

MASTER'S THESIS

„The internet as curatorial space“

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FOREWORD

In the master thesis "The Internet as curatorial space", the field of a curator for art and culture is being mapped in the digital sphere. The role and the work field of a curator has changed over time and developed a methodology and a tool set. It has to deal now in the age of information with new and constantly changing challenges. Not only the technology and its use has become important in the daily work, but also the grounding ideas of the web structure, mass media communication and well thought through digital transformation are of high importance.

In the context of this thesis, the curatorial approach to the Internet as a curatorial space is investigated in order to emphasize not just web-based art but also digital versions of classic art forms and the context in which they are displayed. It is the particularities of the process of curating on the web that distinguish it from the process of doing so in physical space. As a result, the practice and the results are shaped by these particularities. In light of this, we will compare and contrast the practices of offline and online curation by conducting research on theory and practice in a variety of professional fields. These fields include curation as a spatial practice, as a networking practice, curation from an operational and managerial perspective, and curation as a practice that is intellectually stimulating and emotionally seductive when carried out in dialogue with audiences.

This master's thesis intends to map the areas of activity, investigate the conditions, the obstacles, and the characteristics of an online art curator, and then compare those findings to those of their offline counterparts.

In the scope of this thesis, a heuristic hermeneutic approach will be pursued to map the field of the curator for art online and to outline the very individuality of the processes itself.

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List of Abbreviations

TCP/IP - Transmission Control Protocol/Internet Protocol

BMBF - Federal Ministry of Education and Research

UCD - User-Centered Design

HCI - Human-Computer Interface

ZKM - Center for Art and Media Karlsruhe

AR - Augmented reality

VR - Virtual reality

SM - Social media

1. Introduction

Transmission Control Protocol/Internet Protocol (TCP/IP) was adopted by the ARPANET on 1 January 1983, and it was then that researchers began to assemble the "network of networks" that would eventually become the modern "Internet". More than four decades after its invention, the Internet has spread into every aspect of modern life, including the arts. Since the beginning of the Internet era, a great deal of effort has gone into creating online art exhibitions. Initially, the Internet was a cumbersome environment for art due to its low level of interactivity, sophisticated programming, significantly fewer features, unprepared audiences and limited devices around the world. Today it offers a wide range of display formats, design tools, storage capacity, interactive software and hardware, more powerful devices and access to an extremely large audience that is connected to it in many different ways.¹

Pioneers of art began experimenting with the newly emerging web space with the intention of reaching their aims of connecting with people all over the world, creating communities, disseminating knowledge, and dismantling barriers. Nevertheless, the utopian expectations that virtual exhibitions will be accessible to the general public, attract a large number of visitors, and provide an experience that is comparable to or even superior to that of a physical exhibition have not yet been fulfilled. Notwithstanding the limitations and restrictions imposed by the prevailing technological status quo, notable advancements have been made in the creation of the online art exhibition experience. This is the case despite the fact that the status quo remains. It is vital to investigate what changes are required for the practice of online art curation to evolve and what kind of online infrastructure is needed in order for it to thrive in this evolution. However, it is equally vital to consider what abilities the curator of

¹ Cf. Andrews 2019.

digital art needs to have in order to deal with the ever-evolving audience and technology.

The number of tasks and obligations that fall under the purview of a curator has grown, resulting in an increase in the number of opportunities for curatorial work on the Internet. Because this new realm of activity emerged at the beginning of the evolution of the Internet, it has not yet been acknowledged and established as a sovereign, self-determined curatorial practice with its own methodology and tool set. This is because recognition and establishment of such a practice is still in its infancy. In order to establish one, it is vital to gain a deeper understanding of the circumstances of this practice and investigate the distinctive qualities it possesses.

This thesis investigates the curatorial approach to the Internet as a curatorial space. It does so with the aim of emphasising not just web-based art, but also digital versions of classic art and the context of display. The distinction between curating in the virtual and in the physical realm hinges on the nature of the virtual. Consequently, the practice and the results are informed by these particularities. In light of the above, the aim is to compare and contrast the practices of offline and online curation by conducting research on the theory and practice of this subject in a variety of professional fields. These fields include the examination of curation as a spatial practice, as a networking practice, the analysis of curation from an operational and managerial perspective, and an investigation of curation as a practice that is intellectually stimulating and emotionally seductive.

The objective of this master's thesis is to map the areas of activity, investigate the conditions, the obstacles, and the characteristics of an online art curator, and then compare those findings to those of their offline counterparts.

This thesis will adopt a heuristic hermeneutic approach as the most appropriate methodology. The most significant issues raised by this thesis will be subjected to detailed examination and analysis following

the completion of extensive research on pertinent primary and secondary sources. The concept of contemporary art will be examined in depth in the initial section of the thesis's opening chapter. Subsequently, the duties and responsibilities of a curator will be elucidated, accompanied by a historical overview of the curating process. Ultimately, the focus will be on digital curation. The subsequent chapter will address the subject of the internet, with an investigation of the evolution of art on the internet over time.

In examining the evolution of the Internet as a curatorial space, it is essential to consider the role of the commons, as explored in the volume 'Aesthetics of the Commons.' This work highlights how artistic projects, which neither conform to traditional art forms nor align with political activism, can redefine spaces when intersected with the concept of the commons. The projects discussed in this book demonstrate how art can contribute to the discourse on commons, particularly through the creation of new perspectives on aesthetics. These discussions are vital as they reveal the potential of art to reshape social and political spaces through collaborative practices and shared resources.²

Furthermore, the notion of documentation as an integral part of the artistic process is expanding, as detailed in 'Documentation as Art.' This book presents documentation as a dynamic practice that not only preserves art but also participates in its creation and reception. The contributions in this volume explore how documentation itself can become part of an original artwork, challenging traditional notions of art preservation and curatorial authority. As such, documentation is increasingly recognized as a significant cultural form, essential for understanding and preserving the fluid and participatory nature of digital art.³

² Cf. Sollfrank, Stalder, and Niederberger, 2023.

³ Cf. Dekker and Giannachi, 2023.

2. Curatorial past and present

It is evident that the digital parallel universe is undergoing an expansionary process as a consequence of the proliferation of Internet technologies and the increase in global access. In the Western hemisphere, the usage of the Internet has developed into a commodity that is comparable to that of the telecommunications industry. Despite the limitations of modern technology in replicating the experiential aspect of art, a significant number of prominent figures in the art world currently employ the World Wide Web as a regular platform for showcasing their work and personal profiles. The maintenance of community interest, the outreach to new audiences, the promotion or exhibition of works online, the presentation of research, the introduction of artists and their works, the provision of online lectures, publications, or databases, and the maintenance of community interest are now all tasks that are included in the workload of any art museum or other professional organisation. Given the diverse range of responsibilities inherent to their role, professional curators must possess a comprehensive understanding of digital technologies. In addition to appreciating the artistic context, they must also possess the ability to effectively transform the art and its creative expression into a digital format that is both appropriate and manageable. In order to become a professional curator in the contemporary era, it is essential to continuously expand one's knowledge base and gain a deeper understanding of emerging methodologies and technological advancements. It is now imperative, when planning an exhibition, to gain familiarity with recent technological developments, to identify and engage with online platforms, to communicate digitally, and to express ideas in a manner that is accessible in the digital domain. While the marketing or social media departments are typically responsible for an institution's digital presence, the curation of digital art varies. In this context, the digital art curator plays an important role. As the work of

digital art curators is defined by their own methodology, they are not constrained by the marketing approach.

The most established institutions, such as museums and major exhibition projects like the biennial, have already begun to employ digital art curators in order to extend their display area. It is anticipated that this trend will continue in the near future. To illustrate, the 9th Berlin Biennale selected the DIS Collective, based in New York City, to serve as its curatorial team in 2015. This decision highlighted a shift in the conceptualisation of the exhibition-creation process, as well as a movement towards the digital in the physical output. However, smaller galleries, individual artists and collectives are also seeking to raise awareness in the vast digital landscape with the aim of promoting the dissemination, discovery, investigation and enjoyment of cultural creations. This is being done for a variety of reasons. It is noteworthy that during the global pandemic of 2020, the art world demonstrated an exceptional ability to utilise the Internet as a communication platform and leverage technological opportunities. In the subsequent period, the pivotal role of web technology in sustaining, maintaining contact, reaching new audiences, establishing novel formats and modes of communication, and ensuring continued visibility has become increasingly evident.

The concept of digitisation has permeated every aspect of contemporary life since the advent of the global pandemic, but its influence can be traced back to preceding eras. Since the advent of the Internet approximately half a century ago, the concept that the digital domain represents a novel arena for the acquisition and dissemination of knowledge, as well as for participation in various forms, has proliferated from academic institutions to businesses and the arts, and has become integral to our everyday lives. This is particularly evident in the context of the arts. It is evident that disseminating material via the Internet offers a plethora of advantages, the most significant of which are accessibility, the capacity for experimentation, replication,

storage, and rapid transmission. A physical exhibition's content can be augmented, interest can be generated, and even a permanent online record of the show can be produced through the utilisation of an online exhibition. Furthermore, it may curtail expenses associated with manufacture, such as those for insurance, shipping, and installation. It is able to tackle problems associated with conservation and preservation, such as those involving dealing with delicate or uncommon artifacts. Because of this, access to information is no longer restricted to people who have the financial means to travel and visit museums; rather, it is available to anybody who has access to a computer that is connected to the internet. Due to all this professional and technological developments, a curator is needed aware of his crucial role to advance the experience of art and culture in the digital to another level.

In the context of digital curation, the concept of the commons has gained significant importance, particularly when considering how art intersects with digital spaces. As explored in 'Aesthetics of the Commons,' edited by Cornelia Sollfrank, Felix Stalder, and Shusha Niederberger, this concept challenges traditional curatorial practices by introducing a communal approach to art in the digital realm. The commons, as a shared space for collective creation and participation, provides a new framework for understanding how art can thrive in online environments.⁴ Moreover, the role of documentation as an integral part of digital art has become increasingly evident. 'Documentation as Art,' edited by Annet Dekker and Gabriella Giannachi, delves into how documentation itself is transforming from a passive record of art to an active participant in the creation and reception of digital works. This shift underscores the importance of digital documentation in preserving and curating art in a way that engages with contemporary technological advancements.⁵

Technofeminist perspectives also contribute significantly to our understanding of digital curation. In 'The Beautiful Warriors:

⁴ Cf. Sollfrank, Stalder, and Niederberger, 2023.

⁵ Cf. Dekker and Giannachi, 2023.

Technofeminist Praxis in the Twenty-First Century,' Cornelia Sollfrank explores how feminist approaches to technology and the internet offer critical insights into the power dynamics and potential for resistance within digital spaces. This technofeminist lens is crucial for curators aiming to navigate the complex intersections of gender, technology, and digital art.⁶

2.1 Definitions of Curating

What, then, is the essence of the curatorial process? The term "curating" is often associated with the preparation of exhibitions in museums, galleries, or public spaces. These exhibitions are typically assembled by experts, frequently in collaboration with other professionals. However, the influence of a curator is not constrained by the boundaries of an art institution. Rather, it extends far beyond the scope of most people's perception. They bear responsibility for the organisation of the space, the co-design of the exhibition architecture, the viewing programme, talks and lectures, workshops, and publications, in addition to the management of the show. It is evident that the role of the curator extends beyond the domain of the art industry. There are numerous instances where individuals are employed in a curatorial capacity in fields as diverse as periodicals, retail outlets, digital platforms, and a vast array of other disciplines. These professionals are entrusted with the responsibility of implementing the conceptual framework and operational structure within their respective organisations. Despite the expansion of curation into other domains, such as business, its core functions remain intact. Rather than losing their original purpose, they have been adapted, tailored, and enhanced to suit the new contexts.⁷

It is widely accepted that the primary responsibilities of an art curator

⁶ Cf. Sollfrank, 2020.

⁷ Cf. <https://www.dictionary.com/browse/curate>, accessed: 24.4.2020

are those of a selector and an exhibition creator. In addition to selecting the artworks, the curator is tasked with constructing a narrative, one that encompasses both the tangible and the intangible realms. In addition to conceptualising and creating an idea, the curator is also responsible for managing the people and processes that occur behind the scenes. The role of the curator is often obscured by the procedures to which they are answerable. Consequently, it is not immediately evident how many tasks they are overseeing or in what areas of activity they are exercising their authority. Rather than a single action, their role is more akin to a combination of numerous activities, tailored to the specific field of art or institution in which they are operating.

The contemporary understanding of the term "curator" is shaped by a multitude of definitions. These include the following:

1. The act of assembling, navigating, and selecting for presentation, whether it be music or website content.
2. The process of organizing and caring for the objects or works of art within a museum or art gallery.⁸

The process of selecting items from a vast array of options for consumption and enjoyment by others is a practice that has been applied to numerous fields, including music, design, fashion, and particularly digital media.⁹ These definitions collectively emphasise the intellectual labour and administrative abilities of an individual or collective that serves the interests and/or requirements of another individual or group. In the context of art curation, it is imperative to possess not only an aptitude for aesthetic visualisation but also a profound comprehension of artistic and art historical principles. In many instances, the curator or the curatorial team is not responsible for personally undertaking all the requisite tasks. Instead, they frequently collaborate with a wide variety of other specialists, including exhibition

⁸ Cf. <https://www.oxfordlearnersdictionaries.com/definition/english/curate2>, accessed: 24.4.2020

⁹ Cf. https://www.macmillandictionary.com/dictionary/british/curate_2, accessed: 24.4.2020

architects, technicians, writers, artists, and many more, in order to realise their ideas. This is contingent upon the level of funding available and the total number of tasks required to stage the exhibition. Nevertheless, due to the significance of his contributions, he is involved in all decision-making processes, and he not only offers input but also frequently assumes a pivotal role in determining outcomes. Given the historical intertwining of exhibitions with this specific profession, it is essential to investigate the history of exhibitions in order to gain a deeper understanding of the specific purposes and the diverse roles that modern curatorial work plays.

