STATE POLICY OF DIGITAL DEVELOPMENT OF THE MUSEUM FIELD IN THE REPUBLIC OF POLAND: EXPERIENCE FOR UKRAINE

Abstract. The state policy of the digital development of museums in the Republic of Poland and its possible transfer to the Ukrainian context are analysed. The key aspects of the digitalization of cultural heritage, including the Polish experience of the digital development of museum institutions and approaches to providing access to digital resources, are considered.

The importance of state support, cooperation between museums and technology companies, and the importance of educational programs for the development of digital literacy of museum staff are highlighted. The E-Museums project is analysed in detail as an illustrative example of the implementation of a digital strategy in Poland, and its potential impact on the Ukrainian museum sector is highlighted.

Based on the conclusions obtained, the author substantiates the possibilities and prospects of using the Polish experience to improve the efficiency of the digital development of Ukrainian museums. Particular attention is paid to the introduction of innovative technologies, ensuring accessibility and effective preservation of cultural heritage in electronic format. This interaction between the two countries can contribute to the development of Ukrainian museums by providing a deep integration approach to digital transformation and the popularization of cultural values.
**Keywords:** digital development, the museum field, the Republic of Poland, public policy, Ukraine.

**Problem statement.** In today’s digital society, the dynamic development of digital technologies is transforming the way cultural heritage and society interact. Museums play an important role in preserving, promoting, and studying cultural values. However, in the context of the growing influence of the digital environment, the importance of improving tools and approaches to museum management and development is becoming more urgent.

With the advent of digital technologies and virtual reality (VR), the museum sector has the opportunity to rethink its traditional approaches and expand the boundaries of interaction with society. However, the effective implementation of digital innovations in museums requires taking into account the best practices and experiences of other countries.

In this context, the experience of the Republic of Poland in the field of state policy of digital development of museums is of particular importance for Ukraine. Analysing and studying the Polish experience can provide valuable conclusions and recommendations for the development of the national museum sector, improving information technology platforms, optimizing the interaction of museums with the audience, and increasing the accessibility of the cultural property.

However, it is important to consider the specifics of the Ukrainian cultural context, institutional peculiarities, and possible problems that may arise when implementing similar strategies and practices. Therefore, further research on the adaptation of the Polish experience to the Ukrainian museum sector seems to be a particularly relevant and important task.

**Analysis of the latest research and publications.** The modern world is witnessing an increase in interest in digital technologies in various industries, including the cultural sector. An important aspect of this development is the implementation of digital solutions in museums. The state policy of digital development of the museum sector in the Republic of Poland can provide useful experience for Ukraine, based on the analysis of recent research and publications.

One of the important documents to consider is the OECD report “Museums and local development in Poland”, which explores the interaction between museums and local development. In particular, it is possible to analyse approaches to the inclusion of museums in the city and regional promotion strategies, which may be important for Ukrainian local government policy [1].

The study “E-Museums project. Making Polish cultural heritage accessible online” offers ideas for creating access to cultural heritage through online resources. This approach has the potential to improve the accessibility of cultural resources for a wide audience. Ukraine can learn from this experience to expand access to its own cultural heritage [2].
The Polska Cyfrowa program, implemented by museums in Poland, reflects the desire to use digital solutions to increase the accessibility of cultural resources. This can serve as an excellent example for Ukraine, encouraging the development of similar programs to improve the interaction of museums with the audience [3].

Mariusz Naramski’s research “The application of ICT and smart technologies in Polish museums – Towards smart tourism” reveals the possibilities of using information and communication technologies and smart technologies in Polish museums. This opens up prospects for the implementation of modern solutions in the Ukrainian museum environment, contributing to the development of smart tourism.

This experience of research and programs in the field of museums in the Republic of Poland can be an important guide for Ukraine in implementing digital solutions to improve accessibility, promotion, and development of cultural heritage through museums.

