WEBSITE ANALYSIS OF CROATIAN ARCHIVES - POSSIBILITIES AND LIMITS IN ARCHIVE USE

PAVELIN, G.

Abstract: The aim of this paper was to present the current status and characteristics of the Croatian archive websites. The paper describes the connection, similarities and differences between archives and the Internet as a media, whereby their similarity in terms of organization and presentation of information was indicated. Internet as a medium has its own laws and therefore preferences of users must be taken into account when creating websites. This is especially important for archives as institutions, because they present a national heritage through the Internet. The second part is a practical research of the characteristics of Croatian archive websites. Throughout three phases of website analysis it can be seen that Croatian archive websites are satisfactory designed, but have many shortcomings. The SWOT analysis shows how to improve a site, which also includes advantages and disadvantages, as well as opportunities and threats of Croatian archive websites.

Key words: archive, Internet, website, analysis, Croatia

Authors´ data: Mr. sc. **Pavelin**, G[oran]; University of Zadar, Department of Tourism and communication studies, Franje Tudmana 24i, Zadar, Croatia, gpavelin@unizd.hr

1. Introduction

Archives are institutions which keep national heritage. Its service organizes, preserves and presents to the public a vast amount of information collected through history. Therefore, archives are primarily engaged in information organization and its presentation in different ways, whereas one of them is over the Internet. The Internet as a medium also offers a lot of unexplored information. The difference between the archive and the Internet is in the credibility that information offer. „A digital method of transmitting information, knowledge and story telling is a step further from contemporary media transmittion." (Pibernik, 2006). When someone decides to present information over the Internet, the Internet by itself is a media, a communication tool which sends message to a certain user. Websites are like written text where the author transmits his idea to a reader. The only difference between websites and books is the fact that a book, once it is published, does not allow subsequent changes. Websites provide a constant opportunity to upgrade its content, which makes them the most used communication tool today. The Internet and archive activities have the same foundation – they organize and present materials. It can also improve arhive activities and communication with its users. In Croatia, the most archives have thier own website, which are united together in Croatian archive portal called Arhinet.

Studies regarding the impact of internet on the archive users in Croatia haven't been undertaken on local, regional or national level. Studies undertaken in other countries have shown that today the main purpose is creating quality communication and attracting more users by creating a positive image of archive. (Freeman Finch, 2003) In Great Britain and Northern Ireland there is basic profiling data of the site visitors. In 2001 13,200 questionnaires were completed by the users. Following these results a profile of a typical archive user has been established; by his age, his qualifications, his hobbies and the distance from which he came. According to this, the conducted researches were to establish the contents of the highest priority. (Williams, 2003) Other researches in America have shown that a quality web site cannot be made without the basic knowledge about the user. (Jimmerson, 1989) However, the studies conducted weren't about the effects of the web design which would be useful for the users.

This paper analyzes the website of Croatian State Archives. The first part explains the relationship between the Internet which at the same time has a role of the archive and the media. The second part is devoted to the websites features and their evaluation by the user. According to the facts mentioned above, the first two chapters will include analysis of Croatian archive websites using tabular display elements and textual explanations. Based on the results, last chapter presents a SWOT analysis of Croatian archives websites as a conclusion about the possibility of improving this aspect of the archive use.

2. Archives and Internet

Archives are treasures of information. Besides the fact that they are perserving information that constitutes the heritage of a nation, they also communicate the same information with their customers. Usually it is directly, users visit archives. Although this oldfashioned form of archives search will always be in use, archives can present their information in other ways. The most frequent way of communicating with users is by organizing exhibitions, publications and journals, talking in the media and via its websites.

Today, the Internet has an important role in communicating with customers. At the same way customers use libraries and museums, they could use archives. „ In order to keep unique information - other than those in libraries, museums and documentation centers – archives should find their place in today's online information institutions. They should be presented to the wider audience and at the same time they should represent a remembrence of people." (Lemic, 2002). This is very important because through their own website, not only can they present archives that are kept, but can also introduce it to the public.

Websites are an important communication tool, however they have their own rules that are not in agreement with archive service. Archive servises present the organization of information just as well as the Internet. „Modern information technologies are among the most important factors of development of archive services, and the archive itself is one of the most important information services in a society. The effectiveness of archive service is directly dependent on the extent to which it adjusts to demands of the modern information environment as well as its possibility to upgrade and customize customer servise requirements on one hand and technological imperatives on the other hand. "(Lemic, 2002). To sum up, one of the popular phrases will be used: „it is essential that archives become the part of 21st century".

Archives which are available on the Internet can be observed in two aspects: as the web pages that are used to communicate with users to inform them about the activities and current events and news, as well as a service which offers on-line digitized archives. The publication of digitized material is still associated with a particular legal and ethical issues related to disclosure of information and protection of human rights. „Use and availability regulations of archives include protection, safety, use of materials, the use of classified documents, reproduction, lending, copying, recording and copyright." (Lemic, 2002).

However, a growing number of people are interested in archive analysis, therefore archives have been investigated not only by scientists but also by wider public due to the extremely important role of the Internet. „ Increased public interest in history and documents (...) resulted in an increase of the archive users, expanded the aim of archives and its analysis of the recent historical period. Providing information where to find potential source and how to explore it, is also one of the ways in which archives attract new attention and emphasize its importance. " (Lemic, 2002). The Internet may be set aside as a key form of information that can satisfy such a broad public and meet the needs of its users. In the wider context, "public interrelation with archives is related with the expension of democracy, the progress of data processing and reproductive technology. " (Lemic, 2002).

2.1 How the Internet affects the transformation of archival activities

The use of the Internet has brought some new rules in the organization of information presentation. These rules are quite different from previously dominant forms of material handling in archives. The biggest problem is the lack of credibility of information which is available on the Internet, but the existance of online archives could change this deficiency. The Internet provides new benefits.

