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THE IMPACT OF DIGITALIZATION ON THE CONTEMPORARY ART MUSEUMS IN WARSAW DURING THE COVID-19 PANDEMIC

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The Impact of Digitalization on the Contemporary Art Museums in Warsaw During the Covid-19 Pandemic

Covid-19 Sürecinde Dijitalleşmenin Varşova'daki Modern Sanat Müzelerine Etkisi

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LIST OF ABBREVIATIONS

2D – Two-Dimensional

3D – Three-Dimensional

AR - Augmented Reality

COVID-19 – SARS-CoV-2, Severe Acute Respiratory Syndrome Coronavirus 2

ICOM – International Council of Museums

ICOM – International Council of Museums

NCK – Narodowe Centrum Kultury

NEMO – Network of European Museum Organizations

NIMOZ – Narodowego Instytutu Muzealnictwa i Ochrony Zbiorów

QR code – Quick Response Code

UNESCO – The United Nations Educational, Scientific and Cultural Organization

VR – Virtual Reality

XR – Extended Reality

LIST OF FIGURES

ABSTRACT

This thesis aims to analyse the impact of digitalization during the COVID-19 pandemic on the Zachęta National Art Gallery and the Ujazdowski Castle Contemporary Art Center in Poland.

The COVID-19 pandemic crisis has hit the world and the cultural institutions, pushing them to change their way of operating with a short notice. Planned and ongoing exhibitions, discussion panels, all needed to move to the digital sphere.

Starting with the concept of digitalization, I describe the spectrum of digital technologies, like QR codes or virtual reality, used in institutions. Having described the background, which allows to better grasp the topic, I move to the subject of pandemic from the museum perspective, describing shortly the situation in the world and slowly narrowing down my research to the Polish cultural scene. I attempt to explain the situation based on two examples, representative for the Polish contemporary art scene – the Zachęta National Gallery of Art and the Ujazdowski Castle Centre for Contemporary Art.

This thesis goes through these institutions ways of dealing with the pandemic crisis focusing on the digitalization process they undergo, with the usage of the reports and my own interviews with the institutions' representatives.

Having in mind museums would not exist without visitors, I shortly describe the approach of the audience towards the pandemic offer.

Lastly, based on the reports of the main cultural institutions of the western world, I summarize what the predictions for the global future of the museums, in the face of the recent crisis, are.

Key Words: Digitalization, COVID-19, Pandemic, Contemporary Art Museums, Polish Museums.

ÖZET

Bu tez COVID-19 pandemisi döneminde dijitalleşmenin Polonya'ki Zachęta Ulusal Sanat Galerisi ve Ujazdowski Kalesi Çağdaş Sanat Merkezi üstündeki incelemeyi amaçlamaktadır.

COVID-19 pandemisinin yarattığı krizi dünyayı ve kültür kurumlarını derinden etkilemiş ve kısa süre içerisinde bu kurumların çalışma prensipleri değişmiştir. Planlanan ve devam eden sergiler, tartışma panelleri gibi kültürel etkinliklerin hepsi dijital alana geçmek zorunda kalmıştır.

Dijitalleşme kavramından yola çıkarak kurumlarda kullanılan QR kodlar veya sanal gerçeklik gibi dijital teknolojilerin yelpazesine odaklanılmıştır. Konunun daha iyi kavranmasını sağlayan arka plan anlatıldıktan sonra, dünyadaki durum kısaca özetlenmiş ve araştırma Polonya kültür sahnesine doğru daraltarak, pandemi konusu müze perspektifinden değerlendirilmiştir. İnceleme, Polonya çağdaş sanat çevresini temsil eden iki örneğe dayandırılmıştır. İki örnek, Zachęta Ulusal Sanat Galerisi ve Ujazdowski Kalesi Çağdaş Sanat Merkezi'dir.

Bu tez, bahsi geçen kurumların pandemi kriziyle başa çıkmak için geçirdikleri dijitalleşme sürecini ele almıştır. Tez, kurum raporları ve kurum temsilcileriyle yapılan yazara ait röportajlar ile yorumlanmıştır. Bu kurumların ürettiği çözümlere değinilmiştir.

Son olarak, batı dünyasının önde gelen kültür kurumlarının raporlarına dayanarak, pandemi krizi karşısında müzelerin küresel geleceğine ilişkin öngörüler özetlenmiştir.

Anahtar Kelimeler: Dijitalleşme, COVID-19, Pandemi, Modern Sanat Müzeleri, Polonya Müzeleri.

INTRODUCTION

Throughout the ages, traditional museum exhibits have been limited to leading the audience into showrooms to see the original collections. As Jonah Siegel points out, the institution often seeks to create the perception of being a permanent and established necessity (Pine, Gilmore, 2011).

The museums were recognized as great edifices with collections displayed throughout many floors taking hours to view– and almost equally big magazines where the objects that could not be displayed were waiting their turn. As an example, the National Palace Museum of Taiwan, containing more than 650,000 antiquities, has continuously been increasing its collections. Due to the limitations such as limited exhibition space, venues, and schedules, the total number of direct contacts with exhibits is in the minority. The entire collection of The National Palace Museum of Taiwan would take more than 30 years to display assuming that each exposition was run for three months at a time (Pine, Gilmore, 2008).

This creates an image of a museum as a warehouse rather than a welcoming institution inviting visitors to participate functioning as a learning environment. Technology, present in our daily lives, can be used as a powerful medium that will help the art and cultural institutions not only present their artifacts, but also stay relevant to the modern world and popular. Broadly understood digitalization is one of the possibilities coming with modern technology.

The business provides four different types of experiences, which include educational, entertainment, aesthetic, and escapist experiences (Pine, Gilmore, 2011). With help of the possibilities coming with digitalization, from digitalizing artifacts, through an important social media impact on the sense of belonging and

collectivity, to specially built online 3D exhibition venues, for immersiveness to be visited with virtual reality sets, the museums can fulfill all four of the mentioned realms, not losing an important place in the modern world.

Cultural institutions around the world might have had different approaches towards digitalization – or digital evolution – from treating it as a distraction to seeing it as an attention-grabbing gimmick, to making use of it. However, since other businesses make more extensive use of technology, excluding themselves from this aspect, cultural institutions turn themselves into a more unfavorable position. According to Stephanie Weaver, with more for-profit businesses adopting museum techniques, visitors' expectations of museums rise too (Weaver, 2007). This indicates that cultural institutions should not try to escape from technology – the best choice to be made is to benefit from it.

It does not change the fact that many museums have been using digital platforms for decades now. Digitalized exhibits have been available through dedicated computer programs, applications, or browsers, to be virtually visited in the comfort of our homes. A policy of such is allowing to reach a wider audience, along with providing inclusiveness allowing equal access to the arts and culture to everyone. Digitalization was a tool helping access museums' collections for those who did not have means or ability to pay a visit to a museum in person.

An unexpected outbreak of the COVID-19 pandemic has forced museums to close their physical spaces and move fully to the virtual world. This unprecedented situation has given a new perspective to the usage of digital tools by museums, which – until now frequently treated as a gadget only – happened to be a crucial point of their diversification strategy. The situation provokes us to think that technology in a

museum can be less about innovation and more about accessibility and egalitarianism.

Due to the fact, it is impossible to predict whether the world is going to face new waves of the virus in near future and whether people will be confronted with more lockdown restrictions, the alternatives to physical museum visits are considered to be a necessary element of these institutions' long-term solution and tactical management. According to Steve Perillo, the head of Travel World VR, a US-based VR and 360-degree video marketing and production company, the pandemic has been a shot of adrenaline for a technology that to date had not yet really arrived (Debusmann Jr, 2020).

One of the ideas that museums came up with which are a one-to-one transition from the physical to the virtual world online viewing rooms, widely used during the recent lockdown. An online viewing room is a digital reproduction of a physical viewing room. Like in a physical gallery, the applications allow seeing the online room in three-dimensional space, which can be accessed through computer browsers, mobile devices and immersive virtual reality sets.

Extended reality offers a wide range of possibilities, many of them exercised during the COVID-19 pandemic. During the forced isolation, XR brings alternate realities, allowing us to meet up (as personalized avatars), discuss, and listen to lectures (e.g. Laval Virtual World, an International Exhibition and Conference on VR/AR & Immersive Techniques, which, due to the pandemic, went fully virtual this year), and all of it can happen in a gallery exhibit surrounding. Additionally, the applications allow expanding the reality, for example, by making an art gallery owner describe each art piece on his own, solely for each visitor (The Kremer's Collection).