The purpose of the article is to analyse the experience of the State policy of digital development of the museum sector of the Republic of Poland and to identify the possibilities of its use as a valuable source of improvement of Ukrainian museum activities. The objective is to identify the key aspects of the Polish experience, successful practices, and tools that contribute to the digital development of the museum industry, promote cultural heritage, and engage the audience.

Presenting main material. Today’s rapidly changing world requires cultural institutions to adapt to new opportunities and challenges that are opening up thanks to digital technologies. This is especially true for museums, which serve not only as custodians of historical heritage but also as centers of education and cultural development. The state policy of digital development of the museum sector in the Republic of Poland has proved to be a key step in this direction, promoting the use of advanced technologies to promote cultural heritage and attract viewers. The experience of Polish museums has the potential to be extremely useful for Ukraine, helping to formulate an effective digital development strategy in the museum sector.

The general situation and management of museums in Poland show that the authorities, including local, county, and regional governments, consider museums to be significant tourist attractions and active participants in territorial branding. Nevertheless, they find it difficult to stimulate cooperation between museums and the private sector, artists, craftsmen, or the tourism sector. As key actors in spatial planning and municipal infrastructure investment, they have an impact on museum accessibility, but they do not always recognize museums as important partners or take into account the views of those who can help address these issues. There are already attempts to coordinate various cultural initiatives and create integrated tourist offers that include tourist routes or combinations of rail travel with museum tickets, mostly at the regional level [1].
In the Polish context, there are significant differences in the approaches of subnational authorities to cooperation with museums, due to their different ownership, funding, and organisational ties. In the case of municipal museums owned and managed by local authorities, there is more active cooperation with local authorities (see Fig. 1). They are more intensively involved in supporting and promoting museums as key institutions, developing leaflets, creating websites, and representing museums at international fairs, exhibitions, and other events. However, this activity is only undertaken when the museum plays a significant role in shaping the local heritage brand and is perceived by local authorities as a key component of the local development strategy. For example, the Museum of Mining in Zabrze has become an integral part of the local government’s strategy to develop industrial tourism in the city, contributing to the restructuring of the local economy. The regional government also supports this strategy, for example through active support of the Industrial Heritage Development Programme [1].

Fig. 1. Schematic representation of the mechanism of the state policy of the Republic of Poland in the field of museums
Source: author’s development based on the source [1]

On the other hand, for less prominent museums, interaction with local authorities is limited. Often, this interaction consists of publishing information about
the museum on municipal websites, news publications, and periodicals. This applies to both specialised museums and those with a less visible status (e.g. the Museum of Ancient Mazovian Metallurgy in Pruszkow), or museums subordinated to higher authorities (regional, national) or private entities. Local authorities include them in their promotion initiatives, but do not invest much effort in their maintenance or active promotion. Such museums are perceived by the authorities as actors in the field of leisure, tourism, and culture, but usually do not have dedicated promotion activities [1].

In particular, regional authorities promote museums through specialised tourism organizations (such as the Mazovian Regional Tourism Organisation), regardless of their form of ownership. Opportunities for museums, regional and municipal tourism offices, and national-level institutions lie in some actions that can support and strengthen the interaction between these actors:

- Consider reintroducing licensing of guides or other forms of quality control, particularly in large urban centres. Large city and regional museums could be responsible for and have the right to provide training for guides, but such activities would require additional financial support from the state budget.

- Additionally, information exchange with the tourism sector could be facilitated in a way that would be beneficial to both parties. Museums could develop their packages and offers based on the experience of the tourism sector. Data from the tourism sector could help museums better position themselves in the tourism market.

- An additional initiative could be to raise awareness in the tourism sector (tour operators, offices, and guides) about the diversity of current museum offerings. One approach could be to organize an annual museum fair at the national level. This would draw attention to and raise awareness of the rich cultural heritage offered by museums, and create a platform for active interaction between museums and tourism partners [1].

