Content Characteristics and Limitations of Original Short Video Based on Depth Data

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Abstract. Short video is short video, which mainly relies on mobile intelligent terminal to realize fast shooting and beautification editing, and can be shared in real time and seamlessly connected on social media platform. Different from traditional media, short videos have low production and dissemination threshold, and do not need professional shooting skills. The disseminated content conforms to the characteristics that modern people absorb information fragmentation, which is why short videos are very popular at present. In the face of these changes, original short video came into being, and constantly innovated. Based on in-depth data analysis, this paper analyzed the content characteristics of original short video in narrative technique, form style, production subject, communication mode, etc., which has certain reference significance for the further development of original short video.

Keywords: Depth data, Original short video, Content characteristics

1. Introduction
Short video refers to a new type of video whose video length is counted in seconds, which mainly relies on mobile intelligent terminals to achieve fast shooting and beautification editing, and can be shared and seamlessly docked in real time on social media platforms. The consumption demand and creative vitality of the original cultural industry are constantly improving, and platform operators have invested heavily in content resources [1]. Compared with traditional video, the short video industry has three main characteristics: low production cost, fragmentation of communication and production; Fast communication and strong social attributes; The boundary between producer and consumer is fuzzy [2]. Content-based multimedia information retrieval has developed rapidly in recent years, especially in content-based image retrieval. Many mature retrieval systems have appeared, such as Google pictures, Baidu image recognition and so on. Since 2016, short videos have developed rapidly in China and contributed to the marketing of new media content.

At present, the world's online video market has a good development trend. As the carrier of online video, mobile video has a very broad development prospect and is gradually becoming the main carrier of video playback. According to Nielsen's 2019 report, teenagers under the age of 18 watch an average of 2.5 hours of mobile videos per week, and the time to watch online videos is 1.2 hours; Young people aged 18-24 watch mobile videos for an average of 4.7 hours per week [3]. The forms of information visualization are becoming more and more abundant, and short video, as one of the important means, constantly influences people's consumption habits and stimulates consumption...
demand, and users' acceptance and even dependence on short video transmission are getting higher and higher. These short video platforms basically follow the routine of traditional media, but they are different from each other. The more radical one is the original short video, which adopts the mode of APP+ whole network coverage, showing a certain ambition, but there are also many problems. The following author analyzes the content characteristics and existing problems of original short videos.

2. From Grand Narrative to Micro Narrative: Civilian Perspective

From traditional TV news to original short video, facing the change of audience consumption scene and aesthetic orientation in the mobile internet era, the original narrative mode often fails to achieve the expected communication effect. From grand narrative to micro narrative, information communicators must make changes in response to the changes of the times. Short video can bring sensory stimulation and impact more than traditional text communication or picture communication, and has a better content receiving experience for users; With the gradual expansion of knowledge groups, the increasing convenience of mobile payment and the rigid demand of vertical domain knowledge interpretation, visual translation will become the future trend.

Video is a kind of time media data, which can be divided into four levels from large to small [4-5]: A Video, a Scene, a Shot and an image Frame. Cultural and creative industries become a new explosion point of content marketing. The monosyllabic theme of short video and the current content are favorable conditions for short video to help new media content marketing. Taking new media short videos and user feature vectors as input data of deep neural network, supervised training is conducted for deep neural network. It can bring valuable information to itself in a short time, so the information has strong timeliness and regional characteristics; But the timeliness of information is much broader than that of news. Through further analysis of these short news videos, it is found that these short news videos mainly include the following categories: the latest international and domestic political news, news with bloody and violent pictures, anecdotes or humorous news.

3. Content Characteristics of Original Short Videos

3.1 Strong Regional Characteristics

Original short videos give cash rewards to video content providers in the form of breaking news, and set up a filming system. Therefore, the original short videos are filmed all over the country, and this UGC content supply mode makes the content more interesting and close, that is, it forms geographical closeness with users. Even the latest international and domestic current political news is not always reported, but only news with laughter or attention can be used as short video [6]. Occasionally, there is a combination of real-life shooting, with slightly naughty explanations in intonation and some almost funny music special effects, which makes the overall style of the video very relaxed. Information dissemination is not limited by quantity, so we can pay more attention to the joys and sorrows of ordinary people's lives. Our short video platforms, such as videos and pear videos, often focus on ordinary people around us and release interesting news of ordinary people.

The author makes statistics on the original short video information content in 235 samples collected according to importance, significance, interest and proximity (as shown in TABLE 1.).

| Value element | Importance | Significant | Interesting | Proximity |
|---------------|------------|-------------|-------------|-----------|
| Total number of articles | 3 | 26 | 196 | 10 |

As shown in TABLE 1, proximity occupies a high proportion in the original short video information content. The high proportion of popular videos shows that proximity is extremely important for both audience and platform.