An important aspect of XR is not connected with the pandemic. It is an extended reality that allows to bring world art to disadvantaged groups. An example of such usage is the TKC Mighty Masters program, providing VR tools to schools around the world to fully access the Kremer's Museum. The Mighty Masters program demonstrates strong commitment to education and the accessibility of art, and, as the owners claim, a belief in art's unique capacity to make people, and children, in particular, feel free and empowered. In this sense, virtual reality can be called an egalitarian tool making arts and culture available for everyone, everywhere.

It would be naive to look only at the bright side, though. Especially during the pandemic restrictions, social distancing, and lockdown, people could observe what value being in a group has.

An impact of art seen through a monitor or smartphone differs from an experience of a physical visit. What seems to be an opportunity is taking advantage of virtual reality systems, which bring an immersive experience to a viewer, making virtual exploration more appealing. Such an enhanced, complete sensory museum experience is more remembered and rated highly by visitors (Weaver, 2007).

The Purpose of the Research

Through my writing, I want to evaluate how the COVID-19 outbreak and the general lockdown have changed museums' approach to digitalization from an unnecessary addition, frequently a gadget-like technology, to a necessity and a sheet-anchor, allowing the institutions to remain working and in touch with the audience.

Additionally, I would like to analyze the possibilities emerging in the museum sector with the development of digitalization, especially in the light of different tactics museums implemented during the world COVID-19 pandemic.

I will try to find the answers by analyzing chosen examples of the art museums in Poland –and following my research by investigating the situation at its source, by talking with the representatives of the art museums I base my research on – the Zachęta National Gallery of Art and the Ujazdowski Castle Centre for Contemporary Art.

The reasons for choosing the institutions above are plenty, starting with the fact they are two of leading contemporary art institutions in Poland, which makes them trend setters, especially when discussing the subjects like the one of this thesis. Secondly, both the Zachęta National Gallery of Art and the Ujazdowski Castle Centre for Contemporary Art are cultural institutions under the jurisdiction of the Ministry of Culture and National Heritage (Ministerstwo Kultury i Dziedzictwa Narodowego). Thirdly, I have a personal affection towards both institutions which I have been frequently visiting during my life in Warsaw.

Lastly, I would like to ponder, based on the existing researches, whether the pandemic experience brings bright prospects for the future of technology implementation in cultural institutions.

I find myself in a favorable position for such a research, as I am not only Polish and Varsovian, but I also work in my professional life as a digital artist, which makes me understand the processes behind the digitalization from additional perspectives.

Methodology

To be able to perceive the situation of digitalization in museums, I find it important to understand not only the perspectives of the museum authorities implementing the innovative techniques. Thus, I see it as a necessary step to conduct an interview with the researched contemporary art museums' representatives, the Ujazdowski Centre for Contemporary Art and the Zachęta National Gallery of Art. My research method will be based on qualitative findings.

I will base my research on the literature review, with a special focus on the materials regarding the position of a museum in society and the way it has been changing with the expansion of technologies and digital culture. Due to the fact the COVID-19 pandemic period started, in the year 2020, I find my research to be important for the cultural field. However, because of the short time, not many publications have been made. Therefore, I base this part of my research in a great extent on Internet publications and the information gathered during my interviews.

1. THE CONCEPTS OF DIGITAL CULTURE, DIGITIZATION AND DIGITALIZATION IN MUSEUMS

Even though technological progress and digitalization are frequently said to be similar or the same, their expressions differ. Technological progress is a sustainable innovation effort, while digitalization is the act of detaching each system from the manual system. This alteration is quite considerable between these two concepts.

The progress of information technology in recent years has made the digitization process more diversified and progressive, which made a concept of a virtual museum to be a place where a museum links with its visitors out of the museum's walls (Li, 2015). As a result of this digitalization process in museums, information can be received by the audience with no limitations like time or space. Visiting Louvre does not require visiting Paris anymore, one does not need to go to London to admire The British Museum's expositions.

1.1. THE CONCEPT OF DIGITAL CULTURE

The discussion about the digital shifts in museums would not be complete without realizing the reality of these institutions' walls. To perceive the situation holistically the concept of digital culture should be brought up.

Technology impacts our culture. Shifts and changes happening in the modern societies relate to introducing information and communication technologies into our lives in the way that electricity was introduced years back.

Today, due to the appearance and growth of the Internet and the usage of personal devices like laptops and smartphones as a mass form of communication, technologies

develop a strong influence on culture by shaping the way people communicate, consume information, and interact with each other.

However, the technologies used nowadays cannot be seen just as tools helping people overcome certain constraints, but rather they should be seen as environments. If we take a closer look at the digital environment in which we live today, we will notice that it surrounds us – digital technologies are present in all aspects of our lives (Uzelac, Cvjetièanin, 2008).

This broadly understood surrounding leads to the concept of digital culture. Digital culture refers to the set of shared beliefs, values, behaviors, and practices that have emerged as a result of widespread use and adoption of digital technologies. It encompasses the ways in which people interact with and create digital technologies, as well as how these technologies shape and influence various aspects of society. It is a new creation happening by the innovations brought by the age in which we live and where technology takes up more space in daily life (Senbursa. 2021). The degree of presence of digital technologies in our lives indicates the existence of a digital culture (Gere, 2002). This degree can be hard to tell, as today we use the digital technologies without noticing them (Uzelac, Cvjetièanin, 2008).

As digital technologies continue to evolve and become more integrated into our daily lives, it seems to be right to suppose that digital culture will continue to play an increasingly important role in shaping our individual and collective identities, values, and experiences.

Thanks to digital technologies, participatory forms of culture have emerged. The digital culture's character can be explained by the types of technical processes needed for it to emerge, the types of cultural forms, and the kinds of experiences

which it involves (Miller, 2011). The nature of digital culture can be understood by examining the technical processes involved in its creation, the cultural forms it takes, and the experiences it offers to its participants. In other words, digital culture is shaped by both the technological affordances and the cultural practices and values of the people who use it.

Digital culture encompasses a wide range of phenomena encountered in daily lives, such as social media, online communities, gaming, virtual reality, digital art, and more. It also includes the ways in which digital technologies have transformed traditional forms of culture, such as music, film, and literature.

When coming to museums, digital culture has created a paradigm shift in the museum world by enabling each one of us digitally. This shift challenges the ways we think and work in the 21st century. The institutions like museums must respond to the expectations of digitally enabled audiences if the aim is to remain relevant to the modern world. To do it, it is essential to understand the position of digital experience in the modern audience. It is not less authentic and can be treated as a substitute for a real-life experience (Giannini, Bowen, 2019).

1.2. THE CONCEPTS OF DIGITIZATION AND DIGITALIZATION IN MUSEUMS

Digital culture is shaped by digitalization (Miller, 2011). To understand this term, another term, digitization, should be firstly brought up. One of the simplest, shortest, and hardest to disagree with definitions of the term digitization seems to be the one found in Gartner's IT Glossary. Following it, it is "the process of changing from analog to digital form" (Gartner, 2015).

In other words, digitization refers to the process of converting analog materials, such as physical objects, images, or text, into digital formats. This might involve creating high-resolution scans of photographs or documents or using 3D scanning technology to create digital models of physical objects. The goal of digitization is to create digital versions of physical materials that can be accessed and preserved easier compared to their analog counterparts. Many examples of such applications can be found in the surrounding world – the digitization of art, music, digitization of paper-based archives, business, education, healthcare.

To sum up, it is information that is digitized. In order to speak about the processes behind it, we speak about digitalization (Bloomberg, n.d.).

Digitalization is the way digital communication and technologies reorganize areas of social life, as another definition states, digitalization means "the changes associated with the application of digital technology in all aspects of human society" (Stolterman and Fors, 2004). In other words, the term digitalization stands for the processes in social life, people's interactions – and here mailbox or social medias can be brought up (Bloomberg, n.d.).

Following the Brookings report, the advent of digitalization is bringing about a significant transformation in the world of employment, affecting not only individual workers, but also entire industries and regional labor markets (Muro, Liu, Whiton, & Kulkarni, 2017).

The report states that acquiring digital skills is an important asset for a success in the modern world (Muro, Liu, Whiton, & Kulkarni, 2017). With the institutions, like museums, implementing digital technologies, the workplaces significantly change, especially thanks to automatization (Bloomberg, n.d.).

In the context of museums, the term digitalization refers to the broader process of integrating digital technologies into all aspects of museum operations, from collections management and exhibitions to visitor engagement and education. This might involve using digital tools and platforms to manage collections, curate exhibitions, or create interactive experiences for visitors (Gianni, Bowen, 2022).