„"The advantages of electronic information systems - improved information search, fast and cheap communication and the possibility of multiple use, provide varied and quality information to users. Rapid development of the global information infrastructure and network multimedia systems made information more accessible, which makes archivist more competitive with other suppliers of information." (Lemic, 2002). From the above mentioned, the importance of quality presention on the website could be clearly indicated. Therefore, it is impermissible that archives fall behing other institutions, like libraries, which already have a standardized form of presentation of information which are available on the Internet. „Information products and services which archives provide are expected to be available in electronic form and to a wide range of users. They should be adopted to the demands of the modern information environment which includes certain content, form and technology. Thereby, it is necessary to develop a standardized network services access data archives based on Internet technologies, on-line databases and to set standards of service quality that will not be lower than those achieved by other sources of information." (Lemic, 2002).

The most important thing in the technological changes, what can also be seen in the example of archives is that "modern social development, political change and the use of information technology shifted the *focus from storage to the archive's availability* (...)" (Lemic, 2002). The importance of the Internet archive services can be based on the attitude of the International Council on Archives, which states that it is necessary "to facilitate the interpretation and the use of archival documents in a way that the content is widely presented and available." (Lemic, 2002).

In order to facilitate understanding and the use of materials, technology could be essential due to the fact that operates with more ease with large amounts of information, their organization and presentation. Internet language has also become a universal language. Computer literacy is a prerequisite of any educational process, and therefore through technology, which is also known as universal medium, archives find easier to communicate with the public. Nevertheless, the Internet as a medium has its own rules. Certain individuals or institutions are communicating on the Internet via their official website and these sites have certain standards and rules. These features will be explained in the next chapter.

3. Websites as a communication tool

Numerous studies have been exploring the quality of websites design. The leading website www.usability.gov extensively covers the collected knowledge and information about quality webdesign. The most important for the archive website is to meet the basic requirements especially because they communicate with diverse public, therefore they should be adapted. The importance of this can be demonstrated allegorically: in Croatia all institutions have facilitated access for the disabled, thereby all groups in a society should be taken into account. The same message should be applied on the Internet.

Current knowledge about the Internet informs people about the basic elements of the pages that users like or do not like to encounter while using. In his book „Information Architecture for the World Wide Web", Rosenfeld and Morville (1998) emphasise several disliked elements:

a.*Impossibility of finding a content* - „ websites like those, often provide no index, table of contents or site map and search facility. Even worse, the labels they use for their information are obscure; they may mean something to someone else (...) A poor navigation system or when backgrounds and color schemes change radically from page to page within the same site. " (Rosenfeld & Morville, 1998)

b.*Poor graphic design and layout* – „pages crowded with text, links, graphics and other components make it harder for the users to find information. Many designers forget that white space is as important a component of a page as anything else. (...) Text after text after text, without a brak for the eye, high-octane graphics with loudly crashing coulors". (Rosenfeld & Morville, 1998)

c.*Gratuitous use of bells and whistles*

d.*Inappropriate tone* – „if the site is designed to speak one language and the user speaks another (eg. using professional terminology) who should make the effort to learn the other's language? It is generally assumed that the burden is on the site and its designer to communicate in the language of the user." (Rosenfeld & Morville, 1998)

e. *Designer-centerdness*

f. *„Under construction" warrning*

g. *Lack of attention to detail* – „broken links, out-of-date content, factual errors, or poorly executed HTML (...) any attention to detail demonstrates the lack of professionalism and sensitivity to the user. " (Rosenfeld & Morville, 1998).

„Quality is quiet, passive, and often transparent. We generally take note only when things do not work. However, the sites we love all share the same characteristic: they integrate each of the key aspects of web site design: information architecture, technical design and graphic design. " (Rosenfeld & Morville, 1998). Users mostly like about the web:

a.*Aestetics* - „attractive site is distinguished by a cohesive and consistent look that presents a unique identity for the site and ideally, for its sponsors. These sites' graphics and page layouts are integrated with their other features, such as navigation systems, custom applications, editorial style and so forth. The user doesn't notice the individual images so much as he or she enjoys the overall atmosphere and experience created by the site". (Rosenfeld & Morville, 1998). It could be depicted by WOW – effect, or positive impression.

b.*Big ideas, communicational aspect* – „the intangible qualities of this type of site are its quality writing, copy-editing, and overall ability to communicate ideas effectively." (Rosenfeld & Morville, 1998).

c.*Utility* - „we visit and return to a web site because we find it useful in some way." (Rosenfeld & Morville, 1998).

d.*Findability* - „a real joy can come from a site that makes it easy to find its useful content. Sites that use well-planned information architectures are incredibly effective. Strong information architectures are especially important for large web sites. It is important that the site does not get between the users and the information they need." (Rosenfeld & Morville, 1998). This aspect is important for official archives in the same way as personalization.

e.*Personalization* - „users increasingly demand from web sites the ability to get information that is customized to their interests and needs. These kind of sites demonstrate that their designers are sensitive to the fact the users are not all the same." (Rosenfeld & Morville, 1998).

Based on preferences of an average user, a specific page can be analysed. During the analysis, several features are extremely important, such as, subjective impression, the knowledge of the technology and its use. However, some universal rules apply to most Internet users. First of all, it is important to note that the user's attention on the Internet is extremely short, much shorter than when it comes to other media. „When visiting a new site, users often give up on it before its main page has fully downloaded." (Rosenfeld & Morville, 1998). Because of that fact, WOW effect is very important, otherewise exertion is ineffectual.