2.2. History of Exhibiting

A substantial corpus of literature exists on the history of exhibitions. The majority of this literature emphasises the fact that exhibitions had their genesis in the collection of artefacts, both privately and publicly, that were subsequently displayed in an exposition. The Latin root of the English word "exposure" conveys the sense of "revealing or displaying." In contrast to the term *Sammeln*, which refers to the process of gathering, the English word "display" indicates the act of making a presentation to the outside world and also carries with it the connotation of relinquishing control. Although these two definitions may initially appear to be mutually exclusive, they are in fact inextricably linked within the context of the exhibitory complex. This is because even temporary exhibitions are constituted as collections of objects and actions that are held together by the act of exhibiting them together. According to the Brockhaus encyclopaedia, art shows had already begun to take root in ancient times.¹⁰ However, the concept of "art" did not then have the same connotations as it does now. The earliest known examples of art were utilitarian objects displayed on market stalls in

¹⁰ Brockhaus Enzyklopädie, (1987), s.v. "Kunstaussstellung."

ancient Greece, Rome, and the Middle East. These countries were the cradles of Western civilisation and have provided the inspiration for much of the art that has been created in the West. Furthermore, art was also expected to be displayed during religious events in both ancient Greece and Rome. Such events may have occurred in Athens, Olympia, or Delphi, for example. It was common practice to display artworks at public events and celebrations in Rome throughout the city's history. This tradition endured well into the Middle Ages, when it remained customary to display works of art as part of religious ceremonies. Artistic display was integrated into the fabric of daily life. The purchaser was the primary source of commission for new works of art, and as a result, the client was regarded as an active participant in the creative process. The freedom of expression and iconography of art were constrained during the creative process and required a period of development and emancipation before attaining the autonomy of art as we know it today. The initial substantial transformation in the domain of artistic production occurred in the urban centres of the period, marking a pivotal moment in the history of art. This shift witnessed artists charting a course independent of the prevailing authority structures, thereby forging novel linkages between the artistic realm and the broader society. The sales exhibitions of the 15th and 17th centuries for the workshop-, shop-, and market trade, particularly in Germany and the Netherlands, constituted a significant milestone in this regard. The art exhibition became the primary vehicle for artistic competition and the dissemination of educational ideals that were inextricably linked to the prevailing spirit of the Enlightenment era. Subsequently, independent art exhibition forms emerged in Italy between the 15th and 17th centuries. Subsequent to the conclusion of the 17th century in Europe, the academy exhibition, also designated the salon exposition, was established in Paris. The artistic production and the interconnection of society with art may be defined through an exhibition of this kind. Participation in a significant salon constituted a pivotal moment in an

artist's life and his acceptance within the cultural milieu. Exhibitions of this specific type were conducted in a limited circle for members of the nobility.¹¹ The Salon's exclusive position as an establishing arena was challenged with the inaugural presentation of the "Salon de Refusés" in 1863, an artist-organised event that deviated from the conventional format. The participating artists included Édouard Manet and Paul Cézanne. This marked a shift in the accessibility of art shows to the general public. While subsequent events saw further acts of artistic independence, the contemporary art show continued, and from that point forward, its audience was known simply as the exhibition audience. Only recent creative movements from the previous century, such as pop art, environmental art, and happening movements – which elevated spatial settings or temporal processes to the level of artistic objects – and, most importantly, land art, made an attempt to challenge the established norms of art institutions.¹² It is evident that exhibitions have undergone significant developments in terms of their content, approach, setting, and visualisation. Furthermore, they have established an audience with the specific purpose of engaging with the exhibition. Notwithstanding the numerous and significant advancements in the field of exhibitionary evolution that warrant acknowledgement, they are not discussed in this thesis due to the extensive scope of the subject matter. It is evident that exhibitions have undergone a profound transformation. However, as the audience expanded from a relatively narrow demographic comprising aristocrats, clergymen, and other elites to encompass a broader cross-section of society, exhibitions had to meet a more diverse set of expectations and adapt to accommodate new needs. The emergence of this new audience has led to a shift in their interest in and perception of art, influencing their behaviour with regard to exhibition consumption. This ongoing development is a key factor in the evolution of the exhibitionary

¹¹ Cf. http://www.beyars.com/kunstlexikon/lexikon_7776.html accessed: 12.8.2020

¹² Cf. Koch 2019.

experience. The advent of new art forms and formats of display has prompted a re-evaluation of the traditional modes of engagement with art, with the aim of making it more engaging and interactive. A further factor that has contributed to the public's enhanced access to and comprehension of culture is the proliferation of cultural institutions throughout recent history. Steven Hoelscher, a professor of American studies who also works as a curator, asserts that the majority of museums in existence today were established in the decades after the Second World War, and that the number of museums in existence is only expected to increase in the future.¹³ The upward trend has continued until the present day, with an increase in the number of establishments exhibiting art and a significant expansion in the diversity of formats through which art may be viewed and experienced in the modern era. In addition to museums, there are also art festivals, biennials, galleries, specific project spaces, and a plethora of other physical sites for art. A considerable number of these establishments are already making their way into the online realm. In addition to providing digital representations of what is available offline, they are also expanding and increasing the range of services they provide. Furthermore, web-based formats and forms are emerging as a new phenomenon on the internet. At this juncture, both attendees of exhibitions and the organisers of such events have benefited from an increase in the quantity and quality of information available to them. Furthermore, the latter have also undergone a process of professionalisation. The number of universities and independent educational institutions offering courses in curatorial studies and museology is growing. These institutions are emphasising the sophisticated state that exhibition production has reached. Throughout the course of this ongoing evolution of exhibitory practices, a central figure responsible for the presentation of an exhibition has gradually

¹³ Cf. MacDonald 2015.

emerged. This figure is the art curator, whose role is not only crucial but also multifaceted.

2.3 Evolution of curating practice - The curator and the curatorial

The role of the curator is multifaceted, encompassing a range of responsibilities and duties. In the view of the art historian Terry Smith, the title of a curator can be applied not only to a museum's employed exhibition makers and collection administrators in the present era, but also to all other significant working fields in the museum that are to be curated, such as the educational programme. It is essential to consider historical trends in order to gain a fundamental understanding of the profession and to investigate the roots of digital art curation.

There is considerable confusion surrounding the precise roles that a curator is expected to fulfil. In principle, the term "custodian" can be said to have been superseded by the more contemporary, sophisticated, and in-vogue term of "curator." The term "custodian" has its roots in Roman antiquity, where it was one of Jupiter's various epithets. In the context of Roman religion, it specifically denoted the protective role that Jupiter played. The term was first employed in the context of book printing in the eighteenth century, and it conveyed the idea of safeguarding the leaf. By the year 1800, the role of the leaf guardian had evolved to encompass those of a treasure guardian, watchman, and supervisor, with a particular focus on public collections. In the nineteenth century, the role of the curator was considered in the context of their work as a scientific reviser and collection expander, which was comparable to the role of the curator in a religious cathedral. In this context, the role of the custodian, which subsequently became the accepted designation for this position, was not perceived as a generalist position, but rather as a specialist role requiring expertise in a specific aspect of the collection's expansion, organisation and care. A consideration of the Latin root of the word 'curator', deriving from 'curare', reveals that it signifies the act of caring for, maintaining and attending to

something or someone. Anke te Hessen asserts that in numerous recent introductory texts, the terms "custodian" and "curator" are employed in an interchangeable manner, despite the fact that their respective domains and roles are distinct. In essence, the role of the custodian is that of a lifelong officer whose responsibility is the care of a museum's collection. In contrast, the curator is a temporary intellectual worker whose role is to contribute to a specific exhibition, publication, or discursive programme, before moving on to another project once their current role has been completed. This suggests that a custodian is an expert in one particular field, whereas a curator should possess a more generalised skillset. This is because, during the course of their temporary employment, curators are unable to amass comprehensive knowledge about the collections they are working with. In practice, however, a curator may specialise in a single subfield, expanding the collection, suggesting new acquisitions and spending their entire career in a single institution. In light of the fact that the respective action domains of these two words occasionally overlap, it is challenging to distinguish between them in contemporary practice. Furthermore, the term 'custodian' has been gradually superseded by the trendier and more current name of 'curator', which is generally used in modern practice. This is especially true when considering the fact that their respective action domains are somewhat comparable. The profession has, over the course of its history, formed its own methodologies and philosophies; yet, in tandem with the development of the profession, the actual quantity of labour has also undergone shifts.

Since the inception of the World Exhibitions in the nineteenth century, there have been concerted efforts to professionalise and classify the various types of exhibitions. These endeavours have been ongoing and will continue to be of interest in the future. For example, the renowned German journalist and author Alfons Paquet played a pivotal role in defining the concept of commercial exhibitions by emphasising their "show value". He attempted to categorise and classify the various styles

of exhibiting based on the commercial products that were displayed. The world exhibitions were witnesses to the process of industrialisation that was taking place; therefore, goods and products were the main exhibits. The objective of the world exhibitions was to provide an overview of the current state of technology as well as the cultural practices of the countries of the world.¹⁴ While Paquet's primary concern was not artistic, his efforts nevertheless had a significant impact on the way that art exhibitions are presented and approached today. This is largely due to the fact that the world exhibitions had a profound effect on the development of the global art scene. The most illustrative example of this historical display is the Venice Biennale. At this event, nations present their current creative achievements, showcasing their artistic capabilities on an international stage. Paquet believed that exhibits were an effective method of communication and had played an essential role in public education.

He posited that the displays are occurrences that are external sensations as a unified entity, yet on the interior, they are more or less assembled, organised, and a graded mass, whose components are reacting on each other. Paquet's view is that while exhibits are temporary, museums are permanent collections housed in a single location, where individual items are kept in proximity to one another and visitors are kept at a considerable remove. He did not view this separation as inherently negative; rather, he saw it as a natural consequence of the circumstances, particularly in light of the prevalent display formats during his era. Furthermore, he identifies the items in a museum as being characterised by their age and uniqueness, whereas the displays in an exhibition are marked by a blend of traits, including originality, substitution, and symbolism. The act of selecting objects for the purpose of exhibiting them, for instance, for display as models, allows the underlying principles of the exhibition to become apparent,

¹⁴ <https://www.duden.de/rechtschreibung/Weltausstellung> accessed: 14.8.2020.

as well as the expertise of the exhibition maker. The majority of museums in the modern world serve two primary functions. The first is to display the collection of the institution. The second is to display either permanent or temporary exhibitions that are comprised of works from the museum's collection, works and objects that have been brought in from outside sources, and works and objects that have been created specifically for the purpose of the exhibition. The division is not as clear as it was when Paquet described it in his book, *Das Ausstellungsproblem in der Volkswirtschaft* (1908), although he does highlight the particular specificity of the curatorial practice of selecting, organising and/or developing objects for a show in a specific space. Despite Paquet's efforts to categorise the exhibits according to their commercial nature, there was no established methodology for exhibitions at the time, as there is not currently. However, more than a century later, there are now methods and theories that can assist in the visualisation of storylines in space and in the selection process, particularly in relation to contemporary discourses within the art world.

The practice of curating has also evolved over time, giving rise to new forms and formats of expression for the curator, as well as a distinct curatorial identity. In particular, beginning in the 1960s with curators such as the Swiss Harald Szeemann, it has been established that the requisite abilities for the role extend beyond research and management skills to encompass creativity and highly individual qualities. This is particularly the case in the present era, in comparison to the circumstances prevailing at the time. In preparation for the 1972 Documenta 5 exhibition, he assembled a collection of contemporary art and printed materials that exemplified popular religiosity. This marked the inaugural instance in the history of this exhibition format wherein a single individual was held accountable for the creative outcome.¹⁵

Once more, the transient nature of the shows is underscored, as the

¹⁵ https://www.documenta.de/de/retrospective/documenta_5 accessed: 18.02.2023.

figure in question has established and solidified the notion of "intellectual guestwork," which has in turn created new avenues for curators to express their unique perspectives, research, and opinions. His approach to curation has not only contributed to the evolution of the discipline, but it has also prompted a critical examination of the contextual misplacement and misreading of artworks, particularly in the context of their proximity to other objects and works of art. Since the introduction of this criticism, the role of the curator has been required to expand, yet this has not halted the process of uncovering the numerous action sectors in which the curators can exercise their authority. The potential for the development of additional types of curators, along with diverse forms such as the artist-curator, has emerged concurrently with the growth of curatorial autonomy and the diversification of artistic endeavours into domains beyond traditional exhibition curation, including research, academia, and teaching.¹⁶ Since the aforementioned rupture, it has become increasingly challenging to differentiate between artistic activity and curatorial practice during the process of creating an exhibition. Nevertheless, the integration of an artistic perspective into the process has facilitated the curator's ability to express their perspectives and research more freely. An artist-curator is typically an artist who also assumes the role of a curator. As an artist, he brings a distinctive perspective to the process of assembling an exhibition, which contrasts sharply with the conventionally structured logics that guide the work of a traditional curator. The artist, as a practitioner of material generation and formation for creative expression, possesses the requisite knowledge and training to express thoughts in tangible form. Consequently, he constructs his curatorial vision by combining the works of other artists with his own artistic vision and expression. Art practices such as artistic research and conceptual art have advanced the technique of art

¹⁶ <https://curatingthecontemporary.org/2015/04/30/curator-as-artist-as-curator/> accessed: 19.08.2020.

creation into the domain of theory and research, thereby bringing it closer to the practice of curating.

The process of assembling artefacts for a show is as diverse as the approaches of the curators involved. It is asserted that traditional curators endeavour to incorporate objects and actions not only from their immediate surroundings but also from a logical and complex perspective. In contrast, artist-curators frequently engage with their artistic networks to present their own creative output in an exhibition context. This is in contrast to the approach of artist-curators, who frequently act in the capacity of curators themselves. In practice, however, it is challenging to distinguish between these two approaches, given that the conventional art curator is equally dependent on their network and is also able to communicate their aesthetic vision through the medium of the show. Both practices have been mutually reinforcing, particularly given that the practice of the artist-curator has already been self-established for some time. As a consequence, traditional curatorial practice has adopted certain techniques, and both practices have mutually benefited. Dorothee Richter's concept of co-dependency illustrates the idea that "the curator and the artist now closely replicate each other's position." This has led to the proposition of a new theoretical framework based on the figure of the curator as artist, which has not been widely explored thus far.¹⁷ The act of considering an exhibition to be an artwork has made it possible to think about exhibitions in new ways, as well as to act and behave in exhibitions, and to create new exhibitions. Not only is the method richer conceptually, but it is also more haptic, more emotive, and more multi-mixed.

The practice of curating, much like many other forms of humanitarian labour, is a referential one, in that it draws upon and makes use of a variety of existing theoretical and practical frameworks. This signifies that it draws upon and modifies theories and practices from other

¹⁷ O'Neill, P. (2010) The Curatorial Turn: From Practice to Discourse. In: E. Filipovic et al, (Eds.). *The Biennial Reader*. Bergen Kunsthall/Hatje Kantz, Bergen.

domains with the objective of attaining its own objectives. The role of the curator in the contemporary era is multifaceted, encompassing a range of responsibilities analogous to those of an artist, researcher, writer, manager, and networker. Consequently, the theoretical methodology he employs is supportive in nature and encompasses a diverse range of disciplines, including philosophy, economics, anthropology, art history, project management, sociology, and beyond. However, the practical tools he utilises remain limited and vary considerably from one exhibition to the next. There is a plethora of different types of hanging methods and conceptualisation ideas; nevertheless, none of them are universal and are implemented uniquely in each show. The role of the curator is not merely to display works of art; it encompasses a multitude of responsibilities. Hans Ulrich Obrist posits that the role of the curator extends beyond the mere display of artefacts within a given space. Rather, he suggests that the curator acts as a mediator between cultural realms, facilitating contact between artworks, objects and ideas.¹⁸ The act of considering an exhibition to be an artwork has enabled the conceptualisation of new ways of thinking about and behaving in exhibitions, which in turn has facilitated the creation of novel exhibition experiences. The practice of curating has become not only more robust from an intellectual perspective, but also more sensory, emotive, and encompassing of diverse media.¹⁹

In the context of the exhibition creation process, it is crucial to consider not only the personal capabilities of expression and exhibition production, but also the specific characteristics of the venue where the show will be held. This is because the personal capabilities of expression and exhibition production represent only one aspect of the equation. For a considerable period of time, curators and artists have been engaged in the pursuit of novel exhibition venues with the dual

¹⁸ Hans Ulrich Obrist. Sharp tongue, Loose Lips, Open Eyes, Ears to the Ground: 24.

¹⁹ <https://curatingthecontemporary.org/2015/04/30/curator-as-artist-as-curator/> accessed: 19.8.2020.

objective of expanding their audience reach and situating their works within a meaningful context. Hans Ulrich Obrist, a prominent figure in the field of curation, made his inaugural exhibition in a kitchen. This was in line with his penchant for staging large-scale international shows. The example of his "The Kitchen Show"²⁰ demonstrates enthusiasm and curiosity that broaden our vision of physical art exhibitions. These exhibitions need not be confined to traditional art spaces; exploring new forms of presentation can lead to innovative and engaging outcomes. In addition to non-art spaces, there is a vast array of mixed-use spaces for art, including the internet. Exploring these new spaces and experimenting with them can enhance personal curatorial practice and help to meet the demands of flexibility.

While some alternative spaces have undergone a shift in focus over time, artist-centred spaces have continued to evolve and have succeeded in their mission to support artists in ways that extend beyond the scope of conventional art galleries and museums. Alternative venues facilitate community development, provide a platform for the presentation of artwork that is new to a wide audience and/or is not geared towards generating sales, and allow for the development of new and experimental forms of artistic expression. They serve as a model for major actors in the sector while also serving as an incubator for new types of art, new audiences, and new ways of appreciating art.

