

Innovative Pathways for Idol Group Development under the Perspective of Virtual Idol Culture

Ni Zhu

*Wuhan Sanniu Zhongmei Middle School, Wuhan, China
zhuni710@ldy.edu.rs*

Abstract. The continuous expansion of people's demand for entertainment and has contributed to the rise of the idol industry and culture, however, the traditional idol market is facing the challenges of homogenization and aesthetic fatigue, with a large number of "contactable idols" being copied, and a high degree of similarity and high density of "products" have reduced users' sense of freshness. However, the emergence of virtual idols has brought about a new market pattern, so this study aims to explore how emerging idol groups can make innovations and breakthroughs under the perspective of virtual idol culture. This paper adopts the method of comparative case analysis, focusing on the development paths of Chinese virtual idol group A-SOUL and Korean girl group Aespa, analyzing their similarities and differences as well as their operation strategies, and drawing the conclusion that virtual idols utilize the characteristics of digital technology to form a highly viscous community, promote the culture of second creation, and create a complete virtual worldview to attract fans, and achieve breakthroughs as well as innovations. Relevant idol groups can learn from this model and utilize the non-physical and malleable characteristics of virtual idols to create unique team styles to attract audiences.

Keywords: Virtual idol, A-SOUL, Aespa, innovation and development

1. Introduction

The emergence of the emerging virtual idol culture has had a sustained impact in the entertainment industry under the constant push of technology, and the traditional idol market has been impacted. This study focuses on how idol groups can get rid of homogenization under the perspective of virtual idol culture and utilize their qualities to provide new perspectives and development solutions, further promote the diversification of the development of the idol industry, and contribute to the development of the idol industry. This study mainly analyzes and researches from the aspects of virtual idol operation mode, technical production, and commercial composition. This paper utilizes the literature analysis method to find and read relevant information and literature, and the advantage of this research method is that it can well cover the long-term research process and carry out multi-dimensional comparison, locate the research points in a low-cost and high-efficiency way, which is conducive to the research. Therefore, the main purpose of this study is to locate the path of development and innovation for idol groups by analyzing the industrial composition of virtual idols. Specifically, it aims to utilize the characteristics of the success of virtual idols to propose innovative

directions in which idol groups can be developed, and through these efforts, we hope to provide new insights and solutions to the problem of homogenization in the idol industry, and to promote the development of the field.

2. The basic connotation of virtual idol and the current development of the industry

With the booming development of artificial intelligence AI and digital technology, driven by the aesthetics of Generation Z, the traditional entertainment industry has been revolutionized under the influence of the new era, and the public is no longer satisfied with the real idols under the old idol industry system, and the idol market is gradually saturated. Entertainment companies and related teams are urgently seeking innovative paths for development. As a result, the birth of the new cultural phenomenon set off a new wave of "idols" - virtual idols.

A Virtual Idol is a highly anthropomorphic digital image with human qualities and idol attributes created through various technologies such as Artificial Intelligence (AI), Motion Capture, and Computer Graphics. Compared to traditional real idols, "virtual idols are fictionalized objects that are worshipped or loved" [1]. To be more precise, virtual idol is a "virtual scene or real scene in the idol activities of the empty image", there is no physical form of existence [2]. At the beginning of the virtual idol mostly appeared in the style of two-dimensions, the audience group is mostly concentrated in the field of Japanese culture enthusiasts, referring to the early national style virtual idol Luo Tianyi, which allows the audience to immersive experience the anthropomorphic symbolic world brought to the fans by Luo Tianyi with the support of AR technology [3]. Hyper-realistic style virtual idols have also emerged subsequently, which are usually portrayed more closely to real people, such as Lil Miquela, a virtual musician launched in 2016 by the Los Angeles-based company Brud, which is capable of performing, socializing, fan interactions, and other entertainment behaviors just like a traditional idol.

According to Aimei Media Consulting, it is expected that in 2025, a new cultural "trend" of virtual idol will drive the overall market value of the related industry chain to reach 640.27 billion yuan. Boxun Consulting's "China Virtual Idol Industry Market Situation Research and Competitive Landscape Analysis Report" points out that by the end of 2022, the global market size for virtual idols alone has reached approximately \$3 billion, and globally, the number of active fans of virtual idols has exceeded 500 million, with more than 10,000 releases of related music outputs each year, and cumulative playbacks of related video-created content exceeding 10 billion times. In this way, the digitalization of the idol industry continues to rise and expand in the mass market.

This paper will focus on the Chinese virtual idol group A-SOUL and the South Korean meta-universe concept girl group Aespa, by comparing the two cases to analyze and explore the innovation path of traditional idol groups under the perspective of virtual idol.

3. Innovative breakthroughs in idol group content production and dissemination mode

The word "idol" originated from the figurative expression of religious worship under the color of ancient myths, and after thousands of years of evolution, idols have derived different attributes in different cultural backgrounds, which can refer to an independent individual in reality or hollowed out of reality. As a new type of cultural product created in the digital era, virtual idol has a unique persona background and an "optimized symbolic body", which can make the emotions, spirits and scenes that exist in people's imagination but can't be felt intuitively visible and palpable [4]. It is mainly different from traditional idols in terms of technology drive, business model, marketing

strategy, etc. It mainly relies on completely digital production, mostly adopts the form of human-machine collaboration, and adopts the inter dimensional mode of dissemination and operation.

3.1. A-SOUL's circle-breaking path from birth to successful realization of commercial value

A-SOUL, a virtual idol girl group jointly launched by YH Entertainment and Byte Dance in November 2020, consists of five members: Ava, Bella, Carol, Diana and Eileen. Its commercial operation and fan interaction model, which is different from that of traditional idols, has widely promoted the development of the local virtual idol industry. Although the group has faced changes in membership and a slowdown in commercial performance, it is still the most representative local "phenomenal female virtual group" in China and is therefore used as one of the research cases in this paper.

A-SOUL is different from the technology-driven virtual idol, which adopts the operation mode of human-computer collaboration, in which the "actors" (the real actor behind the virtual character) interacts with the virtual image by manipulating it through technological means such as motion capture, AI voice synthesis, real-time rendering, and so on. In this process, the people behind the scenes need to cooperate with the completion of AI voice synthesis, such as Vocaloid, CeVIO and other voice synthesis technology software processing to achieve real-time conversion, which also includes the original pre-recorded scenes. The world constructed by the link of "Players" is an anthropomorphic world, in which the audience is constantly detached from reality, and puts their emotions and energy on the group of "Players" who have perfect appearance and real personality at the same time; thus, the audience enjoys active participation and high-frequency interaction and equal communication between the virtual world and idols. As a result, while the audience enjoys active participation, high-frequency interaction and equal communication between the virtual world and the idol, their participation behavior itself also becomes the foundation of the existence of the "actors" [5]. At the same time, A-SOUL implements algorithmic strategies through user data on different platforms, adjusts the type of pushed video and the corresponding groups, expands the user base, as well as strengthens the emotional link with fans in the form of live broadcasting interactions, and guides fans to co-creating or second-altering in order to eliminate the distance of the fans' identity of the virtual idol, and these involved fan participation behaviors increase their stickiness and emotional energy, forming a highly viscous community [6]. A-SOUL's construction of inter dimensional scenes has also strengthened this point. For the 2023 "Wonderful Night" New Year's Eve performance, A-SOUL has realized for the first time the technical breakthroughs of holographic 3D real-time rendering, VR (Virtual Reality) offline synchronization and live AR (Augmented Reality) interactive design. The combination of interactive technology breaks the barriers of the traditional stage and allows the audience to see more possibilities of the virtual idol through VR, which allows the audience to see the virtual pop-ups floating in real time and feel the changes of the stage scene and even the weather.

In terms of business operation model, most of A-SOUL's revenues come from digital assets, live streaming, secondary products, and some virtual endorsements; due to its virtual idol nature, A-SOUL spends most of its interaction time with fans in live streaming events or social media broadcasts, so live streaming rewards and membership subscriptions become its main source of revenue, while virtual endorsements or brand co-branding partnerships are secondary sources of revenue. For example, KFC launched the "Karan Set Meal" in collaboration with A-SOUL member Karan, and saw a significant increase in turnover during the period. In addition, A-SOUL commercialization of the second creation market, the use of licensing share rebate to promote the fans to create a combination of related peripherals, expanding the influence of the idol, the position

of the fans from the consumer to the producer or co-creator, "the opening of the virtual idol editing privileges brings the fans to the virtual idol "franchise". The opening of editing rights of virtual idols has brought about the "franchise right" of fans to virtual idols, and the identity boundary between the consumer group and the production group has become blurred [7]. This combination of management rights and homoerotic creation rapidly increases the brand value of the virtual idol" to achieve the purpose of innovating the fan economy and enhancing the sense of belonging of fans [8]. For example, fans based on a melody sung by member Bella in the live broadcast improvisation, the second creation of the homoerotic song "Jellyfish Song", the work quickly spread, the heat continues to increase, and then adopted by the official performance track and released in QQ, NetEase cloud and other music platforms, the second creators to obtain 20% of the flow of the water share, the cumulative total of more than 150,000 yuan. The power of the community to break the traditional relationship between the second creation and the official, facts have proved the feasibility of UGC (User-Generated Content) to feed the OGC (Occupationally- Generated Content), the birth of such a new type of relationship allows A-SOUL to successfully reduce the cost of producing content while increasing the stickiness of fans through the co-creation rebate mechanism.

A-SOUL utilizes its fragmentation implantation, algorithmic mechanism, and second creation market to break the original virtual idol business operation logic, integrating into the traditional mutual product playing method to achieve rapid iteration, user growth and high-frequency cash.

3.2. Yuan universe female group: Aespa real idol + virtual split development strategy

Aespa is a Korean girl group launched by SM Entertainment on November 17, 2020, consisting of four real members, Karina, Winter, Giselle, and Ningning, and four virtual AI members (æ). Unlike A-SOUL, aespa's core operation strategy is to synergize the development of real idols and virtual images, with the virtual images being more like a modification of the real members and a refinement of their virtual worldview. As a pioneer in Korea's traditional idol industry model, aespa is representative of the Korean Wave's exploration of the field of virtual idols as well as its progress.

SM has created a complete worldview for aespa, KWANGYA, which covers a range of products such as music videos, comics, games and AI, using a transmedia narrative around the theme of reality and the virtual. In its worldview, aespa's real members and virtual avatars correspond to real-world human emotions and humanity, and digital life and electronic technology, while Black Mamba is a symbol of evil, digital viruses, and chaos, and in the virtual world the real members and æ need to work together to fight against Black Mamba's encroachment. In contrast to A-SOUL its series of complete story lines and novel world structure is more capable of capturing the attention of fans while extending their immersion time and having a more complete experience that does not rely on fragmented interactions.

Aespa uses 3D modeling and rendering, motion capture and AI technologies to drive the creation of avatar interactions and other derivative works. æ emphasizes futuristic technology in the modeling and design process, using the Unreal Engine for real-time rendering, and generating choreography data, micro-expressions, and skin details through optical motion capture and AI assistance. It emphasizes high-specification visual production and one-way visual impact on the audience, thus highlighting the sense of science fiction in the background of the virtual world, however, most of its stage performances rely on pre-recorded, unable to interact with the audience through real-time motion capture to achieve the effect of two-way real-time feedback, with a low degree of fan participation, and its complex composition of the world is also difficult to cause the topic degree of the second creation of the work out of the circle.

So, unlike the traditional idol business model, how does Aespa use the virtual world view to make money? Aespa utilizes music-related products bundled with KWANGYA to attract fans to buy them, for example, by buying an album to unlock clues or episodes in the virtual world and electronic peripherals with a "limited" label. Its business cooperation with other brands will integrate the setting of its large worldview and brand tone as a way to expand awareness, but also a good integration and continuation of the connection between the virtual worldview and the real world, strengthening the integrity of the background of its team's virtual story and the sense of immersion of fans. For example, the recent aespa and PUBG linkage activities used the launch of aespa-themed game props and clothing, the clothing design integration of aespa's large world view of the future of the mechanical sense of the elements, as well as aespa in the co-branding cooperation with the Korean beauty brand Clio, the eyeshadow palette main color design for a series of neon tones, such as dark purple, and the aespa's virtual world KWANGYA. The main color of the eyeshadow palette is a dark purple, echoing the main color of aespa's virtual world, KWANGYA, and highlighting its sense of technology.

The co-development of Aespa's "twin" model is reflected in the fact that its real-life idols provide an emotional link, while its virtual avatars (æ) create digital assets and construct avant-garde sci-fi narratives. This synergy, coupled with its technological enablement, presents synergies that go beyond traditional idols.

4. Conclusion

This study found that virtual idols rely on their technological drive to create high viscosity communities and new business models by utilizing their digital monetization, online companionship, virtual creation and other characteristics to achieve high-frequency cash, which further leads to the conclusion of its study that idol groups can make innovations in following the general trend of digital development by developing virtual images and creating virtual worldviews and other paths. This study provides creative ideas for other future research in related fields, and these results are important both theoretically and practically, providing valuable references for the development of digitalization in the idol industry. Of course, there are some limitations in the process of the study, involving private data within the company as well as programs that cannot be displayed to provide more accurate data support for this study, and this type of limitation may affect the generalizability and reliability of the results of this study, which need to be overcome by other means. Based on the results and findings of this study, future research should not only focus on technological breakthroughs, but also on technological innovation and humanistic care to conduct in-depth investigation, virtual idols are not only a product of entertainment culture, but also a mirror image of social cognition and human development.

References

- [1] Yu, G. and Yang, M.Y. (2020) Virtual idol: A new communication medium with its own relationship attributes. *Journalism and Writing*, (10), 68–73.
- [2] Yu, G. and Geng, X.M. (2020) Technology empowerment and deconstruction of virtual idols in the era of artificial intelligence. *Journal of Shanghai Jiao Tong University (Philosophy and Social Science Edition)*, 28(01), 23–30.
- [3] Mer, S. and Liu, Y. (2024) Technology, symbols, and emotions: An analysis of Luo Tianyi's mimetic image construction. *Journal of Writing*, (08), 81–82.
- [4] Deng, Z. (2025) Formation mechanism, cultural symptoms and guidance strategies of virtual idol worship. *Jiangan Academic*, (02), 5–12.
- [5] Beard, A. (2025) From human-computer relationship to interpersonal relationship: A study on the quasi-social interaction between the “people in” and the audience in the virtual image broadcasting room. *New Media Research*,

(10), 57–62.

- [6] Liu, S. and Shi, B.R. (2022) Utopian experiment of intimacy: A cultural study of virtual idolatry in youth groups. *Chinese Youth Studies*, (11), 5–12+69.
- [7] Huang, S. (2025) The development dilemma and circle-breaking strategy of virtual idol in the context of fan economy. *Literature and Art Weekly*, (04), 77–79.
- [8] Xie, Y. and Yan, Q. (2025) Generative logic and human-computer interaction of virtual idols in the digital era. *Journal of Southwest University for Nationalities (Humanities and Social Sciences Edition)*, 46(03), 159–168.