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ARTISTIC PRACTICES IN THE CONTEXT OF THE EVOLUTION FROM WEB 1.0 TO WEB 3.0

ASMATI CHIBALASHVILI[1], RUSLANA BEZUHLA[2], POLINA KHARCHENKO[3], MARYNA SEVERYNOVA[4], YURIY KORENYUK[5]

SUMMARY. This article examines the evolution of artists' interaction with the audience in the context of media culture, linked to the updates of communication mechanisms on the Internet, from the static Web 1.0 to the interactive Web 3.0. The aim of the article is to show the connections between the changes in authorship models and mechanisms of interaction with the audience in artistic practice and the evolutionary development of web technologies. The transformation of contemporary artistic forms is the result of the active influence of digital technologies and the associated collapse of the existing hierarchy between author, performer and audience. The study discusses the strengthening of the interactive component in artistic practices, parallel to the development of Internet technologies from Web 1.0 to the semantic Web 3.0 and analyzes the overlapping of these processes and their mutual influence in the context of post humanist perspectives. It was found that artistic collaborations through collective authorship are a characteristic model of authorship for this phase of Internet development. It was noted that the evolution from Web 2.0 to Web 3.0 opens new possibilities for the creation of multisensory experiences, thanks to the use of VR (Virtual Reality) and AR (Augmented Reality) technologies, which

[1] *PhD in Art Studies, Senior Researcher, Deputy Director for Scientific Affairs, Modern Art Research Institute of the National Academy of Arts of Ukraine, Asmati@ukr.net*
[2] *Doctor of Art Studies, Associate Professor, Head of the Department of Theory and History of Culture, Modern Art Research Institute of the National Academy of Arts of Ukraine, r.bezuhla@gmail.com*
[3] *PhD in Pedagogy, Associate Professor, Senior Researcher, Academic Secretary of Theory and History of Arts Department, National Academy of Arts of Ukraine, phhp57@gmail.com*
[4] *Doctor of Art History, Associate Professor of the Department of Theory and History of Culture of the Ukrainian National Tchaikovsky Academy of Music, mseverinchik@gmail.com*
[5] *PhD in Art Studies, Associate Professor, Department of Graphic Arts, National Technical University of Ukraine, "Igor Sikorsky Kyiv Polytechnic Institute", e-mail: yu.korenuyk@gmail.com*

are actively used by artists in artistic practices and works, for example in operas or concerts. In addition, the active development and integration of artificial intelligence technologies in artistic practices has been identified. By analyzing musical projects of different genres and forms, the transformative influence of web culture on contemporary artistic practices becomes clear.

Keywords: artistic practices, music, internet, technologies, interactivity, communicative models' development

Over the past decades, a change in how individuals perceive their place in the surrounding environment, as well as in their relationships with technologies. Transformations in the creative process illustrate the search for new ways of perceiving art and methods of communicating with the audience. These trends are realized both in physical space and in virtual worlds generated with the help of digital technologies.

Thus, social networks and internet platforms have become possible platforms for implementing artistic projects, enabling not only a new level of interaction between the author and the audience but also network users to create and disseminate their own content which can exist as part of a global artistic project. The aim of the article is to identify the connection between changes in authorship models and mechanisms of interaction with the audience in artistic practices and the evolutionary development of web technologies.

The theoretical foundation of the study is composed of works dedicated to the history of media and new media (M. McLuhan, Robert K. Logan), covering historical and technical aspects of the internet's evolution from Web 1.0 to its current state — Web 3.0, among which are T. Team, K. Nath, S. Dhar and S. Basishtha, J. Hashmi. A separate category of sources reflects the practical aspects of the functioning of artistic practices in the context of Web 2.0 — Web 3.0, as well as existing attempts to forecast their further development paths, including publications by B. Marr, S. Ransome, L. Hertz. The aspects of correlation between these processes and their interpretation through the scientific lens of posthumanist views are analyzed based on the research of representatives of critical and philosophical posthumanism, N. Katherine Hayles, F. Ferrando.

The growing presence of technology in everyday human life is one of the vectors of posthumanist research. This presence has a profound impact on art, significantly changing its forms and contributing to the renewal of genre characteristics, along with the transformation/destruction of traditional hierarchical relations between the author/authors and the audience. In this communicative chain, a machine can emerge as a co-author, evidencing a trend away from a human-centric future in art in particular. The focus of this

article's authors is specifically on the aspect of interactivity, through the dynamics of which a connection between the development of internet technologies and changes in artistic practices has been revealed.

