Designing a Web Page for Automotive Business

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Designing a Web Page for Automotive Business

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The purpose of the following thesis was to design a web page for an automotive business. The company is functioning, has clients and partners, but has neglected to design a webpage in alignment with digital marketing strategy.

The objective was to provide client company with ready web design, which accumulates new trends in the field of development, supports user-centric design and provides room for future modifications. The objective proves to be met, when a group of IT specialists and students answer provided survey about the fulfilment of above mentioned tasks through project implementation.

The knowledge base of the project has been accumulating throughout studies at Laurea UAS and research on the topic. The bibliography list proves the wide range of sources used as reference and basis for client’s task to be built upon.

This project has been proven successful, because it has been brought to a logical end, number of survey answers have shown a trending idea that the new web design is customer oriented and better then the predecessor.

Company representative has approved the result of the project outlined in the following Thesis. It has been done in time according to the pre-defined schedule and has included Digital Marketing Strategy of the company in its implementation.

Keywords: Web Design, Web Development, Digital Marketing
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1 Introduction

Nowadays, a webpage is an important part of any business in our society (Nsairi 2013). It serves as a reference, advertising and guarantee tool for partners, perspective and current customers.

For automotive business, it is particularly essential to have a modern, efficient webpage, because it reflects the quality of services offered. As Gardner (2013) states in his article, information presented may vary, being the opening hours, contact details, specifications of services and qualifications of the specialists. Furthermore, a webpage should comply with company’s digital marketing strategy, whereby it provides business owners with tools to control the customer flow cycles and analyse the effects of outside factors on the business operations.

1.1 Goals, scope and constraints

The main goal of this project is to design a web page for Automagia automotive business in order to increase company’s competitive advantage at the new location, attract customers and keep old ones it is necessary to design a new web page, which would comply with company’s Digital Marketing Strategy and provide customers with necessary information about the services and guarantees provided. An example of Digital Marketing Strategy element may be a company’s logo and social networks integration. Information available for customers may be location details and photos of past successful projects conducted.

The scope of the project is to provide the customer with a complete web page design, ready to be implemented by the web developers. This would allow to include the best practices of the current web trends and conduct surveys among potential customers in order to determine whether the designed elements were successfully implemented.

Time constraint may be the most significant threat to the project, as the customer is eager to provide potential customers with a new web page, while complete implementation exceeds the scope of the following project.

2 Case company

The client company Automagia, is a subsidiary of Eko Home Helsinki Oy. Automagia has been fully functioning since April 2015. The company provides automotive services to private and
corporate clients. The range of services provided starts from car maintenance to engine repairs and gearbox replacements. Employees working at Automagia specialize in repairs of VAG Concern, which includes Skoda, VW, Audi and Seat.

During the summer of 2017 the automotive division has changed its location from Helsinki to Tuusula. This has resulted in reduced traffic of new and old customers. Nevertheless, Automagia works with both private and company clients, the latter supply the workshop with high complexity projects requiring experience and competence.

Figure 1: Current webpage design

Currently, the domain has a template in English as can be seen in Figure 1 above, with little information other than contact details, being address, opening hours and phone number. The webpage contains no mention of social networks of the company for customers to follow.

Figure 2: Current webpage design broken link

Additionally, the structure of the template is faulty, which may lead the user to the initial template page as in Figure 2. This decreases visitor’s trust in the company and results in less
customer flow. The before mentioned Digital Marketing Strategy serves as the underlining and reference for the web page design, because it provides the management with clear direction of the marketing efforts. An example of digital strategy may be connecting to customers through social networks, such as Instagram, a popular social network, allowing users to share photos and videos on daily bases. Recently Instagram introduced advertising options for companies, where client already has an account with somewhat two hundred followers.

3  Web design fundamentals

The essential task of web design is provide the best user experience possible. Several factors fall under UX, such as location of elements, colorscheme, font of the text and dynamic elements.

3.1  Website types

Websites may be categorized depending on different factors, such as context. Plumley (2013) identifies two main types, being static and dynamic web pages. A static website presents ready content to the user, based on the files kept on servers. The very first websites created were of static type. On the other hand, a dynamic website’s content is based on data fetched from any source by a script or an alorithm. From the user’s perspective this classification may not be significant, because it would be challenging to determain which type of a web page it is.