While digitization is a key component of digitalization, it is only one part of a larger process of transforming museums into more technologically advanced and digitally integrated institutions. The goal of digitalization is to leverage digital technologies to enhance the museum experience for visitors and improve the accessibility and management of museum collections.

In museum digitalization, technology and societal impact are balancing each other. That means when pondering the digital museum, it's in fact visitor's experience that we should focus on, rather than the technology itself.

The digitally enhanced museum experience promotes the social and educational role of physical, traditional museums and adds value to cultural heritage. The shared feature of these doings is that data can be received by visitors faster and easier, with no constraints of space or time (Gianni, Bowen, 2022).

The digitization of museums has brought some drawbacks, even though the process of developing of museums might benefit from the usage of digital technologies. The development of applications in virtual reality, to take example, makes physical museums increasingly more isolated and useless without visitors. Participants also lose the opportunity to share and communicate their points of view with others. From the point of view of the users, such a concept of a museum does not aim to replace

the traditional museum. The digital information should rather, ideally, complement the museum in its physical form (Gianni, Bowen, 2022).

The traditional value of museums has been inadvertently diluted by the usage of digitalization in museums and for the audience it plays a role that cannot be replaced (Scott, 2007). Therefore, the goal of digitizing and digitalizing museums should be aiming to fill the gaps in the physical museum rather than virtualizing it. Since the museum experience should be based on evaluating the actual objects on site, improving the user experience in a physical museum will be a major consideration in future efforts to digitize museums. In order to make proper use of technology, museums need to understand, design, and evaluate the process (Li, 2015).

To sum up, digitization refers to converting analog materials into digital formats, while digitalization refers to the process of integrating digital technologies into all aspects of museum operations. Digitalization is transforming museums into more technologically advanced and digitally integrated institutions, with the goal of enhancing the museum experience for visitors and improving the accessibility and management of collections.

However, there are some drawbacks to digitization, such as the dilution of traditional museum values and the potential isolation of physical museums. Therefore, future efforts to digitize museums should aim to fill gaps in the physical museum experience rather than virtualizing it. Museums need to understand, design, and evaluate the digitization process to make proper use of technology.

2. DIGITAL TECHNOLOGIES APPLIED IN MUSEUMS

The application of digital technologies in museums has revolutionized their operations, incorporating digital tools and platforms to manage collections and improve the visitor experience. This process goes beyond digitization and aims to leverage digital technologies to enhance the museum experience and improve the accessibility and management of collections.

With the pandemic outbreak, information technology has gained its strategic importance, causing digital transformation to speed up. Remote work, classes, conferences, exhibition openings were conducted online. The pandemic has caused the government to implement numerous, frequently long-lasting restrictions, which resulted in digitalization initiating a fast transformation, entering the business and private lives. (İrge, 2018).

2.1. DIGITAL TECHNOLOGIES APPLIED IN MUSEUMS – SPECTRUM

In the essay "The Conquest of Ubiquity" Paul Valéry writes:

> "Our fine arts were developed, their types and uses were established, in times very different from the present, by men whose power of action upon things was insignificant in comparison with ours. But the amazing growth of our techniques, the adaptability, and precision they have attained, and the ideas and habits they are creating, make it a certainty that profound changes are impending in the ancient craft of the Beautiful. In all the arts there is a physical component that can no longer be considered or treated as it used to be, which cannot remain unaffected by our modern knowledge

> and power. For the last twenty years, neither matter nor space nor time has been what it was from time immemorial. We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art" (Valéry, 1928).

In the modern, digitalized world, we must expect the forms of art and their presentation to evolve in the spirit of the times. Thus, digital screens, extended technology, and QR codes scanning systems, to name a few, naturally develop in the field of arts (Karayilanoğlu, Arabacioğlu, 2020). The museum industry has been impacted by digital technologies, transforming the way museums operate and enhancing the visitor experience.

Various digitalization methods can be divided into two: passive interactive digital technologies and active interactive digital technologies (Karayilanoğlu, Arabacioğlu, 2020). Sound systems, digital screens, and projection devices are called passive interactive digital technologies. They are common systems used by museums creating an indirect interaction with museum visitors.

2.1.1. Passive Interactive Digital Technologies

Passive Interactive Digital Technologies are a type of digital technology used in museums which provide a more immersive and engaging experience for visitors without requiring them to actively interact with the technology. Examples of passive interactive digital technologies used in museums include digital projections, ambient soundscapes, and interactive lighting. These technologies create an environment that enhances the visitor's experience and can help to create a more memorable and impactful museum visit. By using these technologies, museums can create a more immersive and engaging experience for visitors without disrupting the flow of their

visit or requiring them to actively participate in the technology (Karayilanoğlu, Arabacioğlu, 2020).

Digital screens

Digital screens are used to play videos or photographs in museum spaces. Frequently used among the sound systems, digital displays are technologies interacting with a person's perception of the projected displays without the viewer's active contribution (Karayilanoğlu, Arabacioğlu, 2020).

2.1.1.1. Projection Mapping

Projection mappings or video mappings are technologies used frequently by museums and institutions like schools or business places. The video mapping technology uses a projector as the main operating tool. Along with the dedicated software, the projector reflects a digital image on a surface, frequently an architectural object. It is one of the most frequently used display methods in museums, commonly used to make video and light shows (Karayilanoğlu, Arabacioğlu, 2020).

At the Van Gogh Immersive Experience Pittsburgh, the entrance lines were designed to be outdoors, and the indoor exhibit hall was laid out across the floors using benches and wheel projections on the floor (UNESCO, 2021).

2.1.2. Active Interactive Digital Technologies

Active Interactive Digital Technologies are a type of digital technology used in museums to engage visitors in an interactive experience. These technologies involve visitors actively participating in the experience, rather than simply observing. Examples of active interactive digital technologies include touch screens, interactive

games, and motion-sensing technologies. These technologies allow visitors to explore exhibits in a hands-on way and can create a more engaging and memorable experience. Active interactive digital technologies are becoming increasingly popular in museums as a way to attract and engage visitors of all ages (Karayilanoğlu, Arabacioğlu, 2020).

2.1.2.1. Touch Screens

Touch screens are digital displays sensitive to a finger touch or a dedicated pen. The first research on touch screens started in the middle of the XXth century with IBM's research in Ottawa, however, especially after the launch of the first smartphone – Apple iPhone – in 2007, users started getting accustomed to using touch screens.

In museums, touch screens are used in kiosks, tablets, or information panels. Thanks to this technology the information flow is much faster. The museum catalogs and tips regarding the exhibition layout are commonly presented with touch screens. It is possible to be a multi-user interaction, depending on the software used. The museum collection can be accessed digitally through touch screens, it is possible to zoom in on the chosen artworks, watch videos, and even play games.

2.1.2.2. Quick Response Codes

QR (quick response) codes are systems that redirect users to a given website or application when detected by digital devices – mostly smartphones by the usage of a specially generated code. It is a widely used interactive technology, as it is easily accessible to users and easy to manufacture. The QR codes can be used in museums for example by adding them next to the name tags of artists. This way visitors are directed to the online resource for detailed information about the subject. Thanks to this simple technology, the informative writing on the exhibitions is reduced which

helps visual integrity and focus on the collection. Important to point out, access to such extra data is at the visitor's preference. Another possible usage of QR codes by museums is by creating alternative museum experiences through museums' provided devices like smartphone/tablet applications (Karayilanoğlu, Arabacioğlu, 2020).

During the time of pandemic restrictions, the National Gallery in London created an open-air installation in central London allowing the audience to activate artwork on their phones by the usage of a QR code (UNESCO, 2021).

Nowadays, smartphones have built-in cameras that can detect QR codes. This facilitates faster access to information. This technology it is widely used in many museums, being convenient, easy to access, and widespread.

2.1.2.3. Virtual Reality

The idea of virtual reality (VR) was first introduced in 1965 by Ivan E. Sutherland. He predicted the foundations for virtual reality technology emergence today. Following his thought, rather than thinking of a computer screen as a method to display information, one should think of it as a window into a virtual world that can "look real, sound real, act real, interact real, and feel real." Sutherland was mentioning not only devices using hand movement, but also the systems which would be capable of detecting an eye movement and interacting with other senses (Sutherland, 1965). Since then, computer graphics and VR applications have greatly increased the level of graphical realism.

Virtual reality, along with systems such as augmented reality and mixed reality, is a system in an advanced stage of development. It is immersive, isolating a user from the real world, and taking them to the created virtual environment. It allows one experiencing a computer-generated virtual environment. With the development of

VR devices and headsets, their use becomes public and commercially available (Jung, 2016).