In addition to the reports on interesting subjects, the reports on politics, policies and other necessary serious subjects in the original short videos also use civilian narrative techniques as much as possible to tell the stories and lives of ordinary people. The reduction of production requirements
enables users to create independently from passive reception, spread new things in life, have more praises, and make users have stronger active participation [7]. Audiences tend to be more enthusiastic about what happens around them. When they see video content with regional labels, they often choose to click to watch it. When the original short videos are classified, the home page will classify the regional positioning into one category. By constructing a specific data structure for these descriptors, the feature index of shot is formed. When searching, a similarity measure is found to measure the similarity between the user input features and the features in the feature database.

3.2 Not Limited by Time and Space
In the new media era, with the rapid development of mobile phone and Internet technology, the transmission speed of mobile communication network is constantly upgrading, the cost is constantly decreasing, and the short video time makes users who are eager to get information in a short time have a good experience. The communication content and audience time become more fragmented, and the audience's attention will shift frequently. Therefore, short videos must arouse the audience's strong interest in the first few seconds if they want to get higher clicks and wider attention. Through exaggerated pictures and interesting explanations, the explanatory power is stronger and more attractive. It is not difficult to find that, compared with traditional TV programs or PC-side videos, many short videos in original short videos don't require audiences to have too many traditional viewing modes of combining sound and picture. This kind of video is necessary for both the sender and the receiver because it is interesting and entertaining, can fill the fragmentation time of users, and can meet the user's demand for information to a certain extent.

In order to distinguish the two kinds of operation situations of users on new media short videos, the index of playing time ratio of new media short videos is added when judging whether users' operation on new media short videos is effective. The specific calculation formula of playing time ratio of new media short videos is as follows [8-9]:

\[
t_{ia} = \frac{t_{ia}}{T_{ia}}
\]

\(t_{ia}\) is the time for the user \(a\) to watch the new media short video \(i\), and \(T_{ia}\) is the total time for the new media short video \(i\). Only when the ratio of \(t_{ia}\) to \(T_{ia}\) is greater than a given threshold can the user be considered to be effective in short video operation of new media and record it.

Therefore, the feature information of a new media short video can be quantitatively described in the following vector form:

\[
vedio = \{t_1, t_2, \ldots, t_n\}
\]

In which \(t_i\) is the importance of the video on the \(i\)th keyword, and \(n\) represents the total number of keywords.

Then, all the obtained video feature vectors are weighted and averaged to describe user feature information, and user feature vectors are constructed to complete user modeling.

Specifically, assuming that user \(u\) has operated \(n\) effective new media short videos in the past month, the calculation formula of user feature vector is as follows:

\[
user = \frac{1}{n} \sum_{i=1}^{n} v_i
\]

In which \(v_i\) is the feature vector of video \(i\).

In the deep neural network model, there are several key indicators that have great influence on the performance of the recommendation system. These indicators include: smoothing factor, output feature dimension, neural network layer number and learning rate. TABLE 1 shows the influence of different output feature dimensions on the performance of the recommendation system. It can be seen from TABLE 2 that when the output feature dimension increases from 10 to 90, the standard average
error value of the recommendation system is increasing while the root mean square error value is decreasing, which indicates that the performance of the recommendation system is improved with the increase of the output feature dimension.

Table 2. Influence of Output Feature Dimension on Performance of Recommendation System

| Output feature dimension | Standard mean error | Root mean square error |
|--------------------------|---------------------|-----------------------|
| 10                       | 0.823               | 0.304                 |
| 30                       | 0.901               | 0.242                 |
| 60                       | 0.963               | 0.417                 |
| 90                       | 0.975               | 0.368                 |

For a video stream, we can think of it as a sequence composed of continuous video frames. The huge number of users is the pyramid tower of short video communication and marketing, which is steady and thick. Like other conventional videos, the text description data of new media short videos are nothing more than: video title, video basic content, video release area, video planning, screenwriter and lead actor, video release time and release author, etc. Almost all videos adopt the video editing mode of combining sound and picture alignment with sound and picture synchronization. New product lines have been upgraded from the original sub-items, all of which have their own WeChat official account to support and pay independent attention. It is more beneficial to enhance the user stickiness of different audiences to focus on training these vertical fields.

3.3 The Plate Is Rich in Settings and Covers a Wide Range of Contents

Fragmented short video transmission mode, users do not deliberately concentrate on one platform to obtain information, but mainly rely on the wide dissemination on social platforms. It can extend both horizontally and vertically, and belongs to comprehensive vertical media. In the presentation mode of video content, the original short video is similar to TV news, but it is more flexible. Same time-space difference, maximum coverage, minimum correlation and minimum reconstruction error. The main idea of using the same space-time difference to define a function is to divide the video into several segments, so that each segment has the same space-time difference, that is, the function value is the same. Because short video has the advantages of clear source, precise positioning, high arrival rate, small volume, and is beneficial to communication and sharing, it quickly fits in with the marketing of new media content.

Servlet can accept the pictures sent from the client, call the retrieval algorithm in the background to quickly and stably process and generate the results, and return the related information of the searched similar videos to the client according to the similarity from high to low. After the user clicks a video on the client, the client sends a request to the server to view the video stream. After receiving the request, the server returns the video stream to the client for playing. The Servlet architecture is shown in Figure 1.

