

# A new model of subject service in university library in the age of digital intelligence

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**Abstract:** In the traditional sense, university library is a place to provide book borrowing and reading services, but in the age of digital intelligence, the function of library has undergone great changes. The library should not only provide rich paper books and periodical resources, but also keep up with the era of digital intelligence, and actively build digital library and electronic resource platform to provide readers with convenient online search and resource acquisition services. Under the background of the digital era, digital resources are constantly updated and data is in a geometric growth state. Subject services of university libraries can also be presented in a more accurate service mode to meet the needs of librarians for geometric data services. This paper analyzes in detail the connotation of intelligent subject service of university library in the digital age, hoping to enrich the content of subject service and promote the reform and optimization of subject service of university library.

**Key words:** the age of digital intelligence; University library; Subject service; New model

Under the background of digital intelligence, artificial intelligence and big data have promoted the continuous development of all walks of life in the direction of intelligence. Big data is the foundation of artificial intelligence, which promotes the development of artificial intelligence, but also drives the development of related technologies such as the Internet of Things technology, and builds a new digital technology system. Digital technology and artificial intelligence technology together constitute the era of digital intelligence, and promote the transformation of disciplinary services in universities. How to embed digital technology into the subject service of university library, provide students with accurate and intelligent subject knowledge service, and meet their diversified subject service needs, has become a new topic that university library needs to explore.

## I. An overview of the new model of subject service in university library

Under the digital era, subject services of university libraries should adhere to the principle of “user-centered”, embed subject services into the library, readers’ subject and scientific research activities based on professional digital analysis technology and massive Internet teaching resources, and strive to provide users with diversified services by creating a good virtual environment and physical environment to build information security. Including but not limited to knowledge service, active service, etc., in order to meet the personalized information needs of users. In the digital age, subject service of university library is developing towards embedded subject service, which requires university library to make full use of digital information technology and existing subject information resources to provide professional, free and dynamic information service, and effectively promote the development of embedded subject service. Under the digital age, the reform of subject service in university libraries needs to update the service concept, cooperate with other organizations to build a smooth communication mechanism and a powerful cooperation mechanism, constantly expand the subject service space, and effectively enhance the visibility of subject service.

Embedded discipline service is a customer-demand-oriented model that provides customers with differentiated and targeted discipline services, which has always been one of the important models for university libraries to explore. Under embedded discipline service, discipline administrators should actively seek for user needs, actively combine with user environment, and do their best to provide users with diversified information services, including knowledge service, user evaluation and so on. Embedded subject services promote the development of embedded librarians, that is, subject librarians who are included in online courses as instructors, designers, etc. Architectural trial administrators are not only the subjects who provide subject services for library readers, but also the participants in university scientific research and teaching activities, providing exclusive, differentiated and personalized information services for university scientific research and teaching activities, and assisting library readers to complete scientific research and teaching tasks. In 2007, David Shumaker et al from the Library of Imperial College London studied embedded subject services and proposed that embedded subject services can be divided into three categories: They are virtual embedment, organizational embedment and physical embedment, pointing out that the embedded source is to deeply understand the needs of readers, tap the potential needs of readers, and provide accurate and intelligent subject services for readers through information technology. At present, there is no unified definition of embedded discipline service in the academic circle. Some scholars believe that university libraries should vigorously support the development of embedded discipline service, closely focus on the needs of users to develop discipline management system and embedded work mode, and create an innovative library discipline service mode. Some scholars pointed out that embedded discipline administrators and users are actually partners, by analyzing users’ information needs, creating user scenarios, and providing users with in-depth knowledge services, so as to support users to carry out subject teaching activities. In general, the current library should base on the real needs of users, take the initiative to explore the depth of service mode, provide users with accurate and digital services for scientific research and teaching, and maximize the value of the library.

