A Study on the Usability of Digital Humans in New Media Contents

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Abstract

This thesis is a study of content development utilizing media outlets to date through digital humans. The trend of global content is that the video content industry, including the character business, is growing. Lil Michela, who was selected as one of the 25 most influential people on the Internet by Time magazine in 2018, Nasua, who appeared in a SK Telecom commercial, and Rosie, who appeared in a Shinhan Bank commercial, are representative. Digital humans, which are driving new content, are computer-generated human characters with various characteristics and are referred to as virtual humans, metahumans, and cyber humans. With the rise of the metaverse after COVID-19, digital humans are being utilized in various forms such as media and marketing as an element of visual content. In the form of media, we can see that the boundaries between the offline and digital worlds are converging, and in the form of marketing, we can see that digital humans connect consumers and products more naturally. In the form of interaction, it is possible to achieve two-way communication through various methods of operation, and through these factors, it is possible to go beyond behavioral communication in the form of memorialization to emotional communication through AI technology. What can be seen through these processes is that through the currently developing digital human production methods and AI functions, not only experts but also non-experts can create quality contents, and new directions of contents will appear, and contents that can provide immediate feedback by bringing consumers and creators closer together have been studied.

Keywords: *Digital Human, New Media, Metaverse, Metahuman, Digital Content.*

1. Introduction

Since the turn of the 21st century, advances in digital technology have dramatically changed the global entertainment industry. This transformation has created new streams of content production and consumption in various forms, and one of the most notable trends is the rise of video and game content centered on character licensing. According to the latest global content market statistics, movies, TV shows, and animations that utilize big-name characters like Disney's Marvel and Warner Bros.' DC Comics are seeing significant growth.

These contents are produced in various ways based on one strong concept, providing rich experiences for viewers and consumers. What's more, this way of producing content goes beyond the traditional persona or character to present new adventures in the virtual world through the fusion of metaverses. The metaverse is a space where virtual reality and the real world are fused, and various conceptual characters and contents centered on virtual humans called digital humans simultaneously exist beyond the boundaries of reality and virtuality. In Korea, the rapidly developing K-pop industry is gaining attention alongside this global trend. K-pop is forming a global fan base through contents in various fields such as fashion, beauty, and entertainment, not only music, which attracts great attention not only in Korea but also in overseas markets. In addition, new media contents such as influencer advertising marketing using SNS and realistic animation are actively produced in Korea, fostering diversity and creativity.

Against this backdrop, this paper examines the trends in the global content market, focusing on the growth of video and game content centered on character licensing and the innovative changes that have resulted. Through an analysis of domestic developments and their interaction with the global market, this paper examines the significance and possibilities of the current and future entertainment industry.

Table 1. Global Content Market Statistics

	Character/License	Broadcasting	Animation	Movie	Game
2018	2716	4826	53	419	1087
2019	2803	4895	50	435	1201
2020	2928	4906	83	451	1317
2021	2763	4622	28	155	1429
2022	2940	4848	51	276	1548
2023	3126	5024	69	373	1638

1.1 Digital Humans

A digital human is a virtual human character or model that uses modern computer technology and graphic design techniques to create a human-like form and movement that is virtually indistinguishable from reality. These digital humans are often created using 3D computer graphics software, modeling and animation techniques, and can display high-resolution visual details and realistic movement.

Digital humans are used primarily in the entertainment industry, most notably in movies, video games, virtual reality (VR), and augmented reality (AR). These virtual characters can play a central role in a work or replace real actors or models, enhancing the creativity and expressiveness of the work. In Korea, Rozy, which appeared as an advertisement model for Shinhan Life in 2021, and MAVE:, whose members are all digital humans, are representative examples. These digital humans are blurring the boundaries between reality and virtuality, providing consumers with new perspectives and experiences. Overseas, Lil Miquela, who was named one of TIME magazine's "25 Most Influential People on the Internet" in 2018, has garnered attention. These domestic and international examples of digital human use cases are bringing new levels of creativity and innovation beyond traditional content creation.

Digital humans aren't just visual, they are combined with artificial intelligence (AI) and voice recognition technology to enable more realistic interactions. They are used in a variety of fields, including education, healthcare, marketing, and the military, to increase human-machine interaction and create new experiences.