Furthermore, each page is composed of certain basic elements without which it would not have characteristics of a website. „The elements of information architecture are: navigation systems, labelling systems, organization systems, indexing, searching methods, metaphors – these elements are the glue that holds together a web site and allows it to evolve smoothly." (Rosenfeld &Morville, 1998). From this it can be concluded how important is that the basic elements of each page are integrated and implemented in a way that is understandable to users, while at the same time they simultaneously respond to all technical and aesthetic requirements. Therefore, when designing a site this should be taken into account:

a. *users* – users are the most important and at the same time the main reason for the existence of the page. The page serves as a communication tool between institutions and users. It is necessary to take into account the fact that not all users of the same. „Because different users have varying needs, it is important to support multiple modes of inding information. Some users know exactly what they are looking for. (...) Other users do not know what they are looking for. They come to the site with a vague idea of the information they need.." (Rosenfeld & Morville, 1998).

a.*The organization of information* – During the organization of information it is always important to have in mind final user because, he is the one whom the information is intended. „Our aim is to apply organization and labelling systems that make sense to users. The Web provides us with a wonderfully flexible environment in which to organize. We can apply multiple organization systems to the same content and escape the physical limitations of the print world. Therefore, during the organization one must have in mind: unambiguous, heterogeneity and differences in perspectives." (Rosenfeld & Morville, 1998).

b.*Labeling* – in order to organise certain content it should be appointed in a way that is understandable to all users. In the same way as the material in the archives is marked, all information on the site should be divided into related subgroups and should be given an adequate terminology. „Labeling is form of representation. Just as we use spoken words to represent thoughts, we use labels to represent larger chunks of information (...) Labels are used to show users the organization of the site and its navigation." (Rosenfeld & Morville, 1998).

c.*Navigation* – navigation on the Internet has the role similar to the one that has an employee in the archives who shows right information to the user. Navigation system knows the material and can easily point out where things are. It is our guide. „Navigation system is used to chart our course, to determine our position, and to find our way back. They provide a sense of context and comfort as we explore new places." (Rosenfeld & Morville, 1998). On the website it is

very important that the navigation is consistent, so users would not always have to learn a new ways of communicating with other user. „The most common and important navigation elements are those that are integrated into the content-bearing pages of the website. As users move through the site or sub-site, these are the elements they see and use again, and again. Most integrated navigation elements fit into one of two categories: navigation bars and pull-down menus." (Rosenfeld & Morville, 1998).

       d. *Information search* - the goal is that users get information they need.

       e. *Credibility of information* - refers to the question "Does the web site have general integrity and credibility as a source? What is the purpose of the site? - To inform, to explain the facts or data, to persuade, to promote, to sell, etc? Who is linked to that page? Where is it cited? (Tezak, 2002). Based on above theories, the analysis of Croatian archive websites will be shown in the next chapter.

4. Website analysis of Croatian archives

4.1 List of Croatian archives

       Prior to conducting this research, a list of archives in the Republic of Croatia is established according to data from Croatian archives portal (www.arhinet.arhiv.hr). In the phase of development, the author assumed that all Croatian archives have their own website. In the first part of the analysis all archives were included, while in the later stages of analysis those archives which did not meet the minimum criteria of the previous phase were excluded. According to Arhinet portal, the names of Croatian archives are:

      1. State archive in Bjelovar (http://dabj.hr)
      2. State archive in Dubrovnik (www.dad.hr)
      3. State archive in Gospic (www.arhiv-gospic.hr)
      4. State archive in Karlovac – it does not have an official website
      5. State archive in Krizevcima – it does not have an official website
      6. State archive in Medimurje (http://dram.host56.com/index.html)
      7. State archive in Osijek (www.dao.hr)
      8. State archive in Pazin (www.dapa.hr)
      9. State archive in Rijeka (www.riarhiv.hr)
      10. State archive in Slavonski Brod (www.dasb.hr)
      11. State archive in Sisak (www.dask.hr)
      12. State archive in Split (www.das.hr)
      13. State archive in Sibenik – it does not have an official webiste
      14. State archive in Varazdin (www.dav.hr)
      15. State archive in Virovitica – it does not have an official webiste
      16. State archive in Vukovar – it does not have an official webiste
      17. State archive in Zadar – it does not have an official webiste
      18. State archive in Zagreb. – (www.daz.hr)

4.2 Basic information

       When people first seek information on the Internet, it is usually used via search engines (Google, Yahoo, etc.). Archives, in order to serve its customers, should be available on the Internet. Although in the real world, archive could not be reached without knowing the exact address of the institution, therefore the Internet offers exact information with only partial knowledge of the addresses. Based on this idea, web browsers should offer an archive as a first result when users try to seek information about it.
Users choose a technology of their own preferences, but the goal is the same – to find the answer to the problem.
Therefore, it is necessary that the website administrator takes into account that the site is compatible with all prevalent forms of technology use, and thus do not discriminate even one single person.

Web pages are usually created in HTML form, which is also accepted as a standard. The website www.w3.org, the official website of World Wide Web Consortium, an association that deals with the standardization of technologies used on the web was founded by Tim Berners Lee. He was first person who announced the first public HTML file, where says that the HTML is "language to describe Web pages, and the abbreviation means Hyper Text Markup Language. Display hypertext is allowed by a web browser. HTML is not programming language, it is the language of the tag presentation which describe the page. (...) "The purpose of the browser (Internet Explorer, Google Chrome and Mozila Firefox) is to read HTML documents and displays them as a site, while does not show tags, but use them to interpret page content." (HTML Introduction, www.w3schools.com/html/html_intro.asp)

When searching on the Internet, the results listing is extremely important due to the fact that user loses his will to search if the result is not listed among first results. Search engines are already adapted to the Croatian language, consequently there is no place for an excuse if their result is not listed among first results.

The number of results that come out when a person is using searching tool show a lot about the archive activities on the web, and in the real world. These figures may not be relevant for the quality of the activity, but show the extent to which Internet - media spread information about the work and how many times the work is disscussed on other sites. Based on these information user can provide a significant number of additional information (credibility of information on the Internet is questionable, but it is not relevant in this case).

Certain users have much clearer picture of the data they need while searching on the Internet, therefore it is necessary to facilitate and shorten the job search process itself. When it comes to archive, the user can already be familiar with the contents of a particular archive, but does not know the exact address on the Internet. Web browsers offer the possibility of direct entry into the "sub-pages", in particular, content specific, sub-groups. The possibility of such targeted search is certainly an advantage for the users and as such can be viewed as one component of a quality relationship between the user and the web.

