Analysis of the Essence of Social Networks as a Tool for Mediatization of the Historical and Cultural Heritage of Museums

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Abstract. The essence of social networks as a tool for mediatization of the historical and cultural heritage of museums has been analyzed in the study. The concept of "mediatization" as a kind of translator of cultural samples has been considered, and it has been emphasized that the media, as an attribute of modern communication, is a means of constructing socio-cultural reality. Nowadays, social networks are, in fact, the tools of mass communication, as they carry their functions and are the most effective in the modern communication space. Innovative technology in the activities of museums has been analyzed. The stages for creating promotional presentation of web-museums to the community with the involvement of social networks have been developed. Specific criteria for measuring the popularity of museums have been identified. The preferences of the pages of national museums on the social network Facebook have been monitored, the rating of the museums popularity have been compiled as compared with the studies of the previous years, and the relevant conclusions have been made, in particular, which audience the museum can potentially influence through social networks as a separate tool.

Keywords: Social Networks, Communication, Mediatization, Museum, Web-Museum, Virtual Environment, Monitoring, Rating

1 Introduction

The topic of the research is relevant because given the importance of information technology in the era of global progress the advanced technology is being introduced in the activities of cultural institutions, including museums. Museums are increasingly creating jobs for the staff presenting the museums in digital space. On social networks, in the process of promotional presentation of the activities of museums, the connection with the user comes to the fore. The most active campaigns on social networks take place at the expense of the activity of their participants.

In order to find the information they need (localization, description, and the like) the users are mostly looking for the corresponding one according to the queries on the museums' websites. Therefore, the positioning of museum websites on social networks is also particularly important and relevant. If the entity itself does not have its own Internet resource where such information is provided, the local authority may post these data on its website, as the municipal authority is interested in promoting the cultural heritage of its region, since it is a direct way to increase the influx of tourists. To this end, the municipal authorities must fully support all state-of-the-art advertising tools and position them with the help of information resources.

It is important to realize that the plus side of mediatization is that it gives access to the cultural heritage to everyone without exception, usually in a popular science style, but rather in a simplified form, explaining any particularities and phenomena of culture. The downside of mediatization is the fact that there is a standardization of values and ideas, stereotypy, non-critical attitude to reality, that is, traits inherent in mass culture.

The purpose of the study is to reveal the role of social networks in the mediatization of cultural space, in particular in promotional presentation of the museum activities.

The main tasks of the paper are to analyze the sources on the topic of the research, to reveal the essence of the mediatization as a translator of cultural samples, to analyze innovative technologies in the activities of museums, to build schemes for implementation of the viewer's interaction with a virtual museum through social networks, to develop stages of creating a promotional presentation of web-museums to the community and statistics of the museum community on social networks.

2   Related Works

An important source material for writing the research have become the theoretical works of the museum specialists who worked in the field of introduction of new technology into the museum theory and practice. Their methodological and scientific developments have been published at times on the pages of the Museum magazine, which is published under the auspices of UNESCO and covers various aspects of the museum activities, as well as the issues related to the preservation and mainstreaming of cultural heritage.

The issues related to the computerization and introduction of the Internet into the museum environment have been studied on the pages of Museum magazine by J. Sher [1], R. Chenhall [2], E. Roberts [3], D. Birman, D. Trant [4], et al. Thus, Jacob Sher suggested the term "museum informatics", which made it possible to outline and characterize one of the first stages of introduction of computer innovations into the theory and practice of museum studies[1]. An article by Andrew Roberts, a leading English expert on the introduction of information standards into the scientific and holdings work of museums has become important for our study[3]. D. Birmat and D. Trant studied the history and peculiarities of the Internet influence on the museums.