The state policy of digital development in the field of museums in the Republic of Poland is currently an important area based on the active introduction of technology into the exhibition activities of museums. One of the key features of this policy is the great attention paid to virtual tours and interactive exhibitions. These new approaches allow museum visitors to interact with exhibits on a deeper and more meaningful level.

In addition, the Polish state policy of digital development of the museum sector includes active use of digital archiving of collections. This approach allows not only to preserve valuable cultural artefacts, but also to make them accessible to researchers and a wider audience through online platforms. The process of digitisation of cultural heritage in Polish museums has been ongoing in recent years, resulting in the introduction of certain collections to online platforms such as Europeana and Google Art Project.

Thanks to these efforts, significant progress has been made in making cultural heritage accessible online. However, despite the progress made, there is still work to be done to increase access to digitised objects for the public.
To address this issue, the National Institute of Museums and Public Collections (Narodowy Institute Muzealnictwa i Ochrony Zbiorów, NIMOZ), a public institution under the Ministry of Culture and National Heritage, has taken a leading role in digitising museum collections and setting standards for collection management. In this context, NIMOZ has launched the Electronic Museums project, which aims to contribute to the development of the information society by facilitating access to Poland’s rich cultural heritage [2].

The Digital Museums project is guided by some key objectives. Firstly, it aims to increase accessibility to cultural treasures stored in Polish museums. Second, the project aims to improve the documentation related to these collections. Finally, it aims to create a sustainable digital preservation system. These goals are to be achieved through a multifaceted approach: selective digitisation of museum collections, creation of a centralised repository for digital resources from different museums, and development of a joint museum web portal.

Important, the Digital Museums project was coordinated with the Polska Cyfrowa (Digital Poland) operational programme, which is jointly managed by the Ministry of Infrastructure and Development and the Ministry of Administration and Digitisation. The project covers the period from 2016 to 2018, positioning it as a key development initiative in the field of digitisation and cultural heritage in Poland’s national museums [2].

This document presents the current state of the Digital Museums project, detailing its objectives, expected results, and prospects. It also sheds light on the progress of digitisation initiatives in Polish museums. The foundation for the project was laid through comprehensive preparatory work that defined the theoretical and methodological basis for its implementation. This foundation was created through the joint efforts of expert working groups convened and coordinated by NIMOZ. As Poland’s cultural heritage embarks on a digital journey, the e-Museums project is a groundbreaking initiative with the potential to transform the way the nation’s artistic and historical wealth is accessed, preserved, and appreciated [2].

The National Reform Programme for 2022/2023 of the Republic of Poland, approved by the Council of Ministers on 26 April 2022, states that the dynamics of changes in the modern economy and the impact of the COVID-19 pandemic have accelerated the process of digital transformation. This process has become especially important due to the need for remote work and study. In particular, it is important to ensure the availability of high-speed Internet for the entire population and to ensure the safe use of digital services in the public administration sector and the economy as a whole. The challenge of this task is to ensure access to the latest ICT infrastructure for citizens, entrepreneurs and government agencies. It is also important to actively develop digital skills, as Poland is ranked 24th out of 27 European countries in the Digital Economy and Society Index (DESI 2021). Despite improvements, 13% of Poland’s population does not have access to the Internet, and almost half does not have basic digital skills. Despite the increase in broadband infrastructure coverage with speeds of at least 100 Mbps, almost 35% of Polish
households cannot use such services. There are significant differences in access to the new generation of telecommunications infrastructure between urban and rural areas, as well as between the west and east of Poland.

The National Museum in Lublin, together with partners in a consortium that includes the King John III Palace Museum in Wilanów, the POLIN Museum of the History of Polish Jews, the National Museum in Szczecin and the Castle Museum in Łańcut, implemented the www.muzeach project. This project was funded under the Digital Poland Operational Programme (Activity 2.3 “Digital accessibility and usefulness of public sector information”, Sub-activity 2.3.2 “Digital exchange of cultural resources”) [3].