In the contemporary era, alternative venues are playing an increasingly pivotal role in the evolution of art exhibiting, curatorial practice, artistic activity, and aesthetic perception. Since the 1860s, there has been a growing tendency to establish non-traditional art settings. Furthermore, since the middle of the 20th century, there has been an increase in the number of locations across the globe where art may be discovered. In the present era, art is exhibited in locations that were not previously utilised for such purposes, including forests, decentralised regions, and

²⁰ <https://waysofcurating.withgoogle.com/exhibition/the-kitchen-show> accessed: 11.8.2020.

urban public spaces. A noteworthy illustration of this phenomenon is the art trail that traverses the forested area of High Flaming in Germany. Here, artists were invited to create artworks that addressed the history of the site and integrated the experience of nature with that of the art.²¹ The role of the curator in such an environment is to select the most appropriate artworks in accordance with the historical context, the setting and the conditions of display. In addition, the curator is responsible for providing the audience with an accessible and enjoyable context for the pieces on display.

There are private companies that display art in their work in a professional manner. For example, the electricity supplier Verbund is collecting and showing art in their office for the benefit of both the public and their employees. They are building up a collection which is travelling constantly around the world. By doing so, they are fostering an understanding and appreciation within their staff and providing their clients and partners with new experiences. The curators of the house are dealing with constant changing exhibition conditions. There are even initiatives online only to show exhibitions like the Google arts and culture project²² or the universal museum of art²³ and much more, who experiment with new ways and technologies of display and new forms of art solely online.

In essence, the contemporary art world is characterised by a lack of boundaries with regard to the presentation of art and exhibitions. However, despite this, there remains a paucity of clarity surrounding the optimal approach to be adopted in each medium, the resulting outcomes, and the means of achieving a distinctive presence within the context of a vast and diverse array of competing voices. As is the case with most aspects of life, the solution is often found in a process of

²¹ <https://www.kunst-land-hoher-flaeming.de/> accessed: 20.09.2020.

²² <https://artsandculture.google.com/> accessed 20.09.2020.

²³ <https://the-uma.org/> accessed: 20.09.2020.

reduction. The application of a rigorous conceptual framework inevitably entails a process of elimination and the delineation of essential elements. It is the responsibility of the curator to oversee this process. The process of selection is of particular importance in the digital domain, given the limited attention span of online audiences. The limited attention span of online visitors means that the decisions made have a significant impact on the duration of their visits, the value they derive from the experience and the quality of that experience.

2.3 Digital curating

In the same way that a curator in the real world must contend with the white cubes of museums, galleries, public spaces and other physical exhibition sites, the curator of online content must contend with the frameworks of virtual spaces. Despite the fact that the digital art environment is subject to a variety of constraints and limitations, it is still possible to exercise creative agency within one's own means and to engage in curatorial work. The process of online art curation is shaped by the limitations imposed by the very nature of the Internet, such as its flatness, inability to transmit olfactory or haptic properties, and much more. Therefore, it is of utmost importance to understand what are the characteristics of the web structure, what kinds of limitations exist in addition to those mentioned, how to deal with them and how to overcome them. Undoubtedly, it must be taken into account that there is no single strategy that fits all situations and that not all types of art can be satisfactorily presented in the digital environment. It is also important to consider that not all online formats are appropriate for the same types of artistic expression. One of the ways to do this is to consider what kinds of artworks can be displayed, whether snippets or stories and histories of the works are appropriate for the space, and how these snippets or histories can be communicated to the audience. When it comes to building an online exhibition,

storytelling is one of the most important methods, but there are others such as hyperlinks, the integration of new technologies such as augmented reality (AR) or virtual reality (VR), and multimedia. Technology will continue to evolve, so it is important to keep an eye on it. But most importantly, you need to develop your own skills and approach to the digital world so that you can put your heart and soul into your ideas and communicate them in a way that your audience can understand.

The first step is to gain an understanding of the many kinds of online spaces that exist, and the different sets of constraints that come with each. Just as the exhibition space in a physical location is constructed by components such as walls, displays and objects, the digital environment is constructed by modules of digital instructions written in web languages such as css, java script, html, python and many more. Part of the available space (also called data space) is occupied by data that has been uploaded in the form of images, videos and applications that run in the backend. To build an online architecture, there are pre-built solutions with building blocks available for those who are not fluent in digital languages and do not have staff or funding. These solutions make the process easier, faster and more affordable. Using social media platforms and web space providers that are simple and well established for one's own purposes is another viable option. Similarly, the constraints on the ability to visualise the exhibition may be greater or lesser depending on the solution chosen for the location of the exhibition. However, even for sites that have been developed from scratch, the possibilities may be limited by factors such as the cost of programming or the lack of time available. These factors have a limiting effect on the process. The lesson we take away from this is that no matter what we do, there are always going to be spatial constraints that we have to work around, and they are just part of the game.

Apps and websites of art institutions, online journals, magazines and blogs, social media platforms such as YouTube, Facebook and

Instagram, and many more all generate and provide a space for viewing, displaying and disseminating all kinds of creative content. Advances in software and hardware development have made it possible to use technology creatively for the production and consumption of exhibitions. In addition, these developments have created communities of consumers and providers who can share and contribute to the experience. To give you an idea of what I'm talking about, in 2014 the Tate Modern in London used the immensely popular and well-known video game Minecraft to give visitors a new perspective on art by allowing them to construct digital worlds based on the pieces in their collection.²⁴ In 2015, another prominent figure in the art world, the Centre Pompidou in Paris, employed the same software as the previous year, Minecraft, to establish a digital community with the objective of reimagining renowned architectural works, such as Le Corbusier's Villa Savoye. This initiative aimed to expand the reach of the Centre Pompidou to a broader audience while simultaneously offering new insights into the work of some of the world's most celebrated architects. The objective was twofold: to reach out to new audiences and to provide new insights into the work of the world's most famous architects. The intention was to offer fresh insights into the work of some of the most well-known architects in the world.²⁵ The same technology, better known as a game in which players can construct objects using blocks and embark on quests, has been repurposed by museums as a means of creating distinctive art experiences for their visitors. The two institutions have employed the same software in markedly disparate ways, yet both have done so in a manner that is notably inventive and original. This is merely one illustration of the numerous potential applications of gaming software in the context of art mediation. The

²⁴ <https://www.tate.org.uk/about-us/projects/tate-worlds-art-reimagined-minecraft> accessed: 13.8.2020.

²⁵ https://www.centrepompidou.fr/cpv/ressource.action?param.id=FR_R-85fec66a2bf285951c76b2288fd9¶m.idSource=FR_E-85fec66a2bf285951c76b2288fd9 accessed: 13.8.2020.

creation of software for video games has brought numerous benefits to the artistic community and has even expanded its reach into the offline world. The incorporation of games and increasingly sophisticated technological elements into the learning process has become a prevalent trend in museums, particularly in the context of their educational programmes. Additionally, numerous examples of



hardware are playing an instrumental role in the modernization of online exhibitions. These include augmented reality and virtual reality technology, faster and more advanced computers with higher resolutions, smartphones, and a multitude of other examples. However, these will not be the primary focus of this thesis. In order to establish a distinction between the curatorial ephemeral practice and the immaterial software performance, the effect of the invisible work, rather than the technological set, will be the primary focus of this investigation. Consequently, software development will receive greater emphasis in this research.

Nevertheless, the population of technologically capable and interested visitors of online art exhibitions is relatively limited. Consequently, actions within this niche are directed towards a relatively small number of individuals. However, when one considers the ongoing process of learning to use technology, this population margin is expected to grow

over time. It is becoming increasingly pertinent to engage with the technical advancements that have been made in the artistic domain. This entails not only embracing the functions and potential of these advancements in a creative manner but also adapting them for personal use. This assertion is supported by findings from research conducted for the European Parliament's Panel on the Future of Science and Technology in 2019.

*There are likely to be more products and services combining artistic skills and digital technology in the future. Demand is set to grow as development leads to the world's population increasing, while becoming better educated and wealthier. This will probably increase the demand for more sophisticated products and services.[...]. It is plausible that there will be greater demand to go beyond the functional for a more satisfying experience.*²⁶ Furthermore, this indicates that the regulatory bodies are cognizant of the ongoing technological advancements in the domain of the arts and recognize the necessity to adapt and facilitate a superior experience for the end user, while simultaneously streamlining the processes for content creators with initiatives such as visibility-oriented awards. Despite its publication prior to the advent of the Corona 19 pandemic, the statement was widely perceived at the time as reflecting a notable shift towards digital engagement among all stakeholders in the art sector. It is evident that the advent of the deadly virus will not impede the process of future development, but rather accelerate it. In response to the pandemic, numerous cultural foundations have expanded the scope for applications for funding from artists, curators and institutions. The Swiss cultural foundation Pro Helvetia, renowned for its commitment to the arts, has launched a call for projects entitled "Close Distance", which explores new approaches to mobility within the cultural sector. While many projects have focused on technological and digital formats, others have also devised

²⁶ [https://www.europarl.europa.eu/RegData/etudes/STUD/2019/634440/EPRS_STU\(2019\)634440_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2019/634440/EPRS_STU(2019)634440_EN.pdf)
accessed: 12.8.2020.

innovative analogue formats in response to this call.²⁷

In Austria, during the third period of lockdown, the experience of art was accessible only through the medium of the media. It was no longer feasible to engage with art in a physical manner. A considerable number of museums, galleries, and art spaces were forced to close their doors to the public, yet they continued to operate behind these barriers. The digital art space gained significant traction and witnessed a notable increase in visitor numbers. In the face of the crisis, which triggered the flight or fight reflex, the art sector has opted to fight for its survival online. It has also taught its audience how to use the internet to engage with art. The internet has now become an established medium for both the creation and dissemination of art.

However, the online experience of an exhibition visit differs from the traditional format and requires a tailored dramaturgy that aligns with the digital context. While traditional art forms can be represented through digital reproductions, which limit their immersive experience, the digital domain offers a vast array of creative avenues to explore and showcase the multifaceted aspects and narratives surrounding an artwork, its creator, and the concepts it represents.

2.3.1 Art online and online art

In examining the impact of artistic practice on creative activity, it is intriguing to investigate the methods through which artists engage with the Internet. Artists have historically demonstrated a proclivity for engaging with the most pressing issues of the day. They have been and continue to be a reflection of the prevailing spirit of the age, viewed through the lens of their own personal experiences, political concerns, and historical events. This development has been accompanied by an increase in the number of tools and media available to artists for the purpose of creative expression. A review of historical evidence reveals that artists of different eras have employed a variety of styles, mediums, and techniques for creating art,

²⁷ <https://prohelvetia.ch/de/press-release/erfolgreiche-covid-19-ausschreibung/> accessed:21.09.2020.

reflecting the prevailing beliefs and values of their respective periods. The advent of the digital age has brought about a paradigm shift in the understanding of art, giving rise to a new aesthetic and functional paradigm that has rendered the traditional concept of artistic production obsolete. The proliferation and accessibility of technology, which has enriched the myriad of existing art forms, has contributed to the incorporation of online art into the global conversation about art.

From its inception, web-based art was perceived as a novel phenomenon with a clear trajectory towards sustained presence. Despite the current tendency to associate the term "post-internet art" with the decline of online art forms, the latter remains a vibrant and evolving field. From its inception, the advent of web-based art made it immediately apparent that the experience of art could be accessed from any location, at any time, and even on demand. The mere act of accessing the internet is sufficient to engage with web-based artistic experiences, which can transcend geographical boundaries. Since the advent of the Internet, creative individuals have been investigating the possibilities offered by the World Wide Web. From the outset, these artists perceived the webspace not only as a venue for the display of their work, but also as a vehicle for the expression of their aesthetic sensibilities. These pioneers not only established communities but also created artworks, thereby playing a pivotal role in the evolution of the web experience. Artists have been instrumental in driving innovation and envisioning new avenues for expression, extending beyond the conventional boundaries of the art world. In 2004, Rachel Greene authored a comprehensive account of the history of net.art, aiming to encapsulate the diverse characteristics of this nascent art form and its associated artists.²⁸

The concept of the commons has increasingly become relevant in digital curatorial practices, particularly in the intersection of art and online

²⁸ Rachel Greene, *Internet Art*, Thames & Hudson, 2004.

spaces. 'Aesthetics of the Commons,' edited by Cornelia Sollfrank, Felix Stalder, and Shusha Niederberger, explores how communal approaches to art within digital frameworks offer new avenues for curators. The notion of the commons challenges traditional curatorial strategies, encouraging a more collective and participatory approach to art presentation and engagement.²⁹

Additionally, the role of documentation in digital art has expanded beyond mere record-keeping to become a dynamic element of the curatorial process. 'Documentation as Art,' edited by Annet Dekker and Gabriella Giannachi, discusses how documentation itself can be considered an art form, shaping the way digital art is curated and preserved. This shift reflects a broader trend in the digital curation landscape where the boundaries between documentation and artistic creation are increasingly blurred.³⁰

Furthermore, technofeminist perspectives are crucial in understanding the dynamics of digital curation. Cornelia Sollfrank's 'The Beautiful Warriors: Technofeminist Praxis in the Twenty-First Century' provides insights into how feminist approaches to technology and the internet can inform curatorial practices. This perspective is particularly valuable in addressing the power dynamics and potential for resistance within digital spaces, offering curators tools to navigate these complex intersections effectively.³¹

The artistic collective originated at the outset of the 1990s, when web-based art first emerged as a prominent trend in the art world. In the present era, a considerable number of artists employ the Internet as a medium for the creation of art, utilising a diverse array of techniques. As with numerous other art movements that preceded net.art, the defining characteristics of these art forms were challenging to ascertain. Nevertheless, they rapidly became integral to the contemporary art canon and the history of digital

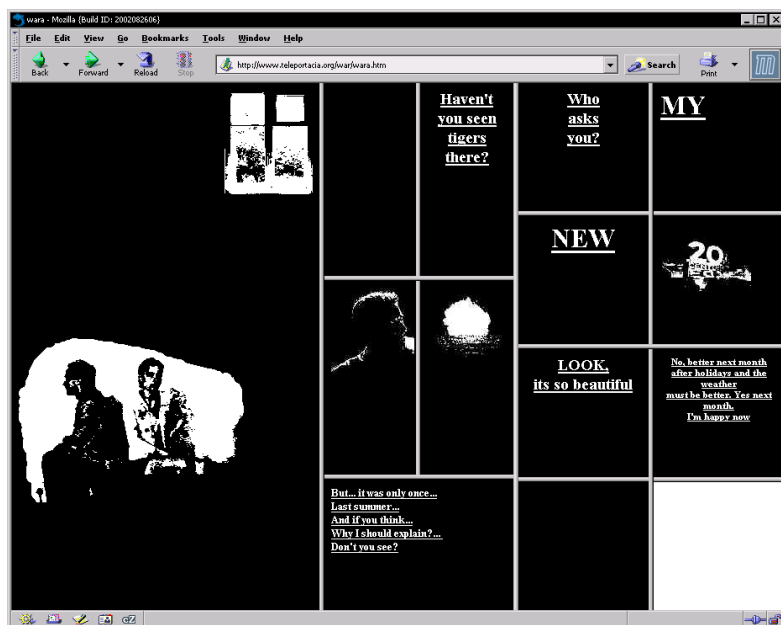
²⁹ Cf. Sollfrank et al., 2023.

³⁰ Cf. Dekker & Giannachi, 2023.

³¹ Cf. Sollfrank, 2020.

art.³²To name some, an important milestone was the work *Nettime*³³, which was basically a mailing list created after the meeting at the Berlin Club at the Venice Biennale 1995 on the topic of what's going on with the Internet. Members of the *Nettime*, comprising Geert Lovink, Pit Schultz and Nils Roeller (later joined by Ted Byfield and Felix Stalder), would publish their critical texts and disseminate them via post. In doing so, they constituted a community of artists with a keen interest in the potential of the internet and a willingness to explore its possibilities. Geert Lovink is still regarded as the founder of web criticism, a role he continues to fulfil.

