

Research on Agriculture-based New Media Art Creation in the Internet Context

Taking the Popular Science Film "The Secrets of Fields and Balcony" as an Example*

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Abstract—Objective: This research aims to implement the "Internet plus Agriculture" program, break through the traditional art creation mode, and describe agriculture-themed new media art creation method under the Internet context. **Methods:** This paper combs the process of creating agriculture-based new media art, and takes the popular science film "The Secrets of Fields and Balcony" as the creative case to expound the creation method from the application perspectives of visual element, auditory element and story element. **Conclusion:** In the context of Internet, today's agriculture-based new agricultural media creation is a combination of technology and business. With the continuous enrichment of media art creation methods, the forms of expression become more and more diverse and the spread platform is constantly expanded, providing a new vision, new ideas and new mode for agriculture-based new agricultural media art creation. But its essence is the expansion of research on the efficiency and effect of information dissemination.

Keywords—Internet; agriculture; new media art; art creation

I. INTRODUCTION

In 2015, Prime Minister Li Keqiang first proposed the concept of "Internet +" in the government work report. "Internet +" as a field of consciousness was promoted to the level of national innovation strategy. Followed by, "Internet finance", "Internet education", "Internet agriculture" and other new development opportunities come in a continuous stream.

"Internet + agricultural service + media art" aims to promote the rapid development of agriculture through media art means and help rural revitalization. For example, through the combination of digital video art and business such as advertising and documentary, it is possible to back feed agriculture; the cultivation and marketing of agricultural products has been carried out at the practical level. With the continuous enrichment of digital media art means and the

popularization of mobile internet, the speed of promoting innovation in media industry is accelerated obviously. Agriculture-based new media art creation in the context of the Internet has been applied from the practical level to the entire industrial chain of agricultural production, processing and sales. For example, according to change in producer directors of the "A Bite of China" from the first series to the third series, the whole process from unconscious promotion of rural agricultural products to conscious combination with "Internet +" as shown on national media platform embodies that in the process of digital tools creation, digitalized information product applies visual modeling language to express the new media art of artistic thought and marketing concept change, showing amazing modern marketing power. However, along with the deep coupling of media and products, it also exposed many problems such as insufficient expression forms and improper association. In view of this, it is urgently needed to comb and mutually prove the theory and practice of agriculture-based new media art creation method and the like aspects in the Internet context.

II. COMBING OF NEW MEDIA AND AGRICULTURAL CORRELATION THEORY

Since the 1990s, the TV information-oriented transformation of agriculture information has promoted the development of agricultural industrialization and accelerated the commercialization of "mountain products". For example, the mode of "Country Love" series of film and television plays is essentially the beginning of combination between new media and agricultural industry. It fundamentally demonstrates the possibility for resource development information dissemination of agricultural products in the context of new media from the perspectives of project background, project basis, project development, project market and project operation and the like based on media technology. Digital media technology is used in agricultural production, processing and promotion and gets quantized data to prove its ability to give new value to agricultural products. It also proves the possibility to gradually transform from "production agriculture" to "multi-functional agriculture" through assisting agricultural development by coupling the government's strategic orientation, industrial integration and development and other factors. [1]

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With respect to the value-added development of agriculture driven by new media art and new media industrial development, American art historian Roy Ascott once pointed out that the integration of new media art into traditional industries is divided into five stages: connection, integration, interaction, transformation, and emergence. Digital media information dissemination will present unprecedented connectivity and interactivity [2]. Nowadays, it is generally believed that digital media is not only a technical productivity, but also a cultural productivity, and more a change in the way of thinking, development strategy and business model. On the one hand, digital media has penetrated into the level of business value and model, industrial institutions and forms. On the other hand, the rapid development of traditional industries and the emergence of diversified needs also accelerate the reconstruction of the context of new media art. From the perspective of agriculture, new agricultures such as digital agriculture and smart agriculture have emerged, and with the awakening of the masses' aesthetic consciousness, diversification of interest has taken shape. The multi-centered, personalized, interactive and other communication paradigm orientations of new media art creation, agricultural information datafication, visualization and art creation also catalyzed the exploration, remodeling and construction of new media art. Thereby, the "Terminal + Application + Platform + Data" four-in-one pan-Internet technology paradigm still needs to seek for understanding and recognition under the emotional and aesthetic dimensions.