The second main feature, which is helping at differentiating websites is the functional purpose (Dix 2009). Web pages may serve as online-representation of businesses or individuals, or trading platforms that aim at creating profit. Additionally, websites may be news or information sources. The first group may be categorised as commercial or web-representating, while the second one is information resource based.

<table>
<thead>
<tr>
<th>Website type</th>
<th>Website purpose</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brochure website</td>
<td>An online extension of a business.</td>
<td>Number of pages: 1-5. Includes: Main page, Contacts, Pricelist, etc.</td>
</tr>
<tr>
<td>Corporate website</td>
<td>Information and commercial functions.</td>
<td>Unlimited number of sub-pages. Includes News and Article sections, product catalogues and galleries.</td>
</tr>
<tr>
<td>eCommerce</td>
<td>Online marketplace for sale of goods and services.</td>
<td>Unlimited number of items, payment methods.</td>
</tr>
</tbody>
</table>
Table 1: Types of websites

Website types presented in Table 1 provide general sub-division of commonly used online platforms. An example of an eCommerce is Finnish tori.fi, where users and enterprises may sell and buy items all over Finland. Facebook is an example of a Platform website type, because it has a wide variety of functions, posts, comments and multimedia data.

3.2 Website structure

Based on James Garrett (2010) identification, the structure of the site is a tree-like hierarchical representation of all elements of the site, including information sections and their subsections. Meaning, it is a web-resource base, which is subsequently filled with text and graphic information.

Most web sources are built according to the block principle. According to Frain (2015), at the top is a header, on the left - the menu, on the right - the block of advertising, in the middle - the information, and below (in the footer of the site) it is written - “Copyright - all rights reserved”.

The structure of the site can be complicated, with an additional menu under the header and its duplicate above the footer. Also navigational links are placed on the right instead of advertising. Location of elements depends on the purpose of the webpage. The following structure is good for an information portal, since a lot of space is left for links of different sections (Peterson 2013).

There are three main types of web site structure:

- Linear structure. This is the simplest structure of a web site, in which the data is not divided into levels. All pages of such a web site are hierarchically equivalent and is fairly simple to implement, but due to its simplicity its application is limited.

![Linear structure of web components](image-url)
• Tree structure is the most popular type of structure. This is a universal structure, suitable for web sites of various types. This structure is hierarchical, as it contains sections, which in turn include several subsections and so on. Thus, different pages of the site have different levels of nesting.

![Tree-like structure of web components](image)

Figure 4: Tree-like structure of web components

• Grid structure is the most complex of the structures. Its difference from the Tree structure is that the user can navigate through the pages of the web site both vertically and horizontally, i.e. between pages of different levels. It is often used for catalogues.

![Grid structure of web components](image)

Figure 5: Grid structure of web components

The structure of a web page may also include text sections and various program modules, such as voting, feedback form, etc.

3.3 Navigation

The navigation menu is a reflection of the structure of the site that the user sees when visiting the page. Jon Duckett (2013) stresses the fact that the user should always be able to see the so called guiding thread, which is the button to return to the previous section (page). Also on each page of the site there should be a link - "return to home page". A link to the feedback form is also required if the site involves interaction with the user. All these links and buttons do not replace the menu, but only complement it, therefore enhancing user experience. Thus, the user should understand where he is and where he should move next. Consequently,
correctly placed links not only simplify navigation, but also may guide the user to perform a certain action. For example, place an order, buy a product, download a movie, etc.

There are several types of navigation:

- Menu
- Drop-down menu
- Search
- Page search

The menu is the most common navigation system, it is similar to the table of contents for a book. The menu consists of short text active links to specific pages of the site. The menu should be visible from any page of the website, then the user can utilise it at any time (Sklar 2011).

Then, the drop-down menu comes to the rescue, i.e. when a person clicks on a link, several additional links that describe the subsection are opened. Designer can place several menus: one under the two others on the sides - right and left. If the web site is small, it is better to limit the formation of the menu in the right column of the site, because it is convenient and common for the user. On the right side, according to Joel Sklar, it is better to have the most important links to sections, because this area is most visible on the site, possibly due to user commonly seeing it because of the closing tab action.

Search form on the site is useful for large web pages, where it is physically impossible to fit all the names of sections in the menu. The advantages of "searching" is that thanks to it the user finds several texts in which the desired word was encountered, therefore has the opportunity to become more fully acquainted with the information of interest. The disadvantage of the search is that often there is a substandard sorting and in response to the request is a heap of documents containing the search word (or phrase) issued in a different context. This prevents correct filtering of the information and makes it harder to capture.