The history of Web 1.0 began in 1989. Web 1.0 was characterized by static web pages with limited interactivity, where information flowed in one direction from content creators to passive consumers. Thus, at this stage of the Internet's development, artists predominantly used websites as virtual portfolios or digital galleries to showcase their works. The active development of digital technologies, including Web 2.0, began in 1999 and continued throughout the first two decades of the 21st century. For this stage, dynamics and interactivity are characteristic features. It was during this period that Facebook, Twitter, TikTok, and YouTube emerged — social platforms that allow users to exchange content and provide feedback on it.

According to Robert K. Logan, "Web 2.0 represents the fact that the community of Web users recognize that the Web is more than an Internet based shared space for audio, visual, and text, but that it has become". The researcher cites Marshall McLuhan[6] quote in support of his opinion, a "living [vortex] of power creating hidden environments (and effects) that act abrasively and destructively on older forms of culture" (p. v), and, as such, has taken on a life of its own"[7]. Artists gained access to new digital tools that facilitated interaction among internet users, particularly allowing them to comment, disseminate various information, and share their own content. This development significantly altered traditional approaches to art making and sharing, enabling a more democratic and participatory form of cultural production. "Collective creation and the production of open and continuously evolving works are two of the most appealing artistic breakthroughs the Internet can offer to creators in general and to music composers in particular"[8]. An example of such a collective open project is Wiki-piano – an interactive piece for piano and internet community, initiated by composer Alexander Schubert. Everyone is welcome to contribute to this global network piece at any time and from anywhere in the world through its internet page, which shows the current state of the piece and allows visitors to make changes, such as adding audio or video files, leaving comments, etc. The project's web page serves as the score of the piece.

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[6] McLuhan, M. (1994). Understanding Media: The Extensions of Man. The MIT Press

[7] Logan, R. (2016). *Understanding New Media* (1st ed.). Peter Lang. Retrieved from https://www.perlego.com/book/1991551/understanding-new-media-pdf (Original work published 2016)

[8] *MTG - Music Technology Group (UPF)*. URL: https://mtg.upf.edu/files/publications/FMOLDexa.pdf (date of access: 30.01.2024).

The contemporary state of digital technologies and the latest mechanisms for creating and perceiving artistic content not only significantly influence the development of art, but also constantly change the rules of interaction and communication. “When we say that Web 3.0 is ‘decentralised’ we mean that it seeks to shift power and control back to the users, and create a more open and distributed web that is not controlled by any single entity”[9]. In the context of the current stage of technology development, artistic projects are bringing to the forefront posthumanist aesthetics, which blur the lines between natural and artificial, between humans and their prototypes in virtual space. In recent years, immersive technologies that simulate the effect of immersion and alter the traditional frames of perception have been gaining increasing popularity.

Ben Shneiderman has stated that virtual reality offers a lively new alternative for those who seek immersion experiences via blocking out the real world with goggles on their eyes[10]. Virtual reality offers the possibility for audience participation in interactivity, choosinag paths of event development within an immersive artistic work/space. Such interaction fundamentally affects human perception of another reality.

In the opera “Miranda: A Steampunk VR Opera” by composer Kamala Sankaram, the audience is endowed with the powers of a jury, capable of affirming or denying evidence, thus influencing the decisions within the trial process of suspects accused of murdering the main character — Miranda Wright. The opera features three scenario outcomes, namely its finale, depending on which of the three suspects is convicted by the audience, who becomes co-authors of a portion of the dramaturgical action. This innovative approach integrates VR technology to create a unique, participatory experience, illustrating the profound impact of digital technologies on contemporary artistic practices and audience engagement. The music of the opera “Miranda: A Steampunk VR Opera” is rich in polystylism, combining elements of baroque opera, popular music, hip-hop, tango, rock, and more. Each style corresponds to a different character in the opera. The performers (vocalists and instrumental ensemble) play their parts in real time, simultaneously being represented by digital avatars. This format blends the means of live theater with cinematic effects, which are unavailable in the stage format of the work. In our opinion, the opera’s format is determined by the search for new theatrical formats in the context of the COVID-19 pandemic; however, such experiments combined with immersive technologies are considered quite promising. It should be noted

[9] *How Artists can Embrace Web 3.0 — Sarah Ransome Art*. (n.d.). SARAH RANSOME ART. https://www.sarahransomeart.com/blog/how-artists-can-embrace-web-3

[10] Serafin, S., Erkut, C., Kojs, J., Nilsson, N. C., & Nordahl, R. (2016). Virtual Reality Musical Instruments: State of the Art, Design Principles, and Future Directions. *Computer Music Journal*, *40*(3), 22–40. https://www.jstor.org/stable/26777007

that at this stage, the audience can influence the dramaturgy of the work only to the extent determined by the author. However, in the future, it is likely that the degree of variability in the development of events, dependent on the audience's decisions, will increase. This, in our opinion, could lead to the gamification of art. According to N. Katherine Hayles "Virtual reality technologies are fascinating because they make visually immediate the perception that a world of information exists parallel to the "real" world, the former intersecting the latter at many points and in many ways. Hence the definition's strategic quality, strategic because it seeks to connect virtual technologies with the sense, pervasive in the late twentieth century, that all material objects are interpenetrated by flows of information, from DNA code to the global reach of the World Wide Web"[11].

The role of Artificial Intelligence in artistic practices, which has actively entered the toolkit of artists, particularly in the era of Web 3.0, deserves special attention. An example of its use can be seen in the work CONVERGENCE by Alexander Schubert[12]. The piece has two versions — a live performance and a digital version of the work, and represents the interaction of human and technology. "'Convergence' utilizes the concept of artificial intelligence to explore the characteristics of human musicians and then create new units based on these recordings. In this work, players interact with their created partners, seeing themselves transformed and changed. It metaphorically and parametrically presents a constructed world"[13].

Thus, we acknowledge the transformation of human experience in the online space thanks to the evolution of the Internet and specifically information technologies, as well as their impact on artistic projects that go beyond online boundaries or have a combined online-offline nature. "Web 3.0 potentially offers a range of exciting opportunities for artists to expand their reach, protect the value and authenticity of their artwork, and connect with a global audience of buyers and collectors. As the Web 3.0 ecosystem continues to evolve, it is likely that even more powerful tools and technologies will emerge that can help artists to thrive in the digital world"[14].

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[11] Hayles, N. Katherine. (1999) How we became posthuman: virtual bodies in cybernetics, literature, and informatics / N. Katherine Hayles. 364 p.

[12] Alexander Schubert. Alexander Schubert - Convergence [Ensemble Resonanz] @Kampnagel/ Eclat, 2021. *YouTube*.
URL: https://www.youtube.com/watch?v=o5UXkJWJciQ (date of access: 30.01.2024).

[13] Story of Convergence. *ensemble resonanz*.
URL: https://www.ensembleresonanz.com/resonanz-digital/themen/story of-convergence (date of access: 30.01.2024).

[14] *How Artists can Embrace Web 3.0 — Sarah Ransome Art*. (n.d.). SARAH RANSOME ART. https://www.sarahransomeart.com/blog/how-artists-can-embrace-web-3

Junaid Hashmi talks about another vision of Web 3.0, the researcher believes that Metaverse "to provide an immersive 3D virtual space where humans can interact through VR headsets and AR glasses giving almost a real-life experience, yet virtually"[15]. It's likely that the Metaverse, in the future, will unify all existing environments and methods of human interaction within the Internet network.

In our view, although the Metaverse and Web 3.0 can interact and complement each other, they present different concepts. The Metaverse is a concept of a virtual world, or a set of virtual worlds, that can interact with one another. Its main goal is to create a shared virtual space (which could be a social platform, a game, or simply virtual/augmented reality) where users can communicate through avatars. Among the common features between these concepts is the idea of decentralization, the potential use of smart contracts (a key component of Web 3.0) to automate activities in virtual space. Thus, the integration and interaction between them can create new communication possibilities in the digital space.

The evolution from Web 1.0 to Web 3.0 correlates with post humanist concepts through the reevaluation of relationships between people, technology, and art. Within the framework of Web 3.0, art aims to change perceptions of traditional roles of the artist and the viewer, expand the boundaries of perception and participation in art, and raise questions about the impact of technologies on our identity and coexistence with machines.

In recent years, Japanese concerts featuring the 3D hologram of Hatsune Miku, one of the most popular virtual performers, have gained immense popularity. Hatsune Miku is the first Vocaloid developed by Crypton Future Media following Yamaha's release of Vocaloids Meiko (November 5, 2004) and Kaito (February 17, 2006). The first "live" concert of the virtual idol Hatsune Miku took place on August 22, 2009, at the Saitama Super Arena during the annual anime song music festival (Animelo Summer Live) in Japan. To date, there are two virtual operas featuring Hatsune Miku. The first, "The End," dates back to 2013 and did not involve real live performers. It was created with contributions from designer Louis Vuitton and director Toshiki Okada, premiering at the Theatre du Chatelet Opera House in Paris. The second, "Weebmalion" — an opera buffa, emerged in 2018, written by Polish composer Krzysztof Żelichowski and performed with the participation of Hatsune Miku and real tenor Aleksander Kunach.

[15] Hashmi, J. (2023, August 7). *The Journey from Web 1.0 to Web 3.0*. LinkedIn: Log In or Sign Up. https://www.linkedin.com/pulse/journey-from-web-10-30-junaid-hashmi

Art created within the scope of Web 3.0 becomes a universe where each work is a specific hypertext interconnected with a new semantic web and largely relies on virtual and augmented realities, blending digital elements with the real world. Artistic practices within Web 3.0 are open-ended, blur semantic boundaries, envisage the plurality of texts across different linguistic (audial, verbal, visual, interactive) levels and their connection; they demolish the barriers between the author and the listener/viewer, creating a unique space for communication between them; and unite various styles and genres, merging virtual and real spaces.

A vivid example of the creation of artistic universes is virtual concerts, which have gained tremendous popularity among musicians and popular performers since 2019. Among the first virtual performances were the concert by DJ Marshmello in the computer game Fortnite and a VR concert by American violinist and composer Lindsey Stirling in collaboration with the startup Wave.

The emergence of the world's first VR concert by Lindsey Stirling on her YouTube channel was likely propelled by the global COVID-19 pandemic, during which nearly all of humanity was restricted from live communication. During the concert, the violinist was in a special studio, and thanks to cutting-edge technologies, her digital avatar was created in virtual space, fully replicating her movements and the sound of the violin, while viewers had the opportunity to watch the concert and listen to it using virtual reality headsets such as the HTC Vive and Oculus Rift.The experiences of Marshmello and Lindsey Stirling inspired similar concerts by other famous performers. We emphasize that all the mentioned changes undoubtedly provide artists with extensive opportunities through new ways of interacting with the audience, while also requiring quick response and adaptability to new conditions that continue to accelerate development.

To summarize, the development from Web 1.0 to Web 3.0 and the corresponding changes in artistic practice, which have shaken traditional notions of the creative process and the mechanisms of human-computer interaction, raise questions about human identification in the digital virtual space that correlate with the posthumanist concepts that emerged at the end of the 20th and beginning of the 21st century. This goes hand in hand with the use of new digital tools, the active involvement of the audience and practical and scientific approaches and confirms Marshall McLuhan's position that "The effects of technology do not occur at the level of opinion or concepts but alter sense ratios or patterns of perception steadily and without any resistance"[16].

[16] McLuhan, M. (1994). Understanding Media: The Extensions of Man. The MIT Press

Proof of the correctness of McLuhan's position has indeed been provided by the proliferation of various technological tools and methods in the context of Web 3.0. By analyzing examples of artistic projects in which the aforementioned tools and methods were used, we note the strongest influence of technologies on the creative process, which was reflected not only in the forms and genres of the projects analyzed, but also in the established artistic communication models and rules of interaction — from simple observation/listening to full immersion, participation in the creative process or active involvement in the action. Web3 technology and the art industry have come together to radically change the art world. This will not only have a very positive impact on society but will also play an important role in promoting cultural engagement[17].

Conclusions

The evolution of the Internet, from static websites that only allowed users to view page content to the modern interactive network, has, in our opinion, had a strong impact on the nature of artistic practice. Thus, thanks to the gradual evolution of the Internet from Web 1.0 to Web 3.0, artists have been given the possibility of interactive engagement with their audience, which could lead to an even greater blurring of the boundaries between the natural and the artificial, between humans and their virtual avatars.

The authors of the article conclude that the gradual convergence of web technologies with the art sphere is taking place in parallel with the strengthening of the interactive component in both areas. Especially in Web 3.0, interaction has reached its highest level, which in our opinion will further change the world of art. It is obvious that the further development of technologies will continue to expand the boundaries of artistic expression and communication, as the dynamic interaction between art and technology, which has been activated especially in recent decades, contributes to the continuous development and transformation of the mechanisms of artistic creativity.

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[17] Web3 in art: Implications for artists, art collectors, and the art industry. *LeewayHertz - AI Development Company*. URL: https://www.leewayhertz.com/web3-in-art/ (date of access: 30.01.2024).

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