Another mentionable artist is Olia Lialina which became famous for her work "My Boyfriend Came Back from the War"³⁴ in 1996, where she would use browser frames, hypertext, and images both animated and still to tell a story of a soldier coming back home to his love. The work draws inspiration from the divergences between cinema and the web as artistic and mass media. In its form, the work explored the then-emerging language of the web, which was still in its infancy.



³² <https://thehistoryoftheweb.com/net-art/> accessed: 5.11.20.

³³ <https://monoskop.org/Nettime> accessed: 13.8.2020.

³⁴ <https://anthology.rhizome.org/my-boyfriend-came-back-from-the-war> accessed: 5.11.2020.

By employing the same hyperlinking technique in a more abstract manner, the collective JODI has created a web page, www.jodi.org, which serves as an artistic representation. This representation, which is still on display, highlights the inherent flaws and planned mistakes inherent to the process of creating and maintaining a website. With the aesthetic of a hackers' workstation, the artists constructed a playful and counterintuitive web project that called into question the widely held belief that everything on the web should function seamlessly. The Netherlandish artists of JODI, Joan Heemskerk and Dirk Paesmans, are regarded as pioneers of browser crashing, game hacking and overloading operating systems, which they employed as a means of artistic expression.³⁵



The three art projects presented here demonstrate how artists have exploited the online opportunities of their time and the structure of the web to create narratives or artwork in web space and bring together communities. In addition to establishing novel virtual spaces, these artists also created new experiences and explored a diverse array of subjects. The advent of digital aesthetics in the physical world has prompted artists to integrate visual elements derived from technology into their traditional

³⁵ <https://rhizome.org/editorial/2008/may/21/jodi/> accessed:05.11.2020.

works of art. For example, as one of the most recently rising Austrian painters, Nana Mandl³⁶ incorporates glitches and digital imagery into her canvases.

The aesthetic principles of digital art are not constrained by the limitations of any single style, and its fundamental tenets remain to be established. It is reasonable to posit that the field will continue to evolve, and that, over time, the Internet will become home to an even wider variety of artistic practices and academic fields. The Internet has demonstrated its capacity to serve as an optimal environment for the evolution of novel forms of artistic expression, giving rise to the emergence of distinct virtual spaces over time. The web structure is undergoing constant improvement, and it is already possible for art to be developed freely within a variety of media. Consequently, the combination of technology and expertise will facilitate the display of art online in ways that are not yet imaginable. The changes that are currently observable represent merely the initial phase of a much larger process. The internet has enabled the preservation of numerous historical works of net.art in their original form and for an extended period of time. These works are accessible from any location worldwide at any given moment. It should be noted that not all digital artworks remain online permanently; many are designed to be ephemeral and may be experienced as part of an event or performance.

2.3.2 The digital art curator

As the duties and responsibilities of a curator have expanded and undergone significant changes over the decades, so too has the range of activities that may be carried out by a curator expanded in response to the opportunities afforded by the Internet. Derived from the practice in space, the art curator, along with many other cultural professionals, is establishing a presence in the digital domain.

³⁶ <http://www.nanamandl.com/> accessed: 20.02.2023.

The discussion of digitisation has permeated many aspects of modern life. The concept that the digital realm is a space for knowledge and participation has spread from academic institutions to many fields of the arts and has finally made its way into our day-to-day lives. As well as in the artistic sectors, large institutions are attempting to fill the void within their own four walls, and this endeavour has evolved into a worldwide trend.

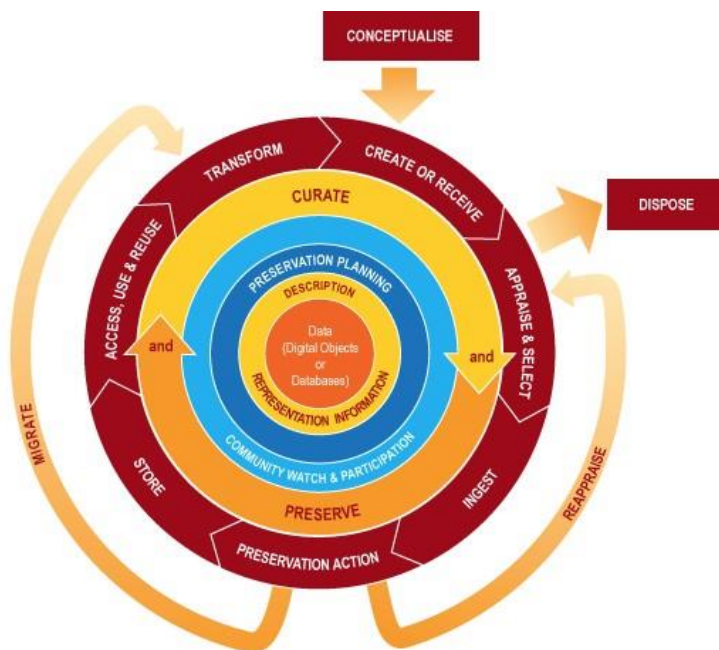
The term "digital curation" can have a few different meanings: *"Digital curation is the process of preserving, managing, and adding value to digital content to ensure its long-term accessibility. It involves actively collecting, organizing, preserving, and providing access to digital information and data to ensure its usability and authenticity over time."*³⁷

Another possible Definition could be: *Digital curation is defined as the practice of selecting, preserving, and providing access to digital content and data for current and future use. It is the process of maintaining, preserving, and adding value to digital assets over time. Digital curation is an important part of digital preservation, which ensures the long-term accessibility of digital content and data.*³⁸

³⁷ Digital Curation Centre. What is Digital Curation? Available at: <https://www.dcc.ac.uk/resources/curation-reference-manual/introduction-digital-curation> (accessed 27.01.2021)

³⁸ National Digital Stewardship Alliance. "Digital Curation." Accessed xxx. <https://www.digitallibrary.org/what-is-digital-curation/>

The digital curation lifecycle



The Digital Curation Lifecycle Model by Sarah Higgins, IJDC Issue 1, Volume 3, 2008

The digital curation lifecycle comprises the following steps:

Conceptualize - conceive and plan the creation of digital objects, including data capture methods and storage options.

Create - produce digital objects and assign administrative, descriptive, structural and technical archival metadata.

Access and use - ensure that designated users can easily access digital objects on a day-to-day basis. Some digital objects may be publicly available, whilst others may be password protected.

Appraise and select - evaluate digital objects and select those requiring long-term curation and preservation. Adhere to documented guidance, policies and legal requirements.

Dispose - rid systems of digital objects not selected for long-term curation and preservation. Documented guidance, policies and legal requirements may require the secure destruction of these objects.

Ingest - transfer digital objects to an archive, trusted digital repository, data center or similar, again adhering to documented

guidance, policies and legal requirements.

Preservation action - *undertake actions to ensure the long-term preservation and retention of the authoritative nature of digital objects.*

Reappraise - *return digital objects that fail validation procedures for further appraisal and reselection.*

Store - *keep the data securely as outlined by relevant standards.*

Access and reuse - *ensure that data are accessible to designated users for first time use and reuse. Some material may be publicly available, whilst other data may be password protected.*

Transform - *create new digital objects from the original, for example, by migration into a different form.*³⁹

3. The museum on the internet

This section provides a brief overview of the evolution of the Internet and the emergence of virtual museums on the World Wide Web. This is followed by an examination of the various designations and qualities of these museums, which collectively illustrate the inherent challenges in formulating a universally applicable definition. The differing methodologies are analysed, as are several attempts to classify museums that may be found on the internet. Subsequently, the numerous opportunities and points of view that museums can leverage to capitalise on the internet's potential are presented.

"Already in 1968, when the Internet had not even been born yet, the museumscientist Allon Schoener dreamed of the 'Electronic Museum'." The first computers were networked together for military purposes in the United States in 1969. In 1974, Korean artist Nam June Paik published an essay in which he outlined a vision of an "electronic superhighway" that could connect disparate locations via networks. In the 1980s, another network was established with the objective of

³⁹ <https://www.dcc.ac.uk/about/digital-curation> accessed:27.01.2021.

advancing scientific and educational endeavours. This network was designated the Internet. In 1989, the Internet gained significant traction with the advent of a novel Internet service, the World Wide Web (WWW). Only two years later, "[...] Tim Berners-Lee, at a time when there were perhaps fifty websites in the world, again formulated the idea of building a virtual archive of knowledge through computer networking." Consequently, the inaugural virtual libraries were established. Over time, an increasing number of museums began to present themselves on the Internet in a variety of ways. In 1994, Jonathan Bowen created the "Virtual Library of Museums Page," which served as a compilation of museum websites accessible via the Internet. Meanwhile, the sheer volume of information available on the Internet has reached a point where it is challenging to navigate and manage effectively. In light of this, a variety of methods are being employed in order to cope with the vast quantities of data. A variety of search engines, subject catalogues, indexes and overview pages have been developed with the intention of facilitating the discovery of museums on the Internet.

3.1 Definitions of the digital Museum

The plethora of designations for museums on the Internet, including web museum, Internet museum, digital museum, virtual museum, electronic museum, cyberspace museum, online museum, and hypermedia museum, gives rise to the following question: The term "museum on the Internet" is not yet clearly defined. This paper presents a number of definitions that touch on different aspects and should give an impression of what is meant by the museum on the Internet. One definition, proposed by web designer DiNicola, refers to all existing museums on the Internet as virtual museums: "By its very nature, a digital-art-museum that exists online is a "virtual museum" - sometimes with ties to an existing physical museum, sometimes not."

Jamie McKenzie assumes that the content can consist of anything that can be digitized: Virtual Museums live on the World Wide Web...the Internet. [...] A virtual museum is an organized collection of electronic artifacts and information resources - virtually anything which can be digitized. The collection may include paintings, drawings, photographs, diagrams, graphs, recordings, video segments, newspaper articles, transcripts of interviews, numerical databases and a host of other items which may be saved on the virtual museum's file server. It may also offer pointers to great resources around the world relevant to the museum's main focus.⁴⁰

Regarding the cultural dimension, Ben Davis, a consultant to the media and entertainment industry, states: The main issues of digital museums are storage, retrieval, and interaction. [...] Building digital museums is to reveal the essential nature of museums. The digital museum is an interesting hybrid of the culture that needs no museum and the culture that relies on them. The collective memory that digital museums represent is much like the culture that keeps its cultural identity in its head. Dematerializing objects and creating virtual buildings that anyone with a computer and a modem can visit makes the traditional museum into a transactional space.⁴¹

The information scientists Ewan Andrews and Werner Schweibenz formulate the following definition: [...] the virtual museum is a logically related collection of elements composed in a variety of media, and, because of its capacity to provide connectedness and the various points of access available, lends itself to transcending traditional methods of communicating with the user; it has no real place or space, and dissemination of its contents are theoretically unbounded.⁴² Klaus Fieberg bases his definition on the virtual or real existence of the

⁴⁰ McKenzie, J. (1997). Building a Virtual Museum Community. <http://www.fno.org/museum/museweb.html> Abruf: 9.6.21.

⁴¹ <https://archive.aperture.org/article/1994/3/3/the-digital-museum> accessed: 20.02.2023.

⁴² Schweibenz, W. (1998). Das virtuelle Museum. <http://www.compania-media.de/mum/mumfo01.htm> Abruf:

12.6.21 Andrews, E. (2019). Who invented the internet. <https://www.history.com/news/who-invented-the-internet> 01.05.21.

museum: "Virtual museums can be the Internet presentation of real existing museums. [...] Besides virtual museums, which are based on a real museum, there are, however, also "real" virtual museums, which "exist" in the respective form exclusively on the Internet. According to Annette Hünnekens, media such as video disc, CD-ROM and computer-based stations, which found their way into European museums in the 1980s, could not be described as "virtual" museums yet. They serve mainly to illustrate the exhibits. But with the possibility of networking individual digitized museum collections in Europe [...] for the first time the potential of virtual museums actually seems to be redeemed [...].⁴³ Karabin defines museums that exist exclusively on the Internet as follows: Electronic art museums exist only on the Web. In other words, they should display artwork that, in its on-line exhibited form, cannot be viewed in its entirety at a given institution. Therefore, it may have its "own" collection, but may also represent a conglomeration of artworks from museums around the world.⁴⁴ Unlike "real" museums, electronic museums do not have their own building, place or location to visit outside the Web. As a result, a visitor may experience new and exciting connections with the electronically based exhibitions. Frequently, electronic art museums take advantage of specific media or on-line technologies in order to display or encourage users to interact with artwork.⁴⁵

3.2 Diversity of online museums

The internet offers a multitude of options for navigating museums, with a variety of categorisations available. In 1998, the information scientist Werner Schweibenz collated a number of these examples and proposed

⁴³ Hünnekens, A.
<https://library.oapen.org/bitstream/handle/20.500.12657/23377/1006777.pdf?sequence=1&isAllowed=y>
accessed: 20.02.2023.

⁴⁴ <https://www.archimuse.com/mw2000/papers/karabin/karabin.html> accessed 20.02.2023.

⁴⁵ Cf. Fieberg 2001.

a typology comprising brochure museums, content museums and learning museums. In his analysis, Schweibenz employs methodologies developed by McKenzie, Wersig/Schuck-Wersig, and Dolgos, which are delineated in advance. In his commentary, McKenzie distinguishes between two principal categories of online museums, namely: Learning museums, also referred to as educational museums, facilitate repeat visits from their visitors, as they provide online access to fundamental educational materials. Such resources facilitate more in-depth investigation and discovery. Furthermore, additional advantages include the ability to access vast collections online, the provision of comprehensive content, and the incorporation of an appealing and user-friendly homepage. Furthermore, a diverse array of educational activities is available, each designed to align with specific age groups or learning cohorts. Marketing museums are employed for the purposes of promotion and communication, with the objective of increasing the number of visitors to the museum in question. The objective is to encourage users to visit the physical museum. This approach allows a wider audience to become aware of the museum's collection and events. German communication scientists Gernot Wersig and Petra Schuck-Wersig have identified four categories of German museums that are accessible online. The first category comprises museums that offer only the most basic information, including the museum's name, location, and business hours. The second category, the "basic offer," provides a condensed summary of the museum's residence and collection. The basic offer includes the fundamental statistical data, as well as supplementary information regarding special exhibitions and other pertinent details about the museum and its collection. Thus far, there is no requirement for an institution to possess its own webpage, given that the information in question can be sourced from third parties. This substantial informational offering is accompanied by its own dedicated homepage. It reflects the structure and organisation of both the museum and its collection and is comprehensive in scope. In

addition to its role as a marketing instrument, it provides opportunities for user involvement. Dolgos classifies American museums as falling into one of three categories: the brochure museum, the information museum, or a hybrid of the two. An information museum is defined as a display located within a physical museum that provides information. In contrast, a brochure museum is a more common occurrence due to the relatively minimal effort required for its production and maintenance. Consequently, the creation of such a thing requires a considerable input of labour. The information scientist Schweibenz has developed his own classification of museums, which is available online and is based on the proposals that were previously provided. This provides the basis for the ongoing research being conducted on online art museums. He proceeds to differentiate between the following categories: The brochure for the museum includes essential museum information, such as the address, as well as opening hours and instructions for visitors. Notes regarding the collections and exhibits are included in the supplementary information. Each piece of data is presented with the objective of persuading the user to visit the museum in person. Schweibenz states that, "Since it lacks all the features of the virtual museum, such as a comprehensive array of digital artefacts and information, to mention only the most significant," it cannot be considered a virtual museum in its current state. The museum with a greater quantity of information is the content museum, in contrast to the museum with a more limited amount of information, which is the brochure museum. It is recommended that users peruse the extensive collections available online. The presentation does not adopt a didactic approach to the topic. Such items may be located via the search functionality and are organised according to a variety of parameters. The content museum represents the initial stage of the virtual museum, wherein digital items and information are exhibited in their unprocessed form. At this stage, the objects and information are not yet linked to one another, and thus no preparation is required at this level. The

requirements of the virtual museum are best met by the learning museum; nevertheless, it is necessary to differentiate between the learning museum, which is restricted to its own collection, and the learning museum, which provides links to the exhibits presented by other virtual museums. This second option is more aligned with the conceptual framework of a virtual museum than the former. In order to accommodate the categories proposed by Werner Schweibenz, it is necessary to introduce an additional category to the list. Such museums are solely present in digital form on the internet, lacking any physical location. Such virtual museums are not based on any actual museum or historical site. In the majority of instances, the individuals or groups responsible for their creation are private citizens or project teams.⁴⁶

