

The Virtual Human Technology Adoption and Professional Adaptation of Chinese Local News Anchors

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ABSTRACT

This study examines the adoption of AI-driven virtual human technology among local news anchors in China and their strategies for career adaptation. As virtual human anchors become increasingly prevalent, traditional news anchors encounter challenges in preserving their professional identity while adapting to technological advancements. A qualitative research design was employed to investigate the attitudes, adoption behaviors, and career adaptation strategies of 30 Chinese news anchors. Data were collected through interviews, observations, and document analysis, guided by professional identity theory. Interviews examined their professional background, perceptions of virtual human anchors, identity formation, and emotional responses. The study reveals that news anchors redefine their roles by emphasizing their strengths in in-depth reporting and emotional communication. While some feel threatened by virtual human technology, others regard it as an opportunity to enhance their professional value. Job satisfaction fluctuates due to increased competition, yet most anchors believe their unique skills remain essential. Changes in information consumption during the digital era impact career honor, prompting anchors to upskill and differentiate themselves. The future of news anchoring requires interdisciplinary knowledge and innovation. Anchors must leverage their unique skills while adapting to AI-driven changes. This study provides insights into professional adaptation strategies and offers a framework for media organizations integrating virtual human technology.

Keywords: Virtual Human Anchors, Artificial Intelligence, Professional Adaptation, Job Satisfaction

INTRODUCTION

Against the backdrop of the exponential growth of artificial intelligence, the media industry is also undergoing significant changes. The advent of AI-powered virtual anchor technology has not only increased the number of ways in which news can be broadcast, but has also created a set of unprecedented challenges for the future of news professionals.

In March 2019, Xinhua News Agency, in conjunction with Sogou, released the world's first AI-synthesized female anchor to participate in news reporting. AI-synthesized female anchors are based on AI technology that extracts information such as the voice, facial expressions, and body movements of a real-life anchor and then analyzes and reorganizes them to form a virtual human anchor. She can work 24 hours a day on a continuous basis with extremely high work efficiency, and putting them into the news reporting field will realize a large output of reports. (Xinhua News Agency, 2019)

In April 2023, Indian media launched a virtual human anchor named Sana. At the beginning, it mainly broadcast some short news reports. When Sana gave a full news broadcast in French during the prime time of the "Aaj Tak" channel, it became famous and became an important milestone in the history of Indian radio and television. She is smart, beautiful, ageless, tireless, multilingual and completely under my control, said Kalli Purie, vice-chairman of the India Today group, on Sana's debut. (Lou, L. & Wang, Y. 2024)

In addition to this, virtual human anchor who can broadcast news have been introduced in the UK, South Korea and many other countries. (Lou, L. & Wang, Y. 2024)

With the release of ChatGPT and the iteration of technology, it is possible to combine the natural language generation technology based on deep learning with virtual human, and the intelligent level of virtual human is expected to be greatly improved, which will play a role in the application of different fields.

According to data from iMedia Research, In 2022, the market size and core market size of China's virtual human driven industry were 186.61 billion yuan and 12.08 billion yuan respectively, and it is expected to reach 640.27 billion yuan and 48.06 billion yuan respectively in 2025, showing a strong growth trend. (iMedia Research, 2023)

We have reason to believe that the development of virtual human technology will affect the news dissemination of the entire process of news gathering, editing and broadcasting, through all links, with unprecedented speed and depth to reshape the pattern of the news dissemination field.

In the past, Chinese local news anchors played a key role in traditional modes of communication, conveying news information to the audience through their professional expertise and personal charisma. Nowadays, do anchors worry about being replaced by virtual human technology? what impact will this technology bring to the original industry? Against this background, it is of great practical significance to study the technological adoption and professional adaptation of virtual human by local news anchors in China. This study takes news anchors as the research object to provide useful reference and inspiration for the development of the news communication field in the era of artificial intelligence.

Research Objective

To study the adoption of AI-driven virtual human technology among local news anchors in China and their career adaptation. With the rapid development of AI

LITERATURE REVIEW

It is worth noting that the application of artificial intelligence encompasses many fields, and relatively little research has been done on virtual human technology. This previous development is still far from the effect of comparing with real people, and in the past two years, it has only reached the effect of realism. Starting with online selling, it gradually extended to various fields.

