

Innovative Practice of Intelligent Business Models in the Field of Communication

Yi Yin¹, Chenggang Li^{2*}

¹School of Information Management and Information Systems, Beijing Institute of Fashion Technology, Beijing, China

²Business School, Beijing Institute of Fashion Technology, Beijing, China

Email: *ccid205@126.com

How to cite this paper: Yin, Y. and Li, C.G. (2024) Innovative Practice of Intelligent Business Models in the Field of Communication. *Intelligent Information Management*, 16, 147-156.

<https://doi.org/10.4236/iim.2024.164009>

Received: June 19, 2023

Accepted: June 29, 2024

Published: July 2, 2024

Copyright © 2024 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

As a service format to meet spiritual needs, fashion culture industry is often synchronized in its creation, production, dissemination, display and consumption. In order to explore how artificial intelligence provides technical means, platforms, channels and space for intelligent formats in the field of communication, and how to provide intelligent services for cultural creation, communication, display and consumption. This paper discusses the application and innovation of artificial intelligence in all aspects of communication field, analyzes the problems and puts forward corresponding countermeasures and suggestions.

Keywords

Communication Field, Intelligent Business Format, Model Innovation

1. Introduction

Artificial intelligence is an important driving force of the new round of scientific and technological revolution and industrial transformation, and it is a new technical science to study the theories, methods, technologies and application systems used to simulate, expand and extend human intelligence. Artificial intelligence is a very extensive science, including robotics, language recognition, image recognition, natural language processing, expert system, machine learning, computer vision and so on. In recent years, with the continuous progress of science and technology, the development of artificial intelligence is also increasing, and it is growing in all walks of life.

The industrial form of fashion culture industry is divided into design, creation, manufacture, dissemination and display. Different from the traditional situation that industrial and agricultural production and consumption are sepa-

rated, fashion culture industry, as a service format to meet spiritual needs, is often synchronized in its creation, production, dissemination, display and consumption. Artificial intelligence reshapes the communication ecology, injects new vitality into the process of cultural communication, and brings changes in the field of cultural communication in all directions and at all levels by improving production efficiency, enhancing communication effect and optimizing recommended content. Under the current digital background, artificial intelligence is undoubtedly an important development trend in the present era, which has broad prospects and is also one of the important driving forces of the future society.

As early as 1956, at a meeting of Dartmouth College, John McCarthy first formally put forward the concept of “artificial intelligence” and created a new discipline of artificial intelligence, and his work had a far-reaching impact on the development of artificial intelligence. About artificial intelligence and cultural communication, scholars at home and abroad started to study it earlier, and so far there have been many excellent research results and exploration routes. As early as the rise of artificial intelligence in China, [1] Zang Zhipeng and Xie Xuefang (2019) proposed that the mainstream value communication of cultural industry in the era of artificial intelligence is being reshaped and constructed, and the international community has generally begun to pay attention to the ethics and value orientation of artificial intelligence; [2] Longfei (2023) thinks that we can use artificial intelligence technology to help cultural communication, and draws the conclusion that “artificial intelligence is a very important technical means in the process of cultural communication”; [3] Zhou Jianxin (2023) published a research report on the development of China’s cultural industry in the era of artificial intelligence, which mentioned that in 2023, the academic circles of cultural industry did produce rich artificial intelligence issues and the overall research results were rich, but the application of artificial intelligence in the cultural industry also had problems, which should not be underestimated or optimistic; [4] Li Shuqin (2024) emphasized in the role and challenge of generative artificial intelligence (AIGC) to science and technology communication that in view of these problems and risks, we should give full play to our advantages and avoid risks, and listed specific practices; [5] Zheng Chuan (2024) revolutionized the use of digital humanistic methods in the era of artificial intelligence—the problems and challenges of the era of art generation and dissemination have also been drawn to ensure the balance between “humanities” and “numbers”; [6] Zhao Yuancheng and He Ye (2024) also agree that cultural communication under the generative artificial intelligence mode should consider change, risk and governance.