3.4 Grid system

Modular grid is a layout system which builds a specific composition of the website.
In practice, modular grid is a set of vertical (in some cases horizontal) lines, to which the main elements of the website are attached. Figure 4 shows, that all elements belong to certain columns. Most modern webpages use the grid system.

One of the advantages of using a grid system is that it makes it easier to create a design (LaGrone 2013). The process of arranging the elements on the page is therefore simplified. It provides guidelines, which intuitively suggest the best way of arranging the elements. It also allows to add new elements without overloading the design of the whole layout.

Another advantage of using the grid net is clear and fast layout. When front-end developer is working on the web site based on the grid layout, he/she is able to use the ready-made CSS-generators to quickly create a complete layout.

3.5 Golden ratio

The key indicator of the quality of web design is how naturally and easily it is perceived by the users. The use of Golden ratio helps at making a web page functional and informative. It
is believed that this ratio generates harmony, which is why the rule of the Golden ratio has gained popularity in art and design (Pilgrim 2010). The ratio is based on the mathematical proportion, which forms harmonious relation between parts of the whole. It can be obtained by dividing the whole into two parts, so that the ratio of the first part to the second is the same as the ratio of the whole to the first part. The approximate value of the ratio is 1.6180.

![Golden ratio example](image)

For instance, if one side of an image has size of 300px, then the other side will be 300*1.6180, which is approximately 485px. The figure size values may then be divided by the ratio to decrease in size further and further, as Figure 5 shows.

By using the ratio, it is possible to arrange elements on the page in a scientific way, locate and determine the sight of the user and ultimately provide better user experience, which is the end goal.

### 3.6 Typography

There are a lot of different font classifications. Some of them do not comply with others, which makes it easy to get mixed up in them. The simpliest way to look at them is following Stephen Boss (2016), whereby there are two distinct fonts: with serifs (antiques), without serifs (grotesques) and all the rest.
The grotesques group includes handwritten fonts (they imitate handwriting or calligraphy), monospaced fonts (as in typewriters or in the code editor), symbolic (icons, symbols, emoji) and accidents - so called any decorative fonts for large inscriptions, headings and logos (Shenoy 2016).

The size of font should be between 10 and 12 points for printed documents, and 15 to 25 pixels for web projects. According to Rob Huddleston (2017), this is based on the different ways users perceive the information and the overall way a document or a webpage looks.

Perhaps, a problem is not solved by choosing a "beautiful" font, but using the correct principles of typography. In a completed layout, the final result is affected not only by the selected font, but also by its size, shape (for example, bold or italic), line spacing (leading), spacing (letters), indents and margins. For instance, use of typographic symbols, long dashes and color, composition, visual hierarchy, the presence of other graphic elements and much more.

3.7 Color theory

Color theory is the study of the way color is perceived by the user visually, psychologically and symbolically. When designing a web page, colors have a primary role of creating the atmosphere and connecting with the user (O’Grady 2017).

Artists and scientist have been trying to arrange the colors in a certain order, to separate the basic and derived colors. Whereby yellow, blue and read are the main colors, mixing them...
will produce all the other shades. In 1676 Isaac Newton has created a color circle, where main colors were identified, being yellow, green, blue, indigo, violet, red and orange.

Newton’s color circle, as shown in Figure 7, served as the base for future scientists and artist to mix and understand the effect of color scheme on humans. Color harmony arose as a result, being derived from color perception. Color harmony is a result of a balance of two and more colors, as well as group of colors.

Therefore, colors affect users in different ways. For example, red and orange are warm colors, while yellow stimulates for action, irritation (Lupton 2015). Cold colors, such as purple, blue, indigo muffle and reduce irritation. Additionally, warm colors are perceived as close to the user, while cold ones emphasize distance.
Furthermore, the color theory applies to every day lives as much as web design. Northern countries with a lack of sunshine often use warm colors in home decorations. While residents of Southern countries, with lots of sunshine, prefer cold or neutral colors in their clothes and interior. For better user perception of the color sheme of the web page, it is better to combine colors which derive from the same bases colors and do not derive discomfort and distract from consuming information.