The aim of this project was to improve the quality and accessibility of digital cultural resources provided by museums on the Internet, as well as to unlock the potential of their cultural heritage. The project had two main objectives: to make digital resources of museums accessible to a wide audience, and to develop the infrastructure for digitisation and access to digital materials necessary to achieve the objectives.

As part of this project, measures were taken to promote the digitalisation of both museum exhibits and staff training (see Figure 2). The work resulted in digitised museum collections of more than 1,296 exhibits available to the public free of charge. The project is also creating digital collections of cultural resources for several museums and a multi-search engine and geoportals for interactive navigation among these resources.

Fig. 2. Activities within the “www.muzeach” project.
Source: developed by the authors based on the source [3]
The project established uniform requirements for all consortium partners regarding the digitisation process and used a variety of innovative solutions. The introduced rules for information exchange are intended to create a search engine that allows finding digital resources through a single platform. Thanks to the diversity of the museums in the consortium, different types of collections can be presented online.

This project is part of the Digital Poland Operational Programme for the period 2014–2020, within the framework of priority areas No. 2 “E-government and open government”, No. 2.3 “Digital accessibility and usability of public sector information”, No. 2.3.2 “Digital access to cultural resources”. The National Museum in Lublin will carry out an online catalogue of collections, digitise over 1296 exhibits, and provide access to 2000 items, including unique resources of the museum’s collections that were not previously available in digital format [3].

The achievements made through the implementation of digital initiatives are extremely important. They have allowed Polish museums to attract new audiences, including young people who actively communicate in the virtual space. Digital archiving also preserves heritage for future generations, reducing the risk of losing valuable artefacts. However, along with the positive effects, there are also challenges related to cybersecurity, the lack of technical readiness of some museums, and the need to constantly update content.

However, traditional museum tours in Poland primarily rely on physical visits to landmarks, although many museums have implemented technological solutions to support their activities. Some of these institutions plan to further develop in this direction, in particular by expanding the availability of audio tours (with an expected reach of 40% if museums meet their declared goals) and creating their mobile applications (with an expected reach of about 20%) [4].

This diversity in approach also extends to the use of technology in museums. Most institutions in Poland do not yet allow visitors to buy or book tours using online systems. In addition, the data and information collected or potentially collected by museums are often not used; they are either not stored or stored solely to fulfil legal obligations. In the most developed regions of the world, which focus on sustainable development and use technology to achieve this, tourism plays an important role in harmonising and supporting the development of smart cities. The flow of data and information, as well as its comprehension, analysis, and effective use to take advantage of the whole structure, is the basis of this intelligent system. Achieving this, however, requires the involvement of the public sector in initiatives to raise information awareness and provide courses on the use of appropriate data analysis tools for civil servants. The results of the study show that big data analysis, as well as the creation and use of databases, are rarely used in Polish museums. Perhaps museum managers believe that future tourism will not be significantly different from current practices and that the use of technology is only a novelty or an additional
function for their activities, rather than a cornerstone of future endeavours (this perspective stems from the fact that many museums are interested in creating mobile applications and virtual tours on their websites, but at the same time show little interest in them – and this is at a time when the concept of the Internet of Things, the use of cloud computing and other key solutions in the field of smart tourism are being discussed) [4].