These documents have laid a good foundation for this paper to explore the cultural communication under artificial intelligence, and provided a solid theoretical basis and a clear framework for thinking. However, at present, the number of domestic related documents is not enough, the definition of professional

vocabulary is not accurate enough, and the conclusion is not authoritative enough. On this basis, this paper will take artificial intelligence as the breakthrough point, and continue to go deep into how our culture will innovate the communication mode and how to balance the relationship with artificial intelligence, hoping to make some appropriate summary and planning for the current form.

2. The Innovative Practice of Intelligent Business Model in the Field of Communication

According to the composition of its supply chain, cultural communication can be divided into data collection, processing and creation, output, media release and other links. Artificial intelligence provides corresponding technical means, platforms, channels and spaces, and provides intelligent services for cultural creation, dissemination, display and consumption. (See **Figure 1**)



Figure 1. Innovative practice of intelligent format mode in communication field.

2.1. Both Efficiency and Quality Are Improved

In the aspect of data collection, the traditional methods such as on-the-spot and telephone interview ensure accuracy and authenticity, but they are costly and inefficient. In the era of digital economy, the collection methods under artificial intelligence are more diversified, including search engines, social media, web crawlers, API data collection and mixed collection methods, in addition to traditional information collection methods, to ensure efficiency and accuracy. Compared with the traditional on-the-spot and on-the-spot collection, based on search engines, social media, web crawlers and API data collection, we can set the program algorithm, adjust the collection frequency, conduct regular and timely data collection, analyze and integrate the data, and improve the speed of data and information collection. For example, China Meteorological Bureau obtains meteorological data from all parts of the country through crawler automatic collection, and makes prediction and analysis.

In terms of creation, relying on search engine and retrieval technology, machine learning and natural language processing technology, we can quickly extract the required information from the database and complete a manuscript in seconds. Rapid generation and all-weather work can complete massive news reports. According to the data of iResearch, Tencent's Dream Writer smart writers reported more than 2000 articles/day on daily quotes and announcements of listed companies in the fields of finance, science and technology, and the average

amount of press releases formed by each round of news in the sports field was 500 articles/day. At the same time, artificial intelligence avoids manual editing and repetitive work, reduces the error rate, and effectively detects spelling errors, grammatical errors and logical irrationalities in articles by constructing patterns, automatically generating content and supporting automatic checking, thus ensuring the quality of manuscripts.

2.2. Rich in Forms and Accurate in Communication

Intelligent technology, face recognition, speech recognition, audio and video processing, multilingual translation, voiceprint recognition, image recognition, big data search, etc. have enriched the categories of data and information collection. This increase in semi-structured and unstructured data enriches the presentation form of information and reflects the original state of things more stereoscopically and truly, which is of great significance and function. For example, at the National People's Congress in 2019, Xinhua News Agency's new media center equipped reporters with "sharp tools" for live coverage—"smart eyes" and "all-round ears". "Smart Eyes" are smart AR live glasses. When wearing live glasses, the reporter's eyes become cameras, and the scene "seen" can be broadcast live to netizens through Xinhua News Agency's client "live news", just like "being there".

In addition, it also has a unique face recognition technology, which can provide real-time identity information of people in front of us. "All-round Ear" is a portable intelligent hardware device that integrates shorthand, simultaneous interpretation and dialogue translation. With the help of the "All-round Ear" intelligent recording pen, the interviewed text can be transmitted back to the rear editorial department in real time, realizing the instant transmission, editing and sending. These smart devices not only empower journalists, but also expand the boundaries of media products. [7]

Compared with traditional newspapers, magazines, radio and television, the publishing and communication platforms of new media are more abundant. It can be divided into social media, service blog forums, Weibo, WeChat, QQ space and other media forms; From the media, use the media platform to publish personal opinions and create personal IP, such as WeChat official account, Headline, Baijia, Big Fish, Sohu, Little Information, Penguin and so on. Short video category, contact short video platform, create short video content, do information promotion and services, including Tik Tok, Aauto Quicker, watermelon video, micro-vision, WeChat video number and so on; Live broadcast platform, which interacts with consumers through live broadcast, including Baidu live broadcast, Tik Tok live broadcast, video number live broadcast, Aauto Quicker live broadcast and so on. Traditional media have also set up official Weibo, WeChat official account and video platforms to enrich the information publishing platforms and channels.