## II. The characteristics of embedded subject services in university libraries in the age of digital intelligence

### 1. To provide users with differentiated dynamic services

In the digital era, with more and more sources of data, information analysis tools and data processing technologies are becoming more and more diversified and advanced. Providing users with differentiated and dynamic services is an important feature of disciplinary services. Dynamic service refers to providing services according to the dynamic changes in the process of data collection and data processing, which means that it is necessary to ensure that the collected data can be tracked and predicted to ensure the timeliness of the data, so as to meet the higher service needs of the discipline. The dynamic nature of data processing is to ensure that the data analysis process and analysis method should achieve dynamic results. Usually, the traditional discipline service does not analyze the past and future development of the discipline, but focuses on the analysis of the current development of the discipline, which is easy to cause some deviations in the discipline service analysis. Therefore, the subject service of university library in the digital era should adhere to the process as the center, and carry on a comprehensive analysis of the past, present and future development of the subject, in order to provide dynamic subject service.

For example, Chat GPT, as a representative of the new generation of artificial intelligence technology, can update the subject information data in time and ensure the effectiveness of the subject information when it is applied in the library subject service. At the same time, with the help of big data and big algorithms, Chat GPT can analyze readers' information preferences, and then provide readers with refined and personalized subject information services. By integrating Chat GPT into the library subject service system, subject data information can be dynamically updated and modular managed, and readers' biometric characteristics, historical retrieval records, and unread contents can be analyzed. The subject information needs of readers can be obtained through algorithms, and sustainable and high-quality services can be provided to users. Chat GPT makes the library subject service further reflect the characteristics of "people-oriented", and provides readers with more accurate and personalized services.

### 2. Apply digital analysis tools to dynamically analyze digital materials

Another notable feature of the digitization of disciplinary services is that all kinds of information analysis means and data resources are dynamically synthesized. In order to better improve discipline service efficiency in the era of digital intelligence and more accurately integrate user needs, subject librarians need to flexibly combine various information analysis tools, conduct in-depth functional decomposition of information analysis tools, dynamically integrate various data resources, and use information analysis tools to fuse and analyze source data, so as to provide users with high-quality discipline services. To truly realize the positive interaction between the four elements of data resources, subject librarians, information analysis technology and users. Chat GPT technology has efficient and powerful data analysis and content generation capabilities, which can replace library staff to do a lot of work, and "liberate" them from the complicated and trivial routine work such as filling in reports, writing documents, sorting out materials and summarizing materials. The universality of Chat GPT allows people to summon the help of artificial intelligence in most cases, thus replacing human labor in boring, repetitive and mechanized work. This helps library staff to allocate their energy and adjust their work content, so that they can devote their time, energy and wisdom to professional work and expert services, and better realize "special use for professionals".

After the introduction of Chat GPT technology in the library, Chat GPT can conduct content retrieval, information sorting and output for the readers' instructions, and provide the subject resources of the library to the readers quickly and accurately. Chat GPT is embedded in the library's collection resource database. How can it be equipped with a senior librarian who can master all the scientific resources in the library and accurately understand the needs of readers? Readers only need to input the subject resource information they have learned. Chat GPT technology can search in the library's resource database and quickly organize the information needed by readers? And present the information to readers. The new generation of artificial intelligence technology represented by Chat GPT, real-time networking, intelligent data update, data analysis, to resource barriers, to provide readers with more extensive content and larger scale of information resources.

## III. The construction of the new model of university library subject service under the background of digital intelligence

### 1. Applying virtual space to sort out digital resources

According to the survey, 64.52% of university libraries have embedded theme services into users' virtual space, among which, 62.13% of university libraries use mobile libraries, wechat public accounts and other carriers to carry out embedded subject services. 35.56% of university libraries use RSS subscription push service to realize embedded subject services. According to the differentiated needs of users, the latest research results and research trends of disciplines can be pushed in real time. In the university library, through the embedding of virtual space, providing subject services for readers can not only improve the quality of services, but also enrich the forms of services.

In the age of digital intelligence, the university library should attach importance to enhancing its application value in the subject service. Theme libraries can take the initiative to participate in users' online activities. On the one hand, they can interact with users through library websites, campus forums, Baidu Post bar, wechat public accounts, etc., and they can also embed library websites into virtual Spaces to realize subject services in virtual Spaces. On the other hand, an interactive tool can also be used to set up an online academic exchange section in which users can share resources and conduct academic exchanges. Subject librarians should actively participate in this process and understand the content and rules required by users' information in the mutual communication. In order to better provide subject services for

users. Chat GPT technology can explain readers' confusion in reading, and output relevant literature as evidence to help readers form a more in-depth and accurate understanding of what they read, improve the utilization rate of library collection resources and knowledge transfer efficiency, and improve readers' reading quality.

