Integration of Library Digital Resources in the Information Technology Environment

Dengli Feng

fffdddlll@hotmail.com

Dongguan City University,Dongguan, Guangdong 523419 ,China

Abstract:This paper puts forward the main stages and the scope of the integration of library digital resources, and actively explores the overall utilization value of library digital resources. In the process of integration and utilization of digital resources, it is necessary to establish a scientific and standardized resource selection, processing, and maintenance control system. According to the specific situation of digital resources in the library, choosing the appropriate digital resource management system and establishing a visual and convenient portal for communication and retrieval of digital resources can make a good arrangement of digital resources.

Key words: network; Library; digital resources; integration; information technology

1 Introduction

In the network environment, due to the breakthrough of time and space, the service object of the library has expanded from the traditional subject to the library readers and become the remote information readers; the service mode shows the important functions of remote service, all-weather service, multi-dimensional service and so on. With the deepening of information globalization, the socialization of digital information is inevitable. With the in-depth development of network informatization, the digital resources of various libraries become heterogeneous, dynamic, and diversified, and the information service mode tends to be digital, networked, and regional. Various online resources, such as online databases, bibliography systems, file systems, and self-built databases. Information organization systems, file format, and retrieval technology used between information sources are different, forming one after another "information island".[1] It brings great difficulties for readers to obtain target information. The integration of library digital resources has become an urgent problem.

2 The concept of digital resource integration

The integration of the Library's digital resources in the network environment is the integration, aggregation, and reorganization of data objects, functional structure, and interaction in the relatively independent digital resources system of the library to form a new organism, realize the seamless link of each digital resource, and enable readers to search and browse relevant information and services through a unified search platform.

NMDME 2023, October 13-15, Xi'an, People's Republic of China

DOI 10.4108/eai.13-10-2023.2341269

3 The main stages of digital resources integration

3.1 Data integration

The so-called data integration is the logical or physical integration of heterogeneous and heterogeneous data in a heterogeneous resource system, which provides a unified representation and query to solve the interconnection and sharing of multiple heterogeneous data resources. The integration of this integration method is the resource entity itself. Through some technical means, different sources, different formats, different characteristics, and different properties of heterogeneous data are logically and organically concentrated, so that these heterogeneous systems "interconnect" and realize the common knowledge and sharing of heterogeneous data.[2]

3.2 Information integration

It mainly describes digital resources of different nature, different sources, and different formats through certain mechanisms or standards, to connect relatively independent resource entities and realize the comprehensive integration of digital resources.[3] Its essence is to connect and integrate a variety of complex relationships between information entities and their basic attributes. It is an integration method based on data integration and search engines.

3.3 Knowledge integration

The so-called knowledge integration is based on the knowledge organization method, data integration, and information integration, supported by the knowledge organization system, and the integration of concepts and conceptual relationships in resource knowledge structure. The main object of knowledge integration is the concept and relationship of knowledge structure in a knowledge system. It is based on data integration and information integration, focusing on the reorganization of concepts and relationships, tracking user needs, and providing a variety of intelligent knowledge services.[4] At the top level of the digital resource integration system, scientific papers are the ultimate goal of resource integration.

4 The category of digital resource integration

The integration of library resources includes the integration of individual library resources and library community resources. [5]The integration of various library resources can be divided into CD resources, database resources, network resources integration, etc.; the integration of library resources includes the integration of all library resources.[6]

4.1 Integration of individual library resources. Over the years, each digital library has accumulated a wide variety of resources. These resources can only be used easily through integration to give full play to their due value.

4.1.1 Integration of CD resources. CD-ROM resources are very rich, each museum uses its own way to record. Most of the recorded CD-ROM resources are reserved, but they are misused and lose their value. CD resource types can be divided into text type, picture type, audio type, video type, and database type. CD resource types such as text type, picture type, audio type, and video type should be developed by a database. Firstly, the metadata of various

types of data in the CD is extracted, and then the resources in the CD are stored as object data and stored in the object server.[7] You can configure audio and video data using a streaming media-on-demand server. Common systems are Realse and Microsoft media servers. [8]Usually, we can use online multimedia files in the way of music, movies, and so on, and also can search and query. Most nonmultimedia data format discs can run in a stand-alone version. You must use a CD-ROM drive and a CD-ROM. For example, people's Daily, National People's Congress copy data, and national newspaper index can use such network resources. And through the network image technology to achieve network retrieval and utilization.

4.1.2 The integration of self-built database resources with the deepening of the digital process of the library, and the formation of a variety of thematic databases, but not many databases can form a scale. A self-built database has the following characteristics: data content has a lot of repetition. Database format and structure are different. Different periods and different developers use different database development tools for research and development, the database interface is not open to the public, and it is difficult to integrate libraries and databases. Data field indexes have different focuses. Due to the different development times of the data field, the development time of the data field is different. The amount of data is very small, and there is no continuity, so it is difficult to scale. The key to integration is to explain the database structure, data format, field name, and other specific technical problems of each database, and then achieve the access protocol through programming and convert it into a common language to complete the data exchange between databases. Multiple databases perform retrieval operations in the same search interface. After the integration, the database capacity is increased, which is the combination of multiple databases, so that the scattered database has vitality, forming the advantage of data scale.