An important topic of our research has become the phenomenon of the virtual museum and its popularization through social networks[4]. The studies of the well-known museum theorists and practitioners, in particular T. Smirnova [5] and L. Barutkina [6] have been used in the paper. The researchers have proven in a well-argued manner that at the current stage of technology development, the virtual museum can be considered a qualitatively new cultural reality, along with its tangible and intangible cultural heritage. For the theoretical understanding of such a reality, a collective paper by I. Liritzis, Al-Otaibi, P. Volonakis, and A. Drivaliari [7] on multimedia technologies in cultural heritage has become important. A crucial theoretical conclusion for our paper has become the concept of cyberheritage proposed by the researchers.

Social networks, in the current context, are actually the tools of mass communication, since they carry their functions and are the most effective in the modern communication space. Social networks differ from traditional mass communication tools by potentially infinite number of independent centers of accumulation and dissemination of information. On the one hand, this determines its democratic and global nature, and on the other, the lack of control. A number of publications by modern researchers V.Ryvlina [8], S. Fedushko [9], N.Shakhovska, O. Peleshchyshyn, Zh.Myna, T.Bilushchak [11], V. Banakh [12] are devoted to these and other problems related to the outlined issues. Thus, V. Ryvlina [8] analyzes the characteristics that lay new meaningful constructs in the organization of communicative space of modern society, in particular - in the cultural space. In her view, social networks play an integrating role between a person and the art. O. Trach, V. Vus, O. Tymovchak-Maksymets study the issues of advanced search query to identify web forum topics. T. Bilushchak, A. Peleshchyshyn, M. Komova [13] study the development of methods for searching and identifying historical information. P. Zhezhnych, O. Markiv [15] analyze linguistic methods for comparing the content of websites with the objects of tourist documentation. The article by A. Peleshchyshyn, V. Vus, O. Markovets, S. Albota deals with the determination of specific roles of social networks users and methods of their influence. An important source was the work by S. Yaco, A. Ramaprasad that deals with the study of Informatics for cultural heritage instruction: an ontological framework [16].

The penetration of communication in all spheres of life activities of society, the emergence and development of modern communication structures update the issue of network communication in modern socio-humanitarian knowledge. In this regard, the four processes of communication transformation distinguished by the German researcher W. Schulz [18]: expansion, replacement, integration, adaptation remain relevant. According to V. Anokhina [19], O. Romanova [20] and Zhytariuk [21], the media is not so much a means of informing the population, but a powerful weapon of value-symbolic influence on the mass consciousness capable of overcoming the semiotic space of culture.

3 The concept of "mediatization" as a translator of cultural samples

The mass communication tools are an important subject of cultural and socio-political life, a tool for influencing people's consciousness, and a means of shaping public opinion. In today's realities, culture and art are a factor in the development of spiritual, economic and political life. Cultural communication largely influences the institutionalization of cultural changes. We can safely define both culture and communication as a combination of natural and artificial signs - languages, symbols, images that help to preserve, collect and pass on to future generations certain experiences that generate progress, advancement, because this experience in any way gives birth to new ideas and discoveries that shape social memory and preserve the genetic memory of society. Nowadays, there is a need to update the forms and functions of culture by rethinking its role, as modern media forms and advertising are spreading, which reinforce the generation of ideological and moral stereotypes of mass culture. Gradually, textual perception becomes inferior to the visual worldview, as the role of visual communications is constantly evolving. Media has become a major means for producing culture. That is why it is important to preserve and improve the system of multi-level communication links in the field of culture and arts, and shape aesthetic tastes through the perception of the value of the historical and cultural heritage.

