximum 860 pixels
- For smaller tablets: minimum 501 pixels, maximum 650 pixels
- For mobile phones: minimum 50 pixels, maximum 500 pixels

After building the main parts of the website such as pages and some elements such as forms and image galleries, the next step was testing. Usability testing for Satakunnankadun sauna website was performed in an early stage in the development process. The main tasks were completed by the users without problems as users found the navigation easy to use and no complications when accessing to different features in the site; one of the main reasons for the good results in the usability testing may be the size and structure of the website.

4.3.2 Browser support

Some conflicts were found on some browsers such as Firefox and Internet Explorer (especially older versions). HTML5 form features were not supported, for instance: placeholder, autofocus, validation and date picker. On the other hand, browsers such as Opera and Chrome gave almost full support for HTML5 features. The solution to browser support problems was found by adding extra code from sources such as Modernizr, Google code and jQuery libraries.
4.4 Launching the website

The final version of the website was reviewed by Satakunnankadun sauna manager and got approved to be finally launched by mid-February 2013. The maintenance of the website is currently under supervision of media coordinator of Innolink Group. So far, the main goals have been met and the client is satisfied with the results.

The website is available at: \texttt{http://satakunnankadunsauna.fi} and its preview on different screen sizes can be seen below:

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{satakunnankadun.sauna.website.png}
\caption{Website viewed on a desktop screen. (Satakunankadun sauna, 2013)}
\end{figure}
PICTURE 3. Website viewed from a tablet device. (Satakunnankadun sauna, 2013)

PICTURE 4. Website viewed from small tablet device. (Satakunnankadun sauna, 2013)
PICTURE 5. Website viewed from a Smartphone. (Satakunnankadun sauna, 2013)
5 RESEARCH

Most sauna rental places in the city of Tampere offer the same service as Satakunankadun sauna, relying basically on their location, space and price. Often, sauna businesses investment in online presence is minimal, which derives in websites with lack of visual interaction, updating and optimization for mobile devices. The lack of websites capable of offering a good user-experience on mobile devices in small businesses, such as sauna businesses is a great opportunity to benefit from.

The main questions that come from the existing situation on websites for similar businesses to Satakunankadun sauna are: can applying Responsive Web Design on a small business website generate higher revenues? And, is it possible to reach a younger market by applying responsive web design on a small business website?

The main objectives for the research are:

- To prove that users are accessing the website from mobile devices.
- To prove that by keeping a responsive website online, revenues can be higher than earlier years.
- To prove that by investing on new web practices such as Responsive Web Design, business can benefit well.

5.1 Methodology

5.1.1 Quantitative research

Quantitative research is the method to be applied on the thesis because the whole idea of applying responsive web design on a small business is a practice that can be measured in a statistical manner. Another reason to choose this method is because it is possible to make concrete and realistic estimations.
Quantitative research deals with numbers and relationships between them. Numbers can be used to carry out various kinds of calculations. To be able to carry out quantitative research calculations it is necessary to know what is calculated, i.e. what is the object. This requires knowledge of the phenomenon. This knowledge is available in the form of knowledge and theories produced by qualitative research, which is the “Mother” of all research. (Kananen 2011, 75)

5.1.2 Data collection method

The data collection method used for this thesis is Web Analytics; this method provides free or inexpensive tools can help to see basic statistics. The Web Analytics used for the thesis is Google Analytics.

The statistical data needed for the analysis is based on web usage and other information such as:

- How often people visit?
- How long people stay on the site or particular pages?
- Is the user accessing the website from a mobile device?
- What screen resolution does the user’s device has?
- What operating systems and browsers people are using?
- What device people use to access to the site?
- What are the most typical paths through the site?

Google analytics

Google Analytics is a free Web analytics service that provides statistics and basic analytical tools for search engine optimization (SEO) and marketing purposes. The service is available to anyone with a Google account. Google bought Urchin Software Corporation in April 2005 and used that company’s Urchin on Demand product as the basis for its current service.
Google Analytics features include:

- Data visualization tools including a dashboard, scorecards and motion charts, which display changes in data over time.
- Segmentation for analysis of subsets, such as conversions.
- Custom reports.
- Email-based sharing and communication.
- Integration with other Google products, such as AdWords, Public Data Explorer and Website Optimizer. (Tech Target, 2011)

Other sources of information

The company provides statistical data from their internal database such as previous and current data on reservations and revenues.

5.1.3 Quantitative analysis

Quantitative analysis is good for assessing the size of a potential market, the probability that people in the audience possess a particular characteristic, or the likelihood that two characteristics occur together. (Goodwin 2009, 217)

Visualization and comparison are usually the best ways to insight using quantitative methods. Tables may point to possible relationships among variables, while graphs can help to understand where there may be trends or clusters. (Goodwin 2009, 219)

5.2 Data collection

5.2.1 Data on web traffic

The data collected for this thesis is from the period between week 7 and week 19 (From February 11th to May 12th), altogether 13 weeks. The data collected contains facts from general web usage, mobile usage and revenues.
FIGURE 4. Number of visits on Satakunnankadun website per each week (period: Feb 11th to May 15th).