On the basis of the previous constatations and therories, the group of questions and criteria for assessing the quality of the websites of Croatian archives is formed. The first group of questions relates to the existence of a website and its accessibility on the browser and the possibilities they offer. On account of these features, all mentioned archives in Croatia are included, regardless the fact weather the Internet is used to communicate with users. The following questions are comprised:

1. What is Google's response when searching certain archive? (Response is expressed by number)

2. What is the position of archives on Google's list of results? (Response is expressed by the number of the position)

3. Does Google show the location of the town on Google Maps tool? (Possible answer is yes or no)

4. Whether the website is divided into subpages in Google's view? (Possible answer is yes or no)

5. Whether the site is equally displayed in browsers:
   a) Internet Explorer (yes or no)   b) Mozila Firefox (yes or no)
   c) Google Chrome (yes or no)

6. Were the various web tools used when programming website? (Response does not include only usage of html, it is also referring to html supplement such as flash and java application).

#	State archive in/for:	Google response	Google page	Google search		Page display in different web			Different web tools
				Map location	Division on sub-	Internet Explorer	Mozzila Firefox	Google Chrome	
1.	Bjelovar	33600	7.	yes	no	yes	yes	yes	no
2.	Dubrovnik	62400	1.	no	yes	yes	yes	yes	yes/flash
3.	Gospic	41900	1.	no	no	yes	yes	yes	no
4.	Karlovac	87700	no	yes	~	~	~	~	~
5.	Krizevci	38100	no	~	~	~	~	~	~
6.	Medimurje	34600	1.	no	no	yes	yes	yes	no
7.	Osijek	68800	1.	yes	no	yes	yes	yes	no
8.	Pazin	40700	1.	yes	yes	yes	yes	yes	no
9.	Rijeka	379000	1.	yes	yes	yes	yes	yes	no
10	Slavonski Brod	50400	1.	no	yes	yes	yes	yes	no
11	Sisak	64400	1.	yes	yes	yes	yes	yes	no
12	Split	34100	1.	no	yes	yes	yes	yes	no
13	Sibenik	52300	no	~	~	~	~	~	~
14	Varazdin	56900	1.	yes	yes	yes	yes	yes	no
15	Virovitica	45200	no	~	~	~	~	~	~
16	Vukovar	110000	no	~	~	~	~	~	~
17	Zadar	166000	no	yes	~	yes	yes	~	~
18	Zagreb	295000	1.	yes	ne	yes	yes	yes	no

Tab. 1. Access to basic data Croatian archives via web browsers and search engines

4.2.1 Results description

- *Google answers* - Number of Google's answers varies from the archive to archive. The number of answers does not depend on the existence of sites. They are related to the number of references in the names of various articles on the Internet, therefore the number does not depend on their size or the size of the archives. Over 100 000 answers in Croatia have 4 archives: Zagreb, Zadar, Rijeka and Vukovar.

- *Website positioning on Google* – from 18 archives which are included in the analysis, 6 of them does not have its own website. This figure is significant because in Croatia even 1/3 of all the archives do not have a website. Of the remaining 12, on each Google lists the results is in the first place, except for the site of the archive in Bjelovar, which is located on the position 7 due to the fact that it does not have its own website.

- *Map location* – Google maps application is an advantage for all profit and non-profit organizations that helps users to find locations on the map. Only 9 of the 18 Croatian archives are marked on the maps which are displayed next to the website offered in Google's results list.

- *The subpage division* – 8/12 Croatian archives official websitesthat have the option of accessing through a subpage. Subpages are targeted for people looking for information such as contact information or current events. This criterion is partially met.

- *Page display in different browsers (Internet Explorer, Mozzila Firefox and Google Chrome)* -   All 12 pages of official Croatian archives provides a unified view of content no matter which browser is used. The standardized presentation of information via the website is essential, no matter what they are and what the preferences are. Each analysed website meets this technical criterion.

- *Website tools usage* - Each Croatian archives website is using HTML technology as the most commonly used form of transmitting information over the Internet. The exception is the Archive of Dubrovnik, which uses flash animated navigation.

Negative aspects are seen in the website of the archive in Medimurje. When a user wants to open other subpages, animated banner of web hosting company appears. Although these banners are common on commercial websites, they are entirely inadequate on state institution website, such as the archive.

4.3 Visual, technical and functional web site features of Croatian archives

The first impression is often important in life. Special attention is paid to business communication where aspects of nonverbal communication such as clothing, gestures etc can be learned. The first impression in the virtual world is very important just like in the real world. The end user may not analyze a website, but he will certainly know that he does not like a special website. The special wow-factor is also explained on the website www.usability.gov. This website outlines in detail website features which are adapted to the end user and which add quality to a site, whereby the end user receives accurate information, without interuption. In many suggestions offered on the website survey www.usability.gov the first question was: "What is your general impression about a site?" (What to test/Note taker`s guide). (http://www.usability.gov/templates/index.html) For this reason, here will be mentioned my personal wow-factor on 12 official websites of Croatian archives. It would be ideal to use a group of participants who will give a better assessment of this aspect of website analysis.

The wow-factor is influenced by the choice of colours for the page design. A field of psychology is concerned with the symbolic meaning of colours. Colours are associated with something that surrounds us in the nature. "The fact is that pictures and images that speak to the cortex of the brain, responsible for gestalt and the colour impression, represent the sensory image, which is to most cultures unambiguous, an image that is not necessary to learn seperately. (...)" (Pibernik, 2006). Archives represent mostly heritage, history or antiques and the first image that we imagine are piles of old, yellowed, dusty paper, cards or postcards. Based on associativity colours are linked with something familiar in the nature, so we can say that yellow is knowledge, orange is activity, blue is faith, purple is mystery etc. It is essential that the archive site reveals what the site is about, to describe its activity and area with the colour associativity. Good choice of colours belongs to non-textual communication with the user and to the added value of the site. (Itten, 1997)

A website is not only filled with colour and text, but also with white spaces. "It is preferable not to "squezze" too much text one to another, primarily because of the readability, the white space should not occurr "unexpected" but should be used in order to provide rest for the eye." (http://www.directoryone.com/usability-sample.html) This text from the U.S. company website

specialized for website quality analysis, is not concerned with white spaces, but the layout of the website content, the framework of pictures and texts placed on the site and the spaces between them, regardless the background colour. This element affects the overall wow-factor just as the colour selection affects it.