4.1.3 Integrate large database resources. Large databases produced in China are very popular in China academic journal database, China Science and Technology journal database, and Wanfang database. The integration of these databases allows all readers to search on the same platform.

4.1.4 Network Resource Integration. At present, most of the network resource mining work only aims at the special website connection, writing some abstracts, or downloading some resources to the self-built database, but it has not reached real deep mining. The integration of network resources is a systematic project of the library. This is a huge project after experts use the corresponding software and storage devices for analysis and demonstration.[9]Using network robot software, search dictionary software (such as book classification and topic vocabulary), large database software, and massive data storage equipment to coordinate the work, complete the collection, sorting, and archiving of network data resources, and form a resource database, which can be queried like a database system.

4.1.5 Integrate daily consulting resources. In the network environment, the library's consulting service is closely related to various databases and network information resources. Answering questions is usually a hot topic in current research, and it is more forward-looking. The value of reusing these resources is also great.

4.2 Resource Integration of Library

Library resource sharing is an inevitable trend in the network age. The integration of all kinds of library resources will make the digital resources of the library scale, which is conducive to

the development of the library business. In the process of integration and utilization of digital resources, it is necessary to establish a scientific and standardized control system for resource selection, processing, and maintenance, select an appropriate digital resource management system, and establish a visual and convenient portal for communication and retrieval of digital resources.

4.2.1 Integration of bibliographic database. At present, the basis of each library is the machine-readable directory tag format, which has good versatility and easy integration and is equivalent to the traditional union directory.

4.2.2 Integrate self-built database resources. Each Museum has many small characteristic databases, but the distribution is difficult to achieve. The integration of database resources established by each museum will show the scale advantage of library data. The integration of these resources needs a unified data format, or write data exchange protocol to coordinate the reading of each database data. An integrated database is equivalent to a large database with comprehensive content and a large amount of data. The authority of every museum is attached to the data, and every library can enjoy the benefits of scale.

4.2.3 Network Resource Integration. The collection and integration of network resources, if the library can work together and use a unified database software for management, the museum will get huge results with little investment.

5 Conclusions

In the era of rapid development of information technology, the orderly integration of distributed digital resources will become the development trend of digital resource management and service under the network environment, and will also maximize the "people-oriented" service concept.[10] In the process of integration and utilization of digital resources, it is necessary to establish a scientific and standardized resource selection, processing, and maintenance control system. According to the specific situation of digital resources in the library, choosing the appropriate digital resource management system and establishing a visual and convenient portal for communication and retrieval of digital resources can make a good arrangement of digital resources.

Declarations:

Ethical Approval: It applies to human studies. Ethical committees--- The Education Ethics Branch of the Chinese Ethics Society approved to contribute my paper. I consent to participate and consent to publish my paper.

Competing interests: My interests of a financial or personal nature have no conflicts with anyone.

Author contributions: The author approved the concept and design, data collection, and analysis of the final article

Financial Support: This article is the interim achievements of the 2023 Major Research Project at Dongguan City College titled "Research on the Integration of Xi Jinping's Socialism with Chinese Characteristics in the New Era and Chinese Traditional Culture" (2023YZD003R), as

well as the 2023 Higher Education Characteristic Innovation Project at the Guangdong Provincial Department of Education titled "Research on the Citations of Chinese Traditional Cultural Classics in Xi Jinping's Important Speeches" (2023WTSCX160).

The authors claim that none of the material in the paper has been published or is under consideration for publication elsewhere. I don't have project grants.

Data availability statement:all data that support the findings of this study are included in this manuscript.

References

[1] Li Hang. Research on integration and service of digital resources of "Thick Data" Siwei Map Library [J]. Journal of Henan Library. 2023,43(08):128-131+135.

[2] Wang Liping. Analysis on integration measures of new media resources and digital Library [J]. News Research Guide. 2023,14(13):160-162.

[3] Sun Xiaoxu. Research on the construction of digital resources under the environment of Big Data -- Taking the construction of digital resources in university libraries as an example [J]. Chinese and foreign enterprise culture. 2023(06):40-42.

[4] Zhu Yong. Research on information resource integration and optimization strategy of Higher vocational college library under Big data [J]. Science and Technology Trends. 2021(23):171-173.

[5] Ma Xiuli. Research on diversified composition teaching in junior middle school under the environment of information technology[D].Jinan: Shandong Normal University, 2015.

[6] Zhao Lei. Investigation and Research on the construction of digital resources in Henan University libraries[J]. Library Science Research, 2014, 06:54-58.

[7] Jia Liyue. Investigation and analysis of the current situation of digital resources construction in Shanghai University libraries[J]. Library and Information Work, 2010, S1:102-104.

[8] Tao Huiqing. A Study on the Distribution and Utilization of digital Resources in Shanghai University Libraries[D], Shanghai Jiao Tong University, 2010.

[9]Tenopir C, King D. Reading behavior and electronic journals[J]. Learned Publishing, 2002, 15(4):259-265.

[10] Robinson-Garcia N, Jimenez-Contreras E, Torres-Salinas D.Analyzing data citation practices using the data citation index [J]. JassocInf Sci Tech, 2016, 67(12) :2964-2975.