Virtual reality is used in art, education, video games, architecture, health, and many more. The usage of the technology in museums varies – it can be used as a tool in restoration projects or heritage sites under conservation. VR applications are also being used in museums to interact with limited-access artworks.

2.1.2.4. Augmented Reality

Augmented reality (AR) involves the projection of a digital image into reality. Ronald Azuma described the concept in the research from the year 1997 (Gülel & Arabacıoğlu, 2019). The researcher lists three systems that distinguish augmented reality from virtual reality. The systems are a display device, scene generator, tracking device, and tracking and detection. Augmented reality implementations can be easily used by the devices such as smartphones and tablets that are commonly used on daily basis. AR apps have become widespread around the world with the location-based multiplayer AR game – Pokemon Go.

Augmented reality technology is used in education, healthcare, museology, entertainment, architecture, etc. The usage of this technology in museums is increasing. A great example of it is the Tate Britain Museum project, which he created in 2019 for Instagram in cooperation with Facebook. By the usage of AR, the works of art were shown in motion, allowing to tell the story behind them. Augmented reality increases spatial and artistic communication in museums. It can be predicted that with the development of augmented reality technology, it will be increasingly used by the museums around the world.

2.1.2.5. Mixed Reality

Mixed Reality (MR) connects both augmented and virtual reality in one interface. Milgram and Kishino were the first to describe the concept of MR in 1994 with two terms: mixed reality (MR) and augmented virtuality (AV). Augmented reality is applied in these two ways in real space. The first is portable AR technologies such as smartphones and tablets, or wearables such as VR glasses. Here, virtual objects overlap with real space. In the second method, augmented reality perception is boosted by a virtual image projected on a physical space by technologies like projection mapping, which has been described before (Raskar, 1998). The concept of AR is created by the overlapping of computer-generated information with spaces. Augmented virtuality is a system closer to the virtual environment (Kılıç, 2016).

Mixing or combining digital worlds with the real one is not a new concept for museums (Galani, 2003). Mixed reality (MR) has various applications in modern museums. Virtual reality applications and devices help to develop and improve museum communication.

Many interactive devices can be used with such applications (White, 2007). To point out one, HoloLens 2.0, is a virtual reality headset created in 2019 by Microsoft. The headset is capable of creating a 3D perception assuring high resolution of an 8-megapixel tracking sensor at the same time. It allows a user to interact with hologram content with the support of artificial intelligence (AI).

In 2018, an innovative Mixed Reality Museum Kyoto was opened in Japan. MR museum offers the viewers the Microsoft HoloLens MR headset to experience an MR immersive experience while standing in front of a 400-year-old Japanese masterpiece. Additionally, a holographic image of a monk leads the museum tour.

2.1.2.6. Artificial Intelligence

Artificial intelligence (AI) is a sub-section of computer science that involves research into the ability of computers to create intelligent behavioral programming and behavioral data algorithms (Newell, 1980). Alan Turing argued whether machines could think back to the middle of the last century (Turing, 1950).

In contemporary times, AI is widely used. The medical industry, robotics, psychology, the entertainment sector, etc. use applications based on artificial intelligence. Artificial intelligence is becoming more realistic as research continues. Machine learning systems allow machines to learn – evolve simultaneously thanks to the received data, without the need of reprogramming each time.

AI is gaining popularity in the museum industry. In order to improve the museum experience, digital guide robots offer visitors suggestions based on the data received from them. An example of such a robot is Berenson, developed in 2011 by robotics engineer Philippe Gaussier and anthropologist Denis Vidal, known for an exhibition held at the Quai Branly Museum in Paris (Karayilanoğlu, Arabacioğlu, 2020).

Google's Arts & Culture digital application offers an AI app called Art & Selfie which matches the users with their counterparts in art history. Through such projects, art is disseminated to a wider audience through an entertaining process. AI is used in the creation of artworks, as well as in realistic interaction between machines and humans. In 2017, the The Next Rembrandt project 3D scanned and digitized 348 works by Rembrandt using a deep learning algorithm. The artistic style of the painter was imitated by the facial recognition technique. At the end of the research, by imitating the unique techniques used by the painter, a new Rembrandt work was created (Karayilanoğlu, Arabacioğlu, 2020).

In 1996 Deep Blue, IBM's artificial intelligence chess computer, defeated world chess champion Garry Kasparov. This event has started a debate whether machines could learn and acquire artificial consciousness. While it is not yet possible for machines working with different algorithms to reach autonomous consciousness, is still is an idea running many researchers in the modern world (Karayilanoğlu, Arabacioğlu, 2020).

Thanks to the use of artificial intelligence systems able to fully interpret data, visualization, and information from museum collections, and simultaneous access to online resources, the museum experience can be personalized and quickly updated.

2.1.3. Internet Usage

Next to the passive and active interactive digital technologies, there are digital methods available thanks to the usage of the Internet. Among them are methods such as: applying previously digitalized materials to create virtual collection displays, applications, games, and online publications, digitalization of collections and displays and exhibitions which can be published on the Internet website with the usage of social media platforms like YouTube, activity in social media like Instagram or Facebook, including creating new channels on the mentioned platforms, holding meetings of professionals with the usage of dedicated computer programs like Zoom, Microsoft Teams, Google Meet, live streamings (Karayilanoğlu, Arabacioğlu, 2020).

2.1.3.1. Social Media

Museums and cultural institutions are increasingly using social media to connect with existing and potential visitors. Platforms like Facebook, Twitter, Instagram, and Tumblr allow museums to showcase their collections, exhibitions, and events. This

use of social media has transformed the way museums operate, making them more accessible and transparent to the public. Social media users can participate in open dialogues with museums and view the processes behind the scenes, which has increased online public engagement. Long-form social media, such as blogs or Wikis, can market a museum in unique ways, while short-form platforms, like Facebook, can get messages across quickly and effectively (Gonzalez, 2021).

Museums have recognized the potential of social media platforms to engage with their audience and increase their reach. As already mentioned, one of the ways in which museums utilize social media is by sharing images and videos of their collections, exhibitions, and events. This allows museums to showcase their offerings and provide virtual visitors with a glimpse of what they can expect to see in person.

In addition to these, museums also provide behind-the-scenes glimpses into their operations. By sharing images and videos of the installation process or preparing an object for display, museums are able to give their audience a unique perspective on their operations, which can foster a deeper understanding and appreciation of the work that goes into creating a museum experience.

As I describe later in the course of this thesis, online events have become increasingly popular among museums, especially in the wake of the COVID-19 pandemic. Museums use social media to promote and livestream events such as talks, lectures, and workshops. This allows them to reach a wider audience and provide virtual visitors with access to their programming from anywhere in the world.
Institutions like museums use social media to run online campaigns and raise awareness about issues related to their collections and exhibitions. These campaigns may focus on social issues, such as climate change or human rights, or promote specific exhibitions or collections. Through these campaigns, museums are able to engage with their audience and highlight the importance of their work (Fine, 2023).

Finally, museums use social media to engage with their followers by responding to comments and questions. This two-way communication helps to foster a sense of community and allows museums to build relationships with their audience. Additionally, museums often run online contests and quizzes to further engage with their audience and promote their collections and exhibitions.

Social media has become an integral tool for museums to engage with their audience and increase their reach. By utilizing platforms such as Instagram, Facebook, and Twitter, museums can share images and videos of their collections and exhibitions, provide behind-the-scenes glimpses into their operations, promote and livestream online events, run online campaigns to raise awareness, and engage with their followers through contests and quizzes (Gonzalez, 2021).

2.1.3.2. Virtual Tours

Virtual museums are online exhibits or galleries designed to educate and entertain, offering a unique way to engage audiences worldwide. They are organized around specific themes, topics, or collections, showcasing artifacts, art, and specimens. While they cannot replace the experience of visiting a physical museum, virtual museums offer access to rare exhibits for remote learners and those who live far from major cities. Museums and educational institutions can create virtual museums with interactive programming, visual and auditory content, and educational experiences to tailor their engagement with visitors. Such museums offer a great opportunity to connect with a global audience and provide educational experiences to a broader population (Walhimer, 2022).

Virtual tours have become popular in museums, enabling visitors to explore their collections and exhibitions from their own homes. There are several ways virtual tours are used in museums, including 360-degree tours that allow visitors to navigate

through galleries and exhibitions and view objects from all angles. Interactive tours allow visitors to click on objects for more information, view videos or listen to audio guides. Some museums use augmented reality (AR) technology to offer virtual tours, providing visitors with 3D models of objects overlaid onto the real world. Guided tours led by museum guides, who offer commentary and insights about the objects on display, are also available (Marta, 2022). Virtual tours can be particularly beneficial for people with disabilities, providing an accessible way to experience museum collections and exhibitions.