The website content is placed in the website framework, which is usually in form of an rectangle whose shorter sides are placed horizontally. The navigation and its location are particurary important when designing a website, because it leads the user through the content. Three most common navigation forms are the horizontal (top or bottom of the page, often top of the page because its more visible), vertical (left or right side, usually the left side with respect to practices in Western culture) and f-navigation (very common form that combines the horizontal and vertical forming the letter f). All other navigation forms do not belong to common or typical, and therefore would not be recommended to public institutions that interact with a diverse and wide audience. According to the website www.usability.gov, the eye of the user searches for information in the F form. "The navigation system can be designed to support associative learning in order to include sources that are connected with the content currently displayed. (...) As users move through a well-designed navigation system, they learn about products, services or topics associated to the specific content they set out to find." (Rosenfeld & Morville, 1998). Navigation systems for website archives should operate according to this principle. Using standard forms of navigation, archives enable users to learn and to retrieve information easily and to review offered facilities.

Except simple and functional navigation, the archive will show the focus on the user with a multilingual offer. Although the facility is primarily intended for Croatian citizens it is necessarily that, like the government website, etc., provide at least basic information on some of the foreign languages through the language options.

The greatest amount of information on the website is provided by the text. It is a widely accepted view in design that serif fonts are used in printed materials, and non-serif in digital media for which they were incurred. Serifs are used for easier readability in large texts, but in computer technology other rules are applied. Serifs are not "in spirit" of the screen and keyboard so that most websites are created by using non-serif fonts.

Except letters, it is necessary to design larger blocks of text. The importance of white space has already been mentioned, which here refers to the fragmentation of the text in paragraphs, font size suitability, etc. Although many browsers allow increasing the font size, it is also important that the owner of the website thinks in advance about this factor and adjusts the size to the most common sizes on the Internet (from 8 to 12 points for texts that are not titles). The American company for website quality analysis also notes the importance of letters and background contrast. They note that "it is recommended to proceed to black text on a white background. Studies show that everything else is simply hard to read, and that it will discourage users and is not optimal. " (http://www.directoryone.com/usability-sample.html) It is not necessary that the contrast is black and white, but it is important to reflect the same contrast values.

A picture speaks a thousand words. In a visual medium like the Internet, the role of photography is extremely important. They illustrate the text content, simplify the information search and sometimes are also information for themselves. As illustration can be used for the division of the text into sections, it is also necessary to be incorporated into the overall appearance of the site. "It is geared more toward creating relationships between visual elements and determining their effective integration as a whole. On a page, printed or HTML, these elements include white spaces and typography as well as images." (Rosenfeld & Morville, 1998)
Credibility on the Internet is a very important issue. Considering that archives represent a public institution, it is necessary to provide information about the owner of the site and the one who maintains the site. Such data can often be found at the bottom of the page. With this information usually stands the year of the last update, which provides also information about the actuality of the content offered on the site.
Wow effect, except for aesthetic impression, increases with the fulfillment of functions. When a user uses a site, such as official archives, the area of information requested is probably in advance

determined. When the site "at first" by its appearance, but also with first offered information, clearly reveals the kind of content it offers, the wow effect is stronger. It is essential that the owner of the home page clearly provides basic information about the content that users will be able to find by further searching. Information that can help to acquire an overall impression of the content that a site of an archive offers may be news on current events and news related to the operation of the facility, basic information about the history, activities of the institution and frequently requested contact information, address or other technical, informative data.

From the above mentioned derive following questions for the second phase analysis of the remaining 12 Croatian archive websites:

1. Does the site contain the wow-factor? (possible answer is yes or no)
2. How many colours were used for the website formation? (numerical answer)
3. Does the colour represent symbolically the activity, the archives? (possible answers are yes, no or partial)
4. How much space do empty spaces take on a site? (answer in percentage)
5. Which form is the navigation on the page? (vertical, horizontal or F-form)
   a) Where are the main connections / links? (header, side, middle)
   b) Where are the secondary connections / links? (header, side, middle)
6. Does the site have the possibility of multilingual search? (yes or no)
7. What type of font is used? (serif, non-serif or a combination)
   a) Is the text formatted? (yes or no)
   b) Is the typography in contrast to the background? (yes or no)
   c) What is the colour of typography? (answer: font color)
   d) What is the font size? (size in pt)
8. Does the site use photographs or illustrations? (yes or no)
   a) How much space on the site is used for photos? (answer in percentage)
   b) Is the formation of pictures embedded in the general page layout? (yes or no)
9. Are there any data on the page about the webmaster and the edition year? (yes or no)
   a) When was the page last updated? (years listed)
10. Does the home page contain current news? (yes or no)
   a) Does the home page contain history of the institution? (yes or no)
   b) Does the home page provides information about the activities? (yes or no)
   c) Does the home page contain contacts, opening hours, etc.? (yes or no)

	1	2	3	4	5	5a	5b	6	7	7a	7b	7c	7d	8	8a	8b	9	9a	10	10a	10b	10c
Rijeka	Yes	3	Yes	60 %	Central	Central	Lateral	Yes	Combinati	Yes	Yes	Black	9 pt	Yes	10 %	Yes	Yes	/	No	No	Yes	yes
Pazin	No	3	Partial	30 %	F-form	Header	Lateral	No	Combinati	Yes	Yes	Black	9 pt*	Yes	10 %	No	Yes	2011.	No	No	Yes	No
Osijek	No	2	No	40 %	Vertical	Lateral	Lateral	No	Non-serif	Yes	Yes	Black	11 pt	Yes	5 %	Partial	Yes	2010.	No	No	Yes	No
Medimurj	No	2	partial	50 %	Horizontal	Header	Header	No	Non-serif	No	Yes	Black	10,5 pt	Yes	15 %	Yes	No	/	Yes	No	No	Yes