The media can be conditionally divided into five historical types (Fig.1). According to Hajarvard [22] and W. Schultz, [18] such a division is rather
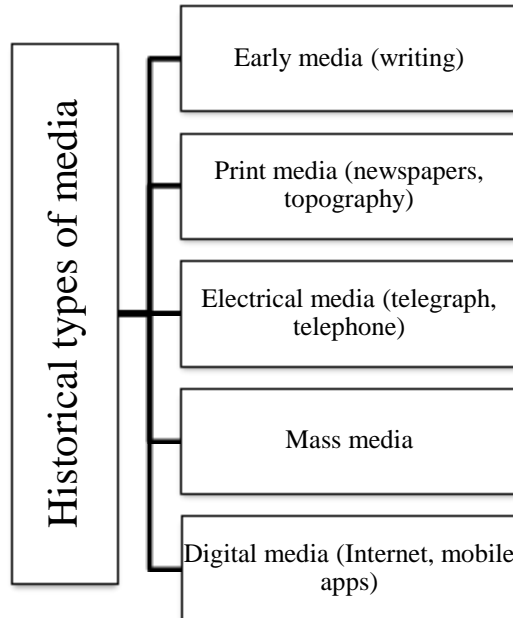

Fig. 1. Historical types of media

conditional, but it is undeniable that every new stage of media development has

influenced the society by transforming most social institutions. The last type of media development associated with digital technology has actually shaped a new type of society - the mediatized society. As for the term "mediatization", there is no single concept in the literature. Before proceeding directly to the issue, let us try to define the concept of "mediatization" in the context we need.

One of the first terms of "mediatization" in the original sounding used was used by the English researcher J.B. Thompson in his The Media and Modernity to denote the role of media, which broadcasts not just information, but samples of culture that have been shaping the modern society for the recent centuries. The modern world, according to J.B. Thompson, is saturated with communication networks, the experience of an individual is increasingly mediated by technological systems of production and transmission of symbols - carriers of ideology [23]. Wikipedia defines mediatization as an increase in the volumes and role of processes of dissemination and receipt of indirect information, which replaces the direct experience of people and is a sub-process of informatization, the purpose of which is to create and disseminate state-of-the-art systems of collective and personal communication that provide access for any individual to all sources of information, to all levels of personal, interpersonal and group communication [23]. In light of our topic, it is important that the accumulation of information involves the preservation of experience of previous generations. Media tools perform one of the most important tasks of preserving and translating the values of culture into the masses. In addition, an indicator of the society maturity is the attitude to the monuments of history and culture. Their preservation and promotion should be one of the important areas of public policy (mine). Mutual enrichment, dialogueness of cultures determines their openness and creative interaction with other peoples and cultures. This is especially important in our conflict and difficult times. Media, as an attribute of modern communication, is one of the tools for constructing socio-cultural reality [23]. The Internet, as a mass-communication tool and the technological basis for networking, gives rise to new tools of mass communication, new levels of structuring of information, which is a direct factor in mediatization. Social networks are increasingly penetrating all spheres of human activity. Today, the main social networks are Facebook, Twitter and Instagram. Contemporary development of mass-communication tools creates new experience of coexistence.

4 Innovative technology in museum activities.

For the first time, the issues related to cultural heritage and active introduction of new computer technology into the museum environment began to be actively discussed in the 1970s. At that time, the use of digital technology in the museum industry was to create and use information retrieval systems (databases), as well as computer networks that connected a number of museums.

Museum experts have proposed the term "museum informatics". Its formation began in the mid-1950s and was associated with the creation of mechanical systems for finding information on archeological objects that were mapped manually.

Following a symposium organized in 1968 under the auspices of the Metropolitan Museum of New York, "museum informatics" focused on the automatic search for information about museum collections.

At the same time, in the late 1970s, the scope of museum informatics was expanded through the educational and research activities of museums, museum maintenance, as well as planning, budgeting, and management. For example, in the context of computers and educational work, it has been suggested "by providing museums with colored slides and explanatory texts" to partially solve the problem that most of the artistic and historical treasures are stored in the museum depositories and are simply not accessible to visitors. The use of computer technology eliminated the obstacle that some of the exhibits could not be on display or in the holdings of other museums, even foreign ones.

The museum's educational work on the use of computer technology provided an analysis of the flow of visitors, routes and schedules of the excursions conducted to maximize their advantageous planning in the future.