3.8 User-centered design

The before discussed topics of design and usability combine under the term of user-centered design. Its task is simply to provide the user with the best online experience possible, whichever the task may be. A few examples of user-centered design include reducing the amount of unnecessary and irrelevant information, reducing the number of clicks needed for user to find information or using visually attractive elements such as graphics or animated actions (Shneiderman 2016).

4 Digital Marketing Strategy

Digital Marketing Strategy is a term which may be described as a plan for achieving company’s goals via digital services and using them in order to distinguish competitive advantage (Peppard 2016). The Figure 8 below is a DMS map, which provides company’s management and marketing team with pathways for specific actions necessary for particular marketing techniques, that may be applied.

![Digital Marketing Strategy map](Image)

Figure 10: Digital Marketing Strategy map
A new web page design is a part of client company Automagia’s Digital Marketing Strategy, aimed at increasing sales and widening the circle of permanent customers and partners. The particular tasks received from the client regarding the website designed being aligned with company’s DMS.

A web page is the primary tool for Automagia to communicate with its clients, therefore design of it may affect the business directly.

Based on the information received from the client, the DMS is based on the following:

- The main aim is to attract new customers by having a web page with pleasant and modern design, which appeals to the perspective customers.
- The average customer’s age may vary, but the need for website to reassure of good customer service and work guarantees is definite.
- Automagia has a competitive advantage of specializing in VAG concern automobiles, as well as BMW and Mercedes-Benz. It should be reflected in the design.
- Web page must have proper description and images for reassurance and search engine findings.
- Web design must contain social network connectivity (Facebook and Instagram), so that customer has an option of following the latest offers and updates of the company.
- Contact information and address must be clear and visible to unexperienced web user.

5 Web site design

Before actually implementing a project, it is necessary to brainstorm and put together a plan for the overall structure of the design. The design of a web page is itself based on the logical structure of the information needed to be displayed for the viewer to see. Once the needs of perspective users are clear, it is possible to organize their online paths into a visual design, with elements supporting each other and creating an overall pleasant user-friendly experience.
5.1 Structure

The website map for this project, shown in Figure 9, is clear and has an underlining idea of enabling the user to access a necessary part of the web site with minimum amount of clicks.

Next, web site mock ups were created. Figure 10 consists of four pages with similar design elements, but different content and data provided. Such technique allows for designer to allocate space for parts of the web page, making use of architecture and logical flow of information for the user to see. Additionally, the same web page design may not be applied to mobile devices, due to a difference in position and context it is viewed. In Figure 11, it may be seen, that the web site map structure is still used, but menus are allocated in a way of accumulating the most important and relevant information at the fingertips of the user. This is done due to the lack of perspective of the user on the web site and the fact that less time must be spent on the mobile version to find the needed information. A specific design for a tablet is not necessary, because both desktop and mobile versions are tablet friendly. Also, according to Global Stats tablet market in Finland is only 7% of all devices.
Figure 12: Web page mockups

Figure 13: Mobile version mockup
5.2 Design Implementation

The implementation of the website design is possible once its underlining structure and sketches are made. Such preparation work is not necessarily binding for the designer, but rather helpful at organizing ideas and functionality of the project in question.

Figure 14: Design result of home page
The design presented in Figure 14 is the proposed Home page for the client. Final implementation included designing three menus being Home, Services and Contact page.
Client’s requirements of following the Digital Marketing Strategy were met, through applying the corporate colorscheme, social network integration and User Centered design. A prospective client may find the contact details of the company on each page, located in website’s header and footer. Additionally, users may use submit-forms, whereby company representative is to contact the user back with an answer to a submitted query. Figure 15 shows the Services page of website design, which follows the overall design structure while providing client’s photos as proof of complexity and professionality of provided services.

Figure 16: Design result of responsive mobile version

Another requirement of the client and part of User Centered Design was website’s responsiveness to smaller screens, such as mobile phones and tablets. Figure 16 showcases the way design converts to reduced dimensions, while providing informative and simple guidance for the user. Contact details, social networks and feedback form are all integrated into responsive design version.

Additionally, while designing webpages, it is advised to consider site loading time, which is directly affected by the amount of information and menu tabs. Nonetheless, including Contacts page was a strategic decision, based on the assumption that even when provided with phone number and address on other pages, user may find it easier to search for the particular button. Most webpages follow similar logic, which is based on a thought-map of internet users, therefore such functionality must be implemented.
Figure 17: Design result of Contact page
6 Survey

A survey was used in order to receive opinions of potential users of the website. The condition was for test-users to be IT students and/or specialists in the technical field, to acquire insights and professional feedback. The survey is demonstrated in Appendix 1.