3.3 Possibilities/Perspectives of online museums

Fears that virtual museums will discourage users from visiting real museums are unfounded: "In no way can the Internet be seen as a competitor to the institution of the museum." The Internet opens up new perspectives and opportunities for museums. The director of the "Exploratorium", a center for media and communication, describes some potentials of the Internet: "Despite its lack of 3-D reality presence, the Web has some particular capabilities which make it of great interest to the museum world. It is both atemporal and a spatial medium. It provides the opportunity to meld imagery, text and interactivity. And it provides for both individual and group [...] experience. These attributes are analogous to those provided by the museum experience, which makes the conjunction of museums and the Web an intriguing opportunity. In order for museums to fulfil their educational mission, it is essential that art education is designed in the most effective manner possible. The orientation of the user to their individual wishes and needs is a further contributing factor. The characteristics of the Internet facilitate the

⁴⁶ Cf. Staarmann 1996.

implementation of user-friendly, or user-centred, approaches. Larry Friedlander, Professor of Literature and Associate Director of the Stanford Learning Lab, highlights the potential for the creation of new learning spaces that combine virtual and real activities. The Internet offers a flexible environment for the delivery of art education activities. The concept of a 'museum without walls' is based on accessibility for all. Schlesinger states: "The flexibility of digital technology permits the presentation of materials at different levels of complexity or in a variety of languages, the provision of Braille interfaces or the placement of printed text in place of voice for persons with impaired hearing, even specialized interfaces to enable severely handicapped persons to interact with the system. Databanks can be transported outside the museum, or into schools, in order to reach larger groups with specific interests. Providing and disseminating information, knowledge and digital collections around the globe reaches a broad audience and creates connectedness. This not only strengthens the external representation of museums, but also allows the international exchange of ideas, opinions, proposals, etc. via networks. The possibility of including intangible cultural assets brings cultural heritage to life in a new way. In the form of a virtual memory, memory is being expanded. Information is added and forms a "communicative memory". Furthermore, museums can utilize the Internet to display objects that are not exhibited in the physical museum, whether due to spatial limitations or the need for sensitivity. Museum websites can facilitate communication and discussion between the general public and also between professional museum experts and individual visitors. This enables the specific needs and queries of users to be addressed. Overall, the Internet has the potential to enhance traditional museums with innovative and interactive offerings, thereby enhancing their appeal.

In the context of contemporary curatorial practices, the Internet offers a dynamic platform that radically alters the way we engage with art. As

Dekker and Giannachi suggest, documentation has evolved into an expanded practice that not only preserves but also creates art, challenging the traditional authority of museums. This shift is significant in understanding the role of the Internet as a curatorial space, where digital art and its documentation are continuously recontextualized.⁴⁷

This expanded curatorial practice can also be seen in the way technofeminist practices leverage the Internet for activism and art. Sollfrank highlights how online and offline worlds have merged into a continuum, where art and activism intersect and challenge technocapitalist excesses.⁴⁸

This interplay between art, technology, and gender politics on the Internet further exemplifies the Internet's potential as a curatorial space. Furthermore, the concept of the Internet as a curatorial space is deeply connected to the idea of the commons. As elaborated in 'Aesthetics of the Commons', the Internet facilitates new forms of collective creativity and participation, fostering a space where cultural memory and shared knowledge are continually constructed and reconstructed.⁴⁹ This participatory nature of the Internet challenges traditional notions of curatorial authority and emphasizes the role of the community in the curatorial process.

4. Art mediation online and offline

4.1 Art mediation and technological advance

The capacity of digitized content to be transmitted across boundaries not only facilitates the reach of new audiences but also ensures the provision of information that is current. A multitude of blogs, vlogs, and other non-institutionalized platforms are offering their expertise on a plethora of subjects, thereby creating a pathway that leads by the great doorkeepers, such as prominent personas, museums, research

⁴⁷ Cf. Dekker & Giannachi, 2023.

⁴⁸ Cf. Sollfrank, 2020.

⁴⁹ Cf. Stalder and Niederer, 2020.

institutes, magazines, and other established organizations.

As this novel domain of practice has emerged at the intersection of internet growth and curation, it has yet to be acknowledged as a distinct curatorial practice with its own linguistic and grammatical conventions. This is an imperative task that must be completed in the near future. Although the term "digital curator" is most commonly associated with marketing, there are also digital art curators who utilize the digital space to showcase art and culture.

In the contemporary, technocratic civilization that dominates the West, the maintenance of an online presence has become a necessity rather than a mere optional extra.

The fact that free and easy access to the internet is not yet the norm in the rest of the world provides a rationale for those living in the Western Hemisphere to celebrate the fact that it is openly available to them. When we consider countries such as North Korea, where political constraints are in place, or rural areas of poor nations, where infrastructure is underdeveloped, we are forced to acknowledge the vital importance of this medium of communication and space of free speech. Furthermore, since curated content is inherently a form of public discourse, the internet provides an optimal platform for its dissemination.

The lack of certainty regarding the results, the high costs associated with the construction, maintenance and expansion of web presence, the scarcity of professionals, the lack of funding, the unsatisfactory technological frameworks and the time-consuming and costly preparations are some of the challenges that businesses face when attempting to establish a web presence. The sheer quantity and level of competition are considerable, and ultimately, the visitor is a digital nomad with a limited attention span and a preference for bright, image-intensive content. As digitization has become a global challenge that necessitates investment in time, personnel, and financial resources, each of these challenges is a tangible and significant burden for

individuals and organizations alike.

A review of the early days of the Internet era reveals a significant amount of development. At that time, technical equipment was expensive and difficult to obtain, webpages were unwieldy and prone to errors, and there were relatively few individuals online.

The cost of contemporary technological equipment is relatively low, and the Internet offers a plethora of options and features that have undergone significant advancements in design and usability. This upward trajectory is projected to persist in the foreseeable future. The entire site experience has already undergone a substantial transformation with regard to design, and this process is still ongoing. Consequently, the visitor is undergoing a transition from the status of a digital nomad to that of a digital citizen, which entails learning to adapt to the ever-changing digital environment. The necessity for digital art curators is becoming increasingly apparent, as they can assist in the creation of superior solutions for web presentation in the future. This necessitates not only technological advancement but also the presence of personnel who are aware of the improvements that have occurred in web presentation. A dialogue between the curators and the web architects must be initiated in order to identify more effective resolutions for presentations.

In particular, the year 2020 has witnessed significant transformations in internet exhibitions, both for the curators and the artists, due to the impact of the ongoing pandemic.⁵⁰ Because art can only exist because of the contact it has with viewers, a knowledge of digital users is vital.

4.2 Art mediation in and outside of Web 2.0 - Goals & Functions

There are numerous potential settings for the delivery of art education, including Web 2.0. This encompasses the instruction of traditional

⁵⁰ <https://fadmagazine.com/2020/04/12/the-top-5-online-only-exhibitions-to-see-while-self-isolating/> accessed: 18.8.2020.

works of art, which are no longer presented in a live and personal setting in front of the works. Instead, they are offered as a "virtual art explanation" on the Internet, which can be retrieved according to the user's requirements and areas of interest, as is the case with many modern museums. The advent of the Internet has facilitated a more interactive approach to art education. To illustrate, users of a website are afforded the option of selecting and displaying their preferred paintings in a personal online exhibition, thereby fostering a personal connection to the works of art. The concept of "barrier-free" access to art represents an example of indirect art mediation on the Internet. Modifying the conventional reception circumstances for historically significant works of high culture has the potential to result in a shift in how art is understood. For example, one may listen to concerts in the Digital Concert Hall of the Berlin Philharmonic Orchestra from the comfort of one's own home by purchasing a channel that streams live. As assessed by the marketing department of the Berlin Philharmonic, the Digital Concert Hall has not only demonstrated a consistent increase in the number of users, but it has also proven to be an effective promotional tool for acquiring more live visits. The number of users of the Digital Concert Hall is increasing at a steady rate. The utilization of the internet for the management of public relations in the context of live cultural events represents a pervasive phenomenon within the domain of indirect art communication. This phenomenon is particularly prevalent within the domain of social media. The deployment of guerrilla marketing tactics, exemplified by the flash mob performed by members of the Staatsballett at Berlin's principal railway station to promote their production of "The Wizard of Oz," represents a particularly efficacious and meticulously conceived guerrilla marketing initiative. In the initial period following the action, the professionally filmed footage was viewed 346,000 times, with all performances fully booked. Furthermore, art education can be facilitated through the medium of "user"-generated, participatory artistic productions in the

context of Web 2.0. One example of this is the virtual Effie Briest production on the Internet, in which the users collectively determined the course of the plot while being guided, facilitated, and moderated by the dramaturgy of the Maxim Gorki Theater in the form of the art figure and narrator "Theo." A total of 1,280 individuals participated in the development of a play that was created via the Internet in a manner that was participatory and interactive.

The term "art mediation" is used in a more restricted sense to denote the facilitation of access to art and the enabling of its reception. This encompasses the creation of an understanding of art and the conveyance of the codes governing its reception, whether for the purposes of leisure or as a form of critical reflection. In Bourdieu's terms, this entails the transmission of the codes governing the reception of art, whether for leisure or as a form of critical reflection. Art mediation is concerned with the conveyance of access to art and the facilitation of its reception, whether as a form of elevated leisure or as a critical reflection. This is achieved through various means, including guided museum tours, audience speeches, and introductions to concerts.⁵¹

A combination of marketing, cultural research and art education is employed in order to influence the images of art and cultural institutions, as well as to attract new or different audiences. This is achieved through the use of cultural marketing, public relations and audience-generated attention for art and culture. Furthermore, art education encompasses the instruction of artistic techniques and competencies with the objective of fostering artistic creativity among individuals. Such instruction may occur within the context of traditional academic curricula, in extracurricular programs for young people interested in the arts, in music schools, or in the form of elite promotion. The objective of cultural education is to cultivate creative

⁵¹ Cf. Mandel 2013.

expression and capability, in the sense of empowerment as a strengthening of the individual, as well as to promote essential competencies such as the capacity to perceive, reflect, communicate, and collaborate effectively in a team. Cultural education extends beyond mere comprehension of art and artistic techniques. It encourages international dialogue, identity, and community; it is about fostering "responsible citizens." Cultural education can be defined as a process of self-education in dealing with art and culture. This process is frequently stimulated by professional cultural educators or cultural mediators and takes place, for instance, in the form of workshops and participatory projects in youth art schools, sociocultural centres, district projects, and increasingly also initiated by the "education departments" of traditional cultural institutions, often in cooperation with schools. Consequently, the objectives of art and cultural education may vary considerably, encompassing art-immanent purposes, the commercial interests of cultural providers, and educational, cultural, and other objectives. The process of cultural mediation plays a pivotal role in fostering connections between the production of art and its reception, facilitating communication about and engagement with art, and stimulating aesthetic creativity, even beyond the domain of professional cultural practice.⁵²

Furthermore, cultural mediation can occur in the absence of artistic involvement, as evidenced by discourse on everyday culture. Nevertheless, the arts provide a distinctive quality that is conducive to mediation. Even when the focus is not on the intrinsic value of art for its own sake, but on the processes of cultural education, the arts remain a crucial element in mediation. This is because the arts possess certain properties that enable them to transcend the limitations of life, rationality, and purpose, and to initiate dynamic processes. This is due to the fact that the arts possess certain properties that enable them to

⁵² Cf. Mandel 2008.

transcend the limitations of life, rationality, and purpose, and to initiate dynamic processes. Art is characterised by ambiguity and demonstrates that there is always more than one solution to a problem. Art is also characterised by an aesthetic, sensual, and emotional view of the world, enables a playful free space, and utopian thinking, and demonstrates that everything could also be completely different. In order to transport all these qualities and abilities of art to the viewer and into the digital, it is necessary to employ the services of a curator who is aware of the necessities on the structural and emotive, intellectual level.

4.3 Professionalization of art and culture education

The origins of art education can be traced back to the early twentieth century in Germany, where the art historian Alfred Lichtwark initiated a reformulation of pedagogical approaches at the Hamburg Kunsthalle. The provision of art education in museums commenced a period of expansion in Germany during the mid-1970s. Subsequently, theatre education emerged, and since the 1990s, concert education has also been provided in the majority of music theatres and concert halls. From the 1970s until the early 1990s, art historians, theatre scholars and musicologists were the primary mediators in art institutions, working on a freelance basis in the majority of cases. Outside the institutions, in the cultural education facilities and projects, it was frequently the case that trained teachers found it challenging to adapt to the established school structures of art education. Furthermore, social pedagogues assumed the role of cultural education mediators in associations, projects, and cultural centres. Following the conclusion of the 1980s, those who had completed the inaugural cultural education courses entered the labour market and the institutions, thereby facilitating the establishment of numerous new institutions for out-of-school cultural education. This trend persisted throughout the 1990s, with the number of youth art schools in Germany increasing from a

mere handful in the early 1970s to 420 in the present day. The existence of discrete curricula for the study of art and cultural education is a relatively recent phenomenon, having emerged only in the 1980s. Over the past decade, there has been a notable proliferation of novel course offerings, partly in response to the reforms introduced by the Bologna Process. The number of degree programmes that qualify students for extracurricular arts and culture education in the broadest sense has now reached 364.

Nevertheless, in addition to academically qualified arts and culture mediators, artists themselves are increasingly assuming the role of cultural mediators. This phenomenon, which is identifiable as the so-called "educational turn" in the arts, was initiated by the necessity for artists to cease working in "art niches," which are largely unnoticed by the majority of the population, and instead to exert meaningful influence on life and society. It is evident that there is a convergence of roles between artists and mediators, as well as a partial disintegration of such positions. Despite the long-standing accusation that art mediation trivialises art, the close connection to the arts, the concept of 'mediation at eye level with the arts', and the notion that mediation itself must act artistically have led to an increase in the status of mediation in the world of art.⁵³

With Hilmar Hoffmann's call for "culture for all" since the mid-1970s⁵⁴ and Hermann Glaser's demand for "citizens' rights to culture"⁵⁵, the idea of making the wealth of publicly financed cultural assets accessible to a broader population gained importance in terms of cultural policy. The so-called New Cultural Policy, which manifested itself in a number of ways, including the founding of the Kulturpolitische Gesellschaft (Society for Cultural Policy), led to the establishment of art education in traditional cultural institutions and the additional financing of new

⁵³ Cf. Kulturpolitische Gesellschaft and Blumenreich 2012.

⁵⁴ Cf. Jäschke and Sternfeld 2013.