After extracting video keywords from all new media short video text content, we can quantify the importance of each keyword in new media short video. Short videos are famous for their short and pithy features, which are suitable for single structure narration and quick broadcast. Sometimes they go straight to the topic, and sometimes they come clean with suspense, making people shine at the moment. Find the shortest path in the associated directed graph and set the vertex of the shortest path as the key frame, so as to ensure the minimum correlation between the key frames. Different from the traditional TV news, the video adopts the form of soundtrack to enhance the atmosphere rendering of content, and the use of pictures and video pictures is more flexible. Although it covers a wide range, it is not limited to simple superficial knowledge, but constantly explores vertically in professional fields to ensure the specialization of information, so that the knowledge content can really be used by you.
4. Problems in Original Short Videos

4.1 The Content Lacks Innovative Spirit and Entertainment Is Serious
Simply catering to the tastes of the public has lost the active communication content, but more exaggerated and non-connotative communication content, which makes the public pay no attention to what the content is in the shallow sensory stimulation environment and become a "feeling person" who only pays attention to the feeling. In order to attract the audience's attention continuously, the original short video should first dilute the boundary of form, narrow the distance between video content and users, and eliminate the alienation between them. There are eight kinds of illegal content in Tik Tok short video: copyright infringement, pornography vulgarity, abusive language, rumor spreading, junk advertisement, inappropriate content, suspected of violating laws and regulations, and infringing on minors' rights and interests. Among them, vulgar videos mainly include four categories: pornographic vulgarity, abusive abuse, suspected violation of laws and regulations, and infringement of minors' rights and interests. As far as the samples collected by the author are concerned, there are not a few samples that directly present the name of luxury car in the title, or have obvious suggestive tendency. Such content satisfies the audience's curiosity, but there is not much effective information in essence, which makes the whole content show the trend of vulgarization and kitsch.

4.2 It Is Difficult to Form IP Effect and Lacks User Stickiness
The original short video mainly adopts the production mode of "PGC+UGC", that is, shooting UGC for production and uploading the shot video. The platform adopts the production mode of PGC to edit, score and match the title text of the video content. The cluster center of each class is regarded as the key frame of video. There are various clustering methods, which can be selected according to the needs, for example, Gaussian mixture model can be used for clustering. If you want to make a content product that is popular to everyone, it is very difficult to succeed. On the surface, the audience is very wide, but in fact, the loyalty of users is very low, and the influence of communication is only on the surface. Omnidirectional positioning means no positioning.

User modeling needs to be based on the completion of video modeling. Firstly, according to the user's operation history of new media short videos, all the effective video information that the user has seen in the past is counted. One-sidedly, human-computer interaction in the network environment can meet the actual needs, without social communication, which makes the adhesion between individuals and groups decline. The dissemination of a large number of poor videos will inevitably lead to the audience's ideological emptiness, which is not conducive to the construction of spiritual civilization. Tik Tok short video platform should guide the market with high-quality products, enhance its taste and
realize its social value.

4.3 Attention Is Given Priority to, Truth, Goodness and Beauty Are Absent
Tik Tok short video is a typical example of attention economy in the era of network communication. When communicators create content with attention impact effect in various ways, they often forget the truth, goodness and beauty. In the era of media convergence, the media forms and organizational structures of different media are integrated, and the media products are diversified. No matter what era, "content is king" is still the unchanging standard. To gain a firm foothold in the wave of multimedia, short videos must work hard on content, lead more different topics, and encourage users to make more independent innovations, instead of just mouth-to-mouth or hilarious GIF animation, and break the deadlock based on imitation.

4.4 Poor Content, Lack of High-Quality Goods
The idea based on object comparison is closer to human understanding. We need to detect the objects and events in the video and identify the important objects and events, and the extracted key frames need to contain these important objects and events. It is unrealistic to think that all users will be illuminated by one or a series of short videos, so that all users will have a good impression, pay attention to and recommend, purchase, disseminate and share the concepts and products related to this short video. Tik Tok's algorithm system makes anyone have the opportunity to become the center through decentralization; The third is the need of self-realization. Tik Tok provides a platform for users to express themselves. However, it is not difficult to find that in these short videos, the content that users want to express is more important. Although music is the foundation of Tik Tok APP, it has to follow the trend of "content is king" to separate music from content, with content as the main concern of users.

5. Conclusions
With the popularity of short video, it brings convenience for us to obtain information. It breaks the limitations of traditional media, makes communication fast, and makes full use of the characteristics of the Internet, so that it is no longer limited by time and space. However, there are still many problems, such as lack of innovative spirit in content and serious entertainment. From the content characteristics of original short videos, it is not difficult to find a trend of de-elitism. Journalism education and narrative in the traditional sense are being severely challenged. Short video platforms and communicators can promote the value upgrade of communication content from three angles, one is to highlight life service; Second, it is necessary to strengthen teaching and entertaining, and push forward positive, healthy and beneficial works. It is also necessary for the society to provide users with a truly open space through technical design, introduce more accurate user insight technology, accurately position the whole picture of users' needs, and make them look at themselves in the comprehensive and complete cognition of society.

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