In the distribution of information, artificial intelligence provides accurate ser-

vices through algorithms. Traditional media is mainly unilateral transmission, which belongs to mass communication. The new media can better realize the benign interaction between publishers and audiences, and target people, form personal portraits, form tagged content and implement targeted and accurate services based on artificial intelligence algorithms. The artificial intelligence service with innovative algorithm can realize a certain degree of personalized customization of news information. That is, targeted and personalized services can be provided according to the user's data information. (See **Figure 2**)

Product name	Dreamwriter	DT manuscript king	Secret Duer	Xiaoming bot	Media brain	People's Daily Creative brain
Belonging platform	Tencent	First financial (Alibaba)	Baidu	Today's headlines/Toutiao	Xinhua News Agency	People's Daily
Docking platform	Tencent finance Tencent technology Tencent sports	First financial view	Baidu	Today's headlines/Toutiao	Xinhua News Agency/Xinhua Zhiyun (Xinhuaner With Alibaba)	People number
uptime	2015.9	2016.5	2016.8	2016.8	2017.12	2018.6
Coverage field	NBA events Football match business report	Financial channel	NBA events	NBA events Football match	Clues, planning, mining Interview, production and distribution Send and feedback	Intelligent writing, intelligent media citation Engine, voice transcription, data Rubik's cube and video search
Reporting attribute	Battle report newsletter	Newsletters, long reports, television news	Event commentary	war communiqué	Full news link, Video news	All media
Whether to match the map or not	Part of it	A few	yes	yes	yes	yes
Daily manuscript volume (average)	500-2000 articles	Hundreds to thousands of articles	10-20 games	More than 30 articles	Several articles /10 seconds Draft video news	---

Figure 2. Application status of writing robot in China media industry [1].

2.3. Enhance Influence and Expand the Scope of Communication

Compared with the traditional point-to-point field data collection, the extensive use of new media data collection tools has extended people's horizons. It can record, transmit, store, display and control data according to the requirements of real-time monitoring. For example, through drones and sensing equipment, images, videos and images are collected at high altitude. Through the emotional interaction technology, the captured audience's emotional changes are transformed into more intuitive and computable data through accurate analysis, and then drawn into a real and visible "emotional curve". For example, in 2015, Xinhua News Agency took the lead in China to set foot in drone news reports. The application of drones in the news field opened up a new dimension of information collection, and it was able to enter areas that were difficult for human beings to enter in the first time to collect information from a wider range and more perspectives.

3. The Problem Analysis of the Innovation of Intelligent Format Mode in the Field of Communication

Although artificial intelligence has brought us a lot of convenience in the process of communication, at the same time, some problems cannot be ignored.

3.1. Limited Technical Optimization and Lack of Research Depth

First of all, with the continuous progress of the times, people's daily needs are also growing and standards are constantly improving. At present, the development state of artificial intelligence still cannot solve most problems of human life independently. This is because behind the seemingly neutral and objective language processing of artificial intelligence, there are a large number of algorithm models gradually formed by algorithm engineer after repeated training, debugging and improvement on large-scale data sets, and every step of which must involve human beings. Artificial intelligence also generally lacks the ability of opinion output and value judgment. Due to the lack of standard answers to viewpoint questions, it is difficult for artificial intelligence to realize its subjective initiative. Although the behavior of artificial intelligence comes from fixed algorithms and codes, its action process is still in a "black box" state to some extent. [8] Many algorithms have not yet been explored by human beings, and may never be explored. In addition, at present, the number of related documents about artificial intelligence and cultural communication is still very limited, and there is a lack of accurate noun explanation and relationship definition in the existing documents. All these show that people's exploration of such problems is far from enough, and they can't really control artificial intelligence. [6] Therefore, on the one hand, human beings need to continue to explore more complete algorithms suitable for artificial intelligence, on the other hand, they should timely investigate the current use of artificial intelligence and draw corresponding conclusions to lay a theoretical foundation for the next research.