III. RESEARCH ON EXISTING MODE OF AGRICULTURE-BASED NEW MEDIA ART CREATION

In the era of Internet and mobile Internet, the way of thinking, and the context and carrier of communication have undergone tremendous changes. The creators and audiences of agriculture-based new media art are also shifting from generation to generation, and their understanding and expression of the core of art, namely "beauty", is gradually forming their own habits.

A. Historical Culture Vision Model

The great changes in the times and the transformation of media have changed the way in which artistic information is produced, but they have not shaken the status of agricultural civilization in daily life, and the keep-watching status of agricultural spirit in people's spiritual home. The "intensive cultivation" and "craftsmanship spirit" in agriculture are the call of the spirit of the times. The essence of the spread of agricultural civilization is the affirmation of hard work, the awe of nature, and the pursuit of science and technology. It is necessary to inherit the excellent traditional farming spirit and actively explore the point of connection with today's life. On August 1, 2016, "General History of China (中国通史)" was officially broadcasted on CCTV-6. This film is China's first historical feature film of such a grand scale. From the perspective of the whole industry, the film tells the formation of a splendid civilization of the unified multi-ethnic country based on the experience and lessons drawn from historical development. Wherein, the third episode "The Origin of Agriculture (农业起源)" narrates the long-term development

of Chinese agriculture from historical perspective and tells the process that Chinese ancestors used the wisdom and strength of the massive group to transform the nature and promote the evolution of social structure to higher level.

B. International Culture Vision Model

At present, China's economic development has moved toward an open and high-order level. The "Belt and Road" proposal provides a rare historical opportunity for China's agriculture to "go out". Last year, the import and export volume of China's agricultural products reached US\$216.81 billion [3]. However, different countries have different natural conditions and farming cultures and are bound to form diversified agricultural achievements and cultural crystallization. Nowadays, the access of Internet has made agricultural exchanges and cooperation in various countries increasingly frequent and the global allocation of agricultural resources has been gradually optimized and shared. The "America's Heartland" is a documentary that reflects the development of America's agriculture. The whole film demonstrates the living scenes of farmers' hard work and various agricultural forms in various regions of America. The film was broadcasted on US pay-TV stations and has been aired for seven series with considerable audience ratings.

C. "Community of Destiny" Model

"Destiny" is a subject term favored by artists, writers and philosophers. Rare saying of "destiny" can be seen in traditional political and sociological analysis frameworks. In 2017, Comrade Xi Jinping pointed out that the international community is increasingly becoming a "community of destiny" with you and me. In the same way, the destiny of a country is also created by all walks of life. Farm is the foundation; the state is stable only if the foundation is solid. The issue of "agriculture, rural areas and farmers" plays an important role in the development of the country. From 2004 to 2019, the Central Document No. 1 has focused on agricultural and rural development for 16 consecutive years. On Feb. 27, 2018, China's first agricultural modernization based large-scale documentary "The Power of Agriculture (大国根基)", was firstly premiered on CCTV. The film focuses on Chinese people, and started from small figures to realize an art effect of seeing see big things and the reality through small ones [4]. This should be the original creation intention of excellent artistic works, namely artistic works should serve the "people" and witness the "national destiny community" with practical artistic action.

D. Art Creation and Business Integration Model

After the acceleration of urbanization in Japan in the 1950s, many social problems such as population migration, aging, desertation of terraces, and decline of traditional industries became increasingly prominent. In 1996, a famous Japanese curator Kitagawa Furamu (北川富朗) promoted and planned the Land Art Festival, aiming to awaken the vitality of the region in the form of art, and further promote the regeneration of local traditional industries [5]. The organic combination of "people's wealth" and "ecological beauty" empowers rural development, gives play to the leading role

of artists, and further drives the cultural creative industry, opens up new horizons and new paths for agriculture-based media creation through the art of casting souls. On Oct. 28, 2018, following after the "A Bite of China", Chen Xiaoqing's team launched a new food exploration documentary "Once Upon a Bite (风味人间)" which earned a view counts of more than 100 million within 3 hours of the first broadcasting and earned huge praise and super-high popularity. The sophisticated content production is the primary reason for its success, but the strong commercial marketing strategy cannot be ignored. The "online + offline" interactive mode, the official announcement on the Zhejiang Satellite TV China Blue (浙江卫视中国蓝) named microblog, online singer's singing of the theme song and other series of operation means all reveal a strong commercial atmosphere.

