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Digital Publishing and Communication Strategy Based on Distributed Technology and Cloud Computing

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Abstract The traditional media industry is facing a turnaround and challenges, and at the same time there are many opportunities for development in the new era, which will have many impacts on the mainstream media, and the innovation of mainstream media is imminent. The SECI model is the communication model of mainstream media, and its view on the continuous transformation of mainstream media is consistent with the transformation of mainstream media. This paper tries to combine the theoretical framework of SECI model with the existing communication strategy of mainstream media, to find the theoretical support of communication, to find the key link of mainstream media communication, and to propose new communication strategy of mainstream media, hoping that after the discussion of this paper, it can help the practitioners to do their work better.

Index Terms Financial media era; Mainstream media; Digital publishing; Communication strategy; SECI model optimization

I. Introduction

In the era of 5G, video is a form of information dissemination integrated into all aspects of public life, and short videos are loved and favored by the public because of their interactivity, mobility, simplicity and other advantages, and have become an extremely critical part of the contemporary network content ecology [1], [2]. In particular, in recent years, the rapid development of short video platforms such as Racer, Jitterbug, and Seconds, has led to a larger and larger market, and new mainstream media short video platforms are also increasingly focused on content production and innovation [3], [4].

Multimedia technology has also been rapidly applied with the development of 5G, especially the application of edge computing, which makes multimedia technology widely used [5]. The research focuses on five fields: publishing history, editing, publishing theory, publishing management, new media, and digital publishing [6], [7], and have made suggestions on how to maximize the use of short video by mainstream media from different theoretical perspectives, and most of the research cases are based on user attention Content analysis was carried out on "People's Daily" and "CCTV News", which ranked the top in terms of interaction [8]. The author intended to seize the latest development of short video of mainstream media based on previous research and make a more comprehensive analysis of the independent short video platform of traditional mainstream media, based on this, the optimization strategy of traditional mainstream media in short

video transmission is proposed [9], [10].

The development of media integration has become a trend. Under this general environment, the traditional digital publishing process is bound to face a choice. How to adapt to the development and turn around quickly and magnificently, it seems that no unified answer has been found. Although most researchers have begun to pay attention to it, the systematic research is still focused on the point, or try to analyze it, or develop a discussion that lacks systematic dialectics [11]. On the other hand, if the traditional digital publishing process wants to better transform in the media integration environment, it needs to actively explore the path of transformation, also needs to rely on the reference of successful experience, and be able to timely find and solve problems in the transformation process of the editing process, identify their strengths and weaknesses, make the best use of everything and people, so that the digital publishing process can transform smoothly in the media integration environment [12], [13]. In order to maintain the position of traditional mainstream media stably, we should continue to inherit the social responsibility and responsibility, be brave in innovation and practice, do a good job in the development of various derivative products, and move towards the "integration" stage for traditional mainstream media from multiple aspects such as correctly understanding and understanding the concept of all media, strengthening brand awareness and construction in media integration, and taking the overall transformation route of media industry collectivization, Conforming to the requirements of the all

media era, we sorted out the development ideas [14], [15].

As Internet technology brings unprecedented changes to the media field, there are both opportunities and challenges in the media survival environment. Mainstream media from central to local are accelerating the pace of media digitalization and mobile transformation and upgrading, and mainstream media attacking the field of short video is an important fulcrum for transformation and development [16]. Although the development of mainstream media in the field of short video has made some remarkable achievements, according to the overall trend of its development, some media accounts are still in the primary stage of exploring growth, realizing advantageous integration and seizing the high ground, which requires comprehensive study and analysis of the current operation and development of accounts, and active layout and development of short video business [17]. The development of communication technology affects every aspect of people's lives, and social media gradually enters people's vision, bringing communication into a new ecology. At the same time, production practice models have been innovated and developed. Earlier studies on communication technology were mostly limited to the combing of the development process of communication technology, which was difficult to produce innovations [18]. After repeated reflections, the author decided to put the promotion of modern communication technologies on the media, especially the development process and laws of digital communication technologies and new media as the top priority of the study.

The contribution of this paper is shown as follows.

We optimize the SECI model to make it have different communication modes in the mainstream media communication process, forming a mainstream media spiral and realizing mainstream media innovation. In the architecture of media convergence, we design a multi-level and multi-perspective architecture, so that multimedia technology can be transformed from "implicit mainstream media" to "implicit mainstream media".