Identified gaps and development needs should be systematically addressed and addressed over time. A networking approach at the city level (or wider) for information and knowledge exchange can facilitate effective data collection and use, as well as the dissemination of knowledge and information. This area was identified as a weakness in the cities studied. In addition, the successful implementation of such networked solutions would facilitate the adoption of the smart city concept (and thus smart tourism), which is an integral part of its core principles. Expanded funding programmes and improved policies are important measures that need to be put in place to support the adoption of new technologies in the public sphere. As previously discussed by Pradhan, tourism stakeholders need to keep pace with technological advances and adopt a variety of technologies as they play a key role in driving further development. Owen et al. also noted that when these technologies are presented as beneficial to tourists and used in different ways, they have a significant impact on tourist satisfaction. It can be assumed that private museums will be the first to follow this trajectory (as they are less constrained by financial and legal policies and are guided by the free market), followed by public institutions as they seek to meet the standards set by the private sector to remain competitive. The same dynamics are expected in the area of meeting the needs and expectations of international travellers, which are currently recognised as inadequate. In addition, societal developments and the growing popularity of smart cities are also expected to provide support as they are rooted in the evolution of society. As the notion of ‘smart people’ gains acceptance, the public is likely to become more open to the needs and expectations of others, contributing to a more cosmopolitan and accommodating environment [4].

The Polish experience in the field of digital development of museums can be an excellent teaching tool for Ukraine. By looking at the similarities and differences between the countries, it is possible to identify prospects and opportunities for applying Polish practices to Ukrainian realities. It is worth paying attention to the role of state support, cooperation between museums and technology companies, and the importance of educational programmes for the development of digital literacy among museum staff (see Table 1).
Table 1: Relevance of the Polish experience of digital development of museums for Ukraine

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<th>The Aspect</th>
<th>The Polish experience</th>
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<td>State support</td>
<td>Poland invests significant efforts in the development of the cultural sector, including museums. Ukraine can also promote the digital development of museums by creating state programmes and financial support, which will help attract important resources for the introduction of technologies, such as virtual tours, the development of interactive exhibitions, and the renewal of technical infrastructure.</td>
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<tr>
<td>Cooperation between museums and technology companies</td>
<td>Poland actively cooperates with the private sector and technology companies to implement modern solutions. Such cooperation can provide Ukrainian museums with access to experts, innovative solutions, and financial support for digital initiatives.</td>
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<tr>
<td>Educational programmes for digital competence</td>
<td>Developing digital literacy among museum staff is a key aspect of implementing digital initiatives. This includes knowledge and skills in working with technology, creating content for virtual exhibitions, and providing end users with a convenient and interesting experience of interacting with museum resources.</td>
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Source: table compiled by the authors based on source analysis [1]

Poland has already achieved significant results in the digital development of museums. For example, the Warsaw National Museum has partnered with technology companies to create virtual tours where visitors can explore collections directly from their computer or smartphone. In addition, Poland uses multimedia elements for interactive exhibitions, which allows viewers to dive deeper into history.

Thus, the Polish experience can be an inspiration for Ukraine in the digital development of museums, helping to attract new audiences, preserve cultural heritage, and create innovative approaches to popularising museum collections.

**Conclusions.** The modern world places great demands on museum institutions, encouraging them to introduce new technologies to attract viewers and preserve cultural heritage. The Polish experience shows that an effective combination of traditional museum experience and innovative digital approaches can create new opportunities for promoting cultural values and educating viewers.
Systematic state support and implementation of programmes aimed at the digital development of museums can be a key factors for the successful implementation of Polish experience in Ukrainian reality. Creating a favourable environment for innovative initiatives, engaging private companies and technology partners, and supporting educational programmes to improve the digital literacy of museum staff play an important role in this process.

Polish practices aimed at using virtual tours and interactive exhibitions are also of great value. These methods help to attract a variety of audiences, including young people who actively communicate in the virtual space. The introduction of similar approaches in Ukraine could become a new impetus for opening museums to the general public and increasing their socio-cultural impact.

Thus, the experience of the Republic of Poland in the digital development of the museum sector is an important basis for further improvement of museum practices in Ukraine. The path to innovative museification begins with the study of the positive aspects of the Polish experience, its adaptation to Ukrainian realities, and the careful development of digital development strategies. Only through the joint efforts of the state, museum institutions, technology partners, and the public can we ensure the dynamic development of museums in the new digital age.

References: