Research on Information Media Technology Design of Information Collection and Release System

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Abstract. With the development of newspaper competition, the scale of newspaper business continues to expand, and the newspaper media industry is gradually moving towards the road of collectivization and informatization. The timeliness of news is the primary factor of news report. With the development of computer, network and digital media technology, news information collection and release system based on digital media will become an important part of modern newspaper collectivization. Therefore, the main research object of this paper is the new production flow model of newspaper news collection and press release under the new all media production management workflow system (platform) based on digital media, in order to solve how to better ensure the timeliness of newspaper news and enhance the competitiveness of the newspaper industry under the fierce competition.

Keywords: Digital media · All media · News timeliness · Newspaper news gathering · Newspaper news release

1 Introduction

Digitalization makes the whole traditional newspaper group face a new grim situation. In April 2006, Tsinghua University Social Science Literature Publishing House jointly published the 2006 media blue book, which pointed out that with 2005 as the "inflection point", Chinese traditional newspapers have stopped rising for many years, and advertising turnover has fallen sharply, with an average decline of more than 15%. At the same time, Blue Book believes that after more than ten years of exponential growth, all kinds of emerging media represented by the Internet have approached the "critical point". In the next two or three years, new digital media such as Internet media will also present explosive development. In this new form of media reform, the strong position of traditional newspaper groups has been fundamentally shaken [1]. Blue Book Analysis believes that the newspaper industry's economic downturn is due to the national macro-control on the surface, and is mainly impacted by the network and other emerging media on the deep. The deeper reason is that the transformation period of newspaper media form has come.

2 All Media Concept and Related Technical Standards

2.1 Definition of All Media

According to Baidu Encyclopedia, "all media" refers to the media organizations and operators using text, graphics, images, animation, web pages, sound and video and other media means of expression (Multimedia), through radio, television, audio-visual, film, publishing, newspapers, magazines, websites and other media forms (business integration), Through the integration of radio and television network, telecommunication network and Internet Network (three network integration), we can provide users with TV, computer, mobile phone and other terminals (three screens in one), and receive any media content by anyone, at any time, at any place and in any way.

2.2 Information Collection Algorithm

In the process of clustering, it is easy to generate many local minimum values, which affect the generation of the best number of clusters, and it is easy to misjudge the experimental results. As a good index to judge the clustering effect, the contour coefficient not only reflects the cohesion between data, but also realizes the difference between data. Therefore, this paper will use the contour coefficient as the evaluation index of clustering effect.

$$Sil(X_i) = \frac{B(X_i) - a(x_i)}{\max\{a(x_i), b(x_i)\}} \tag{1}$$

$$a(x_i) = \frac{1}{|C_k|} \sum_{x_j \in C_j} Dist(x_i, x_j) \tag{2}$$

2.3 Characteristics of Omnimedia

"All media" does not only exclude a single form of traditional media, but also integrates various forms of media, so that we still attach great importance to the traditional value of a single form. Moreover, the single form of unified media is regarded as an important part of "all media". 3. "All media" does not reflect the simple connection between the media in the "cross media" era, but the whole network media, whose online media is fully mixed. "All media" has the most complete coverage, the most comprehensive technical means, the most complete media carrier, the most complete audience communication. In the field of media market, "all media" is large and comprehensive, but it shows super segmentation for the overall performance of the audience [2]. For example, through "all media", we can have many forms of expression for the same information, but at the same time, we can also balance and adjust the forms of media expression according to the individual needs and focus of individual audience groups. For example, when displaying the information of a real estate, we can use graphics and text to display the information of the objective description of the house type map and the building book; through the use of audio and video, we can display the dynamic information more intuitively.

3   Requirement Design and Analysis of Newspaper News Information Collection and Release System

3.1   Understanding of System Project Requirements

Modern newspaper industry has become the integration of paper media, online media and mobile media, and the integration of traditional media and new media. Facing the new situation, China's newspaper industry should fully integrate the new and old media, share resources, and realize "one generation, multiple release" of news information [3]. At present, the main problems faced by the newspaper industry are the aging of newspaper readers, the decline of social influence, the emergence of non-traditional competitors (Internet), the change of the positioning of important competitors, the emergence of new customers, the loss of market share in key market segments, the loss of customers, the pressure from the profit margin and so on.