3.2. Over-Reliance on Technology, Ignoring the Main Body of Communication

Culture is flesh and blood, and the spread of culture needs people as the main body. Many scholars believe that the value of artistic creation lies in the expression of people. But now, more and more efficient and quick creation makes the content of the output become stiff and stereotyped. What is even more frightening is that there will be some subtle ideas infiltrating and disciplining the thinking of the communication subject in the form of hidden technical power, which undoubtedly weakens the value of people in cultural communication, and ordinary people can easily create art. Artificial intelligence has gradually evolved into an independent and uncontrolled force, which affects people's subjective value judgment, weakens people's innovation ability, and brings great impact on human's dominant position. [6] The success of cultural communication ultimately depends on cultural production and communication workers, and human beings cannot be lost as the main body in the process of cultural communication.

3.3. Ethical and Legal Issues Arising

The content generated by artificial intelligence is also prone to problems of rules and principles.

The legal problems caused by the creation of artificial intelligence, in terms of intellectual property rights, because most of the products of artificial intelligence are copied and combined with the existing resources of human beings, some studies think that it is difficult to distinguish the works generated by artificial intelligence from those created in the traditional way, which affects the original intellectual property system. In addition, the academic circles still hold different views on the confirmation of the copyright subject of artificial intelligence works. Is it to empower the creators of artificial intelligence or the users of artificial intelligence?

Then, the academic circles have always attached great importance to the judgment of infringement and legal infringement, and the regulatory authorities have not yet formulated a unified standard to stipulate the appropriateness and rationality of scientific and technological behavior in the face of artificial intelligence. There are many aspects involved in ethics, such as data privacy and security, and fairness of automated decision-making. This should not only pay attention to the technology itself, but also pay attention to the influence of technology on society and other levels. Back in the field of cultural industry, there is a paradox between commercial value and humanistic care, especially the lack of ethics and governance of artificial intelligence in cultural production. [3]

If these problems cannot be solved, academic circles may be in chaos. Privacy leakage and data abuse will make human rights and interests no longer guaranteed, and the unfair and unbalanced distribution of social wealth will even pose a potential threat to human dignity and affect human normal life. We should not only formulate clear moral standards and guidelines, but also formulate and improve relevant laws and regulations in a timely manner, clarify responsibilities and obligations, and ensure fairness, justice and personal privacy. (See **Figure 3**)

4. Countermeasures and Suggestions

4.1. Increase Scientific Research Strength and Optimize Algorithm System

In order for artificial intelligence to truly improve human life, it is necessary to develop it with high quality, which requires strong support from the state. Improve the level of artificial intelligence practitioners, increase investment in scientific research, and provide them with high-quality and high-quantity learning conditions, such as offering relevant technical courses for science and technology communication practitioners, cultivating more talents to expand the scientific research team, allowing model developers and research institutions to strengthen research, practice technical “hard quotient” and reduce “loopholes” in algorithm language. This can improve the performance, stability and security of artificial intelligence and make it better serve human beings.