6.1 Survey structure

The survey used was based on the screenshots of old and new designs of the webpage for the client. Recipients were asked to describe their experience based on particular questions. For instance, the new and old color scheme and menu combinations were to be compared. Digital Marketing Strategy was tested in form of social media integration, as well as confidence in the company and its impact on overall experience.

Test users were asked to acquire information from the new website in mobile form and compare its usability to the full-screen version. The answers received were brief opinions on asked queries and comparison questions.

Interview questions to gather basic information, the most important is the specialization of the subject (IT or Business), whether subject is a car owner and/or has he/she ever used or looked for similar services.

6.2 Survey results analysis

The usability testing of the design by IT students and web professionals has proven a successful project implementation. Most of the answers were positive about the design, content and trend changes in the new version of the web page as per Figure 18 below.

The organization of objects on the page and navigation was found to be mostly improved. As well as responsiveness and user confidence. It was brought up that no posts as well as blogs were implemented, making it harder to share on the social media. Students highlighted the fact that old design had no social networks integrated, while the new one contains multiple links in places that remind the visitor. Additionally, the structure of the new website was considered “lighter” and therefore more user friendly.

Some have mentioned that new design has a smaller map than the predecessor. It may be compensated by an address, which users plug into their navigators. It is a solid improvement nonetheless.
The mobile version of the project’s design was considered normal, as it is a common trend and is necessary for implementation. All in all, the survey answers have shown an upward trend in their content review and therefore confirm successful implementation of the project on the user design level.

Figure 18: Graphical representation of the survey conducted

7 Conclusion

The project was set to design a web page for a local automotive business company. Some of the tasks included following the new trends in design, implementing parts of client’s Digital Marketing Strategy and testing the result through surveys.

Research conducted on the topic has proven to be useful, with multiple outcomes being used in the final design of the web page. Development process included experiments and some setbacks, which nonetheless allowed for progress.

The customer has approved the project result presented to be successful and useful. I received no definite answer when software implementation will take place, but will most probably be a part of it due to this project.
7.1 Research learning outcome

Through the following project, I was able to conduct a full product development cycle as a web designer. The challenges which seemed critical and tough at first required additional time and research.

Additionally, the particular part of research for the project has taken the majority of the time. Conducting it, while documenting and keeping notes have provided me with experience of independent academic work, which will surely prove to be useful skills in the future.

All in all, the project has challenged me professionally and time-wise. The development part has taught me not to pause when something does not go as planned, continue developing or better reading on the subject. As a learning outcome of the research and development work conducted, I feel that this experience has made me better.

7.2 Feedback from the customer

The customer has been presented with the findings and developments of this project. The results were found satisfactory, according to own judgement and survey results. The client may continue with the process of developing the new web page, which also may have to be edited due to English-Finnish translation and additional text and multimedia the client may request to be presented to the user.
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Appendix 1: Survey questions form.

**Website Design Questionnaire**
The following is a series of questions regarding the new website design and its functionality for a Thesis project.

**Home Page**

1. Does following Website Design appeal to the potential customer? If so why?

2. Does the Website align with User Centred design?

https://docs.google.com/forms/d/1S_jyGUWvajs_36BBHtSiFWBpf2ZD3mANzVbY2SMwFM/edit
3. Would you use the Social Button links, such as Instagram, to connect with this business?

Website Design Questionnaire
4. Are elements in the following Webpage grouped logically?

5. Do composition and colour scheme inspire confidence in the company and the service it provides?

Website Design Questionnaire

6. Does this design fall under Responsive Website configuration?

7. Does it provide sufficient information and usability?

Website Design Questionnaire

https://docs.google.com/forms/d/15_jOjU7W7Vq4uL3B57t8FWsh0ZfH863aANVTVY2Wf0fM4dt
6. May new design be considered an improvement, in comparison to the above version?

Website Design Questionnaire
5. Based on this and previous screenshot, does this Website version contain Social Network integration?

10. If not, what advantages does this version have, compared to the one shown at the beginning of the questionnaire?

11. Would you please provide an email for statistical verification? Thank you for your time!