2.1.3.3. Digital Archives

Museums and cultural organizations aim to provide wider access and increase engagement with their collections by using virtual platforms. Digitization of archives allows international audiences to access the museum's entire collection anytime and anywhere. Online visitors can listen to audio recordings from the museum's archive, giving them a glimpse into history. Digitization also enables teachers and academics to use the collections to enrich lessons and research. The audience experience is enhanced, as visitors can share their favorite artifacts online via email or social media. Digitizing archives has internal benefits too, as it makes documentation and cataloguing easier for curatorial staff and saves space. It also provides the possibility of creating exclusively online exhibitions and sharing collections with a larger audience worldwide (Martenstyn, 2013).

2.1.3.4. Mobile Applications

Museums started experimenting with digital mobile guides in the 1990s, which have since evolved into fully-fledged multimedia systems that allow visitors to access information in a personalised manner. Mobile apps for museums have also been

introduced and are rapidly expanding, with the majority designed for Apple's iPhone. Nowadays museums are developing their own mobile apps to provide visitors with an enhanced experience. These apps offer audio guides, maps, exhibit information, and additional interactive features (Economou, 2011).

This new technology opens up the possibility of reaching new audiences and enhances museums' ability to communicate with current and potential visitors, gathering the popularity of smartphones (Economou, 2011).

2.1.3.5. Museum Websites

Museums are a source of knowledge, experience and emotional resonance, and it can be challenging to project this onto a digital platform. However, when done well, a museum website can be hugely beneficial. It’s important for museums to ask themselves the right questions when it comes to creating a digital platform, including if it reflects their identity as an organization, if it appeals to visitors and what makes it special. Factors like target audience, area of expertise and location can all have an impact on the way a museum website works, and it’s important to consider how the website can showcase creativity (Charr, 2020).

Museum websites serve to promote and market the museum, provide information about the museum and its collections, engage and educate visitors, raise funds, sell tickets and merchandise, and provide customer service. A museum website contains information about a museum, such as exhibits, collections, hours, and contact information. The ideal museum website should engage visitors, provide relevant information, be easy to navigate, and make it easy to access amazing content. A well-designed website has a clear message and is visually appealing. Websites are important for museums because they provide a way for the public to learn about the

museum and its collections and to promote museum events and exhibitions (Simon, 2022).

Taken all into account, before the COVID-19 pandemic, digital technologies in museums were already becoming more prevalent. However, the pandemic outbreak accelerated the adoption of digital technologies in museums as many were forced to close their doors or limit their capacity. During the pandemic, museums quickly pivoted to online platforms and virtual experiences, such as already mentioned virtual tours or online exhibits that could be accessed from home. These digital technologies allowed museums to continue engaging with their audiences and even reach new ones. The following chapter is treating about this process.

3. COVID-19 PANDEMIC AND THE MUSEUMS

In November 2019 the pandemic caused by COVID-19 (SARS-CoV-2 - Severe Acute Respiratory Syndrome Coronavirus 2) started. There have been mass restrictions applied by most of the countries in the World, among them compulsory mask wearing, social distancing, home office or hybrid work. Following such strict measures, cultural institutions like theatres, museums, and galleries, were closed down or restricted. The COVID-19 pandemic has accelerated many of the changes driving museum transformation. Along with called-off exhibitions, and laid off staff, these institutions were called to organize online erzac programs.

Ticket sales and rental revenues decreased. According to the research by the Network of European Museum Organizations, conducted in November 2020 among 600 institutions, 75% of museums declared a loss of income in the amount of 30,000. EUR per week, even during the time of being opened for visitors (Muzeum kontra pandemia, 2021). Dramatic drops in the number of visitors were recorded even by

the largest museums in the world, like the Louvre, which in 2020 was visited by 72% fewer visitors than in 2019, and the Rijksmuseum by 75%.

The Museum of Modern Art in Warsaw estimates losses in 2020 at approx. PLN 1.5 million, the Museum of Architecture calculated that the revenues from its own activities decreased by 49% compared to 2019, the Zachęta in Warsaw estimates the losses at 35% (Muzeum kontra pandemia, 2021).

The crisis caused by the pandemic outbreak has accelerated the advances in technology, and trends like artificial intelligence, robotics, or computing (Giannini, Bowen, 2022). Many museums were adapting to the pandemic reality through extensive usage of the Internet tools – like social media, live broadcasting, online collection touring, online curation meetings and discussions, podcasts et cetera. Museums before the pandemic had already made a paradigm move from being centered around their collections to being centered around their users, their participation, and interaction. However, it is important to point out that when COVID-19 struck and the restrictions were imposed, the museums were frequently not digitally prepared.

> "There was little of the digital to be seen in museums, and even digital art was mostly excluded. Suddenly faced with the COVID-19 crisis, museum doors shuttered, their visitors gone – and so was their main source of revenue." (Giannini, Bowen, 2022).

Taking the pandemic aside, it seems fair to say that museums are ought to be ready more than ever to adapt to persistent technological changes amid a cultural and social revolution.

> “Museums are inevitably connected and participating across the global digital ecosystem where they inevitably find themselves entrenched, underscoring the central importance of an inclusive integrative museum model between physical and digital reality.” (Giannini, Bowen, 2022).

The museums’ material collections are defined by their physical existence like shape or materials, as well as the spaces they occupy in galleries, which are important to perceive an artwork. The continuation of Covid-19 results in human behavior adapting to being digital, while the void of the public space where people socialize, shrinks. (Giannini and Bowen, 2022).

According to the survey of the Network of European Museum Organizations from 2021, the pandemic has prompted museums to develop their digital offer. 67% of respondents have increased their social media activity and 24% have started creating video content (NEMO, 2021).

Yet, only 34% increased their digital budget, 40% changed the duties of their employees to meet requirements of the digitalization, and 7% hired new staff qualified in digital techniques. Over 80% of respondents claimed they needed more support for digital skills and transitions while 45% felt their institutions lacked digital skills. Four in ten museums claimed they were reviewing how they measure success as a result of the pandemic. Word cloud analysis found that "digital impact" was the most popular new measure of success. It said supporting the development of museums' digital work during the pandemic was important to help them "stay relevant in the future and encourage innovation" (NEMO, 2021).

3.1. THE IMPACT OF THE COVID-19 PANDEMIC ON THE MUSEUMS IN POLAND

On Wednesday, March 11, Minister Piotr Gliński decided to close museums, theatres, cinemas and art schools ("Premier: Podjęliśmy Decyzję O Zamknięciu Wszystkich Placówek Oświatowych i Szkół Wyższych - Kancelaria Prezesa Rady Ministrów - Portal Gov.pl," 2020).

There have been numerous reports based on questionaries regarding the impact of COVID-19 pandemic outbreak about the functioning of cultural institutions and the consequences following closing them up to the public. Among the institutions releasing them were prominent ones like ICOM (International Council of Museums), UNESCO (The United Nations Educational, Scientific and Cultural Organization), and NEMO (Network of European Museum Organizations). Regarding the situation in Poland, the reports were released by NCK (Narodowe Centrum Kultury) and Forum Edukatorów Muzealnych with the support of NIMOZ (Narodowy Instytut Muzealnictwa i Ochrony Zbiorów).

The difficulties which the cultural institutions in Poland and the World were facing were noticed even by the early research dating back to 2020, so the beginning of the pandemic period. Among the difficult subjects raised, the institutions mentioned work organization, administrative and socio-economic situations, and foremost technological obstacles. Technology was offering the main tools letting the institutions function and remain in contact with the audience during quarantine periods and other restrictions (Kamińska, 2021).

There have been around 1600 institutions from 107 countries that participated in the questionnaire of ICOM in the middle of 2020. The report states that 94,7% of cultural

institutions have been closed due to the pandemic outbreak. According to the collected data, half of the closed institutions have raised their activity on social media by at least by 15 %. The pandemic has changed the communication strategy of institutions. Among the differences in the virtual activity of the museums, there were:

- online availability of the collections (17,97%),
- organization of virtual exhibitions (16,16%),
- live broadcasting (18,80%),
- podcast creation (10,39%),
- quiz and competitions organization (19,21%),
- social media activity (47,49%).

