

# Promotion of Cultural, Educational and Enlightenment Activities of Museums During the Pandemic and Overcoming Social Distance (as Exemplified by the Museum of the Lviv Polytechnic National University)

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## Abstract

The significance of the cultural, educational and enlightenment activities of museums and the strengthening of their role during the pandemic have been analysed. The importance of involving citizens in the dialogue through the promotion of digitized historical documents has been shown on the example of the Museum of History of the Lviv Polytechnic University. The digitization of historical documents, their popularization on the museum's website and the involvement of a wide audience in the enlightenment virtual activities of the museum contribute to overcoming social distance during the pandemic. The importance of communication and interactivity at the modern stage has been emphasized, because a modern museum is not only an institution for collecting, storing, interpreting and exhibiting, but also an opportunity for knowledge, spiritual enrichment and exchange of emotions through comments on social networks, expressions of preferences and a chance to get an answer from a specialist. It has been emphasized that the legal and actual status of university museums determines the specific features of cultural, educational and enlightenment activities, where two main directions are distinguished – promotional and educational. In the Museum of History of Lviv Polytechnic, the promotional one is aimed at expanding knowledge about the formation of the university and its history. The essence of the educational direction consists in both the career guidance counselling aimed at getting potential applicants interested in numerous professions and the opportunity for the students themselves to study and research museum exhibits in their scientific projects, as well as get acquainted with valuable documents, in particular during the pandemic through social networks. It was concluded that the COVID-19 pandemic had a profound impact on the activity and representation of historical and cultural heritage objects (including museums) in the world in general and in Ukraine in particular. The prospects of the research have been outlined, which consist in involving socially unstable groups in the enlightenment virtual activities of the museum in order to overcome social distance during the pandemic and involve students in the museum events through the organization of virtual exhibitions around the museum, the organization of virtual quests, which strengthen stress resistance, give the opportunity to get acquainted with the history of the museum, the main milestones and figures.

## Keywords 1

Museum, culture, communication, digitization of exhibits, pandemic, digitization, social networks, strategy

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## 1. Introduction

The concept of “museum”, which appeared somewhere around two and a half thousand years ago, has been constantly acquiring different shades in its definition, because with the development of civilization it acquired new meanings. The process of the museum formation as a separate institution, which is focused on obtaining real knowledge and capable of performing educative and educational functions, is connected with the Age of the Enlightenment and is related with the development of university science and education. This opinion is held by the majority of researchers, since it was in universities that the first collections of scientific nature appeared and connections between museums and fields of knowledge were established. We can safely state that when museum collections begin to be formed and used within the framework of university education and science, the concept of “museum” begins to acquire a modern semantic meaning with mandatory characteristics of scientificity. During the pandemic, university museums began presenting themselves actively on social networks and have become a platform for career guidance of higher education institutions. Museums in universities quite frequently helped teachers deepen their theoretical presentation of lectures during offline classes. Museum funds were also used for research purposes. It was necessary to decide how to continue this interaction during the pandemic. An example can be the creation of the webpage of the Museum of History of Lviv Polytechnic. Active information support of the page: presentation of exhibits, their history, interesting pages from the history of the university, biographies of famous professors, coverage of important events and the like gave the museum a “new lease of life”. Cooperation of museum employees with teachers and quick response to their requests work well for the development of educational practices.

The purpose of the research is to reveal the role and significance of social networks in the promotion of cultural space, in particular in the advertising and informational presentation of university museums activity during the pandemic.

The main tasks consist in the analysis of sources on the topic of the research, revealing the role of social networks in promoting the cultural, educational and enlightenment activities of university museums, the analysis of innovative technologies in the activities of museums, the construction of a scheme for implementation of the interaction of the viewer with the virtual museum through social networks, the development of the stages of creating an advertising and informational presentation of museum activity and statistical indicators of the museum community on social networks using the example of the Museum of History of the Lviv Polytechnic.

The object of the research is the promotion of the activities of university museums in order to convey the greatness of the university, its history and heritage to the public.

The subject of the research is social networks as a tool for advertising and informational presentation of the activities of university museums to overcome social distance during the pandemic.

In the course of the research, general scientific methods of synthesis and analysis were used when processing specialist publications; empirical-analytical and comparative methods when studying the essence of social networks as a tool for promotion of cultural, educational and enlightenment activities of university museums and a modelling method for the practical implementation of the tasks.

## 2. Analysis of sources

The concept of “museum” has been constantly changing with the development of human civilization, and having passed a difficult path from the accumulation of artefacts, museums have grown into scientific-research and cultural-educational complexes, which today actively interact with society and have an important mission, which is to preserve history and influence further development. These are the university museums that have played and still play an important role in this complex process of institutionalization, as they have turned into temples of science, and science has firmly entered the field of museum activity, influencing the organizational structure of museums and the principles of building up the museum collection, its studying, classification, and exhibiting principles. This is emphasized by the researcher V. Samiilenko [1], who studies education in the museum.