According to MIT Technology Review's Zeyi Yang on September 19, 2023, an emerging service allows brands to live-stream their products 24/7 through virtual anchors generated using deepfakes technology. These AI cloned anchors, which can be created with just a few minutes of sample video and a cost of \$1,000, provide brands with 24/7 product demonstrations and sales. The article notes that while these virtual anchors may not be able to replace top e-commerce influencers, they are good enough to replace mid-level anchors. As technology advances, the cost of these deep faking techniques is also dropping, making it easier for brands to adopt this type of automated live streaming.

For an Introduction to Virtual Human Technology

These AI anchors are able to synchronize the movement of their mouths and bodies in response to scripted audio, and some advanced versions are even able to respond in real time to comments made on the air, adjusting their marketing strategies to accommodate viewer numbers. In addition, these AI anchors are trained to mimic scripts and gestures common in e-commerce videos to increase their realism and interactivity. (Zeyi Yang, 2023)

The virtual human realizes various expressions, bodies, languages, movements, and deep interaction with humans through the combination of external image, internal expression, and underlying consciousness (Gao, H.M., 2024). The external image includes the virtual human's appearance, hairstyle, clothing, etc., the internal expression includes the virtual human's way of speaking, verbal emotion, logical expression, etc., and the underlying consciousness is the virtual human's "AI brain", which learns deeply through the construction of a knowledge graph and database to complete human-computer interaction (Gao, H.M., 2024). The interactivity of the virtual human is also manifested in the fact that the creative team can iterate and upgrade the virtual human according to the demand feedback collected from various channels on the Internet, so that the virtual digital human can better match the audience's needs through the shaping of the virtual human's image, voice, and clothing, forming a benign interaction with the audience (Gao, H.M., 2024).

One of the important application directions of virtual human technology in the media field is to create virtual anchors and virtual journalists, different from virtual idols to complete the commercial value of cash, virtual anchors are more to complete the replacement of services, the real person from the complicated, repetitive and simple labor to achieve greater value mining (Li, J.Y., 2023). Compared with real anchors, virtual anchors can be unrestricted by time and place to realize 24-hour uninterrupted live broadcasting, and the accuracy of broadcasting is high, which can realize the transformation of text input to video output (Li, J.Y., 2023).

The Impact of The Emergence of Virtual Human on The Media Industry

The emergence of virtual human mainly affects the upstream enterprises of the media industry chain, such as news publishing units, film and television production companies (Li, J.Y., 2023). With the development of virtual human technology, the application of service-oriented virtual humans such as “virtual anchor” and “virtual host” can save labor costs and release labor productivity for upstream enterprises, and old positions will be replaced and new positions will be born (Li, J.Y., 2023). For example, the debut of virtual human in the 2023 Netflix drama “Under the Inhuman” shows that the application of digital human in the field of film and television drama production has certain possibilities, and once this technology is mature, it will bring lower costs and more innovation to the film and television production industry (Li, J.Y., 2023).

The motion capture and expression acquisition of virtual human is more dependent on real people (Li, J.Y., 2023). The use of identity-based virtual humans with IP and idol qualities in content production will create a new reporting paradigm and promote program format innovation, and collaborative human-computer content creation will become the norm, which requires a certain amount of “people in the middle” to participate in the design and operation of virtual humans (Li, J.Y., 2023).

In other media content production areas such as variety shows, online dramas and other content products, virtual digital humans provide more ideas and possibilities for content production (Li, J.Y., 2023). For example, from the first appearance of virtual human participation in a music program in the variety show “The Son of Tomorrow” to the launch of the “virtual digital human variety show + producer reality show” program “2060” by Jiangsu Satellite TV, virtual humans have brought new vitality to content production (Li, J.Y., 2023).

When facing the news work, the machine's calmness, objectivity and accuracy, to a certain extent, make up for the lack of rationality of real people in news reporting, the data truth guarantees the objectivity of the news, and the role of people will be put more on the temperature of the news, the exploration of news value, and the level of the news gatekeeper (Li, J.Y., 2023). At the level of content production, virtual anchors have the advantages of low error rate, strong anti-interference, high efficiency, etc., due to the news broadcasting according to the pre-set program, and the content production and production of the news is shifted from truthfulness and accuracy to depth and wisdom (Li, J.Y., 2023).

Limitations of Virtual Human in the Field of Communication

Virtual humans are gradually showing the trend of replacing humans in the fields of news broadcasting, pan-entertainment dialog, customer service, etc. However, in the work that requires complex discourse comprehension and flexible disposition, such as talk show hosting and personality interviews, the current linguistic and emotional capabilities of virtual humans still have shortcomings, and they still need the integration of humans (Zhang, L., 2023). Virtual humans currently still have shortcomings in dealing with broadcast hosting jobs that require a high degree of interaction and emotional resonance, and in the foreseeable future, broadcast hosting jobs that require a high degree of interaction and emotional resonance will still require human hosts (Zhang, L., 2023). Both virtual digital humans and real human presenters have their own advantages, and they will coexist for a long time rather than completely replace each other (Zhang, L., 2023).