In the context of scientific and holdings research, computer technology should have contributed to the attribution of museum artifacts. In particular, the use of infrared and X-ray irradiation of photographs to enhance image contrast should have increased the effectiveness of new discoveries in scientific and artistic studies of authorship of the paintings[1].

In the late 1970s and early 1980s, computer technology in museums was used to control mailing lists and memberships (for private museums that have no public funding), accounting and budgetary control, as a search resource of museum exhibits, etc. For example, the American Indian Museum Heye Center carried out a complete inventory of its collections and created a new computer inventory card-catalogue with more details. At the Denver Art Museum, the respective computer programs have been developed for museum cataloging and financial reporting.

At the same time, the US museums were the first to use computer technology to enhance attractiveness in interaction with the visitors in the context of communicative field of museum exhibit. The Rochester Museum and San Antonio Witte Memorial Museum have included in their exhibition programs the use of multi-screen slideshows. Accompanied by the corresponding soundtrack, these museums presented visitors with a short (five to fifteen minutes) computer slideshow program in which six or nine images were projected onto a single wide screen[2].

Thus, in the first stage, which dates back to the 1970s and 1980s, computer technologies in the context of preservation and updating of cultural heritage were used by the museums exclusively as an ancillary resource. The main task is to help and arrange the informative databases of museum collections by creating appropriate computerized museum inventory card-catalogues. At the same time, the first attempts to use new information technology in the museum's exhibit work appeared.

From the late 1980s - early 1990s, computerization of the museum environment was aimed at the formation and creation of the museum information standards uniform for the professional environment. The Museum of London stood first. In 1989, Andrew Roberts, a staff member from the documentation department, headed the International Committee for Documentation (CIDOC) of the International Council

of Museum. According to him, "museum information standards determine the forms of museum information and methods of documentation that must be followed in the process of preservation and use of collections." Under A. Roberts's supervision, four types of museum information standards were developed as of 1994: standards of information systems (including cataloging equipment, work with collections, administrative work, etc.); standards of information exchange (collective exchange of information between different units of the museum and museums among themselves); data standards (structure, content and value of information about collection); standards of documentation methodology (outlining the practical area of work that had to be observed in the process of working with collections and their use. For example, giving the museum items for temporary use) [3].

The most famous museum standards today are, in particular, the CDWA (Categories for the Description of Works of Art). It describes information resources of fine arts databases, offers a conceptual approach to describing and accessing works of art and images. It suggests the terminology that helps to combine information from different systems and make it more accessible. MIDAS (Manual and Data Standard for Monument Inventories). MIDAS provides a general format for inventory descriptions of monuments, as well as contains a set of "information schemes" that provide a logical grouping of facts, a set of which makes information sufficient to create a record of a specific object in the inventory description of MIDAS. Each scheme covers a series of "items of information" containing the basic facts. The MIDAS dictionary defines each item of information. It is used in the English museums to store electronic records of archaeological resources. SPECTRUM (United Kingdom Museum Documentation Standard). This standard for museum documentation and collection management is based on 21 procedures typical of the museum, and the concept of "unit of information" - the data needed to complete each procedure. LIDO (Lightweight Information Describing Objects). Producer: The International Committee for Documentation CIDOC. The strength of LIDO lies in its ability to maintain a full range of descriptive information about museum objects. It can be used for all kinds of objects, such as art, architecture, cultural history, history of engineering, natural history[12].

The next stage in the use of computer technology in cultural heritage, which was crucial for its preservation and updating, was the emergence and spread of the Internet. It can be traced back to 1997, when the Archives & Museum Informatics organized the first International Conference on Museums and the World Wide Web in Los Angeles. More than 400 specialists from 25 countries attended it. Later on similar conferences were held in 1998 and 1999. A new phenomenon arose - the phenomenon of virtual museum. At a 1999 conference, a team of researchers from the Polytechnic University of Milan, together with the colleagues from the National Museum of Science and Technology Leonardo da Vinci, demonstrated new possibilities of Web-virtuality - a collective experience gained during a visit to a virtual museum[4].