The works by S. Muravska, A. Dmytrenko, O. Chybarak, O. Matkovskiy, R. Leshchukh, M. Pavlunia, I. Shydlovskiy, R. Shykula, etc.[2;6] which analyse the status, the role and significance of

university museums, are important for our research. S. Kutsenko [7] studies the importance and possibilities of using social networks in the activities of museums. Lekukh [8], M. Savenskyi [9] dealt with the issue of involving social networks in the activities of museums and, in particular, the challenge of creating interactive platforms based on the database of resources for organizing work with students at the level of holding scientific seminars, competitions, involving them directly in planning the activities of museums (digitization of exhibits and photo and video reports of visits to museum exhibitions and their further placement in community albums, organization of discussions on future exhibitions, etc.). Such modern scientists as Zh. Myna, V. Banakh, and A. Nahirniak [10] deal with the analysis of the essence of social networks as a tool for the mediatization of the historical and cultural heritage of museums.

### **3. Results**

#### **3.1. Intensification of digital activities of museums during the COVID-19 pandemic**

The fundamental direction in the activity of museums is their educational and social work. The interruption of traditional educational activities (school attendance, excursions, master classes, etc.) because of the pandemic has become a painful experience for public activities of museum. However, many efforts have been made to enable museums to continue their outreach work – by using new opportunities (mediating activities that families can use outside of museums), using other media or developing digital tools. Previous investments in digitization, development of virtual visits, use of social networks, etc. proved valuable [11].

In general, the COVID-19 pandemic has significantly affected museums around the globe due to quarantine restrictions, physical collections and galleries have been closed to the public for a long time. Three surveys conducted by the International Council of Museums (ICOM) in April 2020, October 2020 and May 2021 provide a comprehensive overview. In April 2020, although the situation in museums around the world varied, almost 95% of institutions were forced to close to ensure the safety of staff and visitors, resulting in severe economic, social and cultural consequences. In Europe, where according to the European Commission cultural tourism accounts for 40% of all tourism in general, this has had particularly severe economic consequences for museums. In particular, private museums were significantly affected, which led to the bankruptcy of more than one in ten museums, according to the ICOM. This forced museums to offer different ways of interacting with the audience, which mostly involved the transition to digital initiatives [12].

Thus, during the quarantine, many museums intensified their digital activities. According to a survey conducted between April and May 2020 by the ICOM among 1,600 respondents, almost half of them told that although their museum had already been present on social networks or shared its collections online before the quarantine, the digital communication activities, as has been analysed in the survey, increased at least in 15% of museums, and in particular, activity on social networks increased more than twice [13].

Thus, the museums of the University of Florence have provided games for children on their websites due to the fact that they had been isolated at home. Around the same time, the ULB Museum Network in Brussels (Université libre de Bruxelles) also organized the creation of simple games for a children's target audience, similarly restricted by the pandemic. These were programmes called “Objects of the Month” published on their website and Facebook for the past ten years. In the UK, the University of St Andrews has been working on how to take a new look at its University Museum and make it a cultural and social hub during the lockdown. Therefore, Monday Creative Workshops for schoolchildren were organized with advice from experts from St. Andrews University. Projects ranged from creating secret messages like the ancient Incas to creating flying machines. Every Wednesday, the St Andrews Museum team held master classes for an adult audience, where museum staff told funny stories about their collections. On Friday, the Museum of University of St Andrews launched a digital activity programme for under-fives, consisting of rhymes, stories and crafts based on the museum's collections, as well as encouraging programmes for children to create their own museums [14].

The inclusive experience of European museums should be noted separately. The pandemic has enabled people with disabilities to overcome challenges they had anticipated for years. First of all, that was the use of audio recordings, which are an ideal choice for a museum in the context of providing users with access to collections that cannot be touched. Resources such as 3D models, audio recordings and accessible virtual and video tours were used to provide enriching, interactive and stimulating online experiences for visitors who could no longer visit the exhibitions in person. An example of this is the activity of the company Museum in a Box, which uses small portable 3D prints of museum objects, which, in combination with audio descriptions, create personalized audio-tactile museum collections for users [15].

Overall, COVID-19 has not only had a short-term impact on institutions during the quarantine, but has also significantly changed the future course of museums around the globe. Therefore, most institutions have shown great resilience considering the fact that drastic measures have led to an almost complete restriction of public life, in which the only means of staying in touch with society and the world outside their walls has become digital one. In order to adapt and support further investments, the museum sector in Europe and the USA focused on the development of organizational digital culture to ensure the future sustainability of museums and their ability to provide social services and bring public benefit, while finding their own future on the Internet [16].