In short, regardless of the creation model, all agriculture-related art creation should inherit the historical culture origins of the local place and respect people's direct feeling on agricultural production and life, and can be carried out on the basis of the international and modern vision and fully back feed agriculture by taking advantage of commercial dividend. The artification of agricultural media communication is based on the precipitation and epiphany of nature and life in soul, and is also the window for integrating agriculture with business.

IV. STRATEGY FOR AGRICULTURE-BASED NEW MEDIA ART CREATION IN THE INTERNET CONTEXT

A. *The Perfect Coupling Between Traditional Art and Modern Media*

In the new era of media, traditional art and modern media technology present a pattern of unity of opposites. The two are opposed to technology and thinking. The development of new media technology not only changes the current means and channels of information dissemination, but also attracts the new era of art creators to constantly update the thinking and logic of artistic creation. The two are unified in function and spirit. No matter it is which kind of new media technology, it is not opposite to and alternative to traditional art, but it is the expansion and innovation of performance technology and form. Its primary function is to convey the concept and connotation of the creation. The ultimate spiritual core is always to serve the public and the society. Therefore, the incompatibility between traditional art and modern media technology is far less than that of the time and space level.

As the pinnacle of ancient Chinese customs based paintings, the "Along the River During the Qingming Festival (清明上河图)" has an important influence in the art field both in China and foreign countries. The 3D animated version of "Along the River During the Qingming Festival" exhibited in China Pavilion on the 2010 Shanghai World Expo was recreated by technical team (Crystal Digital Technology Co., Ltd.) on the basis of the original painting collected in the Palace Museum by digital scanning and retaining. On the basis of preserving the essence of the original art, the technical team carried out digital and artistic processing on it: namely, gradually dividing the latitude and longitude, determine the subdivision proportion, character

coding, scene number and so on in detail to achieve the separation of static elements and dynamic elements, then presenting it in a dynamic manner according to the occurrence time and space sequence of the recreated independent story line; added with a comprehensive use of a variety of sensory elements such as sound, light and electricity, a grand and beautiful 3D animation scene was "painted" [6]. This exhibition work not only inherits the true beauty of Chinese painting art, but also carries forward the beauty of confidence in traditional culture and demonstrates the beauty of digital technology based innovation. It realizes a perfect coupling between traditional art and modern media technology.

B. *Product Marketing Strategy Under the Guidance of Internet Thinking*

In recent years, Chinese documentaries have broken through the records of traditional TV stations and theater broadcasts; and with the popularization and application of the Internet and mobile Internet, they are gradually integrated into network platform. The new communication platform and market have injected new momentum into documentaries in aspects of production, business model and audience feedback, and also put forward new requirements. Under the new situation of media digitalization, how to accurately grasp the law of network communication and use modern media technology to promote the continuous development of China's documentary industry is an important topic and new attempt currently faced by academic circles and industrial circles [7].

Since the launch of the "A Bite of China" in 2012, it has not only set off a new upsurge of watching documentary all national people and all networks, but also driven the development of the whole industry chain of documentary. The successive broadcasting of the "A Bite of China" from the first series to the third series, the publication of book of the same name, and the releasing of "A Bite of China: Celebrating the Chinese New Year" in cinemas and the like series of commercial operations attracted attentions from a large batch of fans of the "A Bite of China" and also built the high-quality IP of the "A Bite". It not only enhanced the extensibility of documentary IP, but also consolidated and improved the brand value of "A Bite of China". With respect to such commercial operation, first of all, it actively created the dominant brand IP and fully expanded the industrial chain of documentary through the rational sale of video copyright resources, the development and extension of publishing resources, and high-quality IP's entry into film and television industry; secondly, it accurately grasped the law of network communication, paid full attention to the aggregation effect of network communication, and were good at using the "socialization" characteristics of social media to promote the promotion and marketing to all national people and all networks; eventually, it created artistic works and products in the new media era that were adaptive to the deep integration development of media.

V. PRACTICE OF AGRICULTURE-BASED NEW MEDIA ART CREATION IN THE INTERNET CONTEXT

Hegel once put forward in the "Asthetische Verlesungen" that "Artistic beauty eliminates the limitations of natural beauty and thus is superior to natural beauty" [8]. And regardless of whether the viewpoint is arbitrary, and whether artistic beauty is higher than natural beauty or not, artistic beauty can indeed break through the limitations of natural beauty, thus making natural beauty more "beautiful". The so-called artistic beauty is the sensory communication work artistically expressed by artists on the basis of some techniques and their aesthetic emotions ideals on life and nature; it involves many aspects such as hearing, vision and "illusion". Therefore, the authenticity of narrative scenes in the documentary and the artistic form of the expression are not opposite and not available to be unified.