In the case study, the accuracy rate of 7000 data in the optimized system of this paper is over 85%, and the optimized design of web data mining system based on SECI model can effectively improve the accuracy of the system.

II. SECI Model Optimization

SECI model is a descriptive model of network technology innovation and data mining process, and SECI model theory states that network data is composed of explicit and implicit data; data mining and analysis process is realized through networking, externalization, combination, and internalization, which is an iterative cycle of sequential alternation process [28]. This time, SECI model theory is invoked to optimize the design of the network data mining system, so that the system can not only mine the explicit data in the network, but also accurately mine the implicit data with less obvious features in the network, thus improving the accuracy of the system mining.

Modern communication and communication technology refers to ICT, which is the integration of information technology and communication technology. The Internet, are all specific technology applications of communication and communication technology. Compared with previous information and communication technologies, information technology since the 21st century has paid more attention to intelligent development. It can be said that it has opened the era of human intelligence. It realizes the extensive collection, identification, and sorting of images, sounds and data, and realizes the interaction between data, the world has entered the era of interconnection of all things. At the same time, the development of ICT has changed people's way of production and life, promoted the transformation of productivity, formed a digital wave, and promoted the development of all fields towards digital and intelligent direction. The SECI model was proposed by Google in November 2018, and its model structure is shown in Figure 1.

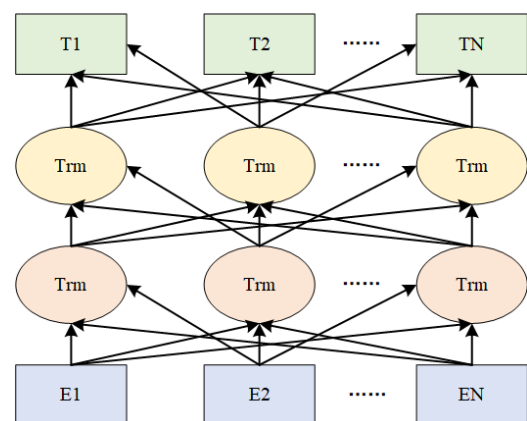


Figure 1: Structural optimization of SECI model

Digital publishing talents are undoubtedly the core competitiveness of the press and publishing industry to achieve leapfrog development. The emergence and development of digital publishing specialty is the reflection of industry dynamics in the academic world. A consensus has been reached that digital publishing is a typical interdisciplinary integration specialty, which is developed from the integration of information science, computer science and editing and publishing. Figure 2 illustrates its correlation.

In the era of mainstream media, newspapers and television are the agenda setters of the whole society and the main propagandists of national ideology. In this process, mainstream media have continuously accumulated reputation for their own platforms and established an authoritative brand image. As the representatives of mainstream media, the People's Daily and the Central Radio and Television Station are both media institutions that occupy a dominant position in the domestic communication space, with more authoritative voice, richer reporting resources and a wider audience. At the same time, China's traditional mainstream media represented by the central media also shoulder the burden of building a

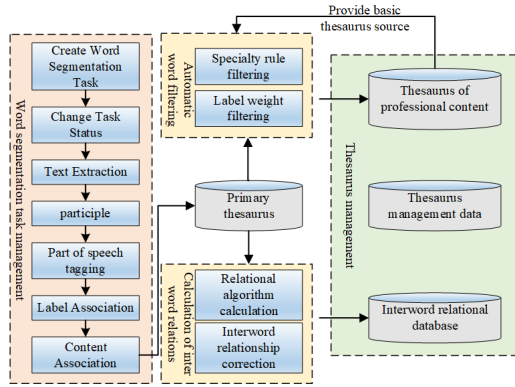


Figure 2: Mainstream media module and associated description

modern communication system. The traditional mainstream media represents the ideology of the whole society and reflects the position of the whole country, this also determines that its positioning and discourse are serious, rational, and restrained, and it is a one-to-many communication. In terms of reporting topics, it is more inclined to major current affairs and social hot issues at home and abroad. The seriousness of the discourse and the profundity of the content often open the distance from the public, showing a "high" propagandist identity. The input and output are variable length sequences, and vectors of fixed length are processed in the middle. The Encoder network structure of Transformer is shown in Figure 3.