### **3.2. University museums: European experience and Ukrainian practice**

In the Ukrainian realities, the development of education and science puts forward new requirements for the activity and involvement of museums of higher education institutions in the educational process. It became especially relevant during the pandemic. Although the issues were discussed long before Covid-19. Thus, on 6-7 October 2011, the international scientific and practical conference “University museums: European experience and Ukrainian practice” was hosted by the Faculty of History of the Taras Shevchenko National University of Kyiv. The conference was organized by the Ukrainian Committee of the International Council of Museums (ICOM of Ukraine) together with the leading universities of Ukraine as part of the establishment of the Section of University Museums and Collections. In addition to the Taras Shevchenko National University of Kyiv, the National Technical University “Kyiv Polytechnic Institute”, the State Polytechnic Museum at the NTUU “KPI” and the National University of Kyiv-Mohyla Academy joined the organization of the conference.

Representatives of more than thirty higher education institutions from different regions of Ukraine, as well as scientists from foreign universities, including the University of Regensburg (Germany), the Roman “La Sapienza” (Italy), the Louis Pasteur University in Strasbourg and the University of Paris-Sud XI (France), the Yerevan State University (Armenia) participated in the conference. The Ukrainian Centre for Museum Development provided informational support.

During the conference, 55 reports were announced and discussed. The main topic concerned various aspects of the activities of museums that were founded and work as part of institutions of higher education: the history of the creation of museums, their status and the main challenges facing museums.

The vast majority of leading Ukrainian institutions of higher education have significant scientific and educational collections, museums of their own history or museum complexes of several diversified museums. Unfortunately, there is almost no information about their activities and collections in both specialized literature and social networks.

Today, museums and university collections of Ukraine study and preserve a significant part of the State Museum Fund of Ukraine, as well as research and promote the history of science and education, which is important for the formation of the scientific worldview of young people. Collections of university museums are distinguished by the uniqueness of preserved rarities that cannot be found in any other museums of Ukraine. They are also actively involved in scientific research and educational programmes, cultural, educational and enlightenment work. However, there are a number of challenges in the organization and provision of activities of university museums that require urgent solutions, especially in the context of the modern development of European higher education. For instance, a complete list of such museums has not yet been compiled, their accounting has not been carried out, and they have not been presented on social networks.

What is more, the vast majority of museums work on a public basis without a clear sourcing of funding and staffing, which does not correspond to the level of the preserved national heritage, the forms of its use and often leads to the shutdown of museums and the loss of rare collections.

Among the positive dynamics, we can note the increasing international cooperation of university museums. Thus, as part of the above-mentioned conference, its participants were invited to the opening of the exhibition entitled “Science, Education, Museum”, dedicated to the results of archaeological research by the employees of the Department of Archaeology and Museum Studies in the 2011 field season. The exhibition highlights important aspects of the university's cooperation with the French National Museum of Natural History within the framework of the international project of the “Dnipro” programme, and Madame Anne Duruflé, adviser on culture and cooperation of the French Embassy, addressed the audience, emphasizing the significant results of such cooperation for science, education and culture of both countries.

For example, the Taras Shevchenko National University of Kyiv has interesting and valuable exhibitions of the Astronomical, Archaeological, Ethnographic museums and the museum of history of the university itself. Valuable collections were collected at the National Technical University “KPI” and the National University of Kyiv-Mohyla Academy.

Ukrainian museum employees are increasingly exchanging work experience with colleagues from other countries. In particular, within the framework of the said conference, the president of the International Committee of University Museums and Collections (UMAC) ICOM, director of the Science Centre from the University of Louis Pasteur in Strasbourg, Professor Hugues Dreyse noted the high professionalism of the employees of the museums of higher education institutions of Ukraine, expressed his admiration for the diversity and richness of the collections, wished significant gains in further work and expressed hope for success in further cooperation [17].

It is not enough to create a webpage of the Museum of History of Lviv Polytechnic University on Facebook to convey the greatness of the university, its history and heritage to the public.