"The Secrets of Fields and Balcony" is a micro-copper documentary about the hydroponic cultivation of urban balconies from the perspective of "new farmers". The film narrates from four aspects such as evoking the pastoral complex, rethinking of food safety, becoming attached to hydroponic techniques, and sharing the farming experience, takes the characters in reality as the object and arranges the logic through the plot of their getting in touch and love with hydroponic cultivation on balcony, showing the whole process that urban people move field into their own balcony. At the same time, in the post-production process, the story elements, auditory elements and visual elements are artistically processed to enhance the expressiveness, appeal and vitality of the documentary.

A. Story Elements

This film is a micro science popularization documentary. Unlike the simple knowledge and technology popularization in the past, the use of story elements can capture the curiosity and empathy of the audience. Pictures and sounds can be used to get nature, life, and status quo vividly presented. In this way, it gets rid of the boring simple recording line and makes the film more authentic and viewable.

The film uses story elements and pays attention to the rationality of the logic of the plot development and the details in many aspects such as the appearance and life scene of the characters to provide the audience vital and influential program content in a focused and hierarchical manner. For example in the part of "evoking the pastoral complex", in order to clearly reflect the origin of the protagonist's pastoral complex, the view at the beginning of the film is set in the protagonist's hometown, Jinjialing mountain in Chashan'ao Town, Hengyang City, Hunan Province, and the narrative is a familiar verse "From tomorrow on, I will be a happy man. Grooming, chopping, ... I only wish to face the sea, with spring blossoms" written by Hai Zi, coupled with soothing string music, so that the overall "temperament" fully meets the status of the protagonist as a young people who goes out from countryside and loves culture and arts. Later, the protagonist's previous experience will be concentrated into several representative scenes, such as the scenes such as children's play, catching the morning market, busy farming ("Fig. 1"). Therefore, the application of story elements in combination with the plot presents the most authentic things in the form of documentary, shows the audience richer content plot, eventually enhances the sense of possession and authenticity of the documentary, and also ensures the full demonstration of the charm of documentary.



Fig. 1. Video capture of the scene "evoking the pastoral complex".

B. Auditory Elements

Auditory element is an important part of the film; its reasonable application can completely activate the emotional factors of the film. The use of various auditory elements can not only present the documentary details diversely, but also enhance the overall expressive force of the documentary.

First of all, the primary requirement of documentary for sound is to be real, but not absolutely real. In the early filming of the documentary, simultaneous sound recording involving natural scenes often fails to meet this requirement. Therefore, it is necessary to rely on the sound engineer to record the sound of similar scenes and then replace the simultaneous sound. For example, in the part of "becoming attached to hydroponic techniques", it is needed to record the sound of dosing nutrient solution and the sound of chirping at night; but in urban environment, it is hard to record such subtle sounds as there are noisy sounds of vehicle and people. Therefore, in post-processing period, the corresponding scene was moved into studio for sound collection and then the simultaneous was replaced with the collected sound by software. Although the workload is increased, the purity and authenticity of the sound in the scene are preserved to the utmost extent. Furthermore, the selection of background music is also crucial. The background music of documentary is not mainly to explain the picture, but more to convey the emotions that are difficult to be expressed by the images while explaining the pictures. In the works, it is the product of sublimation, and the re-creation of the documentary thought [9]. For example, in the part of "rethinking of food safety", in order to match with the image content of compliment after criticism, a pure music "Rapture" (written by John Stanford) was selected as the background music. The front part of the music is a minor-scale instrumental music performance and people's closed-mouth croon to create a faint, melancholy and cold atmosphere; the latter part is a strong drum rhythm with people's open-mouth singing, setting off a strong, serious and tense atmosphere. Of course, in addition to using those scene sounds and background music, it is also possible to use a variety of sound effects such as synthesizers and delayer in combination with different scene language to present the pictures artistically, so that the auditory elements of the documentary are more suitable to the time and scene to demonstrate the unique creativity of the documentary and enhance the overall appreciation nature of the documentary.

C. Visual Elements

Visual elements include macro framing composition, lens motion, picture tone, microscopic visual symbols, subtitles, transition screens, etc. Their rationalized applications can achieve smooth narrative, render mood and enhance the expressiveness and appeal of the screen.