		Bjelovar	Dubrovn	Gospic
1.	Wow factor	No	No	No
2.	Number of	2	3	2
3.	Colour symbolism	Yes	Yes	Partial
4.	White spaces	20 %	30 %	40 %
5.	Navigation form	vertical**	Vertical	Horizontal
a	Main links	Header	Lateral	Header
b	Secondary links	Header	Lateral	Header
6.	Multilingualism	No	No	No
7.	Font type	Non-serif	Non-serif	Non-serif
a	Text formatting	Yes	Yes	Yes
b	Typography	Yes	Yes**	Yes
c	Typography	Black	Black	Gray
d	Font size	8,5 pt	8,5 pt	9 pt
8.	Photo/illustration	Yes	Yes	Yes
a	Quantitty of	25 %	20 %	15 %
b	Incorporation	Yes	Yes	Yes
9.	Webmaster data	No	Yes	Yes
a	Year update	/	2009.	2010.
10.	Actual news	No	Yes	Yes
a	History	Yes	Yes	Yes
b	Business	Yes	Yes	No
c	Technical	yes	Yes	yes

* ability to enlarge / minimize the font size on the page

** except for links that have not enough contrast

*** vertical in a non-standard position-located vertically in the header

	Sisak	Split	Varazdin	Zagreb
Wow factor	No	Partial	No	No
Number of	2	3	2	2
Colour symbolism	Partial	Partial	Partial	No
White spaces	30 %	20 %	50 %	20 %
Navigation form	Vertical	F-form	Vertical	Horizontal
Main links	Lateral	Header	Lateral	Header
Secondary links	Lateral	Lateral	Lateral	Header
Multilingualism	No	No	No	No
Font type	Non-serif	Non-serif	Non-serif	Non-serif
Text formatting	Yes	Yes	Yes	Yes
Typography	Yes	Yes	Yes	Yes
Typography	Black	Black	Black	Gray
Font size	8,5 pt	9 pt	8,5 pt	10 pt
Photo/illustration	Yes	Yes	Yes	Yes
Quantitty of	15 %	15 %	20 %	20 %
Incorporation	Yes	Yes	Partial	Partial
Webmaster data	Yes	Yes	Yes	Yes
Year update	/	2009.	2005.	2010.
Actual news	Yes	Yes	Yes	Yes
History	No	Yes	No	No
Business	Yes	Yes	No	Yes
Technical	Yes	Yes	No	yes

		Slavonski
1.	Wow factor	No
2.	Number of colours	2
3.	Colour symbolism	Partial
4.	White spaces	20 %
5.	Navigation form	F-form
a	Main links	Header
b	Secondary links	Lateral
6.	Multilingualism	No
7.	Font type	Serif
a	Text formatting	Yes
b	Typography	Yes
c	Typography	Black
d	Font size	9 pt
8.	Photo/illustration	Yes
a	Quantitty of	20 %
b	Incorporation	Yes
9.	Webmaster data	No
a	Year update	/
10.	Actual news	Yes
a	History	No
b	Business	No
c	Technical	Yes

Tab. 2. Visual, technical and functional features of the website home pages of Croatian archives

4.3.1 Results description

- *wow factor* – none of the sites have a complete wow factor, the archive in Rijeka is very close, while the archive in Split is only partially close to the wow effect. Due to the non-profit orientation, the absence of wow factor does not need to be considered as an imperfection.

- *Number of colours used*– for the site creation 2 (66 % stranica) or 3 colours (33 % stranica) were used. The amount of colours is appropriate because enough paint is used to achieve an aesthetic experience while on the other hand the site functionality is not burdened with an excessive amount of decorative elements. Croatian archive sites fulfill this task very well.

- *Colour symbolism* - 2/12 websites satisfy the predefined criteria of the colour symbolism, 2/10 do not satisfy while 7/12 only partially uses colours symbolically. For the website creation most often were used colours: red, brown and gray.

- *Empty spaces* – most websites use empty spaces insufficiently as a functional and aesthetic element in designing a site. 7/12 websites leave 20-30% for empty spaces, while the other 5 sites have 40-60 % of empty spaces. Croatian archive sites could use this designing element better.

- *Navigation form* – the vertical navigation is mostly used (5/12 sites), and then equally the F-form (3/12) and the horizontal navigation (3/12). An exception is the archive in Rijeka with a central navigation, which is extremely impractical for a website that represents a public institution. According to the research on user behaviour on the Internet, websites of Croatian archives do not satisfy these criteria well.

- *Main and secondary links*– main links are primary in the header (7/12), an exception is the website in Rijeka with a central navigation. Secondary links are mostly placed lateral (6/12), an exception is the archive in Rijeka with a central navigation. Most websites use a drop-down menu and therefore main and secondary links are mostly placed at the same position (on 9/12 of the site).

- *Multilingualism* – Croatian archive websites do not offer a multilingual content search, except the archive in Pazin and Rijeka. This is a characteristic that needs to improve in the presentation of Croatian archives via the Internet.

- *Font type* – most sites (8/12) use new technologies that are adapted and non-serif font types. Other sites either use a combination of serif and non-serif letters (2/12) or only serif typography (2/12).

- *Text formatting* – only one site (archive Medimurje) does not use the option of text formatting. Other Croatian archive sites use this function very well.

- *Typography contrast* – all archive sites offer a satisfactory contrast between letters and background, and therefore satify this functional element. Criticism goes to archives in Dubrovnik due to poor contrast of connections / links.

- *Typography colour* – all archives use the recommended formula of dark font on a light background. 10/12 websites use black, while 2 use gray. This functional aspect is fulfilled by everyone.

- *Font size* – only 3/12 websites offer a size larger than 10 pt. 9/12 websites have font 8,5 or 9 pt. A positive exception is the archive in Pazin. It offers the option of zooming / reducing the font size, which is a concern for customers and their needs.

- *The use of colours or illustrations* – all sites use colours or illustrations for the content design or as the accompanying content. A photography or the combination of photographies with illustrations (10/12) is mostly used, while only illustrations are rarely used (2/12).

- *Quantitiy of photos on a website* – photographies mostly take 15-20 % of the entire website space (in 8/12 cases). Only one site has less than 5%, or more than 25% of photographies on a website. The amount of space devoted to photographs / illustrations is in most cases adequate.