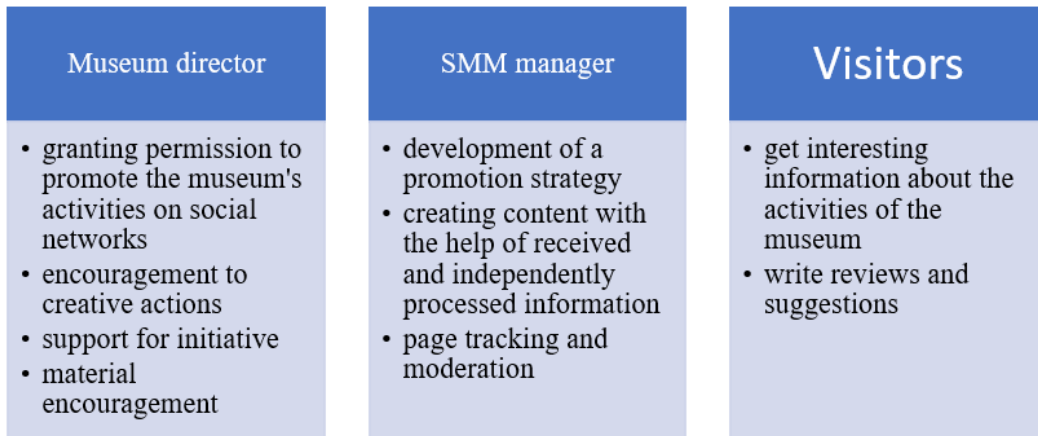
With the help of high-quality digitization of documents, the creation of virtual galleries, it is possible to carry out advertising and informational presentation of the university's activities from the very beginnings to the present.

Lviv Polytechnic National University is the oldest technical institution of higher education in Ukraine and Eastern Europe. It dates back to 1816, when the Imperial Royal Real School was established by decree of Emperor Franz Joseph. Currently, the University includes 16 institutes, 101 departments, 9 colleges, a scientific research department, a scientific and technical library, a publishing house, a student design and construction association “Polytechnic”, a People's House “Prosvita”, 4 educational and recreational camps. The Museum of History of the Lviv Polytechnic has collected valuable documents, the oldest of which date back to 1848-1850, 1858 and 1870-1890. The museum stores exhibits related to various areas of technical achievements, illustrative material about the formation and development of the educational institution, about famous teachers and scientists who worked here at different times. Exhibits about famous graduates and contacts of Lviv Polytechnic with other technical institutions of the world are also valuable. The gem of the main building of the Polytechnic and museum complex is the Assembly Hall, which contains a monumental painting by the world-famous Polish painter Jan Matejko and his students. According to the creative idea, the series of paintings “Triumph of Progress”, specially designed for the Lviv Polytechnic University, was supposed to reveal in allegorical images (with the use of the biblical scriptures and ancient mythology) the idea of the development of human thought, science as the basis of spiritual and technical progress, as a manifestation of the nature of people and their activities that can lead a person to happiness on earth or to regretful misfortune.

The exhibition also contains many interesting documents related to the world-famous physicist Maria Curie-Skłodowska and other famous personalities.

For promotion and educational purposes, a Facebook page “Museum of History of Lviv Polytechnic” was created. Link to the museum page: <https://www.facebook.com/museum.lpnu>.

Presentation of the page of the Museum of History of Lviv Polytechnic on social networks involves a clear distribution of duties of the SMM-manager, powers of the director, taking into account the interests of the target audience and receiving feedback from it (Fig. 1)



**Figure 1:** Distribution of responsibilities and the principle of presenting the museum on social networks

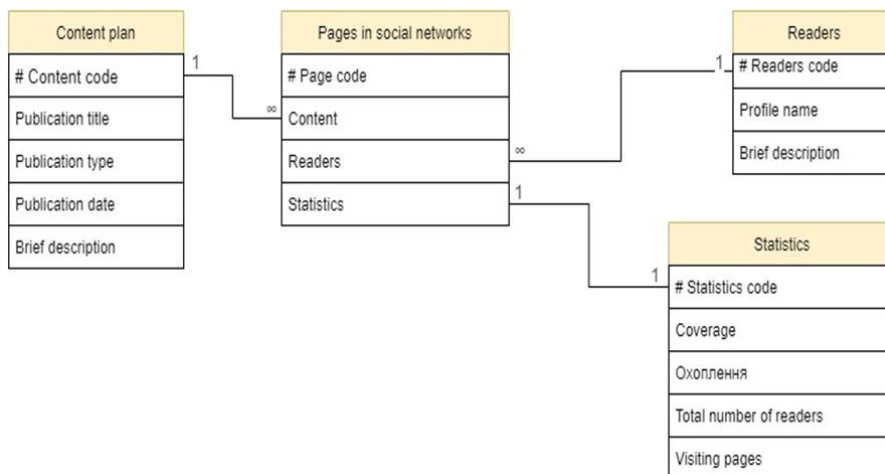
In general, the process of promoting the museum on social networks can be divided into three major stages (Fig. 2).



**Figure 2:** Stages of promotion of the museum on social networks

Thus, the provided information about the museum is first structured, and content is created from it to fill pages on social networks. From a review of page statistics, we get the results of the museum's promotion.