Virtual news anchors are still deficient in the sense of realism, some virtual human expressions can not convey micro-expression details, mouth and lip movements are not synchronized with the language expression, which affects the audience's acceptance of the authenticity and credibility of news reports (Yan, M., 2023). Virtual humans as news anchors face greater challenges in terms of human literacy, and compared with traditional hosts, there is a gap in user empathy and transmission of imagination (Yan, M., 2023). A perfect legal and regulatory system has not been formed, the relevant system is not sound enough, and there are cognitive inconsistencies in the protection of portrait rights and performance copyrights of virtual digital persons (Yan, M., 2023).

Communication Risks and Norms of Virtual Humans

Virtual human communication subject is virtual, and the synthesis of communication content brings great challenges to the authenticity and objectivity of news dissemination (Guo, D., 2024). Virtual humans active in media scenes may spread illegal information such as pornography, defamation, fraud, economic crimes, falsehoods, etc., and even individual well-known virtual humans can hardly avoid similar mistakes (Guo, D., 2024). The legal status of virtual humans is still unclear, and whether they should be regarded as entities with the nature of legal

subjects, as well as their status and rights and obligations in the legal system have not yet been clearly defined (Guo, D., 2024). The person in the middle (operator behind the virtual character), as a participant in the dissemination of virtual digital humans, provides a viable perspective for the effective governance of virtual humans at present, but the development of the middle person does not match its important role in dissemination, and there are problems such as high work intensity, low treatment, and suffering from unfair treatment (Guo, D., 2024).

The development of virtual human exists problems such as serious homogenization, difficulties in sustained operation, insufficient industry standardization and universality, and the contradiction between traditional application scenarios and the diverse needs of the audience (Wang, X.B., 2023). In order to enhance the competitiveness of virtual humans, it is necessary to explore diversified scenarios of application from the audience's perspective, establish a sound management mechanism and standards, and clarify the legal and ethical issues involved in virtual humans (Wang, X.B., 2023).

To summarize, virtual human is a new thing, some researches explored the technical issues, some researches discussed the ethical issues, but there is still less information available to take news anchors as the main subjects and research their career challenges and transformation needs facing virtual human. In particular, there is a lack of empirical research on the attitudes of news anchors facing virtual human technology.

In other industries, such as manufacturing and services, there have been a number of studies that have explored the impact of technology adoption on employees' career adjustment. These researches point out that the introduction of technology often leads to changes in work processes, updated skill requirements, and redefinition of job roles. However, there are still many gaps in the research on the relationship between technology adoption and career adaptation when applied specifically to the field of journalism and communication, especially to the group of news anchors in local Chinese stations.

RESEARCH METHODOLOGY

Population and Key Informant

This study employs the intention sampling method to select news anchors from diverse geographical regions and levels of media organizations in mainland China as the research subjects. The sample includes in-service anchors in Beijing, Shanghai, Guangzhou and Hainan, representing different age groups, genders and years of experience in the field. The sample size was determined according to the principle of information saturation. This involved conducting 20 interviews and then continuing the interviews until 25 had been conducted, to ensure the validity of the theory. This process was continued until no new concepts or categories emerged, which indicated that theoretical saturation had been reached. Therefore, 25 interviewees were ultimately selected for the study.

In the study, participants had to meet three criteria: They had to be working anchors in mainland China. They had to have either a theoretical or practical understanding of virtual human technology. They had to understand the study's purpose and agree to participate. All participants gave informed consent to the study and signed an informed consent form.

Research Tools

In this study, the form of in-depth interviews is adopted based on the rooting theory. The objective is to study the technological choices and career adaptations of anchors to virtual humans. The interview outline is developed by reviewing the information and combining it with the literature. It is then refined after pre-surveying and soliciting the opinions of experts.

Analysing Data

The following steps are involved in the analysis of the data:

1. Open coding: aggregating the transcribed textual data with the same generic content and continuously conceptualizing the textual data to form primary codes.
2. Spindle coding: selection of codes with similar meanings from the codes to categorize associations to form associative themes.
3. Selective coding: categorization of the primary concepts with similar meanings, further abstraction of naming, and formation of the theme concepts.