In addition, under the trend of Internet entertainment, how to ensure the authoritative voice of traditional mainstream media while gaining more attention should first be checked at the source of content, which requires the mainstream media to control the quality and quantity of the main body during the production and dissemination of short videos. It requires both extensive information sources, strong productivity, and the authenticity and quality of short videos. In the process of establishing relations with users, mainstream media need to adhere to their journalistic professionalism, treat entertainment as the highest priority in the post truth era with prudence, enhance the further verification and in-depth reporting of facts, but also change their identity to establish a connection with users with friendly and plain words, and create interesting and humane high-quality content, distribution and their relationship in Figure 4.

The platform uses users to analyze that since digital publishing is an emerging specialty after editing and publishing, to talk about the construction of digital publishing, we must first understand the history of editing and publishing and digital publishing in China. From the establishment of editing and publishing specialty to the development of digital publishing specialty today, we can sort out the development process of digital publishing specialty. Only by clarifying its development context, can we better study the subject of digital publishing specialty construction. Early edit ology and

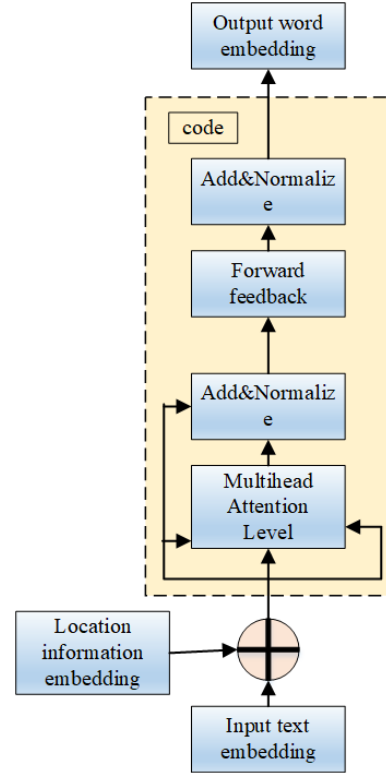


Figure 3: Network structure optimization of mainstream media Transformer Encoder

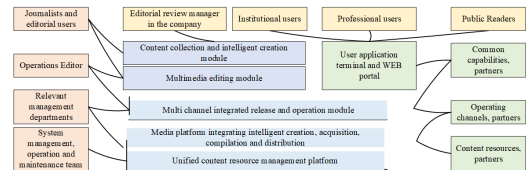


Figure 4: Users of the financial media platform and their relationships

publishing are two concepts.

SECI model shows different diffusion patterns in the process of mainstream media communication, mainly including four transformation stages: socialization, visualization, combination, and internalization. It focuses on the transformation between explicit mainstream media and implicit mainstream media, as well as the transformation between individual mainstream media and group mainstream media. Through the transformation, mainstream media spiral is formed to achieve mainstream media innovation. IDF (Inverse File Frequency): the total number of files worth a word can be divided. The following Eq. (1):

$$idf_i = \log \frac{|D|}{|\{j : t_i \in d_j\}|} \quad (1)$$

According to conditional probability and Markov hypothesis, the probability of statement occurrence is equal to the product

of the probability of occurrence of each word, as shown in Eq. (2):

$$p(\text{sen}) = p(w_1) * p(w_2 | w_1) * \dots * p(w_n | w_1^{n-1}). \quad (2)$$

The probability distribution of all words is obtained through the output of SoftMax function:

$$L = \prod_{i=1}^N p(w_i | w_{i-n}, \dots, w_{i-1}, w_{i+1}, \dots, w_{i+n}). \quad (3)$$

Skip gram model structure is the idea of deriving the context word representation from the head word:

$$L = \prod_{i=1}^N \prod_{-n \leq j \leq n, j \neq 0} p(w_{i+j} | w_i). \quad (4)$$

The relationship between the co-occurrence matrix and the generated word vector is shown in Eq. (5):

$$g_i^T g_j + a_i + a_j = \log(G_{ij}). \quad (5)$$

Through the above tag weight system, we can extract text for the word segmentation subsystem to score new word attributes. The scoring algorithm is shown in Eq. (6) and Eq. (7):

$$\text{Score}_i = wt_i \times \left(w_m \times \frac{mi_i}{\sum_{k=1}^N mi_k} + w_e \times \frac{en_i}{\sum_{k=1}^N en_k} + w_f \times \frac{\text{freq}_i}{\sum_{k=1}^N \text{freq}_k} \right). \quad (6)$$

$$wt_i = \frac{\sum_{j=1}^M c_j \times w_j}{\sum_{j=1}^M c_j}. \quad (7)$$

The weight calculation is shown in Eq. (8), Eq. (9) and Eq. (10):