The filming and production of documentary needs to pay attention to the authenticity of the scene, but the artistic display of the pictures does not violate this principle. Therefore, in the application of the visual elements, this film adopts some artistic design techniques of visual communication design: information visualization design, dynamic text layout, digital illustration and so on. For

example, in the part of sharing farming experience, the sharer presents the data on and knowledge on the proportion of nutrient solution, time of filling, root growth status and so on based on his experience. In this aspect, the film is visually designed; thee boring and complicated data is transformed into easy-to-understand vivid images and animations, which can speed up the dissemination of information and reduce the cognitive load of the audience to improve the audience's acceptance and understanding. For another example, in the finalization of transitions of the four parts, the words of the theme adopt dynamic design based on the different theme of each part. Wherein, the part of "evoking the pastoral complex" overallly adopts the English spelling of "RURAL" (idyllic) as the subject, and adds some garden elements such as lotus pond and bamboo, rendering the farmhouse life scene of the pastoral house; this part adopts the "U-shaped design of positive and negative shapes, with negative shape showing bamboo and birds; finally, the bird is processed into dynamic form ("Fig. 2"). In the part of "rethinking of food safety", the whole body takes "SAFETY" as the subject, and is added with label of poison, food quality and safety signs and other elements; the "T" shape is approximate to an inverted nipple. In the part of "becoming attached to hydroponic techniques", the whole body takes "SKILL" as the subject, and is added with a series of hydroponic tools such as pruning shears and curved dropping bottles; the word "水 (water)" is blue and the lower part is like dynamic water flowing toward the two sides, showing a cross-sectional view of the hydroponic vegetable potted landscape. In the part of "sharing the farming experience", the whole body takes "SHARE" as the subject, and is added with many element of learning tools such as books, magnifying glass and pens; the screen first present an open blank book and then a person holding pen on the right of "E" and writing six characters "共 (Gong), 享 (Xiang), 自 (Zi), 耕 (Geng), 经 (Jing), 验 (Yan)" one by one. With the whole society's audio-visual preference becoming entertainment-oriented, the charm presented by the visualization, diversification and interaction of visual elements gradually appear. Compared with pure pictures, real scenes and commentary, visual elements are more expressive.

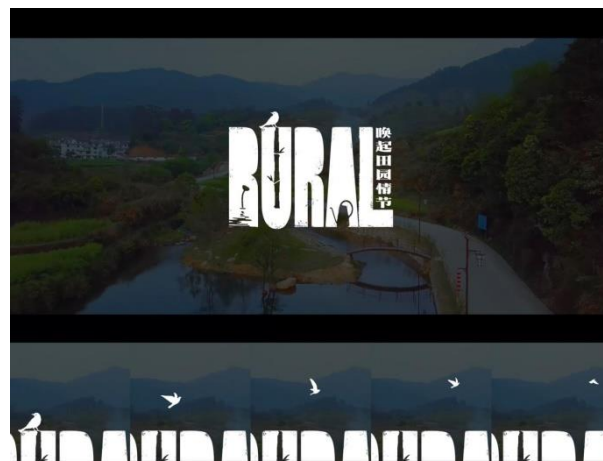


Fig. 2. Screenshot of the finalized transition scene of the "evoking the pastoral complex".

VI. CONCLUSION

For agriculture-based new media art, how to back feed on agriculture in the context of Internet and mobile Internet is also the goal of media art creation. The influence of the new culture form presented and spread by new media in the context of highly popularized and applied network is unprecedented and the most profound two aspects are the new technical feasibility and the change of marketing ecology and media value. Grasping the two points, it is possible to seize the lifeline of the Internet's new media art creation, and further make it developed well.

The survival and development of mankind cannot be separated from agriculture. China has a very ancient and complete inheritance of agricultural civilization. The development prospect of the combination of art and agriculture is undoubtedly huge. From the farmhouse decorated with bamboo hat, straw rain cape and Chinese-style tile to the edible landscape under three-dimensional breeding and soilless cultivation environment in modern agriculture, art is backing feed on agriculture at all times and gives new inspiration and new forms for spreading of agriculture. The emergence of new media art has maximized the complementarity between art and technology. Hence with the rapid development of current network information technology, the application field of new media art is also constantly expanding and extending, and new media art has created a brand new virtual emotional experience mode for human beings in real life. This will bring very profound impact on people's current and future production and life manner and living conditions.

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