

Creation and Typology Definition of the Museum on the Internet

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ABSTRACT

Through advancing new technology, perspective of museum institution and museum profession is changed. The content analysis and analyze of used terminology by online users will show us which term is the most used between frequently used terms such are: online, electronic, web, internet, digital, virtual and cyber museums. This scientific paper suggests that online users don't differ mentioned terms while they search for museums on Web. Using the appropriate »prefix« in order to better describe the typology of a museum on the Web is the first step in designing the future of the museums and certainly encourages serious approach in to the study of the new museum »entities«.

Key words: museums, online museums, internet museums, cyber museums, new museums, perspective of museums, digital museums, content presentation, museum typology, terminology of online museums

Introduction

Through advancing new technology, perspective of museum institution and museum profession is changed. During the past few years many questions came in to light regarding future of museums, especially in terms of presentation of its content on the web, so far those questions still don't provide us with proper answers.

During the mid nineties of the last century Ben Davis in magazine »Aperture Magazine« by paraphrasing P. Brooks in article »Objects Within Objects«, started re-considering influence of IT technology on museums and compared »concept oriented societies« with »material oriented societies«¹.

According to Davis, the approach »concept-oriented societies is based on the creation of an information infrastructure that, implicitly, becomes the parent to the museum exhibits«. Devi's approach to harmonize museum and information technology is interesting, because in a direct way is creating holistic conditions to their subsequent synergy.

Thinking in this way of the museums on the Web, it can be said that it has very strong IT potential. There is frequent occurrence of online museums that don't have their physical equivalent, but are defined as an independent museum »entities«.

Such development of online museum will certainly change the viewing angle on the museum profession in the broadest sense of its social perception. In this context raises a number of issues that are still not sufficiently defined, concerning the standardization of access to online presentation of the museum and methods of evaluation, but also a terminology and typology of museums on the Web.

Specifically, is there a standardized approach to the nomenclature of museums on the Internet?

Are »Cyber Museum« (»cyber museums«), virtual museums (»virtual museums«), electronic museums (electronic museums, museums internet (»internet museums«), museums online (»online museums«) or digital Museums (»digital museums«)?

The first part of this paper will show some historical determinants underlying the museum in the internet environment as we know today. Structuring and archiving of data and information, as well as assumptions and indications of the development of museums on the Web are known to be considerably less than is commonly thought. Based on this, it is important to gain insight into the complexity of matter and its relevant historical coverage.

Familiar with this information we will certainly be able to adequately reflect the categorization and typology and appropriate terminology such museum appearance.

In fact, there are relevant documents that suggest that the prevalence of the idea of the museum in an alternative form of existence, physical, museums exist in various forms since the early 16th century.

Historical Foundations of Present Web Museums

An interesting article titled: »The semiotics of the Web«, available from the link: <http://pauillac.inria.fr/~codognet/web.html> suggests that the binary code, the basis of the information revolution, mentioned in the 1520th in a document »Leibniz's medallion of the Duke of Brunswick«² (Figure 1).

Thus, the history of online museums, contrary to expectations, does not begin with the appearance of World Wide Web. Late 19th century, namely, 1895, in the book »The Time Machine« from 1895 (which many scholars consider the forerunner of today's museums on the Web), HG Wells³ was the first who promoted the term »World Brain« (»World Brain«). Inspired by the success of his first book he published a book titled »World Brain«.

The term »global brain«, implies the place where would be stored a complete world knowledge in the form of books, articles, papers, etc. It is logical that for such a venture, »carriers of knowledge«, could not be stored in its authentic form, and that we had to devise ways of its compression and optimization.

Therefore, Wells proclaimed microfilm to be the future of media, believing that his idea of a »World Brain« can be realized only by storing the information in this medium.

In his work Wells shows the enlightenment spirit by emphasizing that the task of »World Brain« will be ready when every man in the world could have access to each document stored on microfilm. It is incredible how Wells' idea, which dates from the 1895th in theory fits in today's global information structure and principles of its use.

In consideration of the preconditions that ideologically preceded the creation of museums on the Internet it is important to mention a movement called »futurism«, created in the second half of the nineties.