$$w_m = \frac{\sum_{k=1}^N en_k + \sum_{k=1}^N \text{freq}_k}{2 \left(\sum_{k=1}^N en_k + \sum_{k=1}^N \text{freq}_k + \sum_{k=1}^N mi_k \right)}. \quad (8)$$

$$w_e = \frac{\sum_{k=1}^N mi_k + \sum_{k=1}^N \text{freq}_k}{2 \left(\sum_{k=1}^N en_k + \sum_{k=1}^N \text{freq}_k + \sum_{k=1}^N mi_k \right)}. \quad (9)$$

$$w_f = \frac{\sum_{k=1}^N en_k + \sum_{k=1}^N mi_k}{2 \left(\sum_{k=1}^N en_k + \sum_{k=1}^N \text{freq}_k + \sum_{k=1}^N mi_k \right)}. \quad (10)$$

Generally, when expressing the meaning of words, if the frequency of words appearing together is high, the corresponding impact on the loss function will be greater. Therefore, the loss

of each item needs to be accumulated to get the final loss function, as shown in Eq. eq11:

$$L = \sum_i^N f(G_{i,j}) (g_i^T g_j + a_i + a_j - \log(G_{ij}))^2. \quad (11)$$

Using the original function of the algorithm to judge the implicit data class and explicit data class, verify whether the data is in line with the optimal mining, if the number of mining and the accuracy of the expected set value, the mining results will be output, otherwise it is necessary to return to recalculate until the mining target is reached, so as to achieve the optimization of the system software by the SECI model.

III. Methods

Media convergence is a concept with multiple levels and perspectives. As for whether it is media integration or media integration, domestic researchers have their own priorities in their research. In this paper, the author does not make excessive discrimination between the two, and it is unnecessary to distinguish media and media painstakingly, because the concepts of "media" and "media" point to the same word media in the English context. In the stage of visualization, "the recessive mainstream media is transformed into the dominant mainstream media"; The combination stage is the transformation stage from "dominant mainstream media to recessive mainstream media"; The internalization stage is the transformation stage of "dominant mainstream media to recessive mainstream media", as shown in Figure 5.

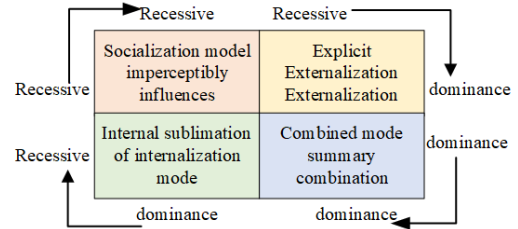


Figure 5: SECI model optimization diagram

The key steps described in this section are those highlighted based on the discussion in this chapter and are not universal. The k word pairs with the highest similarity are arranged in descending order as keywords, and the remaining k 'word pairs are non-keywords, as in Eq. (12).

$$\cos(\theta) = \frac{\sum_{i=1}^n (x_i \times y_i)}{\sqrt{\sum_{i=1}^n (x_i)^2} \times \sqrt{\sum_{i=1}^n (y_i)^2}}. \quad (12)$$

At present, most of the information flow advertisements in China are put on social media platforms. According to the classification and representative platforms of the mainstream information flow advertisements in the market, the author has

Information flow advertisement type	Representative platform
News and information flow advertisement	Today's Headlines, Yidian News, Sohu, Tencent, etc
Information flow advertisement on social media platform	Weibo, WeChat, Xiaohongshu, QQ, etc
Video information stream advertisement	Dithering, Fasthand, iQiyi, Tencent Video, Youku Video, etc
Search engine class information flow advertisement	Baidu Search, Sogou Search, 360 Search, Google Search, etc
Other information flow advertisements Ink	Weather, Gaode map, Baidu cloud disk, Xunlei, etc

Table 1: Types and representative platforms of information flow advertisements

Zhong Hua Book Company	Professional publishing of traditional cultural books and collation of ancient books
Commercial press	Academic books, social science books
Joint Publishing	Domestic classic literary works
China Citic Press	Application mechanism of financial publications and publishing houses
Writers	Publication and distribution of literary boutiques and modern best sellers

Table 2: Publishing houses in China and their brand characteristics

analyzed and sorted them out, as shown in Table 1. The categories are roughly divided into five categories: news information flow advertisements, social media platform information flow advertisements, video information flow advertisements, search engine information flow advertisements, and other information flow advertisements. According to the current situation of the digital publishing industry, text similarity algorithm can help publishers in topics selection, public opinion analysis and decision-making in the future. Therefore, this chapter crawled popular book reviews on a website through web crawler technology and obtained 11256 related corpora. Through data cleaning and screening, 10134 meaningful data sets were obtained.

