

The Future Metaverse of Digital Journalism

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Abstract. The scope of digital journalism is expanding rapidly due to the development of internet tools and digital technologies. In particular, in the future of digital journalism development, one of the main areas of research coming into theory and practice is the term and concept of "metaverse", which is considered a new branch of digital journalism. We have written this article based on theoretical research on new media concepts, computer technology, and augmented reality with a new perspective on the "future of digital journalism". The wide range of possibilities for accessing metaverse virtual reality environments and technology has reached a level even higher than that for immersive journalism, and some researchers and media organizations have confirmed that this is the new future of digital journalism.

Keywords: new media, web technology, immersive journalism, metaverse journalism, the virtual metaverse platform, design of new media

1. Introduction

One of the main objects of research penetrating the theory and practice of Internet journalism is the term and concept of "metaverse". In this article, we consider this phenomenon from the perspective of a new trend, "future digital journalism".

When carrying out this research, we relied on relevant theories of the concepts of new media, computer technology, and virtual reality. The article also focuses on theoretical concepts such as new media theory, postmodern concepts of new media approaches, and theoretical concepts of digital technology and the Internet. Additionally, a new information model, /figure – 2/, was produced, and the metaverse attempt of researchers, /figure – 1/, was justified.

Today, the virtual reality metaverse and its technological possibilities have reached a much higher level than the possibilities of immersive journalism.

The achievement of Internet technology at the "Web 05" and the development of virtual reality support tools are creating new directions and forms in electronic journalism.

Starting from the creation of information relations in virtual reality, such unique means as immersive journalism, convey the emotional environment of what is happening; artificial intelligence; augmented reality; and hybrid reality, which has led to new directions and a promising future for journalism. Participants differ from each other in that each takes part through their own unique avatar. Metaverse journalism is successfully developing when communicating in a virtual environment develop and developing certain information, thereby allowing people to freely overcome the spatial barriers of real life and clearly demonstrating real facts, the latest technologies, media experience, and the results of various types of research.

However, one cannot fail to pay due attention to the fact that some factors, namely, insufficient ability to use the fruits of technological progress and certain psychological limitations, create tangible difficulties that hinder the future development of the metaverse.

2. Results and Discussion

Social media has continued to change over the centuries with technological advancements and innovations. With the advent of radio and television broadcasting in the 20th century, it has become more immediate than regular publications (such as newspapers and magazines) (live transmission that overcomes the limitations of time and space) and has feedback characteristics (in the middle

of the broadcast, viewers and listeners can connect to space and time by phone). A new form of e-journalism has come to dominate because it can be directly connected to airwaves from anywhere, overcoming these limitations. Similarly, with the invention of computers in the 1960s, the introduction of the Internet in the 1980s, and the beginning of the digital revolution, new media at the threshold of the new century were strengthened by mobile devices, social networks, digital data, and cloud technology, shaking the position of traditional media. Following this revolution of new media, the era of digital journalism based on the advancement of digital technologies in the field of public relations and media began.

Advances in Web Technology for new Internet-based media are summarized as follows. /Notice the chronological outline/

Web 1.0 data /1990 – 2000/

Web 2.0 production /2000 – 2010/

Web 3.0 distribution /since 2006/

Several sources (Terra, Jan 13, 2023) believe that Web 1.0 developed from 1989 to 2005, Web 2.0 from 1999 to 2012, and Web 3.0 from 2006 to the present.

Digital journalism uses ready-made programs and templates that copy, convert, and combine information using digital media, quickly and easily prepare and process it, quickly, provide feedback and interactively interactivity through the Internet. It has the feature of spreading/multimedia properties/in a multicharacter environment. Today, with the development of web technology around the world, digital journalism continues to find new and powerful forms. A clear example of this is Web 3.0, 4G technology, VR, 360° video, the "HTML-5" language, and technological innovations such as the Hadoop system, which create a metaverse in the virtual environment of the Internet and are connected to the blockchain, which is the foundation of digital journalism brought and brings a new closer future. These innovations and changes have been made by the development of social media websites such as Facebook, YouTube, and Twitter.

The metaverse is a virtual world that has already been created by companies such as Facebook, Microsoft, and Decentraland. For example, as of 2022, the news organization Vice has opened a new office in the metaverse to focus on VR journalism. A sub headquarters of that office has been established in Blockchain-based Decentraland, which has already become a meeting point for global teams to discuss collaborations, briefings, and virtual project "shows".

The metaverse is now being heavily discussed in discussions of virtual space. In this way, it was no coincidence that Zuckerberg changed the name of the metaverse, which has become a hot topic in digital technology and electronic development in the last 5 years, to his Facebook. In 2015, when Facebook bought Oculus, this large project started. However, the beginning of Zuckerberg's Facebook/Meta was only a prelude to the intensive development of the metaverse, which will be discussed later through immersive discourse. However, now, the metaverse, which is the real environment of our existence in the virtual space of the Internet, is a virtual world where all Internet users communicate with each other using their digital avatars.

However, we create a metaverse of deeper and more real relationships than direct and interactive communication with friends and family in the online environment by using information communication tools and platforms to write messages, make video calls, create room to chat, hold meetings, and organize training sessions. The "real world" is much more common than virtual reality (VR), and was created with the help of software; It looks real to the user but also surpasses the version of virtual reality combined with the real environment, known as augmented reality.

Thus, as a result of the rapid development of information and communication technology, the world of living is being "replaced" and "enhanced" by the "real world" of the network based on artificial intelligence, which does not depend much on any social system, and a completely new citizenship society is being built. In general, human society changes, evolves, and develops only for the sake of communication. Therefore, technical and technological progress has made human relations increasingly accessible. It should be dedicated to the fulfillment of a clear, especially realistic, equitable, unimpeded goal.

It is becoming clear that the Metaverse is the most convenient environment for achieving that ultimate goal. Therefore, an infra-rational environment can be defined as one that makes intellectual things more real. In short, this can be understood within the formula "virtual space + real relationship".

The term "metaverse" refers to a combination of many trends and technologies. Some of these are important (Takyar, 2022): augmented reality (AR), virtual reality (VR), the internet of things, the AR cloud, mixed reality (MR) /VR and AR technologies, artificial intelligence (AI), blockchain, cryptocurrency, nonfungible tokens (NFT), spatial technologies, and head-mounted displays (HMDs).

Based on this combination, "an abstract world that can be used for a long time without limiting the number of participants in an online environment based on artificial intelligence using 3D technology is called a metaverse."

Put simply, it is about creating an autonomous internet using wearable VR technology (i.e., smart glasses).

The term metaverse was first coined by Neal Stephenson in his 1992 book "Snowfall" and is said to be used in the novel, but such a concept itself was written in Stanley J. Weinbaum's 1935 "Pygmalion's Glasses"; (Figueiredo, 2022) is based on a science fiction short story.

In general, new technologies are born from the dreams of mankind. The idea of a computer intranet is said to have originated from the title of a novel written by an unknown American author in the 1940s. This is a fictional story titled "Press F and Contact Me". Similarly, the word and concept of the metaverse originate from science fiction.

In 2021, the term "metaverse" was identified as one of the most important words in the Collins dictionary, which immediately reinforced the importance of the concept.

Just two years ago, what is the Metaverse now? Soon, most of us will be connected to the evolving Metaverse of consumer-oriented, interactive, and exciting virtual platforms. These devices are accessible from a variety of devices, including web browsers

and VR headsets, where we can experience the metaverse by taking calls, buying things, displaying, collaborating, creating, learning, performing, working, relaxing, and consuming (Ball, 2021). Currently, the most popular virtual platforms are Roblox and Minecraft.

The first test of the metaverse in Mongolia took place on February 14, 2022, during the strict curfew of the pandemic. Specifically, Young people from the 'Unitel' company held a virtual party called "U&Me" to meet and have fun in the first metaverse world for Valentine's Day (<https://gogo.mn/r/9q878>, 2022).

However, our goal is to identify how the metaverse is becoming a new trend in mass communication, especially journalism. Researchers believe that 2022 will be the year of implementation and innovation in the development of the metaverse in the digital space (How will the Metaverse affect the media?, 2022). This is also coming true. These changes are gradually becoming more pronounced, and people are rapidly introducing new forms of communication, entertainment, and communication into their lives.

One question inevitably arises. Therefore, what is the difference between reality and the metaverse? This process is explained as follows. See Figure 1.

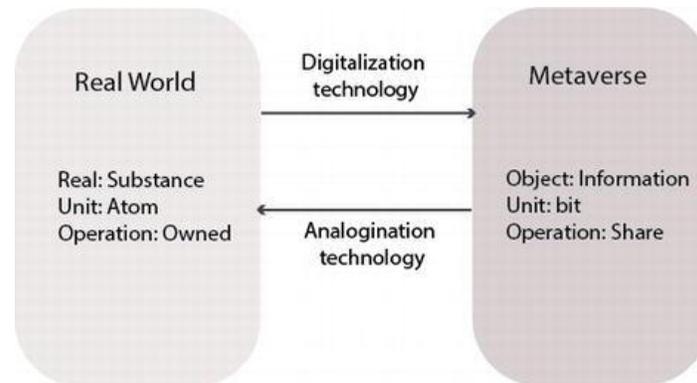


Figure 1. The relationship between the real world and the metaverse (Hyun-joo Jeon, January 12th, 2022)

Hence, in the real environment, the real quality is the "physical" thing, while the metaverse object is the information. An atom, a unitary unit of reality, is a "bit" of the metaverse. A bit is a unit of information. While real-life activities are "personal," the metaverse is a process of "sharing". "When this technology enters, it is likely that our consciousness will also be biased and will be confused because the virtual world seems to be made real as well as the real world," some researchers conclude.

Additionally, before discussing the metaverse, one more concept needs to be explained here. This is the concept of "immersive journalism" in the field of digital journalism. It is a type of electronic journalism that allows viewers and readers to enter the three-dimensional (3D) image surrounding a computer screen and experience the reality of events and happenings. For example, Wired magazine attached *Cutthroat Capitalism* (2009), a news game about Somali piracy. Viewers will be offered the role of a Somali pirate and will be given an understanding of the economics of the extortion system through gameplay. Basically, what happens to the player is programmed, and depending on the choices, the story can unfold in several scenarios. Above all, one of the main differences between this "participatory journalism" reality and the metaverse is that there is no virtual presence.

Immersive journalism is a form of journalistic work that allows individuals to personally experience the events and situations depicted in news reports and documentaries (Nonny de la Peña, 2010).

By using 3D technology, the audience can participate in an event, create a feeling of being there, and experience and communicate with the event physically; in a sense, the audience participates in the news story as a witness and participant and enters the emotional environment with the sound accompanying the news. In general, immersive relationships in the virtual world have become familiar in Mongolia. There are movie theaters, digital museums, and even digital banks that offer virtual services while wearing VR glasses. For example, the "Zev Digital Museum" (<https://www.unitel.mn>, 2021), which opened in 2021, is a clear example of this phenomenon.

It is impossible to talk about virtual journalism without mentioning American journalists or documentary filmmakers Nonny De La Peña. He said that the wide potential of new media has the potential to change journalism in "Hunger in Los Angeles". who proved it with his works. The film is said to be a virtual reality film depicting an eyewitness inside a Los Angeles bank.

This is reality, not just virtual reality. We journalists and the media must be big players in this new world.

Let us reach the point. Is the metaverse the future of journalism? The answer is becoming clear. Just as the worldwide borderless, time-space-occupying internet network and the development of web technology based on it have created a new real world, this metaverse, which makes our fantasy-like abstractions and imaginations real, is proving to be the new future of journalism that strives to express reality. We cannot be surprised if, in the near future, people watch journalists' reports through VR headsets and experience everything as if they were there (Figueiredo, 2022). The media in technologically advanced countries have adopted this approach.

As of 2021, several media organizations are experimenting with the metaverse in e-journalism (Foresight, 2022).

News outlets such as the New York Times and The Guardian are using virtual reality (VR), 360° video, and "augmented" reality (AR) to create more engaging content that appeals to audiences and engages their empathy. To clarify one thing, digital journalism is characterized by the fact that, in addition to events and facts, which are the content of information in the virtual environment, considering that the psychological environment formed in the environment of the event is important, it seeks the opportunity to make users feel the reality of the real world and is now paying special attention to creating it in the metaverse. As print sales decline, these news outlets are opting for an entirely new form of digital journalism aimed at strengthening relationships with regular readers and attracting new users.

Based on the above facts, today's digital journalism has joined and adapted to the fun of the meta world, and journalism is ready to move irreversibly to a new form.

Metaverse journalism refers to the professional act of journalism that aims to prepare, process, and report news in a VR environment. However, journalists can be considered a new evolution of traditional journalism because it provides the opportunity to convey more interesting phenomena, events, stories, and experiences to the audience. Metaverse also creates a new virtual space for users to interact with people whom they cannot interact with in real life through their digital avatars.

In terms of the metaverse environment, this tool provides viewers with real-time recordings and provides an opportunity to see real-life experiences and lessons related to current events, such as seeing the construction of the environment.

Understanding the metaverse as virtual reality (VR) is misleading. VR is a large part of the digital space, but it is only a part of the metaverse. In terms of technology, metaverses include not only VR but also a variety of digital tools, such as augmented reality (AR), mixed reality (MR), and artificial intelligence (AI) (Foresight, 2022). These technologies are critical for journalists, as they create new ways to tell stories and engage with audiences.

The virtual Metaverse platform has (relatively limited) technical capabilities to create (generator + studio + tools) support services (decentralized and capital markets, voice chat, player accounts, and payment services) implemented in a way that enables a multistakeholder economy (i.e., shared usage costs with creators/developers on the platform, as well as creator/developer-to-creator/developer revenue) (Ball, 2021).

In today's Digital Era, digital citizens (residents, S.A.) are increasingly attracted to platforms that create advanced technologies and smart new tools. In brief, look at the children and young people sitting behind the computer, connected to the Internet, and wearing headphones. Check out the platforms they use.

The Metaverse is a "real world" that combines new technology and humans to overcome the shortcomings of artificial intelligence. Journalism is a field of "creative production" that requires sensitivity, skills, and thinking in many ways; therefore, artificial intelligence of a "machine-like" nature cannot completely replace humans" (Batbaatar. J., 2023, хууд. 144). However, in the metaverse, a human being can "get in person" and take part in an action, so he can overcome the limits of artificial intelligence.

Web 2.0 created the conditions for open and intimate communication between people and media users, while Web 3.0 ushered in the era of intangible but metaverse content. In doing so, the relationship between the media and people was strengthened (Feng, 2022. 11. 17).

This is reality, not just virtual reality. We journalists and the media must be players in this new world.

How will journalism work in a metaverse manner? Before explaining this, we use an example.

During the strict curfew of the pandemic, a Chinese journalist used the online virtual world to create her character in the metaverse and invited young people to come in and create her character. Therefore, she gathered in the metaverse, went out on the streets, and the journalist asked the young people she met on the road about their views and opinions about the ban and broadcast it live on social networks. That is all. Solving the problem of not being able to meet in real life due to quarantine in this way in the metaverse is proof that the virtual world has great potential for humanity, human social relations, information communication, and journalistic activities. Simply put, the days on which journalists rushed to the state house to interview the president, prime minister, or speaker of the parliament were long gone.

Media-centric companies already understand the concept of Metaverse and take advantage of it. For example, Spain's El Economista, which was voted on the world's best-designed newspaper, has already launched a metaverse correspondent's office to report from this virtual space and provide easy access to new regions. Even large organizations such as Reuters and the BBC have begun to strengthen their position on the metaverse.

How will journalism work in a metaverse manner? In response to this question, let us talk about the main points.

First, 1. Create your avatar and profile in Metaverse. 2. Two problems need to be solved: creating an environment or a facility.

Simply put, media editors and journalists create their image in the metaverse, live there, breathe it, meet people or sources there, gather information, bring users into the same environment of the event, and work on the principle of making them feel.

In general, when data are presented in the metaverse, actual images, videos, and original text are "created". Metaverse content can be used to create meetings, entertainment, interviews, and various reality shows. Even a documentary film will be "produced". The participants (informer, source, recipient of information - user - contacts) were in different spaces without feeling the boundaries of the screen of the new media or leaving behind the feeling of being behind the screen to obtain the "live" feeling of meeting face to face and communicate with that impression. It has reached the current level of new information technology.

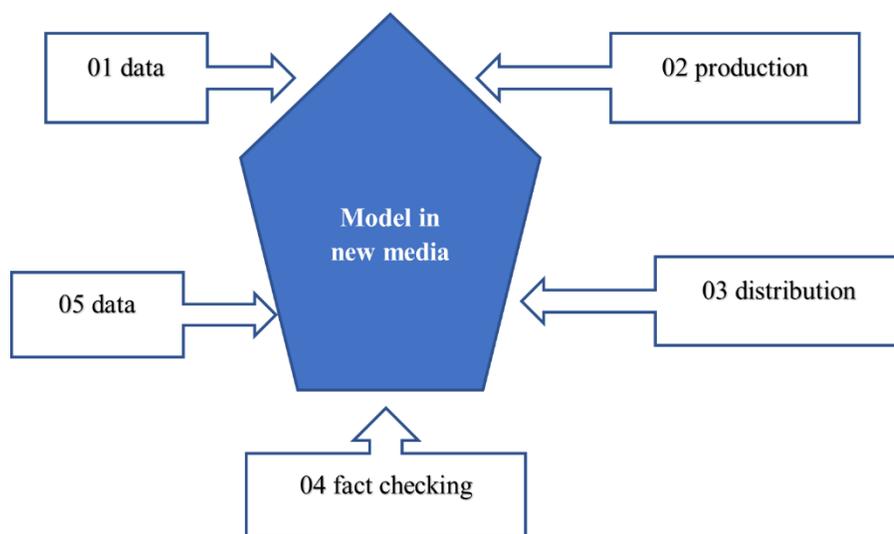


Figure 2. Design of New Media

If news content creation tools in the metaverse are accessible to all (Spark AR is free right now, we will need Spark AR to use the metaverse) or at least easy to use for quick turnaround, it is all approximately 360° video creation software. Now, the latest 360 video cameras make it very easy to shoot, edit, and publish.

In general, with the advancement of technology, the metaverse is starting to create the future in the field of information technology. For example, the BBC's VR creative experience Easter Rising made some strong AD/design choices, no less than the documentary production experience (How will the Metaverse affect the media?, 2022)

When working with Metaverse, VR developers can be reliably supported by optimization, i.e., by creating the optimal and fast operations necessary to display a large amount of data at the same time, as well as by making it possible for the physical laws of the real world to apply equally in VR, organizing it to be felt by the user, and by making 3D objects simple without stuttering. It is necessary to master and apply methods such as simplifying methods to create a small size, performing load detection performance evaluation/performance budgeting, playing video games to increase user experience /UX/, and installing UI-user interface or player knowledge and experience.

And the Internet is getting very fast, 5G has arrived. In general, the metaverse is becoming easier for countries that have adopted it.

In general, using the metaverse in information communication to create new channels or other forms of consumption underestimates the potential of the Internet. The metaverse has the potential to create a whole new category of fully integrated media. For example, consider the use of news: a Metaverse user can read a newspaper, share it directly with others, and obtain the story itself in one place. In brief, this approach allows the user to directly access the 3D environment and subject location from the comfort of their own home.

Unfortunately, meta-native journalism has a challenge. This approach lacks scalability. This virtual journalism relies on VR headsets and additional personal technology devices; as such, virtual reality headsets are currently not widely used, so the content created in VR cannot be easily accessed. Another problem is that many people criticize the experience of VR as uncomfortable and nauseating. This alone may limit consumer interest in accessing digital content.

Today, citizens register with metaverse news organizations, distribute articles with nonrefundable tokens (NFTs), promote articles, and even acquire rights to own articles and titles in the metaverse. In brief, news and content in the metaverse are personalized, owned, and profited based on individual interests and activities in the metaverse.

In addition, "No, if you want to be creative, it appears to be one of the most exciting times to be a journalist". Lorek's words highlight the new future of digital journalism.

3. Conclusion

In the process of developing any new media, the power of old media diminishes, and new media based on Internet technology has taken the place of traditional media and attracted more users.

The development of Internet technology has reached the level of the "web 05", and the development of tools to support virtual reality has created new trends and forms in electronic journalism.

The transformation from creating information relationships in virtual reality (VR) to immersive journalism and artificial intelligence (AI), augmented reality (AR), and mixed reality (MR) are new trends in journalism. Bringing the future is becoming a metaverse process.

Facts, technologies, and experiences prove the development of metaverse journalism, which communicates and prepares information in the virtual space and freely overcomes the limits of the real space. However, the future of the metaverse cannot be overlooked in terms of the user's ability to use technological advances and psychological limitations.

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