Written by F.T. Marinetti, the famous »futuristic manifesto« precisely describes the goals and programs in creation of a new world.

The idea of »futurism« is, in fact, based on the full restoration of human sensibility through the discovery of science as a driving force of the project. The movement had the attitude that the definition of material things in the world causes distortion of the psyche of the individual⁴. That was the reason why futurists led by FT Marinetti advocated the burning of libraries, museums, collections and other cultural »tissue« in hope of creating a new, fairer, better and sensible world.

In 1936 Walter Benjamin⁴ in his essay »The Work of Art in the Age of Mechanical Reproduction« prophetically announced that a future museum will disappear in its original form, but through special techniques, knowledge would be multiplied and divided in to countless copies through media which will all be available to anyone.

Studying the history of online museums and basic theoretical assumptions that preceded it, we cannot bypass Andre Malraux. In 1947 he established phrase »Imaginary museum without walls«⁵. The driving idea for Malraux came from his passion from photographing works of art.

After seeing how people who have never been able to go to a museum are delighted by the photographs shown to them he realized the power of the storage, transmission and distribution of multimedia data.

At about the same time in America a scientist named Vannevar Bush conceived a new non-linear system of storage and use of data and documents. Vannevar Bush was a special advisor to President Roosevelt, whose confidence he enjoyed during his research activities.

In the year 1945, the magazine Atlantic Monthly published an article titled »As We May Think«⁶, which describes in great detail his ideas mechanically related to information services which he called »Memex«. This service allowed the operator to enter text, picture or message on the photo – mechanical principles which are now treated as early beginnings of hypertext and multimedia. It is important to note that Vannevar Bush, beside the »memex«, devised the system of »associative indexing« which is still in use when searching documents on the Web.

These were the first serious guidance to the structuring, processing and distribution of multimedia documents that made foundations for the development of online museum. Except for processing multimedia documents present online museum in the technical sense depend on hypermedia ie, nonlinearities in the approach to distributing information on the Web.

However, the realistic assumption for the nonlinear structure of the information used today began in the sixties of last the century. In fact, during the 1960's Ted Nelson invented the precursor of hypertext as we know it today under the name »Xanadu Model«.

The main characteristics of Nelson's model⁷ are:
– unbreakable links

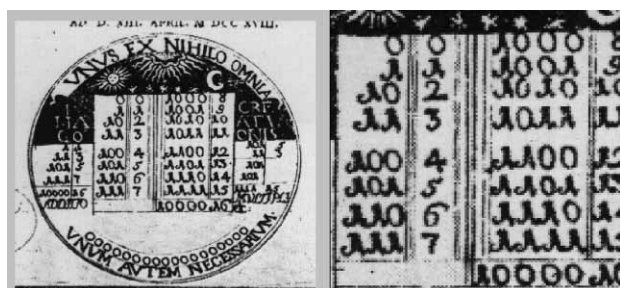


Fig.1. Leibniz's medallion of the Duke of Brunswick, 1520.

- ease of access to copyright
- link with the original document
- two-way links
- a simple comparison of related documents
- accurate »version management«
- easy publishing of documents.

The principle of the model was very simple – create a document/content and then it is easy to distribute it and maintain within the browser. The scheme of this model can be seen in the Xanadu model illustration (Figure 2).

Many Web sites today use the same algorithms in the presentation and interactivity of its online publications. One of the most popular Web sites is Wikipedia⁵. This on-line encyclopedia has totally free access to its documents and data. It is very interesting that Wikipedia was created (and continue to grow) in order to visitors be able to add up information.

Namely, if a visitor believes that he is an expert in a subject, it is allowed to him to use an extremely intuitive GUI (graphic user interface) and to create an encyclopedia by himself. User, therefore add up content based on his knowledge of the subject searched.