With the development of society, the demand for communication in time and space has increased, which has greatly contributed to the rapid development of communication technology. The current stage of communication has reached a new level where the distance in time and space has been greatly reduced, but there is still room for further development in relative terms. Among the potential competitors of digital publishing, there is no shortage of companies with competitive brand advantages. For some mature domestic publishing houses, the brand advantages established in paper book publishing can be extended to other areas of the enterprise, and the brand value belongs to the whole enterprise. At present, publishers publish books covering many disciplines and various fields, the most prominent of which can highlight the brand characteristics. Chinese publishing companies are more mature, and many publishers have their own brand features, as shown in Table 2.

IV. Experiment

In the process of research on editing and publishing in China, the relationship between etiology and publishing has always been a controversial issue. Scholars have their own opinions on whether to divide science into two parts or combine science. But in the actual research process, the two cannot be separated. In China, the study of publishing and editing is carried out at the same time, so the debate on the relationship between publishing and editing can be regarded as a characteristic issue in the field of editing and publishing theory in China. Here, the discussion on the historical evolution of the construction of

the editing and publishing profession in China will use "editing and publishing science" in a unified way. Therefore, Ci SECI focuses on the introduction of part of speech and high-quality word vector information. By acquiring more source information, the semantic representation is closer to the real semantics. It provides a solid foundation for the comparison of text similarity. Figure 6 shows the overall algorithm structure design of Ci SECI.

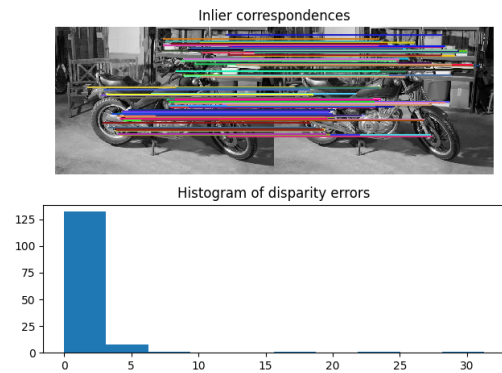


Figure 6: Ci SECI text weighted similarity algorithm optimization

Structural communication technology includes many functions such as information service, data analysis, etc. For China, information and communication technology promotes the industrial reform and high-quality economic development. The country has included ICT in the discussion of various meetings on many occasions. The process is shown in Figure 7.

To better understand the whole process of short video operation, we can start from the understanding of the short video industry chain, as shown in Figure 8.

In this all-media era with rapid development of media, the rise of short video has provided a unique form of news reporting for traditional mainstream media. Driven by technological innovation, CCTV's "news broadcast" shake tone signal, combined with news visualization and innovative news production mode, presents a new communication voice and communication strategy in a diversified communication envi-

-	-	Frequency	Percentage	Effective percentage	Cumulative percentage
Valid	Below 100 (including 100)	9	2.24	2.24	2.24
-	100-1000 (including 1000)	109	30.09	30.09	32.32
-	1000-1w (including 1w)	153	42.35	42.35	74.66
-	1w-10w (including 10w)	82	22.57	22.57	97.22
-	Above 10w	11	2.79	2.79	100.0
-	total	364	100.0	100.0	-

Table 3: Statistics of "News Broadcast" treble signal forwarding volume

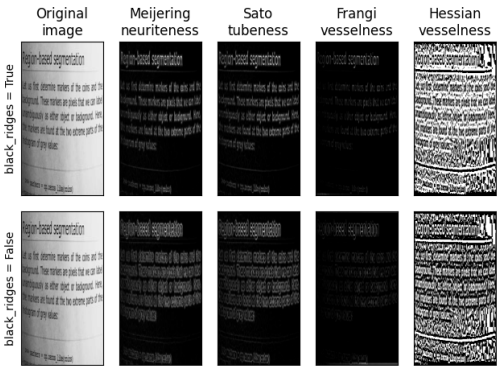


Figure 7: Optimization process of new word discovery algorithm in digital publishing

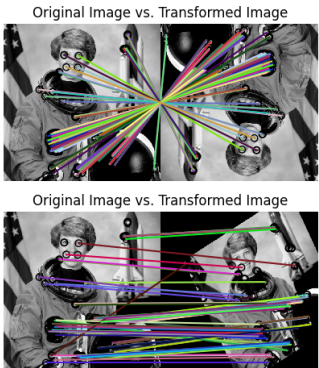


Figure 8: Short video industry chain of mainstream media

ronment. The mainstream process of manuscript processing of the entire intelligent creation and collection, compilation and distribution integrated media platform is shown in Figure 9 and Table 3.