### 2. Integrating disciplinary services into scientific research work

In the age of digital intelligence, subject librarians will be integrated into scientific research services. Therefore, subject librarians must actively communicate and communicate with users, convey the cutting-edge hot topics and the latest development trends to researchers based on a comprehensive understanding of users' knowledge needs and cognitive abilities, and provide feasible solutions to the problems encountered in the subject.

The research of scientific research subject mainly includes a series of work such as project novelty search, project establishment, online consultation, literature retrieval, achievement evaluation and final acceptance. According to the survey, 51% of the time is spent on scientific research work, and only 9.3% of the time is spent on research papers. It can be seen that a lot of time and energy are not actually applied to scientific research. University libraries participate in scientific research services. In the whole scientific research activities, subject librarians can sort out the dynamic data resources needed in each stage of the scientific research process in real time, provide high-quality subject services for researchers, and help researchers complete the research work with quality and quantity. This can not only reduce the time consumption of researchers, but also improve the scientific research level of subject librarians. This is a mutually beneficial and win-win way.

Embedded theme services of university libraries (innovative search, literature collection, patent creative verification, etc.) run through the whole process of scientific research activities. In each stage of research and development, subject librarians can provide accurate theme services for scientific research users, which plays a great role in promoting scientific research work. For example, Chat GPT technology can quickly sort out and output the information required by readers, provide readers with more extensive and larger information resources, improve readers' reading and analysis efficiency of scientific research literature, and help scientific research work.

### 3. Integrating discipline services into classroom teaching

In the age of digital intelligence, university libraries should keep up with the pace of The Times, constantly innovate, integrate digital services into their own teaching activities, communicate with teachers of various disciplines, and provide rich resources for teaching activities. At the same time, the literature retrieval technology, data mining technology, data processing technology and other technologies are applied to the teaching, so that teachers and students can collect the relevant subject resources faster and more accurately.

#### (1) Digital intelligent teaching platform

On the school's teaching website, subject administrators and teachers together will be related to teaching exercises guidance, teaching homework, teaching courseware, teaching videos, etc. posted on the school's teaching website, in order to facilitate students to preview, review and so on. Through wechat, forums, micro-blogs and other platforms, librarians can also communicate with students online and answer their questions, such as: The subject librarian of CUNY Library collects and organizes the teaching resources related to the course and uploads them to the Blackboard teaching platform. The subject librarian can answer students' questions through the course forums and emails to improve their mastery of what they have learned.

By integrating Chat GPT into library services, readers can access the required learning materials and literature resources anytime and anywhere with the help of Chat GPT technology. When they have questions, they can also ask Chat GPT for questions, obtain information and answer questions. After the Chat GPT is integrated into the library, students can efficiently use the fragmented time and check the library resources anytime and anywhere, helping students to form the habit of independent learning and lifelong learning.

#### (2) Digital intelligent classroom

In the classroom, the library can embed its own thematic services into the classroom, participate in curriculum development, classroom teaching process, teaching evaluation feedback, work with teachers, and take responsibility for teaching results. Librarians in the University of Rochester in the United States have integrated subject services into music teaching, including literature retrieval, information literacy and other knowledge, and help teachers to correct homework; In the process of discussing professional courses such as philosophy, ideology and politics, history and social work, librarians of various disciplines in the library consulted with teachers from the School of Humanities and Social Sciences, participated in class discussions, and trained students in information retrieval skills to improve their ability of information retrieval.

## Concluding Remarks

With the advent of the age of digital intelligence, new requirements are put forward for the subject service of university libraries, that is, to provide more subject service for readers through new ways and means. As a brand new subject service way, embedded subject service is a new trend of subject service in university library. University library should seize this opportunity and innovate to make it play its role better and provide support for the sustainable development of university library.

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