⁵⁵ Cf. Hoffmann 1979.

initiatives. The introduction of additional sociocultural offerings did not result in any fundamental changes to the relationship between high culture, which remained the dominant form, and the other cultural forms, including everyday culture and popular culture. Furthermore, there was no discernible increase in the importance of the audience or users. The principal objective of cultural mediation was to facilitate access. From a supply-oriented approach to a user-oriented one: the emergence of the concept of the cultural audience. It was only with the decline of the traditional cultural audience and the increasing competition from private-sector cultural providers that it became necessary for publicly funded cultural institutions to move away from concentrating on the arts and also take an interest in the audience and its needs, and to address both old and new audiences in an assertive manner. Audience development began to establish itself at the end of the 1990s as a response to the declining interest among younger generations in classical cultural offerings. In addition to cultural educators, cultural managers and cultural marketers began to play a role in the field, establishing professional practices for engaging with audiences, designing enjoyable experiences for cultural visits, and developing new formats for presenting art. Cultural education was tasked with the development of audiences. The concept of "megatrend" cultural education and its implications for the reassessment of cultural education. For several years, there has been a notable surge in interest in the field of cultural education, as evidenced by the proliferation of conferences, model projects, awards, and the establishment of dedicated departments for cultural education in cultural institutions. A study commissioned by the Federal Ministry of Education and Research in Germany (BMBF) indicates a significant expansion in the number of programs offered by cultural institutions, particularly in recent years. Concurrently, the study reveals that a mere 4% of budgets are

currently allocated to educational programs.⁵⁶

It is now widely accepted that out-of-school cultural education, frequently in collaboration with schools, can play a significant role in enhancing the educational level of the next generation. The reasons for this surge in cultural education can be attributed to two key factors. Firstly, the observed ageing of the traditional audience has highlighted the necessity to focus on the audience of tomorrow. Secondly, the so-called 'Pisa shock' has brought to light a number of challenges within the education sector.

The objective is to develop an intercultural audience as part of the process of change management inside cultural institutions, with the ultimate goal of creating a participatory cultural institution. Another pervasive theme that has gained traction in the cultural domain is the transformation of society as a consequence of migration. The question of how to increase the number of people with a migration background who attend publicly funded cultural institutions as audience members has recently received considerable attention. This has led to a more fundamental question being posed by the public at large. The question thus arises as to how the public cultural sector as a whole can be successfully transformed in order to make it more appealing and relevant to the entire population. Currently, the offerings of traditional high culture institutions account for a significant portion of the cultural offerings that are supported by publicly allocated funds. However, participation in these events is generally restricted to a limited and highly educated elite group. It thus appears that audience growth as a method for producing new audiences for "existing offers" is not sufficient. In addition to modifying their formats, institutions are obliged to alter their organizational structures, the employees they employ, and the programs they offer. Furthermore, they must adopt new methods

⁵⁶ Cf. Zentrum für Kulturforschung 2010.

of communication, distribution, and mediation.⁵⁷

In order to make cultural institutions more appealing to a larger population, it is necessary to adapt them to suit the needs of new users who come from a variety of backgrounds, including different social milieus, educational backgrounds, generations, and cultural interests and aesthetic ideas. This can be achieved by ensuring that the institutions in question are accessible to a more diverse demographic. One may posit the concept of "deconstructive" art education, which is defined as "art education in which mechanisms of distinction and exclusion are questioned together with the audience." Additionally, one may advocate for a transition to "transformative discourse," which is defined as "art education that claims to call for social co-creation." These definitions are currently prevalent in the discourse on art education.⁵⁸

It is noteworthy that the processes and quality standards associated with developing multicultural audiences, such as those of transformative art education, exhibit considerable overlap with the defining features of Web 2.0. The Web 2.0 paradigm may also be characterized as a "join-in network," which is a participatory, intercultural space where individuals from diverse backgrounds can interact and, in the optimal scenario, collaborate to create something collectively through processes of collective creativity. Web 2.0 can be conceptualized as a "join-in network" due to its facilitation of user interaction. In this sense, it is essential to be willing to learn from mistakes and to have the confidence to explore new things on the internet. Web 2.0 is easily accessible, has a low barrier to entry, and lacks hierarchies in its organization. Personal interactions and casual small talk are much more common than straightforward information exchange. Furthermore, the traditional German distinction between e- and u-culture, often known as high culture and popular culture, has

⁵⁷ Cf. Mandel 2013.

⁵⁸ Cf. Mörsch 2009, p. 10.

largely been eliminated on the internet. The transitions between receipt and output are characterized by a high degree of fluidity. It is a location that is renowned for its punctuality and contemporary status. The empirical evidence on the utilization of cultural resources and the role of digital mediation in Web 2.0 indicates that the Internet is not only the primary source of cultural information for younger generations, but it is also a central cultural space in their everyday lives. The Internet is a cultural space that facilitates art mediation. Empirical studies also reveal that the vast majority of cultural organizations do not make use of the dialogic and interactive functions of Web 2.0; rather, they utilize it as a platform for disseminating information. This indicates that there is still considerable potential for the expansion of art and cultural education on the Internet, particularly in relation to the objective of stimulating cultural participation and cultural self-education procedures.

Abandoning the role of the "authorized speaker," who represents a stable, art-scientifically secured canon, and instead conceptualizing mediation as the process of integrating diverse aesthetic and cultural positions and perspectives, significantly enhances the complexity of mediation. Art education would need to facilitate user contributions of personal tastes, ideas, and opinions, such as enabling users to act as curators of their own virtual exhibitions, as exemplified by the Stadel Museum in Frankfurt. This approach presents digital possibilities for further exploration of ideas sparked by artworks and allows users to supplement these with their own examples, thereby extending the scope of the discourse.⁵⁹

An appreciation of Web 2.0 as a distinct cultural space, transcending the conventional modes of art appreciation and the established art canon, represents a pivotal advancement in the realms of art and cultural education. In this space, the boundaries between high culture,

⁵⁹ cf. Simon, *The Participatory Museum* -> (jahr).

pop culture, and everyday culture become increasingly permeable, and people can travel without ever setting foot in a traditional cultural institution. This paves the way for a broad range of cultural forms that are pertinent and may be brought into relation with each other through mediation procedures to bridge the gap between U and E. The understanding of Web 2.0 as a cultural environment in which professional art offers are mixed with other cultural concepts does not imply that art mediators do not simultaneously develop a desire for and invite people to experience culture in real life. For example, live concerts are flourishing as gathering places where art and culture can be experienced with all the senses. This is because it is evident that the Internet has not led to a decline in people seeking live experiences. Therefore, art educators have a responsibility to act as gracious hosts and ensure that their institutions have the potential to develop into live venues that are educating, sensuous, and communicative, thereby connecting the virtual world with the real world. It is now evident that art education must become active in Web 2.0, utilizing a range of available opportunities. Concurrently, it is essential to engage with users of the Internet to facilitate the transformation of the conditions under which live art experiences are mediated, with the aim of reinvigorating cultural institutions. The advent of Web 2.0 does not render professional art education obsolete; rather, it offers new avenues for engagement with new audiences and provides opportunities for motivating them to contribute their ideas to cultural organizations and activities. This renders professional art education more valuable than ever. Given the communicative role of the curator, who structures knowledge and emotion in space, it is important to monitor developments in the field of art mediation. As the Internet is still unable to provide an actual experience of interaction with physical art, any online curatorial activity has a strong educative aspect.

4.4 Digital Transformation

The domain of art curation has experienced a profound digital transformation, giving rise to a revolutionary shift in the manner in which art is exhibited and made accessible. This transformation entails the incorporation of an extensive array of digital technologies, including the digitisation of collections, the development of online exhibitions, the utilisation of virtual and augmented reality, interactive multimedia displays, and data-driven curatorial practices. The principal objective is to facilitate accessibility, encourage engagement, and guarantee the conservation of artworks while extending the influence of cultural institutions well beyond their physical confines.

The genesis of this transformation can be traced back to the late 20th century, when museums first initiated the process of digitising their collections. The advent of the World Wide Web in the 1990s constituted a pivotal moment, as it enabled global access to digitised collections via static websites.

In the contemporary era, the landscape of digital transformation in the domain of art curation is characterised by a diverse array of elements. This encompasses digitised collections, immersive virtual exhibitions, experiences involving augmented and virtual reality, data-driven curation, online art marketplaces, and global outreach facilitated by social media and collaborative efforts.

In considering future developments, it is evident that there will be further significant advances. The use of technologies such as augmented reality (AR), virtual reality (VR), and artificial intelligence (AI) will facilitate enhanced interactivity, thereby creating novel and immersive art experiences. Personalised curation approaches will cater to individual preferences, ensuring that each viewer enjoys a customised exhibition experience. Additionally, greater integration of blockchain technology is expected to play a vital role in art authentication and the tracking of provenance, particularly in the domain of digital art and non-fungible tokens (NFTs).

The application of AI-driven algorithms will facilitate the decision-

making processes of curators, enhance predictive analytics, and enable the generation of automated educational content. It seems probable that there will be an increase in the number of collaborations between museums and galleries situated in different countries. This will probably result in the creation of hybrid exhibitions which will combine physical and digital elements in a seamless manner. As digital transformation progresses, it is of the utmost importance to address the ethical concerns related to data privacy, copyright, and cultural sensitivity. The digital transformation of art curation is an ongoing and dynamic process that is reshaping the presentation and experience of art. It has already had a profound impact and holds great potential for further innovation, interactivity, and global accessibility. However, this transformation also presents a number of ethical and legal challenges that must be carefully considered. The digital realm is continuing to shape art engagement, making it more inclusive, dynamic, and relevant within our ever-evolving world.

5. The internet audience

5.1 Virtuality and Virtualization

The concepts of virtuality and virtualisation are evident in a multitude of contexts, and can be observed as influencing numerous aspects of our society. Visitors are afforded the opportunity to assume virtual identities within the Cyberspace Café, where they may also engage in virtual forum discussions or participate in virtual chat rooms. Users may elect to join online learning groups and pursue self-education in those settings, or alternatively, they may purchase items from an online marketplace situated in an infinite digital space. Digital reproductions of artistic works are exhibited in online museums, where visitors may explore the galleries through interactive virtual tours. When viewed on a global scale, the Internet may be considered analogous to a virtual museum. In addition to digital reproductions of art from diverse

historical periods and stylistic movements, there is also "net art," which, among other things, explores the relationship between the physical and the digital realms. However, the convergence of art and virtuality is not a novel phenomenon. According to Thiedeke, a sociologist and artist, art should be viewed as a sub-area of human activity and of society that, by definition, is concerned with the creating of the artificial. Art serves the purpose of conceptualizing fictitious hierarchies and, as a result, illuminating the boundary between the actual world and the world of possibilities [...]. Not only do virtuality and virtualization have an effect on society, but also on the method in which art is presented and conveyed. Dealing with these kinds of relationships is one of the responsibilities that art curating entails.

5.1.1 Definitions of Virtuality and Virtualization

The term "virtual" has its etymological roots in the Latin word "virtus," which may be translated as "strength, prowess, and manliness," according to the etymological dictionary. Other interpretations include the notion of merely appearing to exist, existing solely within the realm of possibility, or not actually existing in the physical world. The term "real" is the antithesis of "virtual." The term is derived from the Latin word "res," which signifies "thing, being," and the word "realis," which denotes "essential." The term signifies veracity. It is a simulation of any event or entity that occurs or exists in three-dimensional space. The term "genuine reality" is used pejoratively to denote the antithesis of this concept, signifying the veracity of a given situation. The discussion surrounding the concepts of reality and virtuality is replete with intricacies. Media scientist Mike Sandbothe proffers a definition that draws heavily upon philosophical tenets, underscoring the pivotal role of virtualization in the human capacity for creative expression. When contemplating the philosophical tradition, it has been evident since Aristotle that the real possesses inherent potential for continued growth. However, it is imperative to recognize that the tangible, physical world is not, in its essence, a non-virtual entity. Accordingly, the concept of "real" as defined by Aristotle's

philosophy can be understood as a process that is continuously engaged in actualising potentialities. Once the primary virtual and developing dimension of reality, as well as its processual structure, have been fully understood, it will be possible to state that reality has been grasped. In light of recent developments in pedagogy and didactics, media scientist Horst Dichanz proposes that "virtuality" and "virtualization" signify the expansion of didactical-methodical possibilities through the use of electronic-digital information and communication technology. This, he argues, provides teachers and teaching institutions with a plethora of novel aids, enabling the accommodation of diverse learning processes in disparate locations and at disparate times.

5.1.2 Effects

Virtuality can be defined as a state of being that presents possibilities and alternatives to reality. The Internet, as a medium, provides access to this virtual world and, as a result, has had a significant impact on societal structures and processes. These effects can be perceived as either advantageous or disadvantageous. Technological advancement is an ongoing process. Texts, images, pieces of music, films and works of art are being broken down into a digital numerical code. Udo Thiedeke, a sociologist and artist, warns of a digitalisation of reality that opens the way for manipulation and enables an arbitrary recombination of concepts of reality. These are becoming increasingly complex and are only accessible through machines. Information is becoming increasingly abstract, and emerging world constructions are no longer comprehensible. There is a growing chorus of critical voices that speak of a loss of reality. From now on, the user has the possibility "not only to read potential world descriptions, but to enter them, to change them, and to live in them - at least temporarily." He is able to engage with the development of virtual reality through the playful exploration of his own identity. In this way, he is released from the social and physical limitations associated with his actual physical form.

Moreover, he has the opportunity to assume alternative identities. Torsten Möller, an information and publication scientist, identifies two potential risks associated with this phenomenon. Firstly, there is a possibility of losing one's individual identity within the constructed realities of cyberspace. Secondly, there is an opportunity to utilise the enhanced capabilities of network communication and to integrate these experiences into the non-virtual domain. The capacity for imagination enables the user to situate themselves within the virtual environment. The user is thus able to adopt different perspectives and to experience the virtual environment to varying degrees of intensity. Nevertheless, our physical bodies remain only partially integrated. Similarly, individuals utilize wetsuits to spend extended periods of time fully immersed in water. The development of "wetware" suits, which integrate hardware and software for use on the body, aims to facilitate complete immersion in the internet. In his analysis, web designer DiNicola identifies a seemingly unconscious tendency among individuals to replace their human bodies with virtual reproductions. According to this perspective, the digital body enables the user to interact with digital content in a manner that would otherwise be impossible. This includes the ability to touch digital objects, such as works of art, within a digital museum. Australian performance and net artist Stelarc addresses these considerations by exploring the relationship between the real and the digital through actions such as "Ping Body" and "Movatar." During one performance in 1998, Stelarc was wired directly to the Internet, with electrodes delivering gentle electric shocks that prompted involuntary muscle contractions.

The electrodes were connected to a computer, which was in turn linked via the Internet to computers in Paris, Helsinki and Amsterdam. By selecting specific areas of a digital representation of the human body on a touchscreen interface, participants were able to direct Stelarc to perform a range of actions at their discretion. The concept of virtualisation has an impact on our cognitive processes and is reflected in our ethical outlook and our perception of the world. In an interview, the sociologist and artist

Mike Sandbothe posits that a fundamental phenomenon of the meaning of virtuality can be elucidated by the observation that human beings have, to a certain extent, already designed themselves as possibility beings. He further suggests that our identity is constituted from a virtual, from a future, and from something not yet real. Sandbothe additionally identifies other effects of virtuality, including those pertaining to learning in a transformed environment.