4.2. Attach Importance to Cultural Subjects and Make Rational Use of Science and Technology

As thinking human beings, we cannot be completely replaced by artificial

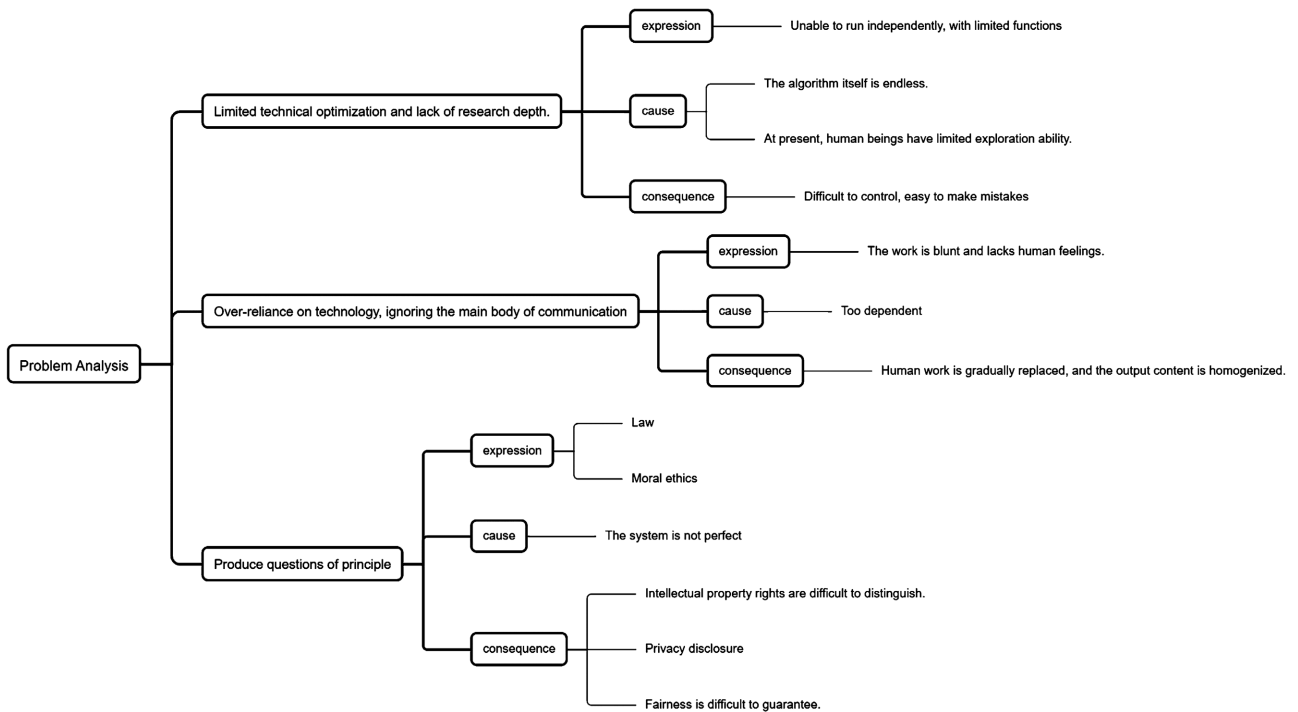


Figure 3. Problem analysis.

intelligence. Although artificial intelligence technology plays an increasingly important role in the field of cultural communication, and human beings rely on it more and more, it is also necessary to clarify and adhere to the main position of cultural communication when using artificial intelligence technology for cultural creation. Rational use means that we can rely on technology to reduce barriers in communication, give full play to the advantages of media to speed up communication, enrich communication methods, broaden communication scope and accurately disseminate information.

Zhai Zhiqiang once pointed out that artistic creation is inseparable from the participation of artists' subjective emotions, willpower, inspiration, subconscious and even unconscious, and the success of creation is directly related to the participation of these emotional consciousness, and artificial intelligence can't change the nature of its technology no matter how high it is [9]. Therefore, we should pay more attention to the subject of cultural creation and dissemination, and realize that artificial intelligence is an auxiliary tool, not a substitute for human beings. Creators need to improve their creativity, have critical thinking and take the initiative to solve problems, so as to reflect their own level and uniqueness in all aspects, and use artificial intelligence, rather than being used by it, to become the "master" of artificial intelligence subjectively. [6] Artists have unique life and feelings for art, and their creative duties cannot be replaced by artificial intelligence. Therefore, we should not let the pattern creation and the technology assembly line art become our culture. [3] Only in this way can we stabilize the dominant position and leading role of human beings.

4.3. Formulate Management Mechanism and Strengthen Supervision

Artificial intelligence in cultural communication must be developed to be reliable and controllable.