- *Visual incorporation of photographies / illustrations in the website layout* – on most sites (8/12) photographies / illustrations are incorporated in the general aesthetic impression of the site, while only one (archive in Pazin) does not satisfy this criterion

- *Webmaster data* – 2/3 analyzed data give webmaster data and hence these sites appear to be authentic, current and maintained.

- *Year of last update* – most sites do not have data about the year (5/12), 3/12 have the year 2010 listed, and only one the year 2011, as the last current year. These data may indicate that Croatian archive sites became obsolete.

- *Current news on the home page* – 2/3 surveyed sites provide information on current events and news, which represents an adequate use of the Internet as a medium for communicating with customers.

- *History information on the home page* – 2/3 analyzed sites do not provide information about the history of the institution, which is not considered a deficiency if the historic part is in a separate subpage.

- *Activity information on the home page* – 7/12 sites offer information about its activities on the home page. The remaining 5/12 sites have a significant deficiency because they do not provide the user with basic information at the outset, and that means also that the user does not know which information can be found on their site.

- *Technical information (opening hours, location, contact) on the home page* – 8/12 sites have technical information on the home page while 4/12 ignore this aspect of communication with users or the process of finding these information is difficult because they are located in a subpage.

4.4. Content features of Croatian archive websites

The home page leaves the first impression, but introduces also users to the way information are communicated, and how contents are organized and the site is used. It should reflect the overall content and layout of the entire website, and it is therefore necessary to apply rules set on it consistently throughout the rest of the site, or any other subpages. „Well-planned information architectures greatly benefit both consumers and producers. Accessing a site for the first time, consumers can quickly understand it effortlessly. They can quickly find information they need, thereby reducing the time (and costs) wasted on both finding information and non finding information. Producers of web sites and intranets benefit becouse they know where and how to place new content without disrupting the existing content and site structure." (Rosenfeld & Morville, 1998).

Archives serve citizens preserving the heritage of a nation. All employees of an archive become clerks of heritage and citizenship, which this heritage represents. Websites are used to comunicate with their users and it serves as a comunication channal among employees. Users often need help in using the archive, and it is therefore necessary to mention the employees on the website archive, their functions, tasks and contacts so that users can easily get the required information.

Archives are not only connected with end users, but also with other institutions. A good example of that in Croatia is ARHiNET - Archival Information System (www.arhinet.arhiv.hr). This archive portal includes not only government archives but also private archives, offers insight into the overall digitized material and is the strongest online archival representative in Croatia. It is necessary that archives on their sites point towards these addresses. This refers to relevant ministries, statutory provisions, other archives, etc.

History of the archive is also important. Perhaps it is not necessary that every user knows the date of establishment of the institution, but a historical overview and the activities of a certain archive can provide insight into the archives history. Archives are an important element of the Croatian cultural heritage, and for this reason it is important that they educate users and show on the Internet the Croatian culture through its own history.

For sites that represent an area of action, and include considerable amounts of information that are introduced through the Internet, it is important to allow users an option to search such large amounts of content. "Search engines are often required due to certain reasons: users will not seek information in other ways through the site. Their time is limited, and the mental burden of information large." (Rosenfeld & Morville, 1998). The existence of the search engine on the site is particularly important in the archive, especially if they provide on-line digitized material.

Photographs clarify the text additionally, offer added value to information, especially if the user does not have any initial idea. Internet is a technology characterized by interactivity. In the printed media everything was said through the text and images. Internet adds a new dimension: sound and moving images. The use of multimedial content on websites is today both for owners and users. Archives keep not only written texts and documents, but also a variety of audio and video, therefore is the Internet an ideal medium for presenting such forms of cultural heritage to the general public. The ultimate goal of the website archives should be the option that customers from home can see the contents of archives. This is possible through the digitization of archival material. The project was united by ARHiNET (www.arhinet.arhiv.hr), but it does not mean that some archives are not able to offer certain facilities to the public via the website. Digitization is certainly a time consuming and tedious process, but that does not justify the archives which do not provide access to documents to the local community. Particularly attractive and interesting in terms of marketing can be a variety of multimedia content (from old postcards to video and audio).

Following questions have resulted from the above mentioned for the closing content analysis of Croatian archive websites:

1. Is the design consistent throughout all sub-pages? (yes, no or partial)
2. Does the page contain information about employees (functions, contact)? (yes or no)
3. Are on the site connections / links to other sites (Ministry, ARHiNET etc.)? (yes or no)
4. Does the site provide information about the history of the institution? (yes or no)
5. Does the site offer the ability to search by the search engine? (yes or no)
6. Are multimedial contents on the site (video or audio files)? (yes or no)
7. Does the site offer on-line digitized archives? (yes or no)

Digitized material	No	No	No	No	No	No	Yes	No	Yes	Yes	Yes	Yes
Multimedia content	No	No	No	Yes	No	No	No	No	No	No	No	no

Drzavni arhiv u/za:	Consistent design	Employee data	Connections/links	Archive history	Search engine
Bjelovar	no*	No	No	No	No
Dubrovnik	Yes	No	Yes	Yes	No
Gospic	Yes	No	Yes	Yes	Yes
Medimurje	Yes	No	Yes	Yes	No
Osijek	Yes	No	Yes	Yes	No
Pazin	Yes	No	Yes	Yes	Yes
Rijeka	Yes	No	Yes	Yes	Yes
Slavonski Brod	Yes	No	Yes	Yes	Yes
Sisak	Yes	No	Yes	Yes	Yes
Split	Yes	No	No	Yes	Yes
Varazdin	Partial	No	No	Yes	Yes
Zagreb	Yes	no	Yes	Yes	Yes

Tab. 3. Content features of Croatian archive websites
* subpages not working/ broken links on the navigation

4.4.1 Results description

- *Consistent design* – 10/12 analyzed sites have a completely consistent design. Archive of Bjelovar was impossible to analyze because connections / links listed in navigation do not work, while in the Archive of Varazdin has only a partially consistent design.

- *Employee data*– 10/12 sites do not offer employee data, nor as a description of function or through contact details. Only archives in Slavonski Brod and Split offer such information. This criterion is not satisfied and improvement can be made by a simple, undemanding modification on the site.