The figure above shows the web traffic occurred during the first 13 weeks after launching date. The highest peak was reached on week 14 with 155 visits while the lowest traffic occurred on the week 18 with 20 visits. The website reached a total of 836 visits in its first 13 weeks.

After launching the website, user activity increased rapidly until week 9. A decrease of traffic on later weeks, especially around Eastern holiday and then scattered peaks follow the irregular activity. The highest peak on week 14 is an unexpected but positive result due to the small size of the website.
Mozilla Firefox was the most common browser to use when accessing the website followed by Google’s Chrome. The usage of Internet Explorer is relegated to a 4th place. New browser Android browser holds a 3rd place leading the mobile browsing choice.

Even though mobile use is increasing among people, the most common way to access Satakunnankadun sauna website was through personal computers. An 18% of users access from mobile devices, including tablet devices.
5.2.2 Data on mobile

The screen resolutions for mobile devices with the highest numbers of visits were 320x473 pixels and 480x800 pixels. The first screen resolution size comes from a Smartphone device and the second one from a tablet device. This data helps to designers to narrow the design and take better decisions when setting screen size limits, depending usually on the most popular screen resolutions.

FIGURE 7. Numbers of visits based on screen resolutions from mobile devices.

FIGURE 8. Mobile devices to access the website per number of visits.
Samsung Galaxy S2 with Android OS and Nokia Lumia 800 with Windows Phone OS were the most common Smartphones used to access Satakunnankadun sauna website as Samsung Galaxy Tab 2 was in tablets.

### 5.2.3 Data on revenues

Comparison table of revenues obtained during years 2011, 2012 and the first 5 months of the year 2013 (Until 13th May). On 2012, Innolink Research Oy managed to get some extra customers independently.

Revenues registered for the year 2013, from January 1st until May 13th reached considerably high values that represent 50% higher revenues than in 2011 and also about 20% higher revenues than in 2012. Since January 2013 Satakunnankadun sauna is managed independently by Innolink Research Oy.
FIGURE 10. Sauna reservations for Satakunnankadun sauna collected by 13.5.2013

The amount of reservations increased after launching the new website in Mid-February 2013. The total number of reservations was 48, registering March and April with the highest numbers on reservations. Usually, the high-season for sauna rentals is between October and December.
6 RESULTS

Satakunankadun sauna new website has a high web traffic registering 836 visits in 13 weeks, an average of 64 visits per week. The web traffic coming from mobile platforms (including tablets) is of 18% from the total web traffic; it is a positive sign that more than 15% of the users access from a mobile device considering that about 12.2% of people in Finland access pages from mobile and tablet devices. (Smart Insights, 2013)

The main browser for accessing the website is Mozilla Firefox and Chrome. Satakunnankadun sauna responsive website has been optimized for Mozilla Firefox browser. Most features present on the responsive website are supported by Chrome.

The main Operating Systems found on the mobile traffic were Android and Windows Phone, a good reason to focus on these two platforms for further optimization of the website. Screen resolutions 320x473 pixels and 480x800 pixels were the most used on mobile accessing, another important fact to consider when setting-up breaking points in the designing process.

Satakunankadun sauna responsive website has breaking points of a minimum of 50 pixels and a maximum of 500 pixels for small screens, relating to small devices such as smartphones. For small tablets screens, for instance: 7 inches screen size, the breaking points are between 501 pixels minimum and 650 pixels maximum; this is an extra consideration because of new devices such as Kindle Fire 7 or Google Nexus 7. For more average tablets, for instance 9 inches wide or bigger, breaking points of 651 pixels minimum and 860 pixels maximum were set. Another observation was that 99% of the mobile devices recognized were touch-screen devices.

Revenues registered in a short period of 13 weeks, after launching the new website, a greater value than in the revenues obtained in earlier years (2011 or 2012). Reservations are progressively increasing and higher revenues are expected for the period June-December 2013.
7 CONCLUSIONS

It is fundamental to inform small businesses why it is important to invest in mobile platforms. Usually, businesses want to invest the least possible time and effort into mobile until they can demonstrate return on investment; which has been demonstrated in this thesis. It is also important to inform that the content from desktop view is not going to disappear or change dramatically when displayed on mobile but just being displayed in a different way, so that mobile users can have a great user experience keeping more or less the same content.

In order to reach a wider market, it is important to analyze their environment and their activities. One of the most relevant observations is that young people, who represent the new market, are constantly online and own a mobile device. It is hard to believe that the new generations would give up on technology.

Building a Responsive Website for a small business is not a difficult task when the plan and the execution are performed well. The main challenges are basically on the content, how to display it and which elements will be used in order to make display correctly.

After finishing and publishing a website, it is good idea to keep track on the mobile devices that registered higher traffic because during maintenance process, optimization can be focused on those exact devices that users are more likely to use to access to the website.

When building any kind of website, it is very important to have good communication with the client. Nobody knows best about the content than the client. Constant communication would ease the development of a website and further corrections can be avoided.

Responsive web design is not a new trend anymore; it is a necessary practice in web design. The constant development and production of web capable devices makes this practice a new standard, that is why as a web designer it is important to keep updated with all the latest practices in the fascinating world of web design and development.
8 REFERENCES