Since the purpose of the study is to reveal the role and significance of social networks in the popularization of cultural space, in particular in the advertising and informational presentation of the activities of university museums during the pandemic, the subject area was modeled, in which its entities and the types of connections between them are reflected for the presentation of the museum in social networks. An information model in Barker's notation was developed (Fig. 3).



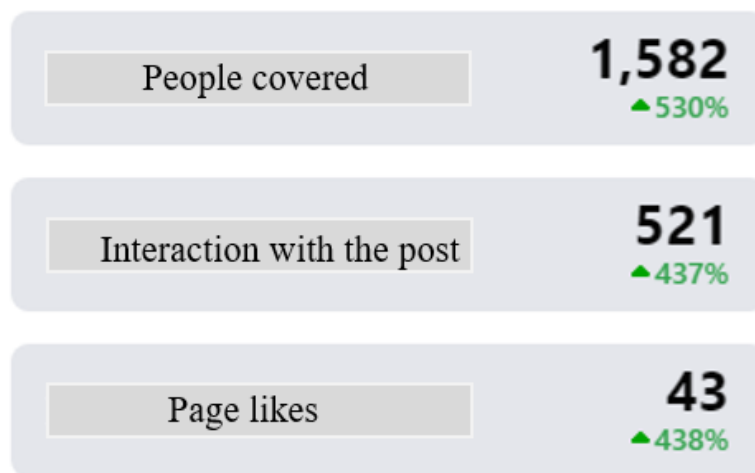
**Figure 3:** An ER-diagram in Barker's notation is constructed

The entities of the subject area: "Content plan"; "Pages in social networks"; "Readers"; "Statistics". Types of relationships that exist between entities:

- the entity "Content Plan" is connected to the entity "Pages in social networks" by a many-to-many relationship, because different types of content are covered on two pages;
- the entity "Pages in social networks" is connected to the entity "Readers" by a many-to-many relationship because both pages can have many readers.
- the entity "Pages in social networks" is connected to the entity "Statistics" because there are two pages and, accordingly, each has different statistics.

An ER diagram is built to depict the museum's social media presence. So, the model shows four entities. The first entity called "Content plan" contains the following list elements: content code, publication title, publication type, publication date, and a brief description for reference. The second entity "Pages in social networks" with the following elements: page code, content, page readers, and statistics. The next Readers entity has list elements such as: reader code, profile name, and a short description about the reader for target audience analysis. The last entity is "Statistics" with the following elements: page view code, reach, interaction, total number of readers and page views.

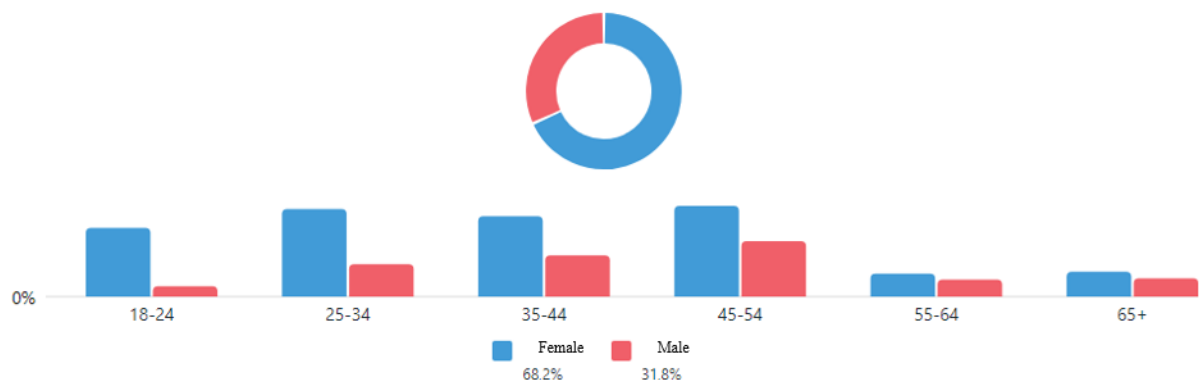
Statistics from 23 January to 19 February 2022 testify to the growing popularity of the Museum of History of Lviv Polytechnic (Fig. 4).



**Figure 4:** Statistical indicators of the growing popularity of the History Museum of Lviv Polytechnic

In the category "Follower's sex", we can see the recent gender ratio of followers during the last time (Fig. 5).