88 countries participated in the UNESCO questionnaire dating between 16 April and 20 of May 2020. The virtual activity of the museums was underlined in the results with five main categories of actions undertaken by the institutions:

- Use of previously digitalized materials to create virtual collection displays, applications, games, and online publications,
- digitalization of collections and displays and exhibitions which can be published on an Internet website with the usage of social media platforms like YouTube or SoundCloud,
- an increased activity in social media like Instagram, Facebook, or Twitter, including creating new channels on the mentioned platforms,
- implementation of projects connected with the lockdown situation,
- holding meetings of professionals regarding the situation of cultural institutions with the usage of dedicated computer programs.

NEMO report presents the pandemic situation of 650 cultural institutions from 36 countries. The study has shown an increase in the virtual activity of the institutions. According to the study, especially hashtags in social media gained a lot of popularity. Among the most interesting initiatives, NEMO mentions:

- virtual walks and exhibitions,
- curator meetings held online,
- stories, which are short, temporarily available to watch visual materials posted on social media profiles of the institutions,
- educational applications,
- YouTube initiatives, like interviews with artists or curators,
- Pandemics' documentation showing personal materials, like narratives or videos.

(Kamińska, 2021).

The suspension of physical activity of cultural institutions due to the pandemic restrictions was announced starting from march 12th 2020 by Ministerstwo Kultury, Dziedzictwa Narodowego i Sportu (MKDNiS).

The situation of the pandemic restrictions in the mentioned institutions of Poland was closely examined and described in the report released on April 14th, 2021 by Centrum Cyfrowe in cooperation with NCK. Its authors depicted the situation of employees and their struggles to meet work requirements in the pandemic reality. Following the report, the contact with the employees was enabled mostly by video calls provided by programs like Microsoft Teams, Skype, and Google Meet, voicemail, telephone and text messages, sharing of a disc-like Google Drive, and, partly, social media chat solutions (Buchner et al., 2020).

The report has touched on an important problem regarding understanding a target group of audience for the online exhibitions of cultural institutions. Determining the audience was frequently based on the intuitive acting of the employees rather than professionally done field research. As a result, the communications were prepared without proper consideration of the public. Among the popular educational activities, the report has described online meetings, webinars, conferences, and workshops. 23% of the institutions have made their first steps in online curatorial tours. The authors of the report have underlined the importance of educating the employees working in the cultural sector in the digital transformation field.

According to field research of Forum Edukatorów Muzealnych and NIMOZ focused on educational activities online, during the pandemic times the most used social platform in Poland was YouTube, followed closely by Facebook and Instagram (Pasternak-Zabielska, 2021).

The new online work routine has caused an increase in online education by 382,87% (Buchner et al., 2020).

3.2. DIGITALIZATION METHODS USED BY THE UJAZDOWSKI CASTLE CENTRE FOR CONTEMPORARY ART DURING THE COVID-19 PANDEMIC

The Ujazdowski Castle Centre for Contemporary Art – the CSW (Centrum Sztuki Współczesnej in Ujazdowski Castle) was built in 1985 in a baroque castle raised in a place of XVIIIth century stronghold of the Mazovian princes. It is a place where contemporary art is being created, presented, and documented. The CSW's mission is to present multidisciplinary contemporary art reacting to the cultural and civilizational phenomena in the modern world. ("Centrum Sztuki Współczesnej Zamek Ujazdowski | Miejsce," n.d.). As the Ujazdowski Castle Centre for Contemporary Art, located in the center of Warsaw, by the Łazienki Park, is a place greatly focused on contemporary art and thus representative to the Polish contemporary art scene. The institution presents exhibitions, performances, runs a cinema, bookshop, library, and an art residency program. They have publications, organize workshops or guided tours. It is a space opened for experimentation and new thought, interested in blending various art disciplines ("Centrum Sztuki Współczesnej Zamek Ujazdowski | Miejsce," n.d.).

The Centre represents not only Polish but also foreign artists, at the same time offering a wide range of scholarships. It not only presents but also educates and actively mediates between modern art and the audience ("Centrum Sztuki Współczesnej Zamek Ujazdowski | Miejsce," n.d.). The Ujazdowski Castle Centre for Contemporary Art is under the jurisdiction of the Ministry of Culture and National Heritage of the Republic of Poland.

To examine the situation of the CSW during the pandemic outbreak, I have made an interview with Maria Nóżka, a Communication Specialist at the Ujazdowski Castle Centre for Contemporary Art, who coordicates graphical content, newsletters,

photographs, or translators. Among many other responsibilities, she was participating in the process of preparation of the online exhibitions which were held during the pandemic restrictions.

Nóżka underlined the fact that both the pandemic and the following restrictions have unexpectedly hit their institution, pushing the employees to make use of the existing means, methods, and archives, like the video collection. She named the pandemic operating of the Institution as an everlasting experiment where the most important if not only one aim was to captivate the audience.

The CSW did not have extraordinary past in terms of digitalization before the pandemic restrictions. It has rich digital archives based on photographic and video documentation. The Centre has cooperated with the media library, using the shared files to remain present and entertaining their audience on social media like YouTube, Instagram, or Facebook without copyright issues.

At beginning of the pandemic, people might have not been aware of the scale and level of danger behind the sickness. Even though the restrictions might have not been severe throughout the pandemic period, the audience might have not been interested in joining the physical exhibitions or other public events proposed by the institutions. Thus, the Ujazdowski Castle Centre for Contemporary Art has proposed on-line curation meetings, recorded with a camera.

One of the pandemic projects of the Ujazdowski was a follow up to an exhibition called Other Dances (Inne Tańce), curated by Agnieszka Sosnowska, which in its original form was a display about the process of development of performance and modern dance in Poland prepared by Ujazdowski before the pandemic. The Centre has created an online archive consistent of performances being a part of the Other

Dances exhibition. The closed archives were reopened, with an agreement of theatres and artists participating in the project. The records were available free of charge on the Internet from March 2020 to February 2021. Maria was presenting the parts, as teasers, of the promotional shows on social media.

During the pandemic time, the Ujazdowski prepared three 3D walk exhibitions: Ursula Mayer, What Will Survive of Us (Ursula Mayer, Co nas przetrwa), Collection Co-selection (Ko-lekcja wyborów), and Ludwika Ogorzelec, I'm Looking for a Moment of Equilibrum (Ludwika Ogorzelec, Szukam momentu równowagi).

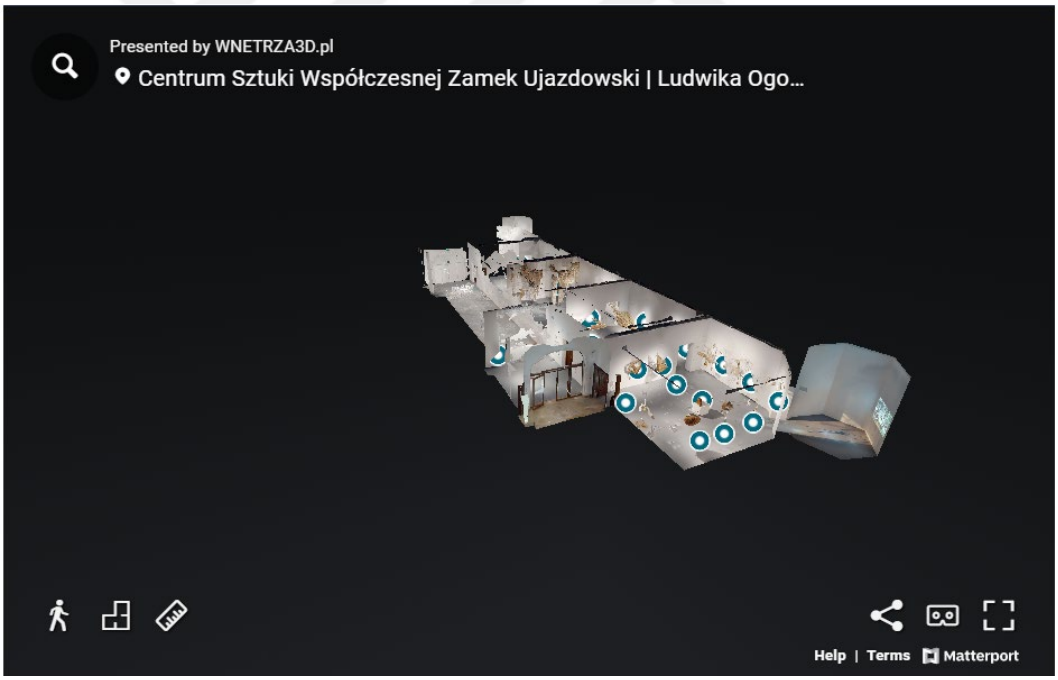

Figure 3.2.1. Ludwika Ogorzelec, I'm Looking for a Moment of Equilibrum, a 3D walk exhibition.