RESULTS

The Adoption of Virtual Human Technology

Most news anchors in the study demonstrated a high level of awareness and understanding of virtual human technology, with all interviewees expressing a willingness to learn and embrace this new technology. Some respondents believed that the introduction of virtual anchors would lead to a more efficient news delivery system,

as these virtual entities could replace the physical labor of human anchors, allowing them to focus more on in-depth and complex reporting tasks. A minority of respondents raised concerns about the potential devaluation of human anchor skills and the risk of unemployment. Those already using virtual human technology asserted that the technology is not yet advanced enough to pose a replacement threat.

Regarding their personal inclination to adopt virtual human technology in a professional context, announcers' responses varied. Some showed notable enthusiasm, viewing it as a potential tool to enhance their reporting abilities. They anticipated using virtual human technology for tasks like conducting virtual interviews or adding visual elements to their narratives. However, others were more cautious, voicing concerns about the reliability of the technology and its potential impact on their professional identity. One experienced anchor noted, "I'm uncertain about the legal complexities surrounding virtual humans, including whether or not they are protected by portrait rights, and there are still many relevant legal regulations that remain unclear."

Professional Identity

News anchors are redefining their roles in the realm of virtual anchoring. Participants highlighted their unique abilities in in-depth reporting and emotional communication, emphasizing that these are invaluable assets that cannot be easily replicated. For instance, many interviewees asserted that they can infuse their news reports with a human touch and real-time resilience, qualities that virtual humans are perceived to lack. This suggests that they are aware of the distinctions between themselves and virtual human anchors, and they are working to emphasize their value.

Most news anchors believe that their professional value remains intact and is even more pronounced in the digital age. They recognize the importance of their role as gatekeepers of information, interpreters of news, and connectors with their audience. Despite the rise of virtual human anchors, they assert that their skills in analyzing complex news events and expressing emotions are still essential for effective news dissemination.

Professional Emotions

The use of virtual humans in news broadcasting has led to a complex range of professional emotions among news anchors. Some perceive a diminishing value in their work, particularly those worried about automation impacting the volume of basic news reporting tasks. Conversely, others view this as an opportunity to advance their careers and stand out. For instance, several seasoned anchors indicated that they felt encouraged to enhance their skills and explore new reporting approaches to stay competitive.

The emergence of virtual humans has affected news anchors' emotional states, influencing their job satisfaction. Job satisfaction has varied due to heightened stress and threats to their accomplishments. Some anchors reported a decline in satisfaction due to increased competition and the feeling that their achievements might be eclipsed by virtual humans. Conversely, other anchors expressed satisfaction, believing that they could still make a meaningful contribution to the news industry.

DISCUSSION

Coping Strategies

Virtual human anchors present a challenge to the media industry, and news anchors should prioritize enhancing their skills, including multimedia production and digital marketing. These skills are essential for adapting to the evolving media landscape and increasing competitiveness.

With the rise of virtual humans, it has become even more crucial for news anchors to cultivate a personal brand, establish a distinctive reporting style, and build an emotional connection with their audience. By leveraging their unique personalities, they can draw in more viewers and solidify their standing in the news industry based on their individual strengths.

Theoretical Contributions

The findings of this study support and expand on the principles of professional identity theory. The redefinition of roles and perceptions of value among news anchors in the context of virtual anchors provides evidence of individuals' ability to adapt their professional identity in response to technological change. This indicates that professional identity is not fixed but can be modified and enhanced through external influences.

Examining news anchors and their experiences with virtual anchor technology offers valuable insights into how professionals in the field respond to technological changes. It also contributes to understanding the complex relationship between technology, professional identity, and career satisfaction.

Practical Implications

The results of this study have practical implications for news anchors. The findings can enhance understanding of the situation and help formulate strategies to tackle the challenges posed by virtual humans. For instance, they may focus on developing their skills in areas relevant to the changing media landscape, while emphasizing their unique abilities and contributions to maintain their position within the news industry.

Moreover, media organizations can also benefit from this study. They may use the insights to create more effective human resource management strategies. For example, they could offer training opportunities for news anchors to help them adapt to new technologies and consider how to balance the use of real and virtual human anchors to optimize the efficiency of news production.

LIMITATIONS OF THE STUDY

This study has several limitations. First, the sample size was relatively small, which may restrict the generalizability of the findings. Although the principle of information saturation was followed, a larger sample size could have provided more comprehensive data. Second, the study focused on news anchors in Mainland China, which may not represent all news anchors globally. Lastly, the study employed a qualitative approach, which may have introduced some subjectivity into the data analysis.

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