Traditional mainstream media and commercial media have different focuses and characteristics for short video narration. Traditional mainstream media focus on transmitting information, making, and pushing short videos centered on the communicator. For commercial short video platforms such as "dithering" and "quick hand", the focus is on user retention and transformation, making and pushing short video content centered on the user, and improving the interactive function of the platform, as Table 4.

In order to prove the effectiveness of the optimized design of the web data mining system based on SECI model, the comparison experiment is conducted with the original system

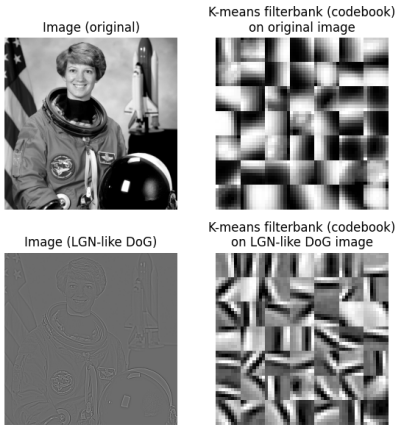


Figure 9: Main process of manuscript processing on digital publishing platform

to check the accuracy of the system. To ensure the validity of the experimental results, the network settings, equipment parameters, and running environment of both systems are the same, and the system running configuration is Pentium (T) dual-SQL CPU, the host memory is 16 GB, and the mining error is 0.01. The specific experimental parameters of the two systems are shown in Table 5.

Figure 10 shows the experimental results of the two systems.

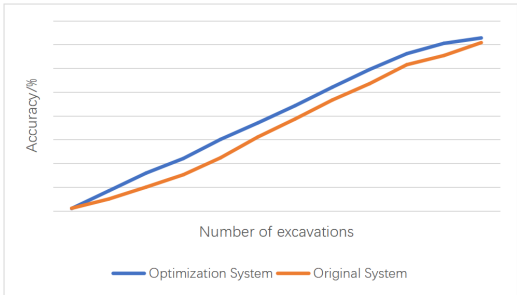


Figure 10: Experimental comparison results of two systems

It is obvious from Figure 13 that the accuracy of the optimized system for 7,000 data is over 85%, up to 97%, while the accuracy of the original system for 7,000 data is only 87% at the highest, and the accuracy decreases with the increase of the mining quantity. The experiment proves that the optimized design of web data mining system based on SECI model can effectively improve the accuracy of the system.

-	Traditional media short video platform	Commercial media short video platform
Objective	Communication, guidance, influence and credibility	User retained cash; platform profitable
Thinking	Elitist thinking	User based thinking
Distribution	Combination of hard and soft	Mainly soft
Visual angle	External perspective	Internal perspective
Subject	Authoritative and professional personnel	public
Structure	Order first	Mainly inverted pyramid
Camera lens	Close up+panoramic	Close up+close-up
Voice Primarily	Original sound+narration	Primarily soundtrack
Word Official	Discourse+public discourse	Folk discourse+private discourse
Strategy	Authority+emotion+detail	Curiosity+resonance+visualization

Table 4: Differences between short video narrative of traditional media and commercial media

Parameters	Setting
Connection Network	Internet
Digging time /min	2 to 3
Excavation command	Cache command
Digging signal	UVMO signal
Digging environment	TE
Digging quantity / B	7000

Table 5: Specific experimental parameters of the two systems

V. Summary

In the context of the new era, we should actively respond to the call, and it is very necessary to seize the opportunity of information technology to promote the stability and high-quality development of society. This time, the SECI model theory is introduced into the network data mining system to realize the effective optimization of the network data mining system, and the optimization design of each hardware device is also carried out, which effectively improves the mining accuracy of the system and also the mining efficiency of the system, so that the system can complete the remote intelligent mining function and ensure the accuracy of the mining results. The theme and narrative are based on emotion + details + authoritative release, but mostly translation and splicing of TV media content; the overall aesthetic value orientation is mainly to convey human beauty, life beauty and mainstream values.

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