5.1.3 Loss of the Aura?

The German philosopher Walter Benjamin (1892-1940) is an intriguing figure in this context. In his writings, he offers a critical examination of works of art in an age characterised by the technical reproduction of such works. A significant proportion of his thought-provoking ideas remain pertinent in the present era and may be applied to a multitude of aspects pertaining to the Internet. One of his primary arguments is that the mystique of works of art is diminished when they can be technically reproduced. In discussing the concept of an artwork's aura, Benjamin refers to the light that emanates from it. The genuineness, singularity, and cult value of an object are contingent upon its most subtle essence. However, the phenomenon of technical reproducibility of works of art has the effect of reducing the significance of the aura. The aura of the work of art is preserved in the original, but this is not the case in reproductions. This concept is also reflected in the work of Johannes Gawert, who posits that the reproduction of works of art leads to a deterioration in their cult value, the dissolution of their aura, and the prioritisation of their displayability. This line of reasoning finds its most contemporary expression in the context of the Internet. It is now possible for anyone, at any time and in any location, to experience works of art. This concept is elucidated in an engaging manner by the site designer DiNicola, who posits, "Imagine you may visit a museum at any time of day or night, without guards and other individuals with whom you are compelled to share the space. As long as you are present, you are at liberty to engage in any activity you choose, including occupying your preferred chair, donning your preferred attire, playing your preferred music, eating, drinking, and smoking at your discretion. You are responsible for setting your own schedule." The visitor is at liberty to proceed with

a brisk and convenient circuit of the various museums. Moreover, visitors have the option of perusing the comprehensive information provided about the artworks, or they may elect to disregard this material entirely. The most appealing aspect of this approach is that visitors are free to engage with the art in whatever way they choose. If a particular piece resonates with them, they can "steal" it, paint it, create duplicates, or otherwise interact with it in any manner they desire. In Benjamin's view, the advent of photography has contributed to a reduction in the cult value of works of art. He highlights the fact that the distinctiveness of a work of art, and one of their most pressing concerns, is to bring things closer together, both physically and socially. In his article, "The Clear Relationship Between the Attempt to Bring the Viewer Closer to the Work of Art and the Increasing Difficulty in Differentiating the Original from Its Reproduction," web designer DiNicola establishes a direct correlation between the two concepts. He raises the question of what this implies for artworks found on the Internet, noting that in many respects, there is no longer any distinction between originals and reproductions. Works of art created on and with a computer can be defined as a sequence of digits. In theory, computer-generated artwork exists only as a sequence of digits, and thus cannot be considered an original. DiNicola identifies a particular consequence of the removal of spatial distance from the original: for individuals who will never have the opportunity to see the Mona Lisa in person, her "digital cousin" assumes a significance that extends beyond that of a mere facsimile. If the only extant version of a work is a reproduction, then the reproduction itself is deemed to be an authentic piece of art. Johannes Gawert is concerned with the question of whether works of art in the present era are becoming art without aura, or, indeed, whether the concepts of aura and originality remain tenable and pertinent in the context of the virtual world.

5.1.4 Virtual World versus Real World?

This raises the question of whether there is a fundamental difference between the actual world and the online world. The fact that this premise is

being challenged indicates that it cannot be sustained, as there is a connection that can be made between virtual reality and the actual world, and vice versa. The interconnectedness of the two concepts is in stark contrast to the dichotomization that has been presented here. Mike Sandbothe, a scholar of media, is unequivocal in his assertion that this is not a "two-worlds scenario." However, he does believe that it is essential to combat the "dualistic conception of reality and virtuality as two separate domains that have nothing to do with each other." This objective is what the "mixed reality concept" was designed to achieve. The methods of communication and interaction between the actual and the virtual world are now being investigated and understood. Scientists and artists are generating possibilities that integrate human behavior in the context of both worlds. For example, the work titled "Murmuring Fields" investigates questions of physiological perception. In this context, a mixed reality environment has been developed that takes into account both the physical and the digital presence of the body simultaneously.

5.1.5 Future developments in art mediation online

The advancement of technology, in conjunction with the advent of virtualization, has become a defining feature of contemporary civilization. It is imperative that greater attention be paid to the increasing opacity of technological advancements. It is therefore necessary to adopt a method that is both critical and reflexive. This necessitates the acquisition of specific abilities. The process of teaching key skills represents a significant challenge for the educational system. "The fundamental objective of education and further training is to establish connections between virtual and actual forms of teaching and learning," asserts Mike Sandbothe. The utilization of new media necessitates interaction through conventional channels of communication. Consequently, it is now feasible to integrate tangible and virtual experiences. This concept is designated as "transmediality." Some scholars posit that face-to-face and virtual

communication represent two media forms that are interlinked through transmediation. Each medium provides insight into the significant interconnectivity between the other two. As posited by Horst Dichanz, a media and educational scientist, this is referred to as "mixed didactic design," and he believes that it will be the future in the education industry. The concept of virtuality entails the existence of possibilities, both beneficial and detrimental. He considers virtual environments as arenas for experimentation. This also applies to interaction with museums via their websites. It is erroneous to perceive the virtual and the current as competing entities; rather, they should be regarded as complementary services.

6 User-Centered Design (UCD)

6.1 What is UCD?

The capacity for users to interact with computer systems is a defining characteristic of many contemporary digital technologies, including the Internet. This suggests that communication may occur in both directions between the sender and the recipient. The most fundamental prerequisite for this communication process is the establishment of an effective and seamless interaction between the user and the computer system. This connection is also a key determinant of the success of internet sites. Consequently, a user-centred design approach is imperative. The user-centred design approach situates the user at the core of the design process. Their actions, desires, and requirements are subjected to careful analysis, and the findings are incorporated into the design process. The study topic of Human-Computer Interface (HCI), also known as User Interface, investigates the communication that takes place between the user and the interface. This has led to the development of assessment techniques that focus on the usability of web pages, collectively referred to as usability. In recent years, there has been a growing trend of developing websites with the end user in mind. A significant number of web designers have established standards for this,

which are based on the following: It is of the utmost importance to gain a comprehensive understanding of the particular user and to consider their viewpoint from the outset of the design process. The design process must be supported by ongoing user assessment, with the findings leading to designs that are open to inspection. Dr. Lynn Dierking, head of the Institute for Learning Innovation, and John Falk have highlighted the dearth of research examining the individuals who are drawn to the Internet and the role that the Internet and museum sites play in disseminating their views. They also addressed the question of whether there are "typical" characteristics of people who use the internet. The user's classification should be improved. However, it is first necessary to consider the individual who visits a real museum, as this person's qualities play a critical role in the research. It is logical to count each visitor as a prospective user of the museum's resources.⁶⁰

6.2 The visitor of a real museum

The user-centred approach, which has previously been outlined, entails the integration of the actual museum visitor into the considerations. Dierking and Falk, among others, have endeavoured to provide a more detailed account of the American museum visitor and to conceptualise them as a potential user of museum websites. There is a lack of clarity regarding the extent to which the demographic profiles of museum visitors correspond with those of potential users of museum websites. Conversely, they posit that for a museum website to be efficacious, its design must also consider the individuals who visit the physical museum. It is crucial to acknowledge that utilising the internet is likely to be as intricate as visiting a museum, which is arguably the most significant insight to emerge from this analysis. In order to create a meaningful web experience for potential users, it is essential to gain an understanding of

⁶⁰ Dierking, L. D. and J. H. Falk. 1998. Audiences and accessibility. In *The Virtual and Real: Uses of Multimedia in Museums*.

their profiles. The following is a presentation of the findings on the visitor profile of people who go to museums in the United States, as reported by Dierking and Falk. The degree to which the visit to the museum is perceived to have personal worth is directly correlated with the likelihood that one will choose to go. Museum goers in the United States consider that there are few other activities that are more fascinating or significant to do in their spare time. They attach great importance to education, proactively pursue challenging experiences, and consider this pastime to be highly valuable. They perceive the museum as an opportunity to broaden not only their own perspectives but also those of their children, and they avail themselves of that opportunity. A significant proportion of museum visitors undertake travel for the primary purpose of providing educational opportunities for their children. Museum attendance is not driven by an abstract interest in acquiring knowledge; rather, it is shaped by a genuine interest in a specific subject matter. Personal history and values play a significant role in this decision-making process. People attend museums that align with their personal interests. For instance, those with an affinity for art tend to gravitate towards art museums. On the one hand, the overwhelming majority of visitors express high to moderate levels of interest in the items that are on display. On the other hand, however, they demonstrate low to high levels of expertise. The desire to become an expert is less important to them than the prospect of broadening their knowledge base and acquiring more specific information. The average American visits a museum approximately every 149 days. Research indicates that individuals who visited museums during their youth are more likely to continue doing so as adults. The majority of museum visitors enter with preconceived notions. They anticipate discovering a diverse range of engaging content that caters to a variety of demographics, including age, knowledge level, personal interest, and technical ability. They attach great importance to education, proactively pursue challenging experiences, and consider this pastime to be highly valuable. They perceive the museum as an opportunity to broaden not

only their own perspectives but also those of their children, and they avail themselves of that opportunity. A significant proportion of museum visitors undertake travel for the primary purpose of providing educational opportunities for their children. Museum attendance is not driven by an abstract interest in acquiring knowledge; rather, it is shaped by a genuine interest in a specific subject matter. Personal history and values play a significant role in this decision-making process. People attend museums that align with their personal interests. For instance, those with an affinity for art tend to gravitate towards art museums. On the one hand, the overwhelming majority of visitors express high to moderate levels of interest in the items that are on display. On the other hand, however, they demonstrate low to high levels of expertise. The desire to become an expert is less important to them than the prospect of broadening their knowledge base and acquiring more specific information. The average American visits a museum approximately every 149 days. Research indicates that individuals who visited museums during their youth are more likely to continue doing so as adults. The majority of museum visitors enter with preconceived notions. They anticipate discovering a diverse range of engaging content that caters to a variety of demographics, including age, knowledge level, personal interest, and technical ability.

6.3 The User

What are the user's preferences and interests? This section will address the general understanding of the user, as well as the specific understanding of the user in relation to their role as a visitor to the Internet pages of museums. Subsequently, an in-depth examination of the user's comprehensive learning trajectory will be conducted to facilitate a comprehensive analysis. In the process of organising any web space on the Internet, it is of the utmost importance to consider the factors that are relevant to the user in general at the fundamental level.

The IBM Web Design Guidelines reflect the company's user-centred design philosophy, which is conveyed throughout the document. Inferences may be drawn about the user based on these. This will be used to construct a generic user profile, which will relate to concerns in the following areas: design, structure, navigation, typography, layout, visual components, and media. Users require the ability to swiftly locate the information they seek and to navigate the platform with minimal difficulty or obstruction. In addition to this, they demand visually appealing design styles and visual stimuli that are consistent with one another.

It is anticipated that users will expect to find information that is organised in a logical fashion within predetermined hierarchies. The presence of buildings comprising more than three levels of depth can result in a sense of disorientation. It is also important to consider how users can be made aware of their current location and the means by which they may navigate back to previous pages. This is contingent upon the presence of navigational components that are consistent and remain static in terms of their design, location, and function. This entails the provision of links with meaningful names in lieu of generic terms such as "Go" or "Click Here," among other considerations. The presence of superfluous linkages can lead to confusion. It is anticipated that users will be accustomed to locating navigation elements and identification (such as the logo) at the top and to the left of the page. Furthermore, it is expected that users will anticipate being able to return to the homepage from any page on the site. They require feedback and are interested in learning how to obtain information. They anticipate this to occur in a manner consistent with logic. Users who have visual impairments anticipate that text will be added to any visuals or image maps that are presented to them.

It has been demonstrated that text oriented to the left is perceived as more accessible and straightforward to read. Furthermore, users anticipate that longer texts will be provided in a printable format. In terms of layout and graphic elements, users are conditioned to identify a specific message with the overall picture. Consequently, they anticipate receiving

communications that are clear and concise. The duration of a user's engagement with a given website is contingent upon their initial impression of it. It is also important to note that users desire aesthetically pleasing designs, with particular aspects of the design, such as symbols, being associated with specific capabilities. The user's sense of coherence and belonging is reinforced by the presence of elements that are consistently reiterated throughout the experience. It is also imperative that the material be adapted in a suitable manner for the user's screen resolution. It is irritating for users to encounter material that can only be seen by scrolling horizontally, as they do not want to have to scroll excessively in order to comprehend vital information. Similarly, they do not want to have to scroll vertically either. It is reasonable to posit that media users will have an expectation that they will be able to manage certain aspects of the media they are playing, such as the play/pause/stop/rewind/fast-forward and volume controls. Additionally, users anticipate accurate information regarding the file download, including the file size, file type, and topic name. For users with hearing or visual impairments, a textual description of any audio or video components is essential. Users are prone to distraction by moving objects and require sufficient time to absorb content. Conversely, they become annoyed and angry when subjected to repetitive content. Professor of Computer Engineering Proenca has this to say about the media: "Net surfers have hightechnological expectations: they want virtual visits and presentations, manipulation of 3D objects, greater interactivity, animation, [...]"The following section presents additional general user characteristics, as identified through the findings of a survey conducted by Schuck-Wersig. Users seek to gain knowledge and enjoyment from their online experiences. The Internet is regarded as a valuable tool for study and information gathering, and it is used extensively for the formation of relationships, particularly through email. The Internet is commended for its rapid and up-to-date access, as well as its utilization of international sources of information and entertainment, which are accessible at any time and from any location. The

Internet is regarded as the system of software distribution that is both the quickest and most convenient, and its users appreciate the ease of use. The element of enjoyment also plays a part, not the least of which is in the process of discovering new facets of life and fields of study. However, users also perceive a number of problems with the network, including poor transmission times, a lack of clarity, a low and superficial level of many offers, insufficient data protection, invasive advertising, and a growing focus on the commercialization of the network.

6.3 The user of museum Internet sites

The results of a poll conducted in Berlin in 1999 in internet cafés regarding the utilisation of museum resources on the Internet are as follows: The majority of respondents indicated that they believe museums can utilize the Internet to enhance their online presence. The Internet offers a number of potential benefits for museums, both in terms of their own promotion and as a supplement to the actual visit. It can also be used as a kind of "showroom" for items that are not currently on display. Furthermore, it provides basic information for visitors, such as opening hours, admission prices and details of current exhibitions. It also allows visitors to process their experience afterwards. The Internet offers a number of potential benefits for museums, including the provision of supplementary information, the creation of a virtual visit, and the offering of a precursor to a physical visit. However, it is important to note that the Internet cannot replace the experience of visiting a museum in person. There is a degree of scepticism as to whether the two-dimensional quality of the monitor can adequately replicate the impression, ambience and experience of a physical museum visit. According to the survey, the most ardent advocates of museums can be found on the Internet, with 78% of college graduates and 81% of those with professional degrees expressing this view. It would seem that only a small proportion of the population actively seeks out museum homepages or has ever visited one. However,

it has been observed that individuals with greater experience of the Internet are more likely to engage with museum homepages. They are more likely to access these sites via search engines or other connections. When it comes to intricate online presentations, potential visitors are discouraged by the costs involved. The term 'school television' is often used in conjunction with virtual museums found on the Internet. Interest in electronic museum stores is minimal and may be considered a passing phase.

7. The internet experience of different museums

In the following, we will take a look at the most diverse museums on the Internet. For this purpose, museums from all over the world will be considered. These are divided into content museums, learning museums and virtual museums.

7.1 ZKM - Museum of New Art

The ZKM (Center for Art and Media Karlsruhe), established in 1989, stands as a unique cultural institution on the global stage. It responds to the rapid evolution of information technologies and the transformation of social structures. The ZKM combines various activities, including production, research, exhibitions, events, mediation, and documentation. The museum's offerings are comprehensive, encompassing several departments specializing in art and new media. The website's content has been carefully curated to provide visitors with a thorough understanding of the subject matter.

The overall user-friendliness of the ZKM's website is compromised by the confusing layout. The different sections are not clearly distinguishable, which muddles the visual structure and hinders the communication of the distinct content, thus failing to transmit the visual and emotional essence of the culture to the viewer. Navigating the site quickly becomes frustrating

because the user often cannot determine their location or whether they have already visited a particular page due to the visual similarities.

The Media Museum and the Museum of New Art are part of the ZKM. In the Media Museum, users can explore temporary presentations and permanent exhibitions, learning about the latest trends in interactive media art. They can search for artists, exhibitions, and projects, though it is unclear which department they are currently in due to inconsistent design across pages. Conversely, the Museum of New Art section is easier to navigate, resembling a brochure museum that effectively informs visitors about on-site offerings. However, online-only offerings are located in a completely different section, adding to the confusion.

7.2 Ars Electronica - Museum of the Future

The Ars Electronica Center, conceived by Hannes Leopoldseder, the director of the ORF regional studio in Upper Austria, was realized in 1992. The Center sees itself as a prototype of a new kind of museum, one that relies heavily on visitor initiative. As a product of artistic creativity, the Center, as a museum of the future, is not primarily a venue for displaying artworks but rather focuses on organizing and producing art and making it accessible to the public. The top priority is user-friendliness, with a clear focus on "usability" and entertainment value.