Age and sex

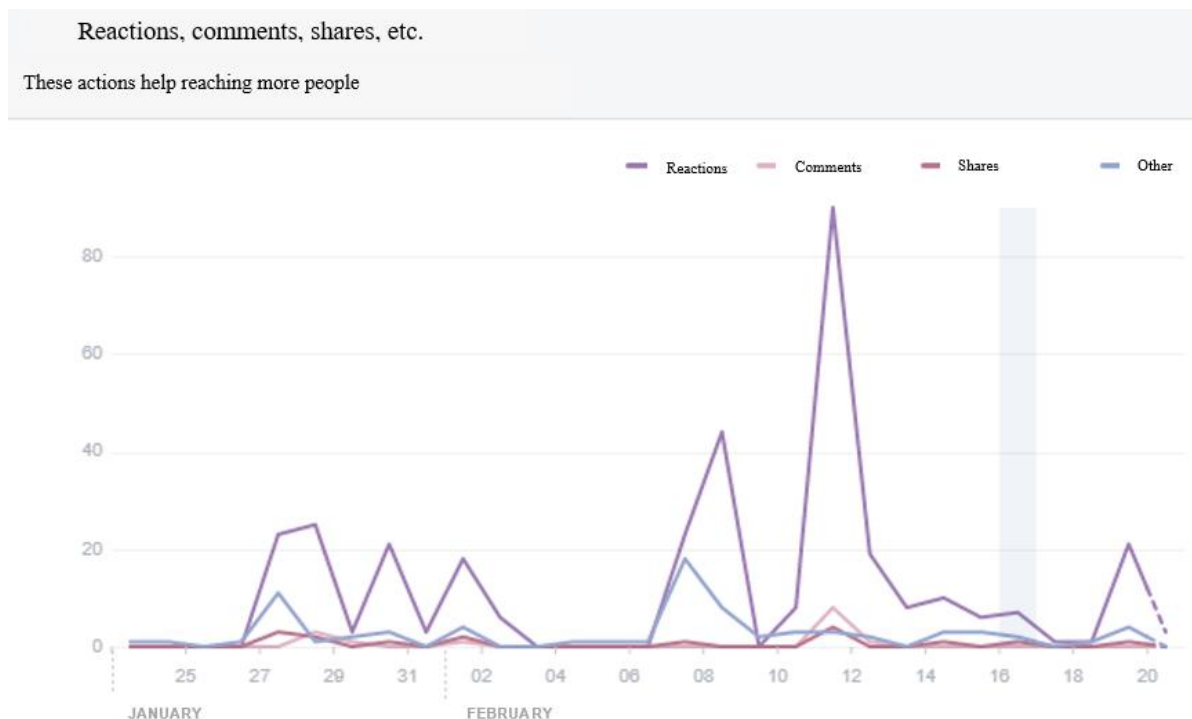


**Figure 5:** Age statistics of the activity of members of the Museum of History of Lviv Polytechnic page

Figure 5 shows engagement based on page popularity. The female gender from 18 to 65+ years is 68.2%. Male coverage aged 18 to 65+ is 31.8%.

Analysis of statistics shows that the page is more popular among women. At the same time, in the range of 18-24 years – 12.5% are women and 1.9% are men. In the range of 45-54 years (the highest figures) – 16.5 are women and 10.1 are men.

The general conclusions boil down to the fact that with the creation of the Facebook page “Museum of History of Lviv Polytechnic”, interest in the museum increased among culture connoisseurs. Students' interest in the history of the university and its notable figures increased as well. Students are involved in various scientific explorations and promotion of museum activities. Thus, students of the Department of Social Communications and Information Activities of the Institute of Humanities and Social Sciences developed the museum's logo, write graduate theses on the topic of advertising and informational presentation of the museum's activities on the Internet, attract a larger number of users, conduct research on little-known pages, which gives valuable results. In particular, the funds are expected to be replenished with the diploma project of a Polytechnic graduate (1931-1940), whose graphic works were masterfully and talentedly performed and contain valuable calculations. The dynamics of growth and decline of reactions, comments, shares (Fig. 6) shows which posts were the most popular and prompts us to draw appropriate conclusions.



**Figure 6:** Dynamics of growth and decline of reactions, comments and shares of the page of the History Museum of Lviv Polytechnic

From 25 January 2022 to 20 February 2022, the most popular post is the February 11 post about women in science.

The beginning of the full-scale invasion of the Russian Federation into Ukraine became an even greater challenge for museums. In total, as of 2 July 2022, the invaders committed 407 war crimes against the cultural heritage of Ukraine. There are 33 museums and nature reserves among the cultural objects that were destroyed or damaged by the invaders.

Despite the difficult situation, the museum continued its work online, and posts with up-to-date information can be seen on social network pages (Table 1). An important innovation is the developed online test for a better understanding of the history of the university. An Instagram page was also created [https://www.instagram.com/museum\\_lpnu/](https://www.instagram.com/museum_lpnu/).