The audience of virtual museums has grown rapidly and already in 2004 the number of virtual visitors to museum sites outstripped the number of "living" visitors to real museums. Thus, according to many researchers, "virtual museums" is a qualitatively new concept, which outlines an entirely new cultural phenomenon. "In

all their forms and types, online museums are an independent, previously unknown phenomenon of culture, which owes its emergence to the development of the Internet, multimedia technologies, databases that have become widely available through informatization" [28]The development of technology gave rise to the emergence and development of a new direction in the creative work of people - computer (digital) art, which is based on the use of digital technology as a tool that allows you to create a work of art in digital form[5].

Multimedia in the museum, along with performing ancillary functions such as demonstration of movies or the use of sound effects, began to be regarded as an independent art object. Among the examples, we can single out the method of "immersing" a visitor, who becomes a participant of the performance, into the virtual space of the museum exhibit. Multimedia culture educates an active researcher who freely chooses the sequence of studying the exhibitions, dwelling if desired on the aspects of his interest, reviews the material in any sequence and the required number of times[6].

The phenomenon of the virtual museum, as an integral part of multimedia cultural reality, has important properties that make it a separate object of cultural heritage. Its basis is real exhibits, so it can have its own structure. The virtual museum is based on artifacts and cultural objects of the past, the present and (in some cases) the future. Therefore, when comparing the real and the virtual museums, it becomes apparent that its virtual form is a "new reality" that can reach much more visitors via the Internet than the real museum[29].

The transformation of the virtual museum into a "new cultural reality" has put the issues on the agenda related to the "essence" of the museum, its connection with knowledge and material culture. Information technologies allowed expanding the cognitive and communication potential of cultural heritage. According to Western researchers, the third cultural (digital) revolution, which is associated with the cyber era, allows us to seamlessly interweave science, technology and art. Therefore, we can talk about cyber heritage, which combines art, culture and intercultural dialogue[7]. In the long run, it will be possible to speak about the preservation and update along with the tangible and intangible historical and cultural heritage and cyber heritage.

It is important to analyze the viewer's path to the virtual museum through social networks and the viewer's interaction with the virtual museum (Fig.2).
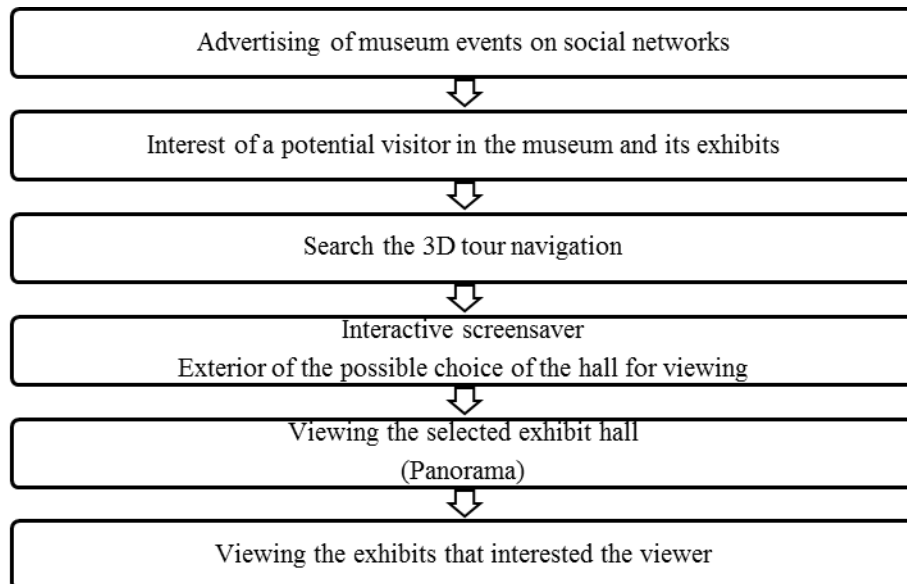
Fig. 2. Scheme of the viewer's interaction with the virtual museum through social networks

That is, the proliferation of social networks since the 2000s has become a separate trend in the use of modern information technology in the museum sphere. The fact that a museum used a page on Facebook, Twitter, and Instagram means entering a social space that is used primarily to communicate and create a personal profile.

5   Results

Museums around the globe are exposed to the internet, digitalization and content consumption through smartphones. More and more people are getting their first experience of interaction with them not offline, but online. Museums want to be open, accessible, have their interested audience. Due to the campaigns on social networks, museums are expanding their audience significantly. Museums are also updating the so-called hospitality area, encouraging visitors to take more photo-shoots and selfies, and share them on social networks. For example, the Hirshhorn Museum in Washington, DC, was able to attract a record number of visitors to the exhibition of the artist Yayoi Kusama thanks to the campaign on social networks [24]. In Ukraine, for example, in 2018, the National Art Museum of Ukraine (NAMU) became rebranded and completely transformed. The Museum is actively campaigning for the promotional presentation of its activities on social networks. NAMU – the National Art Museum of Ukraine tells the history of art on social networks not scientifically, but with a view to a wide audience, using modern techniques, for example, storytelling. If the museum declares openness and its democratic nature on social

networks, then they usually refuse to have formal style of communication. The pages of museums on Facebook and Instagram are different. If the community of museum workers, activists, teachers or students read them more and support on Facebook, then on Instagram people with diverse interests who are not always connected with museums subscribe to the page.

How can museums ensure diversity and inclusion in their digital activities by leveraging the potential of the Internet? Let us try to create a list of opportunities of working with the public online:

- engaging museum staff for telling stories about the collections and active online communication;
- focus on a specific target audience;
- establishing relationships with local partners;
- content: It is worth talking not just about the objects but also the connections: what do your collections mean to someone listening to you? Are they relevant to them?

In order to entice the user, to draw his/her attention to certain museum events, such sequential steps can be developed, involving social networks at a certain stage, from the collection and processing of primary information to the creation of a virtual museum and crowdsourcing projects (Fig.3).
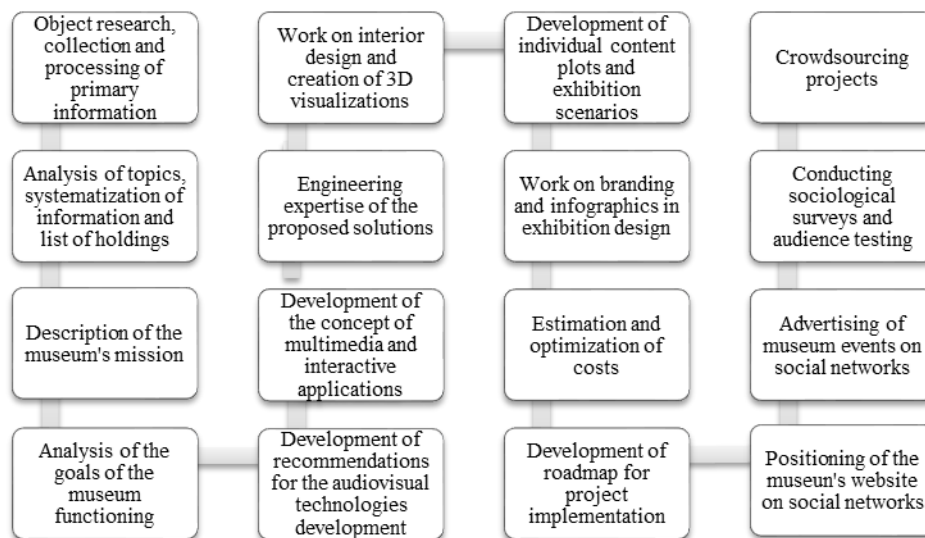

Fig. 3. Stages of creating promotional presentation to the community of web museums with the involvement of social networks

Following the COVID-19 outbreak and the introduction of quarantine measures, the format of the International Museum Day is changing and activities are focused on

digital activities. While promoting the values of the International Museum Day (IMD), safety of the public and the staff comes to the fore.

Today, there are various interesting trends in the development of museums. Thus, relatively small collections can be more popular than the leading museums in the number of visitors and the size of collections. How can we explain that? Firstly, the result of better work and social media; secondly, the creation of an attractive image of the museum. What is more, with the growing role of social media, cooperation with them (SMM - Social Media Marketing) has become a priority task for the museums.

The popularity of museums today and the results of their activities can be measured both by traditional formulas and by the latest ones. The criteria for measuring the popularity of museums are as follows (Fig.4).
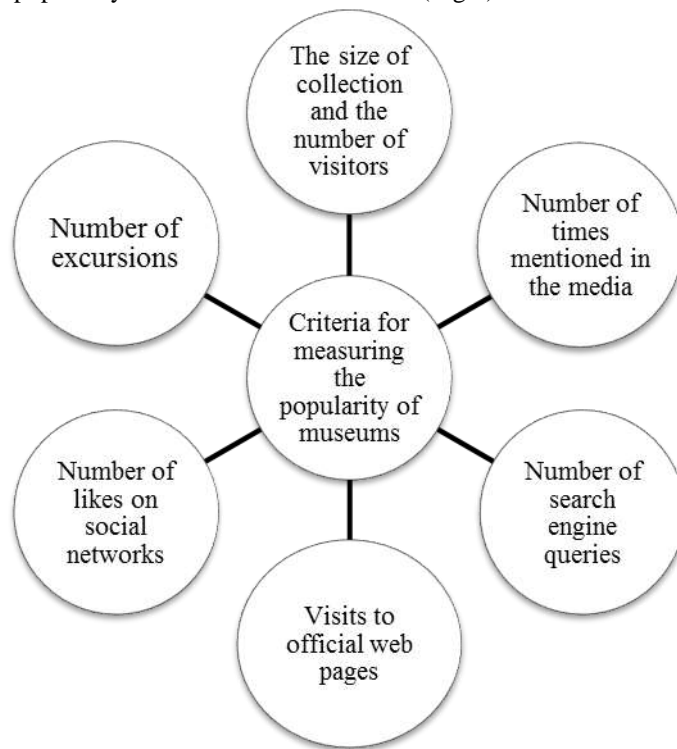

Fig. 4. Criteria for measuring the popularity of museums

Estimation of rating on social networks is a fairly conditional criterion, as there are enough specific nuances to doubt it. For example, museums in the regions where the Internet is better developed and there are more users of social networks will have an advantage over museums located in the regions where the Internet is less developed. Another point: Facebook's audience is different from Instagram's audience, as discussed in the previous section. Moreover, a lot depends on the time of registration of museums on social networks. Nevertheless, web tools make it possible to analyze the structure of the site visitors or pages on social networks and draw conclusions

about pros and cons, adjust information activity, and try to reach the interested audience.

Another highlight is that the majority of the community fans on social networks has been the female audience (60%) for some years now (Fig.5).
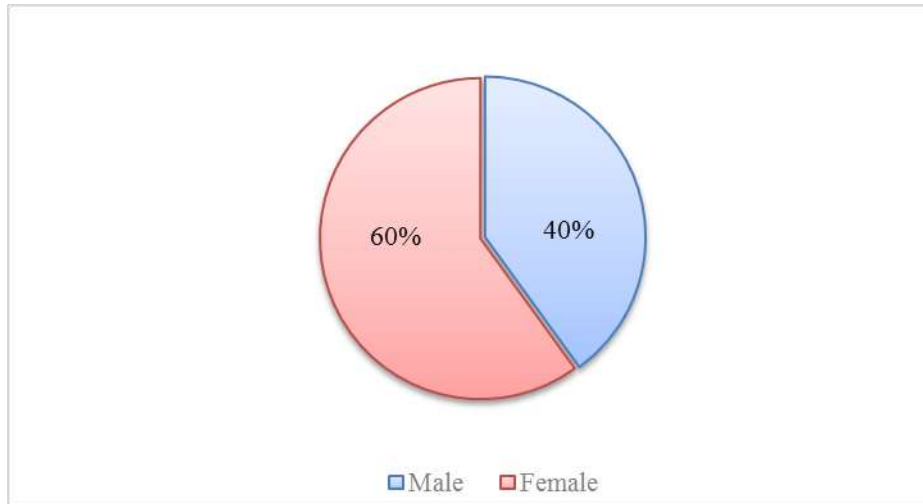

Fig. 5. Gender ratios of social network visitors

The authors of this study monitored the preferences of pages of the national museums (optional) on Facebook, made a conditional rating and compared it with the similar research conducted in 2013 by the initiators of the Museum Space web-portal (Table 1). This rating, as well as the previous ones, does not characterize the activities of museums in general, since different museums work differently in the virtual space, and shows what audience a museum can potentially influence through social networks as a separate tool [26].

Table 1. Comparative rating of museum activity

Position 2013	Position 2020	Museum	23.04.20	20.05.13
1	2	PinchukArtCentre	36.018	12.747
2	1	Mysteskyi Arsenal	42.864	7.788
3	3	National Art Museum of Ukraine	19.448	3.589
4	9	Andrei Sheptytsky National Museum in Lviv	8.580	2.587
5	10	Museum of Modern Art of Ukraine	6.030	1.280
6	4	The Bohdan and Varvara Khanenko Museum of Arts	18.147	1.277
7	5	The Ukrainian Center for Museum Development	11.617	1.145

Position 2013	Position 2020	Museum	23.04.20	20.05.13
8	14	National Museum of Hutsulshchyna and Pokuttya Folk Art	3.744	1.033
9	7	Lviv Art Palace	9.700	917
10	2	Dnipropetrovsk National History Museum (DNHM)	5.276	407
11	6	National Sanctuary Complex "Sophia of Kyiv"	10.788	323
12	11	Lviv National Art Gallery	5.700	282
13	13	State Museum of Natural History (Lviv)	3.870	210
14	18	Odessa Museum of Western and Eastern Art	9.216	190
15	5	Lviv Museum of the History of Religion	3.129	110

The results of the study show that due to the effectiveness of promotional presentation of museum activity on social networks, the correct filling with content the number of users who liked a particular page increased. The figures show how the positions have shifted and, in many cases, the less hyped museums on Facebook in 2013 have outpaced other museums in 2020 by the number of likes. The profiles of the museums registered as "people" and themed museum groups have not been considered, because it is the comparison of the museum pages that the users liked that gives us a better idea of the rating. Monitoring of the results shows that museums in general have begun to use social networks much more to work with the users, who have been given access to be acquainted with the historical and cultural heritage, various exhibitions, get the latest news from the artistic life of museums.

6 Conclusion

After conducting the research, we can conclude that the social networks users appreciate above all the quality of the content: ease of perception, topicality and relevance of the information found to their query. These factors influence the interest in museum pages on social networks. The results of monitoring of the increase in the number of likes over a period of time show that today museums have to promote not only their exhibitions, exhibits, but also the ideas and various programs. The existence of a page on social networks also allows positioning the website of the museum to a greater extent. It also opens up more opportunities for publishing their own information products - electronic catalogues, interactive multimedia applications or museum guides in different languages.

It is indisputable that the widespread presence of museums on social networks is one of the priority areas for the development of museum studies and promotes popularization of cultural monuments and increased interest in the historical and cultural heritage. In terms of the prospects, it remains relevant to establish a dialogue

with virtual visitors for creation of various educational projects, demonstration of a digitized collection with comments and shared access option, which will make it possible for museums to become more competitive.

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