The 3D walks were not popular among the audience, according to the statistics there were not many visitors. The walks were prepared with a cooperation with an outside

company. The lack of interest of the audience might have been caused by the little imperfections of the programs – to mention one, like reflections of the photo camera visible on the objects being photographed.

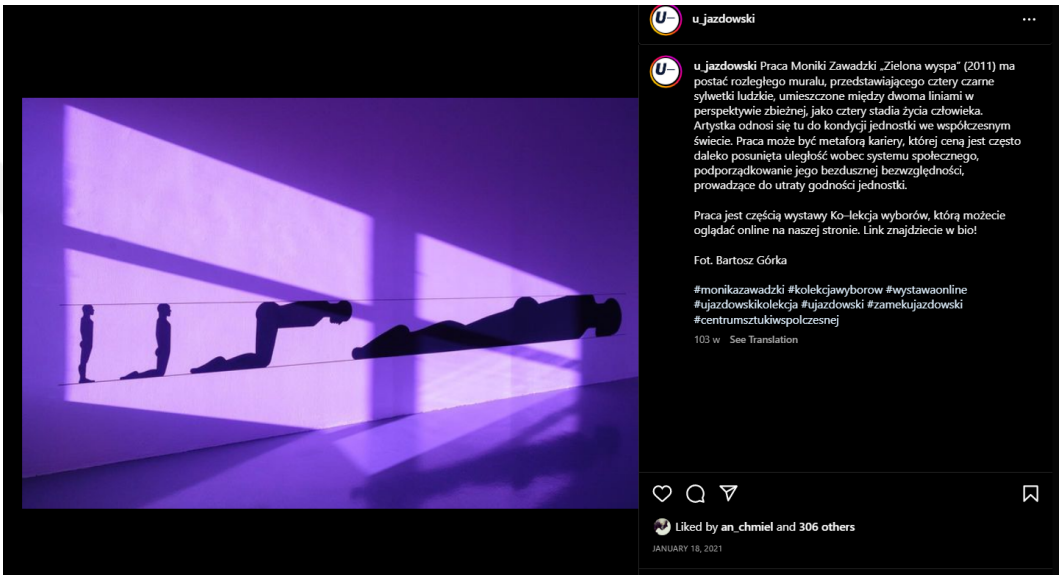

Figure 3.2.2. Ko-lekcja Wyborów, an exhibition to be seen online, presented on the Instagram profile of the CSW Ujazdowski.

Described before Collection Co-selection (Kolekcja Wyborów) was the only fully online exhibition, without an attendance of the audience at the opening. What is worth mentioning regarding this project, is the fact that the art pieces to be exhibited were previously chosen by the audience in an online voting. Significantly enough, the project in its online form has started before the pandemic of COVID-19. The exhibition itself was held during the pandemic, with an opening in a form of an online streaming. The documentation of this exhibition was prepared in physical space, so that it can be visited when the restrictions were to be lifted.

During the pandemic time, the Centre was also organizing guided tours recorded by phone called Art Viewpoint (Sztuka z perspektywy). The project was advertised as

presenting different viewpoints towards the exhibitions held in the Centre – perspective of a curator, artist, educator, a volunteer organizing the project, as well as many others. However, due to the general fear from the COVID-19, not many participants were willing to join the program, which at the end was labelled as unsuccessful.

Online workshops were another addition to the Ujazdowski's pandemic program. Performative Practice (Praktyka performatywna) were series of workshops having a great interest among the audience. The topics brought by Anna Nowak, Polish choreographer, were treating about the resistance in the time of plague. The experimental sessions were held through Zoom application and were aiming to enable discussion, support, as well as have a performative potential.

An Eye on a Collection (Oko na kolekcję) was an online exercise based on PDF cards with given exercises. Each card was presenting photos of the objects from the Ujazdowski's collection with questions regarding them. Each of the cards could have been later on printed and used to build the users' own collage made of the collection. Such a play was aiming to bring the art pieces closer to the audience.

As a part of the museum, there is a studio cinema located in the Ujazdowski Centre. During the pandemic, which has greatly affected the cinema sector, it was cooperating with a streaming platform created for studio cinemas – a virtual cinema – called mojekino.pl. It has allowed it to offer numerous movies from its repertoire online.

The Ujazdowski's cinema was additionally cooperating with MUBI platform and Europa Cinemas. As the first cinema in Warsaw it was offering free three-month-period of usage of the platforms.

Figure 3.2.3. One of the movies offered to be watched on an online platform by the cinema in the CSW and advertised on the Instagram profile of the institution.

Museums exist for the audience. From this perspective, the most important question seems to be whether the audience was truly interested in the online offer of the CSW. According to Maria, the audience of the CSW was missing the real, physical experience and the queues after opening the Institution back were reassuring in this.

From the institutional side, the pandemic has proven how much work is to be done and how much work the live show requires. Next to that, digital advancement requires not only good planning, but also strong financial support. The online offer has made the CSW confront with new challenges in the field of technology, and these were often simple – like a strong enough phone built-in camera, a stable Internet connection, or a process of preparation before online meetings in order to check up the technical background if the guests.

The pandemic has changed the approach of Ujazdowski to their collection. The large collection of the Centre was shown in a different way and from different perspectives – by photos and videos shown mostly through the social media channels. Such an approach has allowed the collection to be more available for public, as each piece did not need to wait for the official, physical display, which frequently takes years of preparation.

In the past curators might have not appreciated the social media role in the cultural life. It has started to shift after the pandemic, when the main way of presenting the content was through social media channels. Additionally, the content created by the cultural institutions started being more valuable, being the only window of connection. As a result of the two pandemic years, the CSW got more engaged in the social media, following with opening a TikTok account.

When asked whether the CSW has a plan of action prepared for a similar situation happening in the future, Maria answered that there is none.

3.3. DIGITALIZATION METHODS USED BY THE ZACHĘTA NATIONAL GALLERY OF ART DURING THE COVID-19 PANDEMIC

Another Polish cultural institution, the Zachęta – the Zachęta National Gallery of Art, is one of Poland's most prominent institutions for contemporary art.
The museum is under the jurisdiction of the Ministry of Culture and National Heritage of the Republic of Poland.

It is located in the center of Warsaw. The Zachęta introduces itself as an institution of which the main aim is to present and support primarily Polish contemporary art and artists. The museum had many exhibitions of famous foreign artists as well, which has allowed it to get internationally established. The Zachęta exhibits both individual and collective exhibitions, frequently attempting to picture the trends in the Polish and foreign art scene. It also exhibits in the Polish Pavilion in Venice. The museum organizes a contest and follows its exhibition which aims to let the young Polish artists be seen. The Zachęta has one of the largest catalog and archives collections in Poland which desdescribeslish art life after 1945. Each of the Zachęta exhibitions is complemented with a rich educational program which normally consists of curation tours, discussions, movie broadcastings, and concerts.

The museum was established in 1860 with the formation of Towarzystwo Zachęty Sztuk Pięknych (TZSP, Society for the Encouragement of Fine Arts), which was a civic initiative aiming to be beneficial for both society and artists. The association was organizing exhibitions, purchasing art pieces to create the national collection, and helping young artists (huncwot.com, n.d.).

Joanna Egit-Pużyńska, the head of the collection and inventory department of the Zachęta, who has agreed to give a short inside about the pandemic and post-

pandemic situation in the gallery, has reported an increase in the gallery's online activity, pointing out especially the social media. As a result, the museum's collection was presented to the audience more frequently.

After the announcement of the lockdown, the museum focused on providing viewers with access to exhibitions in 3D technology, participation in guided tours, workshops and online meetings. The instantly launched zachetaonline.pl platform made it possible to view not only for the Polish viewers, but the audience all over the world, with no time restrictions, showing a current institutions' cultural offer.

Figure 3.3.1. Zachęta Online initiative through Facebook live event.

Hanna Wróblewska, director of the Zachęta, claims that despite the unusual circumstances of the year, the Zachęta organization has emerged with a sense of strength and resilience, adapting to the new realities and challenges brought about by these times. The organization remains steadfast in its commitment to its fundamental principles of social and environmental responsibility, as well as its dedication to

supporting and promoting the work of artists. Despite the difficulties faced, the Zachęta has continued to fulfill its mission and purpose, and looks forward to continuing to do so in the future (Jak Pandemia Zmieniła Instytucje Kultury? 2020 Rok W Zachęcie," 2020). Some of the exhibitions were prolonged due to the institution being physically closed during governmental restrictions. The gallery was offering online curator meetings, promotion events, attempting not to narrow down the offer despite the pandemic situation.