**Table 1**

Statistics of posts of the Museum of History of Lviv Polytechnic after the invasion of the Russian Federation into Ukraine

Content and statistics of posts after 24 February 2022				
Date	Post	Post Impressions	Post reach	Interaction with the post
18.03.22	Initiation of daily National Moment of Remembrance	43	36	2
22.03.22	180 years since the birth of the Ukrainian composer M.V. Lysenko	No insights to show. Not original post.	-	-
23.03.22	World Meteorological Day	No insights to show. Not the author's post	-	-
24.03.22	The Month of Invincibility	No insights to show. Not the author's post	-	-
31.03.22	Announcement. The premiere of Pezhanskyi's found film about the first Ukrainian skiing competitions	No insights to show. Not the author's post	-	-
31.03.22	From the memoirs of Viktor Frankl, a psychiatrist who survived Nazi concentration camps during World War II.	536	513	33
1.04.22	Stepan Charnetskyi (1881-1944) – Ukrainian poet, translator, journalist, actor, director and public figure.	115	97	14
1.04.22	“Galician Society of Brick Production and Construction in Lviv”	95	72	6
4.04.22	The scientific and technical library of the Lviv Polytechnic National University received calendars entitled “Generals of the Ukrainian Insurgent Army” as a gift	No insights to show. Not the author's post	-	-
18.04.22	Congratulations on the International Museum Day!	188	177	26
18.04.22	Invitation to the opening of an exhibition of photographic works by Professor A. Peleshchyshyn	No insights to show. Not the author's post	-	-
19.04.22	Valuable photos of students of the SCIA department of Lviv Polytechnic during visits to the History Museum of Lviv Polytechnic	173	161	27
20.04.22	Invitation to an excursion on the occasion of the World Museum Day.	102	84	14
28.04.22	Tablets for artillerists			
8.05.22	Time for interesting tests!	143	124	48
25.07.22	Cultural objects destroyed by the invaders		-	-

Page views are the number of times a page's profile has been viewed by users (both those who are logged into Facebook and those who are not).

Post reach is the number of people who saw any content from your Page or information about it. This indicator can be estimated.

Post impressions are the number of times any content from your page or information about it was displayed on a user's screen.

The figures correspond to the watch unit.

During the war and the pandemic, the most popular was Viktor Frankl's post-quote, a psychiatrist who survived the Nazi concentration camps during the Second World War: "The first to break were those who believed that everything would soon end. After them – those who did not believe that it will end someday. The ones who survived were those who focused on their actions, without expectations of what might or might not happen."

The statistics of posts congratulating on the World Museum Day and photos with students visiting the Lviv Polytechnic History Museum confirm the importance of museums during the pandemic and hostilities.

The tests about the history of the Lviv Polytechnic developed by the administrators also aroused the interest of the target audience.

## 4. Conclusions

Thus, the COVID-19 pandemic has radically affected the activity and representation of historical and cultural heritage objects (including museums) in the world in general and in Ukraine in particular. The main were the communication challenges – the impossibility of physical contact with various target groups of museum visitors, and therefore the absence of such important areas for museum activity as various workshops, interactive tours, etc. The educational and enlightenment work of museums has always been an important factor in the marketing strategy of museum activities aimed at attracting new visitors and promoting their own product on the market of cultural services.

In the new realities of COVID-19, museums have gained new opportunities in the context of development and active use of information resources. State-of-the-art technology provides a wide range of communication possibilities. Thus, online exhibitions, virtual reality, social networks, 3D technology allowed museum institutions not only to preserve, but also to partially expand their potential audience and make the "museum product" more accessible. Therefore, today museum institutions, including museums of higher education institutions, are facing new challenges – where the museum visibility in the information space plays a decisive role. Museums must also adapt to demographic changes and other visual habits of people in the digital age.

## 5. References

- [1] L. Samoilenko, Education in museum and museum education in the history of the University of Kyiv, *Bulletin of Taras Shevchenko National University of Kyiv. History* 131 (2016) 53–62. URL: <https://visnyk.history.knu.ua/eng/archive/2016/131/131-13-samoilenko>.
- [2] A. A. Dmytrenko and S. V. Chybyrak, *Muzei etnografii Volyni ta Polissia pry Volynskom u natsionalnomu universytets imeni Lesi Ukrainky* [Museum of ethnography of Volyn and Polesia at Lesya Ukrainka Volyn National University], in: *Proceedings of the International Scientific and Practical Conference on University museums: European experience and Ukrainian practice*, Kyiv, Ukraine, 2012, p. 103.
- [3] O. Matkovskiy, R. Leshchukh, and M. Pavlun, *Heolohichniy fakultet Lvivskoho natsionalnoho universytetu imeni Ivana Franka: mynule y sohodennia (do 350-richchia zasnuvannia Lvivskoho universytetu)* [Faculty of Geology of Ivan Franko National University of Lviv: past and present (to the 350th anniversary of the founding of Lviv University)], *Ukrainian Geologist* 4 (2010) 25–30.
- [4] S. Muravska, *Suchasne oblychchia navchalnykh muzeiv vyshchoi shkoly* [Modern face of university museum], *The Scientific Issues of Ternopil Volodymyr Hnatiuk National Pedagogical University*. Series: *History* 2(3) (2017) 157–161. URL: [http://catalog.library.tnpu.edu.ua/naukovi\\_zapusku/hystory/2017\\_2\\_3.pdf](http://catalog.library.tnpu.edu.ua/naukovi_zapusku/hystory/2017_2_3.pdf).

