

ADAPTATION OF WEB PORTALS

Dragica Radosav*, Branko Markoski*, Zdravko Ivanković*, Dijana Karuović* and Branka Dobranić**

* University of Novi Sad, Technical Faculty "Mihajlo Pupin", Zrenjanin, Serbia

** JP Srbijagas, Serbia

dolores023@open.telekom.rs, markoni@uns.ac.rs, ivankovic.zdravko@gmail.com, dobranic@sbb.rs

Abstract - In the modern way of life, the Web (World Wide Web – basic Internet service) has important role and is used in almost all spheres of life. The Web is today a global source of digital information, which may be in various formats (text, pictures, multimedia), and they are called web documents. Message sent by Web page is meant to attract attention of current and future clients, or visitors, to inform them about products or services and to prompt them to buy or use those. Authors of Web pages must consider different abilities, skills and faculties of users and therefore try to adapt the Web to all of them. Every attempt at facilitating accessibility is useful for persons with special needs and for all Internet users. This paper describes explanations and deepening of knowledge regarding development of effective design of web page, adaptation to visually impaired persons and persons with color blindness, as well as senior persons with changed visual abilities due to ageing. All individuals have a right to use all advantages of information society. Persons with special needs (disability) and elderly persons often encounter difficulties in using new technologies and services. Some of those difficulties are result of inappropriate design of technology.

Keywords: *Web, Internet, visually impaired persons*

I. INTRODUCTION

In the modern way of life, the Web (World Wide Web – basic Internet service) has important role and is used in almost all spheres of life. The Web is today a global source of digital information, which may be in various formats (text, pictures, multimedia), and they are called web documents. In order to use all these, accessibility of Internet pages is important to all persons, disregarding their status. Internet enables to share knowledge in unprecedented scale, and therefore it must be at the focus of society development. Internet and Web are in constant rise, and consequently are being used as a high-quality medium for advertising and presentation. The purpose of the Web is to present a firm, agency, party, association, person or anything worth presenting in the best way possible. Possessing of a Web page equals business sense and following modern trends. Advantages of advertising and selling products on Internet are numerous. Some of most important are: it is always accessible to large number of people, who are potential clients; has no time or space barriers, enables many information; this is the fastest-growing medium accessible to everybody at every moment of every day. Internet is the largest worldwide computer network, or network of networks. It may be observed from several aspects, for instance, as a means of mass communication, as a set of communication services, available to users worldwide, and also as an exquisite means for enforcement of a number of business activities.

Today, millions of people around the world use Internet services on a daily basis for communication, to follow stock markets or news, to check on a weather forecast, to make vacation plans, manage their business, to buy commodity goods, to enjoy games and to learn.

II. USE OF INTERNET IN BUSINESS

In modern world, it is hard to imagine any serious business organization or institution that would renounce benefits of Internet in their business. There are several basic aspects of use of Internet in business.

User aspect – The Internet is a set of different communication services to which user accesses using Internet Service Provider (ISP) and a computer or another device, for instance WebTV. User is connected to the Internet via ISP in order to use different communication services.

Aspect of financial gain from Internet – The Internet is a communication medium by which a financial gain is realized by accessing certain information, selling products or services, promotional presence of a company on the Internet and/or organization of its entire business. For these activities, communication resources of the Internet are used.

Conceptual aspect – The Internet is a means of communication. When possibilities of this medium are known, modes for adequate and quality presence of the company in online environment may be chosen.

Not all users of the Internet have the equal working capacities, the conditions or capabilities. Many of them

- can not see, or can not hear, or can not move or use certain types of information;
- have difficulties reading or understanding text;
- can not use keyboard or the mouse (or have none);
- have only a text display or have poor Internet connection;
- do not understand the language of a text, or understand it with difficulties;
- are in a situation when their eyes, ears or hands are busy with other activities (driving or working in a noisy environment);
- have a different operation system or an older version of a program.