The development of digital humans is spurring more research and innovation in future computer graphics and artificial intelligence technologies, further blurring the lines between the digital and physical worlds.

Figure 1. Shinhan Life CF ROZY, Lil Miquela, MAVE:

2. Digital humans and diverse media content

2. 1 Digital humans and media

Digital humans are currently emerging as one of the new trends in the media industry that can reach media consumers in various forms of content. One of the first media appearances of digital humans in Korea was the cyber singer "Adam". "He first appeared in 2009 and started his music career, but due to the initial cost and technical limitations of creating digital humans, his career only lasted for about a year. Since then, with the advancement of technology, "MAVE:", a group whose members are all digital humans, and "aespa", a group whose members are both real humans and digital humans, have emerged in Korea. "MAVE" and "aespa" are representative examples of new media content that fuses the domestic K-pop industry with digital humans, blurring the boundaries between reality and virtuality and enabling interaction with fans through music, visuals, and storytelling.

The use of digital humans is expanding beyond music to include drama and film. In the web drama "Hello, Share" Jane, one of the members of ETERN!TY, a group of digital humans, performs alongside a real actor. These scenes blur the lines between the digital and real worlds, creating new acting experiences and sparking viewer curiosity. Epic Games also used the Metahuman Editor to create the promotional video "Blue Dot". The video was created using digital human creation techniques and motion capture, demonstrating the increasing accessibility of animation production techniques.

The convergence of digital humans and media is not just blurring the lines between the digital and physical worlds, it is also advancing new content creation techniques and viewer experiences. These developments are expected to further expand the media and entertainment sector in the future.


Figure 2. aespa, Hello Share, Blue Dot

2. 2 Digital Humans and Marketing

Modern marketing is constantly changing and innovating, reaching out to the public in different ways. With these changes, companies and brands are adopting different methods to develop creative marketing strategies and form stronger connections with customers and consumers. First, Musinsa is one of the leading fashion

shopping platforms in South Korea, offering customers a wide range of fashion items and brands. Their marketing strategy focuses on merging the physical and digital worlds to connect with customers and consumers in a creative way. To this end, they have adopted a unique approach of utilizing their digital character, Muain, as an advertising and product model. Muain has a similar appearance and features to a real-life human Yoo Ahin, and is used to promote and sell the brand's products. The model is used to emphasize the visual appeal of the product, while also visually highlighting the intentions of the product's creators. These digital character models reinforce a brand's uniqueness and help create an emotional connection with consumers. They are used across a variety of media to reinforce the brand's image and interact with customers, blurring the lines between the physical and digital. Second, SK Telecom, as a leader in the field of telecommunications technology, adopts a marketing strategy centered on AI technology (A.I). To visually represent the features of this technology and introduce it to customers, they utilized the strategy of featuring Jang Wonyoung, a real human, and Nasua, a digital human, together in an advertisement. This collaboration emphasizes the nature of the technology while also bridging the gap between real humans and digital humans. As a real person, Jang Wonyoung demonstrates the effectiveness of the technology, while Nasua, as a digital character, communicates the features of AI technology to customers. Through this collaboration, consumers can experience the harmony between technology and humanity and form an emotional connection with the brand. In addition, this strategy helps to strengthen the competitive edge by effectively introducing A.I. technology and providing customers with a strong connection between the brand and the technology.

These two cases are great examples of the different strategies and ways that modern marketing is merging the physical and digital worlds and strengthening connections with consumers. These creative approaches continue to drive innovation in the field of marketing, helping to create new experiences for customers and strengthen emotional connections with brands.
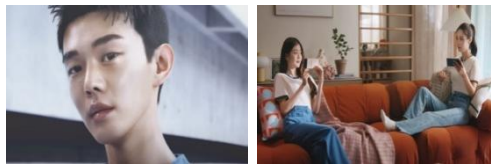
Figure 3. Muain, Hello Share, SK Telecom A.