- [5] I. V. Shydlovskiy, Rol i status vuzivskykh pryrodnychyykh muzeiv u suspilstvi [The role and status of university natural history museums in society], in: Proceedings of the International Scientific and Practical Conference on University museums: European experience and Ukrainian practice, Kyiv, Ukrain, 2012, pp. 411–412.
- [6] R. R. Shykula, Vykorystannia zasobiv pryrodnychoho muzeiu v Mizhnarodnomu ekonomiko-humanitarnomu universyteti imeni akademika Stepana Demianchuka [Use of the facilities of the Natural History Museum at the International University of Economics and Humanities named after Academician Stepan Demianchuk], Naukovì zapiski Berdâns'kogo derzhavnogo pedagogičnogo unìversitetu 1 (2016) 313–318. URL: <https://pedagogy.bdpu.org.ua/wp-content/uploads/2016/10/54-1.pdf>.
- [7] S. Yu. Kutsenko, The possibilities of using social networks in the activities of museums in Ukraine, Praci Centru pam'âtkoznavstva 26 (2014) 145–157.
- [8] R. Lekukh, Sotsyalnye sety na sluzhbe u muzeev [Social networks at the service of museums], Museum Prostir, 2013. URL: <http://prostir.museum.ua/post/31600>.
- [9] M. Savenskiy, Chy stanut ukrainski sotsialni merezhi serioznym biznesom [Will Ukrainian social networks become a serious business], Forbes (2014). URL: <http://forbes.ua/ua/opinions/1369177-chi-stanutukrayinski-socialni-merezhi-serjoznim-biznesom> [in Ukrainian]
- [10] Z. Myna, V. Banakh, A. Nahirnyak, and M. Iavich, Analysis of the Essence of Social Networks as a Tool for Mediatization of the Historical and Cultural Heritage of Museums, CEUR Workshop Proceedings 2616 (2020) 199–213. URL: <http://ceur-ws.org/Vol-2616/paper7.pdf>.
- [11] Museums around the world in the face of COVID-19 - UNESCO Digital Library, 2020. URL: <https://unesdoc.unesco.org/ark:/48223/pf0000373530>.
- [12] M. Vecco, M. Clarke, P. Vroonhof, E. de Weerd, E. Ivkovic, and S. Minichova, The impact of the COVID-19 pandemic on creative industries, cultural institutions, education and research, 2022. URL: [https://www.wipo.int/edocs/mdocs/copyright/en/wipo\\_cr\\_covid\\_19\\_ge\\_22/wipo\\_cr\\_covid\\_19\\_ge\\_22\\_study.pdf](https://www.wipo.int/edocs/mdocs/copyright/en/wipo_cr_covid_19_ge_22/wipo_cr_covid_19_ge_22_study.pdf)
- [13] Survey: Museums, museum professionals and COVID-19, International Council of Museums, 2020. URL: <https://icom.museum/en/covid-19/surveys-and-data/survey-museums-and-museum-professionals/>.
- [14] E. Cioppi et al., University Museums from Home: observations on responses to the impact of Covid-19, University museums and collections journal 12 (2020) 138–151. URL: <https://www.urosario.edu.co/Documentos/Museo/Cioppi-et-al-2020.pdf>.
- [15] R. R. Cecilia, COVID-19 Pandemic: Threat or Opportunity for Blind and Partially Sighted Museum Visitors?, Journal of Conservation and Museum Studies 19 (2021) p. 5. doi: 10.5334/jcms.200.
- [16] L. Noehrer, A. Gilmore, C. Jay, and Y. Yehudi, The impact of COVID-19 on digital data practices in museums and art galleries in the UK and the US, Humanit Soc Sci Commun 8 (2021). doi: 10.1057/s41599-021-00921-8.
- [17] L. Samoilenko, Universytetski muzei: yevropeyskiy dosvid ta ukrainska praktyka [University museums: European experience and Ukrainian practice], Taras Shevchenko National University of Kyiv, 2011. URL: <http://www.univ.kiev.ua/en/news/2923>.