3.2   System Construction Design Principle and Construction Content

The system design should fully inherit the software and hardware of the current information construction of Dazhong daily. At the same time, the system architecture design and the construction of each subsystem should meet the needs of building digital media system, data scale and load. Advanced technology is an important goal pursued by system construction. From content management platform to network information integration and search service, we must achieve a higher level of current media system construction, and meet the direction of IT technology development and progress, based on flexible user definable template publishing technology. According to the specific needs, application environment and future development plan of Dazhong newspaper group, the basic way to build the system is to use software products that meet the needs, are advanced in technology, mature and stable, and are flexible to expand. On the basis of product implementation and deployment, in the corresponding development environment, with the help of the development interface provided by software products, personalized customization and secondary development are carried out according to the specific needs of the project, so as to achieve the technical and functional objectives of the project. The system constructed with mature software modules has the stability and reliability of operation, which can effectively shorten the project implementation cycle, avoid technical risks, and ensure the realization of the technical and functional objectives of the project. As can be seen from the content, the system can realize six complete functions, and the functional modules of the system are designed according to these functions, as shown in Fig. 1 below.
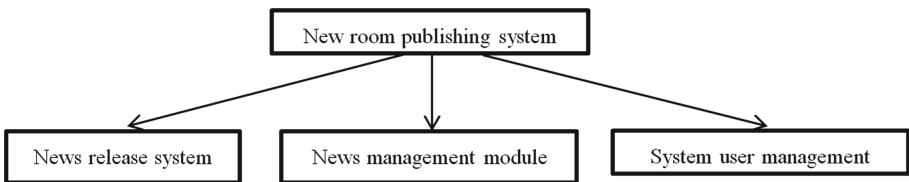

Fig. 1. Function module diagram of news release system

4   UML Basic Model of System

4.1   System Use Case Diagram

Before you create a use case diagram, you first need to identify the actors. In the news release system, it needs the participation of users and information publishers. Users can browse news topics such as information topics, news Hotspots or picture topics; all information content published on the website can be retrieved by keyword, title, full text, author, source, release time, release period and other ways; in addition, users can download pictures and other related materials from the website. As the leader of website updating, information publisher uses this system to edit, publish, modify and delete information. The system needs a special manager for daily maintenance and management, so it needs the participation of the system administrator.

4.2   System Management Time Sequence

The system administrator manages the system sequence diagram. The system administrator can add or delete the publisher through the interaction with the management window. The specific operation is completed by the interaction between the management window and the database. The results of the administrator's operation will be displayed on the page. It shows the time sequence diagram managed by the system administrator in the news release system. Sequence diagram involves five objects: Super administrator, operation interface, control class, account class and account data [4]. The super administrator of the system puts forward the request of adding an account in the operation interface and inputs the new account information at the same time. The control class is responsible for checking and obtaining the application information. After confirming the information, the account is established and the account information is set by the account class. Finally, the account information is added to the account data and the adding result is displayed in the operation interface.

5   Concluding Remarks

The system introduces the ability of all media material collection and editing, which provides the foundation for the group's all media reform. It makes it possible for data of various media to be collected, processed and released. So that the group can run a complete multimedia news process without the help of other organizations. Because all publishing media use the same collection platform, the collection of content can be shared with each other, and the staff will not be sent to the same news scene for many times, thus saving a lot of human and material resources, reducing costs, and improving labor productivity. After using the unified clue platform, Dazhong newspaper group unified its external image, and reporters unified the clue source. Readers don't need to worry about which newspaper they want to report to, and journalists don't need to waste time verifying the validity of the clues themselves. Through the unified news collection and news release management platform, the problem of news information source is effectively solved, and the timeliness is enhanced.

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