2. 3 Interacting with digital humans

There are many ways to use digital humans. First, when creating digital humans through animation and 3D modeling, they can be designed and controlled to perform only the actions that the creator decides. This can be used, for example, to showcase a fashion brand's products or interact with customers through virtual performances. Second, digital humans can be interacted with by utilizing tracking devices to track their movements in real time. This method transfers their movements from the real world to the digital world, blurring the lines between the real and the virtual to engage more directly with customers. Third, digital humans are utilized in which a real person performs a role while their appearance is digitally manipulated through deepfake technology. This approach realizes the convergence of reality and digital in the offline environment and creates a variety of content.

In real-life cases, companies and media are trying various ways to converge the real and digital worlds by utilizing digital humans. Lotte Home Shopping is using AI technology to interact with viewers in real time by casting Lucy, a digital human, as a show host for live commerce. This is a clear visual example of how the digital and real worlds can interact. In the newscast, YTN staged a live interview between a real human anchor

and Jane, one of the members of ETERN!TY, a digital human. Using deepfake technology, the real person moves alongside Jane while the AI interacts with her. This is an example of direct interaction between the digital and physical worlds. Another example is a group called ISEGYE IDOL. They are a group of so-called YouTubers active on the livestreaming platforms Twitch and YouTube, who use digital humans to interact with viewers in real time to conduct broadcasts and hold concerts. This is an example of a real person behind a digital human, not an AI, leading a character industry by playing various characters.

These examples show the importance of utilizing digital humans in various ways, interacting with the digital and real world, and strengthening connections with consumers. In the future, advances in AI and real-time tracking technology are expected to further develop two-way interactions rather than one-way communication. This will enable brands, media, and entertainment industries to create closer relationships with consumers and deliver innovative experiences.

Figure 4. Lucy, ISEGYE IDOL, YTN live interview

2. 4 Digital humans and memorials

Today, memorialization has evolved into a variety of forms as people's lives and perspectives have changed. In the past, it was common to pay tribute by visiting a grave or mausoleum. However, in the era of technological advancement and digitization, memorialization is also unfolding in various ways, providing new experiences and oppor0tunities through the combination of metaverse and digital humans. The first example is MBC's documentary "I Met You". The program creates digital humans of deceased family members and allows family members to meet and interact with them through VR devices. This program goes beyond traditional in-person memorialization by enabling direct encounters and conversations through digital humans, and offers a way to recall memories and create new emotional connections with the deceased. It utilizes digital technology and virtual reality (VR) to make the memorial experience more personal and emotional. The second is M.net's "Once Again" and Tving's "Alive" programs. These two programs create digital humans of deceased singers and use AI technology to leverage their past songs and voices to sing new songs. This is a new form of tribute performance, providing a way to hear the deceased singer's voice again and enjoy their songs anew. This contributes to a renewed sense of remembrance and nostalgia for past artists among fans and parties.

These examples go beyond traditional memorialization and utilize digital humans and metaverses to revolutionize the form of memorialization. They are making the experience of memorialization more personal and emotional, and are serving to maintain and strengthen connections to the deceased in new ways. These innovations in memorialization are expected to evolve in many more forms as technology advances and social change occurs.

Figure 5. I Met You, Once Again, Alive

3. Conclusion

Digital humans are emerging as a revolutionary trend in the media industry and are being utilized in a variety of fields. Groups like "MAVE:" and "aespa" are fusing digital humans with media to expand fan interaction through music, visuals, and storytelling. Creative strategies using digital humans are also emerging in marketing. Digital humans also use animation, 3D modeling, tracking technology, and deep-fake technology to blur the lines between the real and the digital to engage with consumers. Forms of memorialization are also being revolutionized by combining digital humans and the metaverse. These innovations will lead to more advanced forms of content in media, marketing, and memorialization through two-way communication between creators and consumers, rather than one-way presentation from creators to consumers.

As the creation of digital humans becomes more accessible with advancements in technology, it is expected that non-technical people will be able to create digital humans to create a variety of content. This is expected to provide more diverse and innovative experiences in media and entertainment. In particular, advances in technology are expected to lower the barriers to entry for content creation, giving artists, creators, businesses, and ordinary users the opportunity to create and share creative digital humans. This will open up the possibility of trying new ideas and showcasing more diverse forms of digital humans in the media and entertainment industry. These developments are also expected to contribute to the enjoyment of telling different stories and artistic expression through digital humans. Digital humans are expected to make the media and entertainment industry a more diverse and dynamic space, enhancing interaction between creators and audiences.

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