This emphasis on usability is reflected in the museum's well-organized and easy-to-navigate website. The projects are described in detail, illustrated with images, and include precise source information about the artists involved. Introductory videos make the exhibition space visible and allow users to experience interactions with art and technology objects. Experts provide deep, accessible insights into the topics in an approachable manner. The entire website is available in both German and English.

Users can explore the installations via a sophisticated virtual tour, where the real museum's floors are transformed into virtual rooms. Users can click on individual projects via image maps, such as the "Print on Screen" floor, where they can learn about installations that explore typography, typefaces,

and text as mediums of interaction. Events at the real museum are also streamed through various webcams, providing still images that give an impression of the current activities in the museum. The Museum's web pages also feature educational resources, such as the "Bit Byte Book," an accompanying book for teaching purposes.

7.3 Hermitage Museum

The online presence of the Hermitage Museum is extensive, with a clear, compact, and straightforward structure. The museum has made a significant effort to ensure that the vast amount of material is accessible to visitors. All information is available in both Russian and English, catering to a global audience. From any page on the site, users can easily return to the homepage, which offers features such as a site map, feedback services, a calendar, a store, and a search engine. The navigation bar provides unrestricted access to the content parts of the website, including information and highlights of the collection exhibits, the history of the Hermitage Museum, digital collections, and the children and education section.

The section on art education begins with a statement emphasizing the idea that the capacity to appreciate art matures with age. The State Hermitage is dedicated to fostering creative thinking and expression among children of all ages. The museum offers several programs that allow children to engage with and even create art on their own terms. Additionally, classes and seminars are available for parents and teachers, providing a platform for them to discuss shared interests in art with children.

With the assistance of IBM, the Hermitage has implemented technical enhancements such as a 3D gallery, virtual tours, and virtual viewings, which contribute to the user's sense of "being right there." The site's load speeds are notably fast, and the layout is straightforward. An interactive map assists users as they navigate the virtual museum tour. After clicking on a number on the map, users find themselves in the corresponding room

and can move freely within the space via a small viewing window.

7.4 Museum of Modern Art (MoMA)

MoMA is one of the world's most famous art institutions. Renowned museums like MoMA, which attract visitors from all over the world, often receive substantial funding, enabling them to realize their curatorial work on the web in a highly professional manner. This makes MoMA an interesting case to examine as an American museum. On the museum's homepage, there is a section titled "Educational Resources," which provides information on various art education opportunities. The "Department of Education" caters to a wide audience, including students, instructors, and parents, offering resources for research, publications, programs, and activities.

MoMA's online presence is extensive, reflecting its dedication to accessibility. Two particularly useful features for educational purposes are highlighted below, both of which take full advantage of the Internet's interactive capabilities. Flash animations, for example, are employed to help explain various subjects. Visitors can navigate the website to search for artists, topics, or artworks. Throughout this process, they are provided with specific information about the artists' backgrounds and environments. Audio materials, including commentary by the artists themselves, are also available. The history of the artists' collective is presented sequentially, and references to published works encourage further exploration.

Another valuable online feature is titled "What is a Print?" This section introduces users to different printing techniques. Here, the various stages of production are brought to life through technological animations, making the learning process self-directed and interactive. A glossary of technical terms and resources for further study are also provided, enhancing the educational value of the site.

7.5 Metropolitan Museum of Art

The Metropolitan Museum of Art in New York City offers an extensive online

experience. The website is well-suited for art education due to the availability of a significant number of artworks that can be viewed online. In addition to providing information about exhibits and other features of the physical museum, the website offers online research options. A notable feature is a special search option that highlights objects with a history of National Socialism provenance, demonstrating the museum's engagement with important historical issues.

The artifacts are discussed with consideration of their historical and cultural contexts, catering to younger audiences to establish a more personal connection. Texts are concise, clear, and easy to understand, while the visual content is vivid, illustrative, and engaging. The information provided offers insight into the creation of the artworks and interpretations of their meanings, including background information on specific artists and cultural influences.

For artworks that are too fragile or old to be displayed in traditional museums, the internet provides an ideal solution. Users can examine ancient texts without physically handling them and view more items than could be displayed in a physical space. Similar or related art objects are also provided under the artworks, enhancing the educational experience.

The Metropolitan Museum of Art's website features a variety of learning resources for individuals, children, and schools. A notable feature is the "Timeline of Art History," which allows users to explore different periods of art history, each represented by an artwork from the museum. The timeline can be navigated chronologically or by its extensive theme index, presenting art history within both a geographical and chronological framework.

In general, the website offers a wealth of interesting content. Users are encouraged to submit comments or contact museum staff, emphasizing the interactive nature of the site and its commitment to user engagement.

8. Conclusion

In the evolving field of art curation, the emergence of the internet as a curatorial space marks a transformative era that redefines the curator's role in both online and physical contexts. This analysis has explored the differences and similarities in approach, audience engagement, and space usage between digital and physical curation, focusing on the core essence of curatorial practice.

The research reveals that, whether online or in the physical world, curatorial practice shares a core essence rooted in a deep understanding of art, versatile storytelling techniques, and a dedication to fostering dialogue between art and its audience. While tools and platforms may vary, the fundamental mission of curators remains the same: to curate, contextualize, and showcase the significance of art.

As curatorial practices evolve, curators have consistently integrated emerging technologies into their exhibitions, resulting in a fusion of traditional and contemporary approaches. This synthesis has expanded the toolkit of curation and enriched the audience's experience.

Looking ahead, it is clear that the future demands a new breed of curatorial professionals—individuals with a profound understanding of art and digital fluency to navigate the ever-changing digital landscape. The curators of tomorrow will likely engage with artificial intelligence, virtual reality, blockchain technology, and other innovations to create immersive and inclusive art experiences.

The curator's role as a custodian of cultural heritage, interpreter of contemporary discourse, and facilitator of artistic expression is becoming increasingly important in our interconnected and digitized world. Curators serve as mediators between art and audience, building bridges, telling stories, and preserving cultural memory.

In conclusion, the internet as a curatorial space represents a pivotal moment in the history of art curation. It challenges curators to embrace new technologies, adapt to innovative ways of engaging with audiences, and redefine the boundaries of artistic and curatorial expression. As we navigate the digital realm, we must remember that curatorial practice

remains a discipline that shapes our understanding of the world, deepens our appreciation of art, and strengthens our connections to one another.

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Glossary

In this glossary, the topics discussed in this thesis are covered, exploring them from the perspective of curating art in the digital realm. I aim to shed light on how technology influences and shapes the way art is curated and presented online. Additionally, a collection of emerging technologies and terms that play a significant role in the future of art exhibition and curation are introduced. These new innovations have the potential to transform how we create, experience, and interact with art. Due to the mere extent of the Thesis, these topics could not be covered in depth and therefore are added in this section to give a better overview of the curatorial labor practice and technological tool set to get affiliated with in the years to come.

Algorithms: In the realm of art curation, algorithms serve as the backbone of digital organization and presentation. They meticulously arrange and display artworks, ensuring that each piece harmonizes with the overall exhibition. These digital marvels create a seamless and accessible journey through art, facilitating the discovery and appreciation of diverse works.

Animation: Animation, when applied to online art exhibitions, breathes life into static images and sculptures. It can transform them into dynamic, immersive experiences, allowing viewers to witness the evolution of an artwork or explore its details over time. Animation engenders a sense of vitality within the digital art space.

Augmented Reality (AR): Augmented reality allows the viewer to interact with art by displaying digital elements onto physical or virtual exhibits. When used in curation, AR invites visitors to engage with artworks on a deeper level, revealing hidden layers of meaning and stories.

Blockchain Technology: In the digital art curation landscape, blockchain technology functions as an incorruptible ledger, documenting an artwork's lineage. It safeguards the authenticity, ownership, and exhibition history of each piece, addressing the burgeoning demand for trust and transparency, particularly of NFTs.

Games Engine: A games engine provides a versatile canvas for curators and artists to craft interactive digital art experiences. It allows for the creation of immersive narratives, offering visitors an opportunity to journey through a story-driven exhibition, interact with artworks, and participate in the unfolding artistic adventure.

Gamification: Gamification, within the context of art curation, transforms the act of viewing art into an engaging and interactive experience. By incorporating game elements such as challenges, rewards, and competitions, it encourages deeper exploration of artworks, fostering a sense of achievement and excitement in the audience.

Metadata: Metadata serves as the informational foundation for artworks in digital exhibitions. It meticulously catalogs crucial details, including artist attribution, titles, creation dates, and materials. This organized data not only aids in the presentation of art but also enriches the viewer's understanding and connection to each piece.

Mobile Responsive: In today's increasingly digital art landscape, mobile responsiveness is essential. It ensures that art curation platforms adapt seamlessly to various devices, enabling art consumers to explore exhibitions effortlessly.

Machine Learning: Machine learning is an insightful companion in the art world. These algorithms analyze patterns and data, facilitating curated recommendations tailored to an individual's tastes. They also delve into intricate analyses of art styles, offering visitors a more profound understanding of an artwork's nuances.

and historical context.

SEO: Search Engine Optimization, is the practice of optimizing online content to improve its visibility on search engines like google, making it easier for art lovers to discover art and exhibitions.

High-definition 360-degree Imaging: High-definition 360-degree imaging grants the visitor a realistic view of artworks, virtually placing them within the exhibition space. It allows for a comprehensive examination of every brushstroke, texture, and angle, enabling a more immersive and intimate art experience.

3D Scanning and Modeling: 3D scanning and modeling allows the visitor to explore the very essence of an artwork. These technologies create digital replicas of physical artworks, offering an opportunity for new exploration, even when a physical visit is not possible.

Mobile Apps for Art Tours: Mobile apps dedicated to art tours act as personalized docents. They guide viewers through virtual journeys within exhibitions, providing captivating narratives, historical context, and revealing the hidden stories and symbolism behind each artwork.

Live Streaming of Art Events: Live streaming technology connects art lovers to real-time art events worldwide. Whether it's a gallery opening or an artist's talk, live-streaming brings these experiences directly to viewers, allowing them to engage without geographical constraints.

Internet of Things (IoT) for Interactive Installations: The Internet of Things enhances art exhibitions by enabling physical artworks to respond to environmental factors or viewer presence. It creates an art encounter where the audience's interactions influence the art itself, forging a unique and personalized view.

Enhanced Image Recognition: Enhanced image recognition technology aids viewers in comprehending artworks by identifying and contextualizing various elements within them. This

technology is offering instant insights and explanations about each artwork.

Virtual Walkthroughs: Virtual walkthroughs serve as digital portals that transport viewers into art exhibitions or galleries. They mimic the physical experience, enabling visitors to navigate the space, appreciate art, and enjoy the comfort of their own screens.

Chatbots for Visitor Assistance: AI-powered chatbots stand as virtual assistants available round the clock, ready to answer questions and provide information. They ensure a smooth and enjoyable art experience, offering real-time guidance and assistance to visitors.

Facial Recognition for Personalized Experiences: Facial recognition technology tailors the visit to individual preferences and emotions. By recognizing facial expressions and adjusting content accordingly, it fosters a deeper connection between viewers and the artworks.

Cloud Computing for Storage and Scalability: Cloud computing services are the digital repository for art collections, efficiently storing and managing artworks while accommodating growth. It guarantees accessibility and ensures that the art world's digital vault remains infinitely expandable.

Big Data Analytics for Visitor Insights: Big data analytics delve into visitor behavior and preferences, unveiling insights that guide curators in creating exhibitions that resonate with their audience.

Wearable Tech for Interactive Exhibits: Wearable technology, such as VR headsets, plunges users into interactive art exhibits. It transforms art appreciation into a multisensory journey, enabling visitors to engage with artworks in entirely novel and immersive ways.

Holography for 3D Displays: Holography transcends the limitations of flat screens and enriches the visit. It immerses viewers in a captivating world where art breaks its physical boundaries.

Natural Language Processing for Search: Natural language processing streamlines the search process by allowing users to speak with their devices using everyday language. It grants the visitor an intuitive means of locating the perfect artwork.

Drone Photography for Virtual Tours: Drone photography offers aerial perspectives of artworks and outdoor installations. It introduces viewers to unique angles, allowing them to appreciate art in new ways.

Gesture Recognition for Interaction: Gesture recognition technology empowers users to interact with digital artworks through intuitive hand or body movements. It engages a dynamic connection with art, where viewers can become participants in the narrative.

Edge Computing for Faster Response Times: Edge computing ensures lightning-fast responses in online interactions. Visitors can experience immediate and seamless interactions with digital artworks.

Remote Sensing for Environmental Data: Remote sensing technology provides valuable environmental data that contextualizes outdoor artworks. It offers viewers insights into how the natural surroundings influence and interact with the art.

Deep Learning Algorithms for Art Analysis: Deep learning algorithms serve as art critics of the digital age. They decode artworks, dissecting their styles, compositions, and historical influences, delivering instant analyses to the visitors.

Projection Mapping for Immersive Displays: Projection mapping transforms ordinary surfaces into dynamic canvases for art displays. It allows the viewers, to step into the heart of the artistic expression.

5G Connectivity for High-speed Streaming: 5G connectivity ensures uninterrupted streaming of high-quality art content. It provides the visitors with the fastest and smoothest access to the

virtual art world.

Quantum Computing for Complex Simulations: Quantum computing unlocks the potential for creative art simulations. It allows the most complex and imaginative ideas in art to push the boundaries.

Digital Twins for Artwork Preservation: Digital twins create digital copies of physical artworks, safeguarding their essence for future generations. They act as digital conservators, ensuring that art retains.

Edge-to-Cloud Video Streaming: Edge-to-cloud video streaming delivers high-quality art content directly to viewers' devices. It replicates the experience of a visit, where art comes to life at once.

RFID Tags for Art Tracking: RFID tags function as vigilant guardians for artworks, tracking their whereabouts and ensuring their protection.

Machine Vision for Object Recognition: Machine vision technology dives into the intricacies of artworks, identifying and cataloging the significance of objects within them.

Wearable AR/VR Headsets: Wearable AR/VR headsets alternate art dimensions. They transport users into immersive virtual realms, enabling them to explore, interact, and experience art in new ways.

Web3 Technologies for Decentralized Curation: Web3 technologies spark a revolution in the art world by empowering artists and curators to create, own, and share art in decentralized ways. They shift the paradigm of control and ownership within the art ecosystem.

Tokenization of Physical Artworks: Tokenization transforms physical artworks into digital assets on a blockchain. This innovation simplifies the buying, selling, and ownership of art, providing digital certificates of authenticity for the artworks.

Real-time Translation Services: Real-time translation services bridging linguistic divides in the art world, ensuring that language is never a barrier to art appreciation. They extend the reach of art to a global audience, making it universally accessible.

Neural Networks for Style Analysis: Neural networks employ AI to categorize artworks based on their unique styles. They guide visitors to pieces according to their preferences, acting as personalized curators.

Biometric Feedback for Emotional Analysis: Biometric feedback technology measures emotional responses to art, unveiling a deeper layer of understanding and connection. It transforms the art experience into an exploration of one's own emotional landscape.

Content Recommendation Algorithms: Content recommendation algorithms introduce art enthusiasts to new masterpieces based on their existing preferences.

Multi-user VR Environments: Multi-user VR environments foster a sense of community. They enable multiple individuals to explore virtual art spaces together, encouraging shared art experiences and interactions.

Subscription-based Art Curation Apps: Subscription-based art curation apps deliver a steady stream of curated art content, ensuring a continuous connection to the art world. They bring art directly to digital doorsteps, offering evolving and interactive content.

Immersive Storytelling Experiences: Immersive storytelling techniques weave captivating narratives around artworks, elevating their significance and depth.