From the national and government level, we should comprehensively use policy support, ethical guidance, standardized legislation and other governance means to comprehensively improve governance. Sun Xing, wishing the Yellow River a reflection on the phenomenon of “machine substitution” in the era of artificial intelligence, put forward that in terms of policy support, it can improve workers’ labor skills and scientific and technological literacy, cultivate their irreplaceability, and actively guide unemployed people to re-employment; We should also improve the social welfare security system to protect the basic livelihood of the unemployed. In the aspect of ethical guidance, we should formulate controllable ethical norms for research and development and application of artificial intelligence, and identify the ethical risks of artificial intelligence from technology research and development to deployment and application in the whole cycle; By establishing an ethics review committee, we can find and solve the potential discrimination in the algorithm and promote the fairness of the algorithm. In terms of legislative norms, it is necessary for the legislative department to adopt an inclusive, prudent and flexible response. From a practical point of view, the specific case analysis should not only avoid the restrictions on the development of artificial intelligence caused by hasty legislation, but also realize “agile governance” with the development of artificial intelligence. [10] It is urgent to develop the technology of identifying and distinguishing the content generated by artificial intelligence, and at the same time establish a special management department to build a logical road for copyright protection of artificial intelligence. In this way, a comprehensive artificial intelligence management team and a reasonable cultural industry development mechanism will be formed.

5. Conclusion

On the whole, academic circles hold a positive and supportive attitude towards the role of generative artificial intelligence, and society also accepts the success brought by this emerging technology. It can be seen that the innovation of intelligent business model is successful. In the future, science and technology will continue to be upgraded and iterated, and the spread of artificial intelligence will have a far-reaching impact on human life activities. However, when we return to real life, the viability of virtual substitutes is limited. Therefore, artificial intelligence should be given more humanistic care in cultural communication, and behind the application of technology, a virtuous circle of rational use of technology, technology empowerment communication and social responsibility should be formed. Efforts to promote the good integration of artificial intelligence and cultural industries and inject new blood into the development of cultural communication will surely continue.

Acknowledgements

Key Project of Education and Teaching Reform in 2021 at Beijing Institute of Fashion Technology—Model and Innovation of Integration of Innovation and Entrepreneurship Education and Practical Teaching (ZDJG-2105) Phase Achievements.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Zang, Z.P. and Xie, X.F. (2019) Mainstream Value Communication of Cultural Industry in the Era of Artificial Intelligence: Remodeling and Construction. *Mao Zedong Deng Xiaoping Theory Research*, No. 4, 48-54+108-109.
- [2] Long, F. (2023) Thinking and Practice of Using Artificial Intelligence Technology to Help Cultural Communication. *External Communication*, No. 3, 68-71.
- [3] Zhou, J.X. (2023) Research Report on the Development of China's Cultural Industry in the Age of Artificial Intelligence. *Art Studies*, No. 2, 35-43.
- [4] Li, S.Q. (2024) The Role and Challenge of Generative Artificial Intelligence (AIGC) on Science and Technology Communication. *China Science and Technology Industry*, 5, 50-52.
- [5] Zheng, C. (2024) The Revolutionary Application of Digital Humanistic Methods in the Era of Artificial Intelligence—The Problems and Challenges of Art Generation and Communication. *Art Communication Research*, No. 3, 37-48.
- [6] Zhao, Y.C. and He, Y. (2024) Cultural Communication under the Model of Generative Artificial Intelligence: Change, Risk and Governance. *Theoretical Guide*, No. 3, 118-124.
- [7] Fan, H. and Zhao, X.B. (2020) China Military Network “Military Reporter”: “Artificial Intelligence + Media”: Reconstruction and Reengineering the News Production Process. http://www.81.cn/rmjz_203219/jsjz/2020nd8q/bktg_203422/9903202.html
- [8] Hu, Q.Y. (2022) Development Status and Thinking of Artificial Intelligence Communication. *Shanghai Informatization*, No. 5, 12-16.
- [9] Zhai, Z.Q. (2023) The Art of Growth—The Mission and Road of Art in the Emotional Age of Artificial Intelligence. *National Art Research*, No. 4, 55-61.
- [10] Sun, X. (2024) I Wish the Yellow River. Reflections on the Phenomenon of “Machine Substitution” in the Era of Artificial Intelligence. *Jiangxi Social Sciences*, 1-10.