Authors of Web pages must consider users' different capacities, conditions or capabilities and try to adapt to all of them. Every attempt enabling accessibility is in favor of special need persons, and all Internet users as well

III. BASIC ELEMENTS OF WEB PAGES

The design makes for first impression, so it is important to have the best quality design if possible. The Web page is also a shop window. It enables indirect communication to the user. Communication will depend on a way the page is designed. In order to attract as many costumers as possible, it must be original, nice, and yet not be centered on the page itself, but on products. The Web page must be different from competition pages. The best design is the original design. The Web is a complex artificial system with following dimensions: (a) content, (b) design and (c) structure of documents. Content of documents is what is given in natural language, pictures, sounds, animation etc. The purpose of a message is recognized by its content, being defined by the aim of communication. If the aim is well defined, and the message well structured, it will reach the target. It is about visualization or simply the way of showing message content to the target group. It must help easier spotting the message being sent. Display of document is a way in which the document is represented (for instance, as print, or two-dimensional graphic presentation, or text, or synthetic speech, Braille, etc). The element that determines document display (for instance B, FONT, CENTER) is the presentation element. Document structure is the way in which it is logically organized (by chapters, with introduction and table of contents). The element (for instance P, STRONG, BLOCKQUOTE in HTML) that determines document structure is called structural element. This is regarding the process and procedure of making the Web pages, i.e. the technique and technologies involved. A good Web designer must be able to represent the global message to the target group in the best light possible. He also must have in mind different capacities, conditions or capabilities of users and try to adjust Web pages in order to make them close to all users. Target visitors are one of basic factors to bear on mind. The logotype or the visual identity of a company is the visual symbol that, as a frontispiece, stays etched in memory of users, which is the aim. The logo is the association to the brand in day-to-day communication to consumers. Therefore, the design of logotype and of total visual identity is a major item in creating image and positioning in consumers memory. It must be placed on most prominent spot on the page, presumably in upper left-hand corner, and must be clear, legible and easy to remember in order to make company logotype even more recognizable. Company's visual identity must be recognizable to special needs persons too, and this must be considered as well. The perfect logo guarantees that you will be noticed at the market! Consequently, special attention must be paid to logo design, having in mind combinations and psychology of colors, symmetry, composition, visual effect and overall impression on observer. For instance, trademark colors are not changing ever. It is important for trademark colors to be harmonious and well defined. Colors are not defined by their name only (i.e. gray, orange) but in percent ratio of basic colors

in print as in C.M.Y.K. or PANTONE palette or in color catalogue, where every color is represented by its numerical value. This is especially important for print, since only a clear definition of colors provides uniform print, not depending on particular printing shop. Positioning of primary navigation is also important. It is best to be positioned at the prominent place on a page, usually at the very top or on left-hand side. Navigation links must have clear, descriptive names. Also, it is necessary that navigation links have certain reactions when cursor is passing over, and that there is a change on a link on the page where user is currently located, so that user may know on which subpage he or she is in every moment.

Web standards certainly lower costs in long term, since they enable much easier maintenance. Longevity of such solution is the main reason for companies to standardize their web pages according to W3C instructions. Today, all popular browsers, including Microsoft Internet Explorer and Mozilla Firefox, support these web standards. Web standards enable web content to be accessible to vast number of people and to be presented as same or similar on different devices, under different operative systems and in different browsers. Standards in code writing contribute to better accessibility of websites

IV. WEB ACCESSIBILITY FOR VISUALLY IMPAIRED PERSONS

Accessibility of Internet pages means that special needs persons may use the Internet. Therefore, accessibility is the general term used to describe level to which a certain product (device, service, environment etc) is accessible to most people. More precise, accessibility of Internet page means that people with special needs may understand, browse, add their content and interact with other Internet users. Internet accessibility is useful to others, including senior persons with ability changes due to ageing. Recommendations consider possible examples of page design and propose solutions to improve accessibility. People that may have the most to gain of informatics society development often are in danger to be excluded. For instance, to elderly people use of information and communication technologies is often too complicated, and it is not adapted to disabled persons. Such barriers may cause person to feel isolated at home, on workplace and in society in general. European Union has pledged to support investigations connected to solving the problem of accessibility of information and communication technologies to persons with special needs. In this moment, 30% of European population is not actively involved in information society. Among them, disabled persons are most vulnerable, although new technologies have high potentials regarding these problems. European Commission is determined to solve this problem, providing support to investigations and development of products and services that would enable easier use of the Internet. Two basic principles in creating an accessible Web page are convenient display and understandable format content easy to use. There are several ways to design Internet pages so that they are accessible to all persons with physical, sensory or

cognitive difficulties, working limitations or technological barriers:

- Separate document content, structure and presentation. Document content is what is told within it by natural language, pictures, sounds, animation etc. Document structure is a way in which it is logically organized (by chapters, with introduction and table of contents). Presentation of a document is the way in which the document is shown (for instance, as print, or two-dimensional graphic presentation, as text, speech, Braille, etc). The element determining document presentation (for instance B, FONT, CENTER) is called presentation element.
- Format documents in order to be accessible even if user can not see or hear them. Make sure that information has the same purpose or function as audio or video, in ways adapted to other sensory channels.
- Format documents that are not based on a singly converter type. Pages should be accessible to persons without the mouse, with small monitors, without display or with voice or text outputs.

Authors should try to make content more comprehensible and easy to use. This does not include only simple and clear language, but also simple mechanisms to navigate within and between pages. Design of navigation tools and orientation information will increase accessibility and availability. Not all users are able to use visual symbols as hyperlink pictures, sliders, frames, navigation graphics, graphic browsers etc. Users also lose information context if they can see only a part of the page, or they access it word by word (using synthetic speech or Braille) or segment by segment (small display, enlarged display). Without orientational information, users will not comprehend large tables, lists etc. Web accessibility is useful even for people without disabilities. For instance, the key principle of Web accessibility is design of Web pages and software that are flexible according to different needs of users, their preferences and situations. Such flexibility in certain situations may be useful for persons without disabilities, as people with slow internet connection, to persons with "temporary disability" (broken arm, for instance) and persons with ability changes due to ageing. Accessible web pages are those to which persons with certain physical, psychic and mental disabilities may access. Accessibility of web pages takes into account all kinds of disabilities, i.e. health conditions that may influence access to web pages, including visual, auditory, physical, cognitive and neurological impairments, as well as speech difficulties. Ability varies from person to person, change with time, even in a group of persons with similar kind of disability. A person may have combination of different impairments, which may vary in degree. Many persons are not regarded as disabled, although they may experience sensory barriers or problems in physical or cognitive functions due to acute or chronic illnesses. These difficulties are usually worsened with age and may bring to changes in eyesight, hearing, memory and motoric functions. Conditions due to ageing may be relieved by

the same solutions of e-accessibility used for disabled persons. Term "information barriers" is used to describe situation when a disabled person finds a set of information that are inaccessible to him or her due to their presentation format or to inaccessible technologies. Eyesight problems, or visual disorders, may be roughly categorized in three groups:

- Blindness as the hardest disorder is not only a total loss of eyesight, but also a condition when a field of vision is 20% or less than normal.
- Bad eyesight is usual for elderly people, although it occurs in all age groups, caused by genetics, trauma or illness.
- Color blindness is the last large group of visual disorders, although it is maybe not right to call it a disorder since there are not much of situations when color blindness is a real limitation.

V. CONCLUSION

A life cycle of the web presentation does not stop with its construction, on the contrary: this is the beginning of new tasks and if we fulfill those successfully, they will make our presentation even more attractive. Visually attractive web page attracts visitors, and a visual element is certainly the first experience, the thing that visitors notice in the web page. Updating is very important in keeping the sight visited, and maybe even the prerequisite for continued existence of the site, regardless its theme. Besides design and content, the page must be highly ranked in web browsers, as this brings vast number of visitors. It is also important that the page must fulfill its purpose, so that its brand may look professional and serious. It is often said that a successful web page is the one with high visitation, or the visually attractive one with abundance of interactive and multimedia animations, or the one with much contents. The truth is somewhere in between. Key words are multidisciplinary approach, perception and purpose. Successful web page is determined by all these elements, intertwined in interaction.

„The principle of inclusive design, and use of technology as an appliance, must be promoted and supported in order to enable people with disabilities to use all possibilities of technology, completely and in identical conditions as non-disabled ones.“

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