- *Connection / links* – more than half of the analyzed sites (7/12) provide direct links to other institutions. Archives satisfied this criterion halfway. As with the previous criteria, improvement can be achieved by a simple intervention on the page.

- *Archive history* – if the archive site in Bjelovar, whose links are invalid, switches off, all analyzed archive websites provide information about its history.

- *Search engine* – 8/12 analyzed sites have search options via an integrated search engine, while others do not offer that option to their users.

- *Multimedial content* – of 12 analyzed sites only online archives for Medjimurje have multimedial content included, but not completely because it is an animated photo gallery.

- *Digitized material* – more than half (7/12) of the analyzed archives do not offer its archival material in digital form. Other sites have the option to see digitized materials in all forms, except

the archive in Zagreb which offers only digitized photo materials. According to this criterion Croatian archive sites need an improvement, despite the connection with the ARHiNET portal.

5. SWOT analysis of the Croatian archive websites

According to characteristics and criteria that are analyzed in Tables 1, 2 and 3 a SWOT analysis of Croatian archive websites follows:

STRENGTHS	WEAKNESSES
- position on Google results pages - pages display on different browsers - adequate use / amount of colour in designing a page - good navigation - customized typography – in shape, colour, contrast and size - use of photographs / illustrations - informing about current news / events - technical information - consistent design - information about the history of the institution - search via search engine	- location mark on Google Maps Service - use of different web tools - sites do not have a wow factor - symbolic use of colours - wrong use of empty spaces - multilingual search of pages - activity information - lack of data about employees - connections / links to other websites - lack of multimedial content
OPPORTUNITIES	THREATS
- large amount of content about the archive on other websites - location mark on Google Maps - use of various web tools for designing - design improvement - multilingual offer - more frequent updates - information about activities and services - connection with other facilities and institutions via connections / links - the inclusion of multimedial content - offering digitized materials online	- an insufficient number of websites that link or tell on the official site - dysfunctional and maladjusted sites can cause loss of users - existence of ARHiNET - out of date data - incoherence with other facilities and institution sites - lack of interactivity - insufficient offer / difficult access to digitized material directly through the official website

Tab. 4. SWOT analysis of the Croatian archive websites

6. Conclusion

This paper shows the connection between archives and the Internet in the context of communicating and organizing large amounts of information. This paper analyzes basic elements of all national website archives in Croatia through some basic features. Firstly, the accessibility of information that archives offer to end users and the designing of websites were taken into account. This paper is divided into four basic sections. The first section is about the relationship between the Internet and archives. It is about their similarities and differences, about the modern trends to present archives to users via Internet, using information about their activities and current notices, and using online publication of digitized archives.

The second part deals with the Internet characteristics as a media and websites as a communication channel. Specified are the basic characteristics and features of websites. It is also explained what the average user needs, and what is a nuisance when searching for information on the Internet.

The most extensive part, the third chapter, presents the analysis of the Croatian state archive website according to characteristics and criteria set by the first two chapters.

The analysis was done in three phases. The first examines the accessibility of certain archives on the Internet and its accessibility to different users. In the second phase basic features (aesthetic, technical and functional) of each individual site were examined. The third stage refers to detailed examination of the characteristics of navigation, graphic design and the content of information provided.

Based on collected data the last part presents a SWOT analysis as a summary of common problems and benefits of Croatian archive website. SWOT analysis can serve as a framework for further, more detailed studies of this problem but can also show how to make improvements in communication with users and take advantage of other offer. All the collected data should be shared among the Croatian archivists. Results should serve as an encouragement for better web sites. It should also enable archivists to become even better in their fields by applying new technologies.

7. Literature

Freeman Finch, E. (2003) *Advocating Archives: an introduction to public relations for archivists*, Scarecrow press, Inc., 0-8108-4773-6, Oxford

Itten, J. (1997). *The Art of Color: The Subjective Experience and Objective Rationale of Color*, John Wiley & Sons, 0471289280, New York

Jimerson, R. C. (1989). *American Archivist,* 52, 3,, Summer, 1989), 332-340 , 0360-9081

Lemic, V. (2002), *Archives and Internet – new possibilities for access and use of archival record*, 45 Vol. No. 45, March 2002), pp. 207-218, 0570-9008

Pibernik, J. (2006). *Digital space design,* University of Zagreb, 9531690979 , Zagreb

Rosenfeld, L.; Morville (1998) P. *Information Architecture for the World Wide Web*; O`Reilly, 0596527349, Sebastopol, USA)

Tezak, D. (2002). *Internet data search: Manual exercise*, University of Zagreb, 9531690650 Zagreb

Williams, C. (2006). *Managing archives. Foundations, Principles and Practice*, Oxford, 1 843334 112 3, Oxford

*** *What to test/Note taker`s guide*, http://www.usability.gov/templates/index.html, *Accesed on: 2011-12-15*

*** *HTML Introduction*, www.w3schools.com/html/html_intro.asp*, Accesed on: 2011-12-16* 2011)

*** http://www.directoryone.com/usability-sample.html, *Accesed on: 2011-12-20*

*** www.arhinet.hr, *Accesed on: 2011-02-03*

*** http://dabj.hr, *Accesed on: 2011-02-10*

*** www.dad.hr, *Accesed on: 2011-12-15*

*** www.arhiv-gospic.hr, *Accesed on: 2011-28-10*

*** http://dram.host56.com/index.html *Accesed on: 2011-01-10)*

*** www.dao.hr, *Accesed on: 2011-01-15*

*** www.dapa.hr, *Accesed on: 2011-01-23*

*** www.riarhiv.hr, *Accesed on: 2011-02-22*

*** www.dasb.hr, *Accesed on: 2011-02-20*

*** www.dask.hr, *Accesed on: 2011-01-27*

*** www.das.hr, *Accesed on: 2011-01-13*

*** www.dav.hr, *Accesed on: 2011-12-19*

*** www.daz.hr, *Accesed on: 2011-03-01*

*** www.usability.gov, *Accesed on: 2011-01-17*