Despite closing the physical building, the Zachęta organized another edition of the Art of Education (Sztuka Edukacji) conference. Throughout the year, numerous events were held via online messengers, achieving record attendance, such as the first meeting with Rebecca Solnit in Poland (Jak Pandemia Zmieniła Instytucje Kultury? 2020 Rok W Zachęcie," 2020).

Curators of the Zachęta point out that in these challenging times the museum cared for the youngest audience by organizing special workshops for families with children, like "Sculptor at home" or "Tree of power". For this program the institution has used messengers like Zoom and Skype.

Figure 3.3.2. Zachęta's online workshops, "Tree of power". Source: zacheta.art.pl.

In June 2020, the Opened Zachęta (Otwarta Zachęta) received the governmental grant, thanks to which works from the Zachęta collection will be digitized and made available online. This project is implemented in cooperation with TZSP and Centrum Cyfrowej. The Zachęta tries to be opened to people, like the name of the project suggests.

As a result of the implementation of the initiative, the availability and quality of digitally shared cultural resources will increase, as well as the possibility of their reuse (Otwarta Zachęta. Digitalizacja i Udostępnienie Polskich Zasobów Sztuki Współczesnej Ze Zbiorów Zachęty - Narodowej Galerii Sztuki - Centralny Ośrodek Informatyki – POPC Wsparcie - Portal Gov.pl, 2020).

Figure 3.3.3. Otwarta Zachęta initiative. Photo credit: Centrum Cyfrowe.

Otwarta Zachęta project has existed much before the pandemic, but it has found its time with the events of the year 2020. The project was started early enough to make the pandemic easier for the institution to work during the restrictions.
Important to point out, the digitalized materials will be available for everyone, without a profile or a payment.

On the initiative of Eko Patrol, an institution which focuses on promoting environmental education, sustainable development, and eco-friendly practices in Poland (Rokicki, 2007), the Zachęta has resigned from printing promotional materials, paper magazines or the annual report. Further actions are planned to minimize the negative impact of our institution on the environment (Jak Pandemia Zmieniła Instytucje Kultury? 2020 Rok W Zachęcie," 2020). Magazyn Zacheta Online used to be among the printed materials of the museum. During pandemic rather than printing, the Zachęta has decided to move it to online space exclusively.

According to Egit-Pużyńska, the activity in the online sphere of the museum has grown significantly. Additionally, the collection is now being presented to the audience more frequently, similar to the CSW. These efforts have helped to increase awareness and accessibility of the museum's collection to a wider audience.

3.4. RESPONSES OF THE AUDIENCE TO THE DIGITALIZATION OFFERS OF MUSEUMS

In recent years, user experience has been considered a crucial issue by academic researchers and curators in museum digitization. As already stated, during the pandemic, Internet technologies have become an aid for artists, art professionals, and for the public. The extensive usage of digital techniques in the production and presentation of artworks has made art practices more accessible. It is important to ponder how these practices were received by the audience after the pandemic outbreak.

Following the fact that museum visitors tend to spend less than one minute contemplating each collection on-site (Yu-Chang Li & Wee-Chung Liew, 2015), one of the ways of keeping the attention of visitors can be extending time spent on each collection enhancing their knowledge by adopting several types of machinery. This has become a new field of research in digital curation. Research results suggest that the museum experience can be enhanced by an interactive and immersive environment (Wang, Stash, and Sambeek, 2009). Therefore, it is likely that the widely used, traditional way of exhibits description will be replaced by other methods to enhance the real experience of the audience.

Preliminary findings from the UNESCO, NEMO, and ICOM reports underline key issues connected to the digital implications of the pandemic crisis. First of all, many

museums indicated that their digital reach had increased since the lockdown. The UNESCO survey more broadly highlighted the widening digital gap, not only between cultural institutions but also in terms of inequality in access to digital tools in public around the world. More than half of the museums covered by the ICOM survey also indicated an increase in activity in social media while 40% of the museums covered by the NEMO study reported an increase in Internet traffic. The above results show how public demand for online museum content has risen during the early period of COVID-19 pandemic restrictions.

There are also case studies describing the early response of museums in the first half of 2020. For example, monitoring of social media accounts of Italian state museums and state institutions. The results of this study highlight the changing duration of museum visits in the digital space and suggest that new norm are shorter visits to a wide range of digital content. Furthermore, the findings also tell that a hybrid model of on-site and online experiences has the potential to increase public engagement (Agostino, Arnaboldi, & Lampis, 2020).

A similar study examined the responses of museums to the pandemic in the UK and the US in 2020. This research reflects the needs of the audience during the first phase of the lockdown period, namely educational, emotional and stakeholder engagement. The findings puts a special focus on those who may have difficulty accessing digital content presented by the institutions, reflecting the idea of a widening digital gap. The findings suggest that more work is needed to better create virtual visits, and monetization of digital content may support museums in the long term (Samaroudi, Echavarria, & Perry, 2020).

The pandemic has led to the widespread adoption of digital technologies in the art world, making art practices more accessible to artists, art professionals, and the

public. Still, it is important to consider how these practices are received by the audience after the pandemic outbreak. In museum digitization, user experience has become an important issue, and interactive and immersive environments have been shown to enhance the museum experience. The pandemic has also shown the widening digital gap, not only between cultural institutions but also in terms of inequality in access to digital tools among the public around the World. As public demand for online museum content has risen during the pandemic, case studies have shown the potential of a hybrid model of on-site and online experiences to increase public engagement. However, more work is needed to better create virtual visits and monetize digital content to support museums in the long term.

CONCLUSION

As museums were forced to close down their physical places and implement pandemic safety measures, it's not unbelievable to think that future museum planning may take this as an opportunity to change. Considering the negative effects that the COVID-19 restrictions have had on the art industry, it is likely that many artists will be trying to act preventively from similar possibilities in the future.

The COVID-19 pandemic and the crisis following it have given rise to numerous reports in which researchers were pondering the potential ways the society will evolve. The reports mention the possible continuation of the social transformation underlining the development of digital technology at the same time. The disintegration of traditional modes of socializing as well as of the social system is underlined to be one of the risks coming with the described changes (UNESCO, 2021).

The pandemic-related crisis underlines the importance of public authorities in the process of museums' development. This process is crucial for the in society. The COVID-19 crisis has confirmed the importance of the matters related to digital technology, tourism development, and the creative economy in general, as well as the social role of museums. It has painfully exposed the digital divide in the museum network, as well as the fact that the sector in many areas around the Globe is more fragile than could have been expected. The role of public authorities in planning, supporting, and also funding museums is crucial, if we see these institutions as a common good, necessary in our world.

In Museums & Society 2034: Trends and Potential Futures, Merritt (2008) has predicted some trends for the museums of the near future – which seem to be correct

so far. Following the research, museums face many decisions regarding the collection, presentation, and conservation of new forms of virtual objects. With the world becoming digital and virtual, the costs of distribution, storage spaces, and computing power continue to decrease – moving people away from physicality. The raise of this digital world increases the awareness of the public of the world of non-digital resources. Museums are crucial as proof of authenticity, answering the human desire for reality, while the wonders of technology lead in the opposite direction (Merritt, 2008). In 2034, Merritt continues, the collective experience is more fragmented than ever. However, museums provide shared experiences for different audiences, serving as safe agoras for civil dialogue. Museums help people navigate a world of information by filtering and verifying trustable content (Merritt, 2008).

Will the Zachęta National Gallery of Art and the Ujazdowski Castle Centre for Contemporary Art change after the pandemic? Based on the reports, collected data, interviews, and online initiatives, it can be undoubtedly stated that in both art museums social media became the main means of communication during the COVID-19 pandemic, as well as the main work tools. Reaching the audience was possible and easier thanks to the social media services like Facebook, Instagram, and YouTube.

No wonder these institutions have shown a significant upgrade in the digital methods used during the hard times of the pandemic period. In the scope of their projects during the restrictions they were using the previously digitalized materials, creating virtual collection displays, digitalizing collections in order to publish them on the Internet on the platforms like YouTube. The extensive usage of social media channels cannot be underestimated, where the institutions have increased their activity. Additionally, these and other institutions were holding curator and other professionals' meetings.

Will such an extensive usage of digital tools continue? For sure to some extent. But both of the institutions' representatives asked about the special plans could not specify any ideas or programs.

Investment and support, continuing after the pandemic, are crucial for the museums' digital abilities development. Based on the research on which this thesis is based, small and medium-sized museums of art need special attention being the most vulnerable to deficiency of resources and knowledge.

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