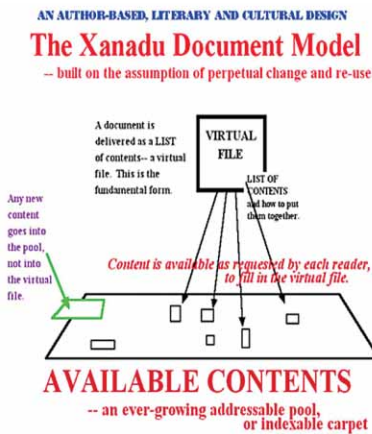


Fig. 2. Scheme of Ted Nelson's »The Xanadu Document Model«.

The question that imposes itself is the problem of truth and validity of data that can be stored in such a »public domain« Web encyclopedia. Verification relies on, according to the authors of Wikipedia, on automatic correction by users of the Web community (Figure 3).

Incorrect data is, in fact, are revealed by the users themselves and then are deleted or modified.

Interactive principles underlying the structure of Wikipedia is in fact the application of Ted Nelson's »Xanadu Model«, with special emphasis on the dual communication and interaction among multimedia documents.

In the mid eighties of the last century »virtual gallery« has been made, it was seemed as revolutionary phenomenon especially for the reason that it was made for that time in fascinating 3-D graphics. It was a work entitled »Luminaire« and the authors were Dean Winkler and John Sanborn⁹. The 3-D clip was recorded on video tape in 1985, lasted for 6 minutes and 54 seconds and became a classic.

»Luminaire« project¹⁰ was introduced by media as »...visual homage to artist Ed Emshwiller contains digitally transformed dancers and space landscapes and the key idea of the scene is review of the history of art in computerized gallery...«.

At the beginning of the nineties, hypertext capabilities were applied to create many virtual museums on the CD-ROM editions. One of the first projects launched by Apple Company was called »Computer's Virtual Museum«.

The project has demonstrated a three-dimensional simulation of three connected museums, created in QuickTimeVR software. The promotion was held 1992 in Chicago at the Fair, »SIGGRAPH 92«. After this promotion world of multimedia museum was nothing like before...

Very soon Hermitage museum, Musee d'Orsay, Le Louvre released their CD-ROM, which were getting more complete and technologically superior as time went by. Over time, the contents of the CD-ROM editions were placed on the Web, which significantly increased number of users.

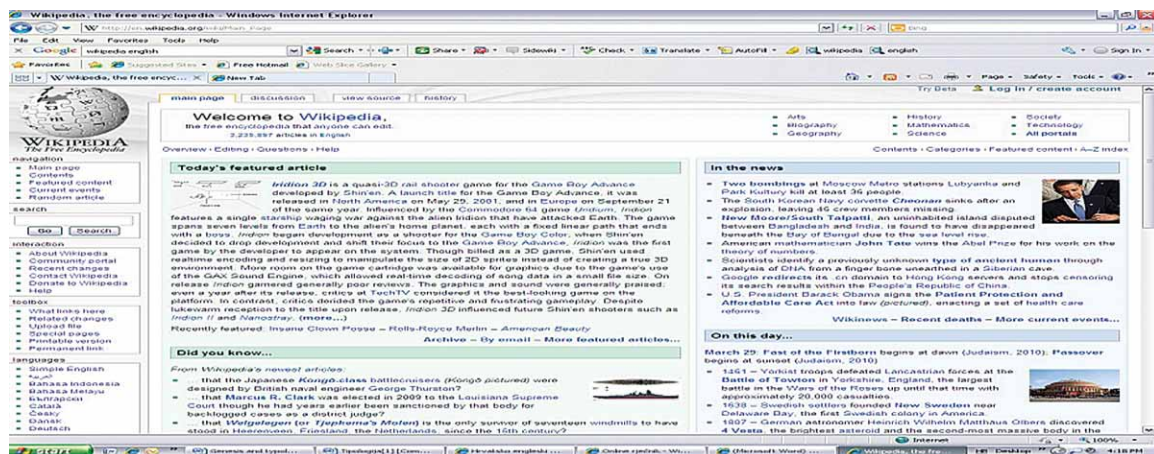


Fig. 3. Home Web site »Wikipedia« in English language.

In the late nineties the Internet has been a growing with various museums that have started taking advantage of multimedia and hypermedia. Beginning of the new century was marked by the emergence of new media for data storage (DVD – eng. »Digital Versatile Disc«), which exceeded the capacity of CD-ROM by several times.

In 2006 started preparations for commercial introduction of a new, revolutionary storage media, known as »Blue Ray«, its capacity is convincingly superior to DVD.

Arrival of new, faster and safer storage media will most likely affect the technological progress of online museums. History shows us that museum content was first promoted internally (the »Intranet« or by some other media), and afterwards »moved« on the Web.

The reason for such promotion of museum content is due to exponential development of storage media, as opposed to network systems (Internet, Ethernet, online databases...) which have linear growth and are, therefore, usually late in accepting imposed standards.

Given the present information flow speed and information technological capabilities of the Web, the dominant skills of »content management« or the creation of the museum content online becomes creativity and sense of perception of the interests of online visitors.

In addition to the many questions that are imposed by itself, there is a reasonable question on the typology of museums on the Web. It is obvious that McKenzie's approach¹¹ of dividing museums into »marketing« and »educational« museums is not sufficient to distinguish the specific museum's online appearance and imprecise terms can easily misled perception of online museums and »content management«.

Typology of the Museum on the Web

In order to precisely define the typology of online museums we need to know what each term used by on line museum means and we also need to estimate whether the use of those terms in the specific context in which they were mentioned are appropriate.

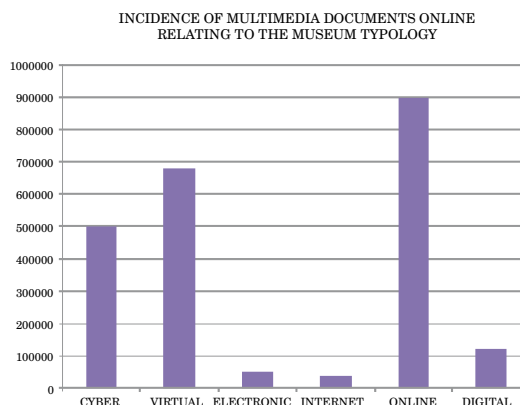
So far in this paper, for the museums that are located on the Web we were using the term »online museum«. This phrase implies the widest context of the exhibition content available on the Internet (Graph 1).

Professional and scientific literature is not entirely certain nor agreed on the issue of terminology, so for the museums on the Internet is often use the term »Cyber Museum« a virtual museum, electronic museum, internet museum, online museum and digital museum.

Are there differences in these terms, or they have the same meaning?

Cyber museums

The word »cyber« by the definition of Atis¹² web dictionary means: »... everything in the broadest sense related to computers and networkin«. Judging by that, all online museums, no matter what their specifics are could have the prefix »cyber« in front of its name. The term



Graph 1. The incidence of multimedia documents on the Web relating to the museum, in correlation with the terminology of museums when using the search engine »Google«.

»cyber« is mentioned, in fact, as an abbreviation of the word »cybernetic« which was first used by Wiener¹³ in 1948 in his book »Cybernetics or Control and Communication in the Animal and the Machine«.

Keyword »cybernetic« based on old Greece word »kybernetes« which means »... the one that manages the ship, the freer translation, a person who controls the process«.

For Wiener, »cyber(netic)« means an area of study, control and regulation mechanisms of interactions between humans and machines. This definition appears very interesting in the context of considerations of synergy »on spot« or »real« museum and online museum.

Wiener definition, regardless of being more than a half a century old is aiming at the core of the problem when defining the relationship between offline and online museum. So, if we accept that the word »cyber« (a shortened form of »cybernetic«) defines the interaction between human and technological components in order to synergies their expressions, we can say that the »cyber museum«, a term that is defined by an excellent McKenzie's understanding of the issue, or how he has called it »museum marketing«. In these museums, according to McKenzie, it is expressed the synergistic effect of classical and online museum with a slight tilt toward the domination of the classical museum, it is because McKenzie¹⁴ does not predict that the online museum is differentiated from its »classic« versions as an independent entity.

It is interesting to see the results of the »ad hoc« research on the terminology used for online museums. Namely, the search engines with inscribed phrase and a number of documents found give an answer to the popularity of a particular prefix referred to online museum. Thus the phrase »cyber museum« in the browser gives 501.000 Google results and Web sites that are substantially determined by that phrase (Figure 4).

Virtual museums

The word »virtual« comes from the Latin word »virtus«, which means excellence, virtue. Over time there

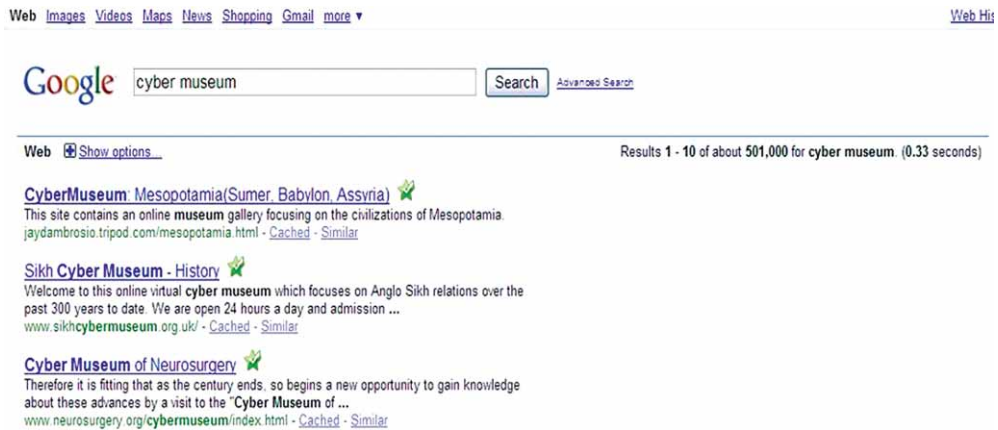


Fig. 4. Frequency of occurrence of the term »cyber museum« on the Web.

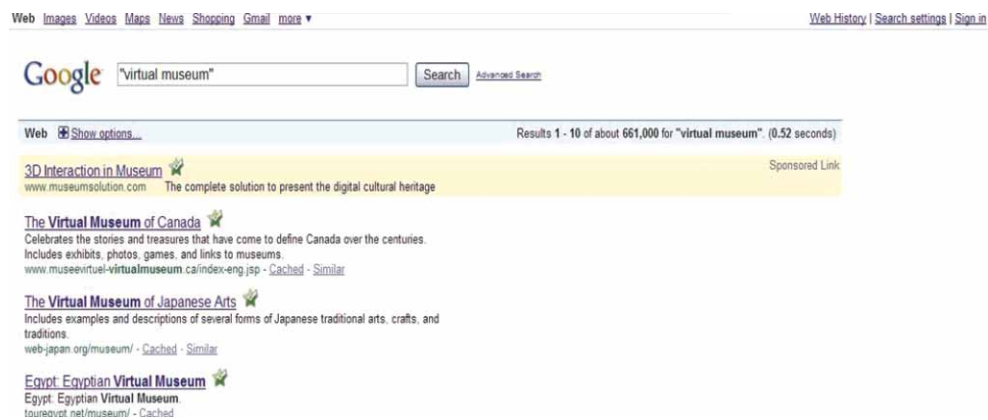


Fig. 5. Frequency of occurrence of the term »virtual museum« on the Web.

has been a redefinition of the word »virtus« in »virtualis«, to the beginning of computerisation and information technology advances, the term »virtual« has become a label for the structure that is relevant and exists in the IT sense, but does not have its own »natural« autonomy.

By definition of »American Heritage Dictionary¹⁵«, the word »virtual« means »... something that exists and functions as the effects and/or information, regardless of not

existing in material form, integrity or name. It can also mean something that is created, simulated and realized by using a computer or computer network... «.

So, based on the above definition of the term »virtual« it is clear that using this word in the context of tagging museums on the Web is imprecise and only partially true.

In fact, given that the phrase »virtual museum« denies the existence of material phenomena, the term sug-

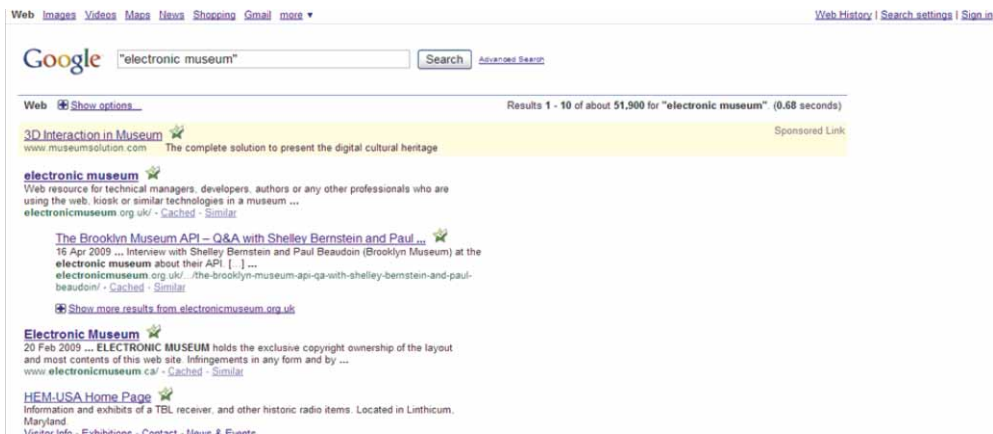


Fig. 6. Frequency of occurrence of the term »electronic museum« on the Web.

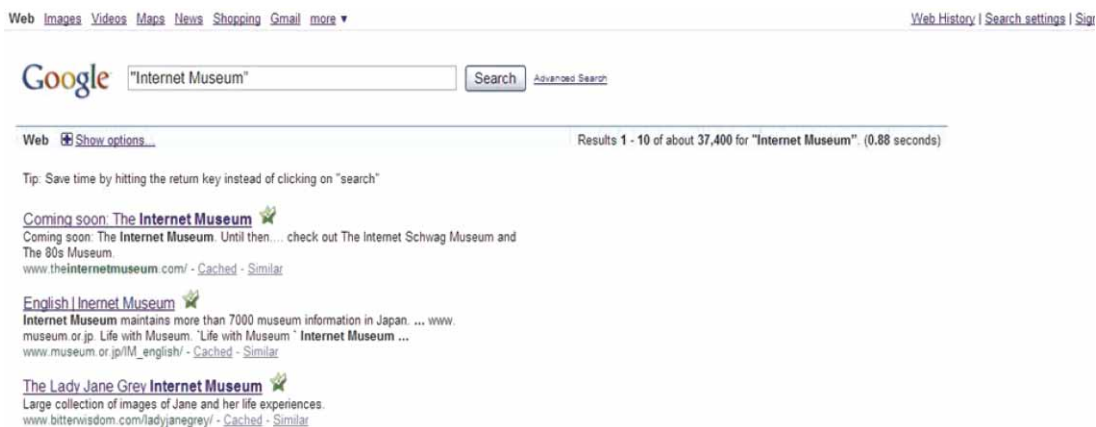


Fig. 7. Frequency of occurrence of the term »internet museum« on the Web.



Fig. 9. Frequency of occurrence of the term »digital museum« on the Web.

gests an independent entity, the museum on the Web (ie, one that does not have its own »spot on« equivalent). In other words – a »virtual museum« is the correct name for the museum relevant content on the Internet that is designed and operates solely on the Internet.

In his definition of »virtual museum« Lewis¹⁶ confirmed the above allegations:

»The Virtual Museum is a collection of digital set exhibits of historical, scientific or cultural importance,

which are available through the electronic medium. Virtual museums do not possess the material artifacts that are typical for the classical museum«.

McKenzie¹⁷ has an opinion on the definition of virtual museums as follows: »...Virtual museum is a collection of electronic artifacts and sources of information on practically everything that can be digitized. Such collection may include paintings, drawings, photographs, diagrams, graphs, images, video segments, newspaper articles, transcripts of interviews, numerical databases, and anything

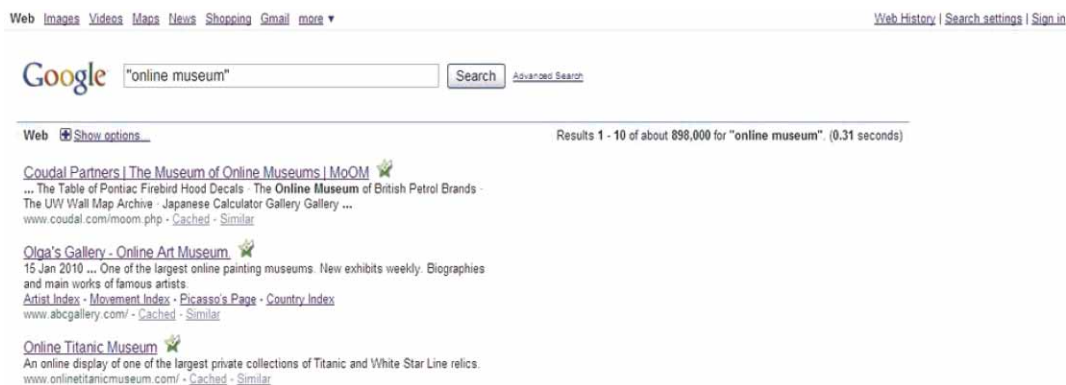


Fig. 8. Frequency of occurrence of the term »online museum« on the Web.

else that can be stored in files on servers of Internet museums«.

It is interesting to see the results of checking the frequency of the phrase »virtual museum« on the search engine Google. For the term »virtual museum« on the Web is reported 661,000 results, indicating that the name of an online museum is very popular among internet population (Figure 5).

Electronic museums

By the standards of information – technology terminology, known as the »ECA«¹⁸ (Electronic Communication Act 2000), the definition of the term »electronic«, among other things, means digital communications in which text, image and sound transferred to the user's request (eng. »on demand«) at a distance.

If we try to put this definition in the context of online museums, the first thing that is observed (if we follow the definition) is the absence of additional user interaction.

Thus, the term »electronic museum« unquestionably means the principles of technological access to the phenomenology of online museum, but not complete interaction of such museums with the user, thus the phrase is not fully adequate to describe the online museum (Figure 6).

Internet museum

The term »Internet museum« is the most comprehensive definition of museums on the Web. Internet museums are, in fact, all manifestations of the museum that exist on the Web. Therefore, covering a wide range of museum entity regardless of the existence of a physical version of the museum. The term »Internet museum« is not wrong; one might say that is too general in its determination. There are no terminology subordination terms which would be in early perception of users more targeted and unambiguous. However, this phrase is often used in a search by search engine Google. There are 37.400 documents with the keyword »Internet museum« on the Web (Figure 7).

Online museums

At first glance it seems that there is no significant difference between the terms »web museum« and »online museum«. However, differences exist. Based on the fact that use of the prefix »online« implicitly suggests that the museum has its own version in the physical form (offline).

For example, we can say that we visited the Ethnographic Museum Online, which implicitly suggests the existence of »classical« Ethnographic Museum, as for example, statement about the visit to the Ethnographic Internet Museum gives us idea of such a museum as an independent entity.

On the Web, the phrase »online museum« is present in about 898.000 multimedia documents (Figure 8).

Digital museums

Digital museum is, by definition of Shigeharu Sugite¹⁹, a system in which objects are digitized in the form of archives and, as such, they are stored online. Although these forms (manifestations) may be quite different in shape, origin and condition, common to them is that the digitization of any letters, pictures or solid exhibit must be defined in a binary form, through the labels »0« and »1«. Storage, search and process can also be performed by the same principle, regardless of the diversity of shapes and appearances. So, according to Sugiti, digital museums are in simple terms – the concept of multimedia databases.

Such descriptions of museums, unlike for example the »Internet Museum«, has its own terminology grounded in basic principles of technology – binary code. The term »digital museums«, therefore, means primarily the principles of structuring content and technical side of »content management« and algorithms for content management.

Thus, the prefix »digital« has the technical definition of a dominant character of the museum. However, the prevalence of documents with the keyword »digital museum« on the Web suggests that, regardless of specific dates, this name is fairly common among the multimedia content on the Internet (Figure 9).

There are 124.000 multimedia documents on the Web which as a keyword use the phrase »digital museum«. Through etymology research of listed museums for the purposes of this study, thousands of Web resources and available (»public domain«) data were processed.

Comparing the definition and consideration of etymology, terminology and typology of museums on the Internet conclusion is in fact, users (and the creators of such content on the Web) do not vary the terms »cyber«, »virtual«, »e-«, »internet«, »online« and »digital« when describing the museum online content. They are most often used as synonyms.

Višnja Zgaga, director of Museum and Documentation Centre, an umbrella organization of Croatian museums, for example, in an interview²⁰ for the magazine »Infotrend« says: »the virtual museum is an exceptional support to traditional museum in terms of spreading the idea of museums and museum heritage, but we must bear in mind the following: we work for 21st century users where computers and Internet is something completely self-explanatory, and therefore implies that the exhibition, therefore the classical three-dimensional *in vivo*, have appropriate IT support to have ability to be better explained and presented; not only museums and galleries on the screen, but also displays in museums«.

It is interesting that Zgaga, for example, uses the comprehensive term »virtual museum«. Given that the context of her interview is synergy between the »traditional« museums and their Web versions, instead of »virtual« adequate expression would be »cyber« or »online museum«.

So, there is still not adopted a precise determination of the online museum, in the domain of relationship to the physical museum equivalent (in this case, if such exists), or the internal structure of such museums. The frequency of use of certain terms that denote the museums on the Web is very interesting (Graph1). Results clearly suggest that the most commonly used phrase among public domain visitors and museum content designers is »online museum«.

The results suggest a distinct domination of the term »online museum«, as opposed to all other definitions of terminology such museums. This is to some extent understandable, given that the word »online« has become all-encompassing term for almost any online phenomenon, even for a museum on the Internet.

Conclusion

We can conclude that so far there is no clear definition of the museum appearance on the Internet. Following this trail it is important to establish a precise typology

and terminology, as well as underlying assumptions forming a new information entity.

It is necessary to say that there is no »wrong typology«, because almost all of the terms that ultimately want to suggest that it is a museum on the Web, which in colloquial use, have their own attributes. However, such definitions are very specific and concrete, and therefore the use of inappropriate terminology and typology can create a wider communication wrong picture of the topic of conversation.

Therefore, the principles of the incidence of museums on the Web in a very large extent are determined by using the prefix »cyber«, »virtual«, »electronic«, »internet«, »online« and »digital«.

Using the appropriate »prefix« in order to better describe the typology of a museum on the Web is the first step in designing the future of the museums and certainly encourages serious approach in to the study of the new museum »entities«.

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NASTANAK I TIPOLOŠKO DEFINIRANJE MUZEJA NA INTERNETU

SAŽETAK

Napretkom novih tehnologija mijenja se promišljanje razvoja institucije muzeja i određenja muzejske struke. Posljednjih nekoliko godina otvorilo je, naime, pregršt pitanja o budućnosti muzeja, osobito u smislu prezentacije muzejskih sadržaja na Webu koja, barem zasada, ne nailaze na adekvatne odgovore. Također, može se zaključiti da zasada ne postoji precizna definicija muzejskih pojavnosti na Internetu. Tim tragom, važno je uspostaviti preciznu tipologiju i terminologiju, kao temeljne pretpostavke formiranju novog informacijskog entiteta. Ovaj znanstveni rad sugerira da ne postoji »pogrešna tipologija«, jer gotovo svi termini koji u konačnici žele sugerirati da se radi o muzeju na Webu, a koji su u kolokvijalnoj upotrebi, imaju svoje određenje. Ipak, takva određenja su vrlo specifična i konkretna, pa stoga upotrebom neadekvatne terminologije i tipologije, mogu u široj komunikaciji stvoriti pogrešnu sliku o predmetu razgovora.