

THE IMPACTS OF THE INTEGRATION OF INFORMATION TECHNOLOGIES AND LIBRARY RESOURCES UPON LIBRARIANS' PROFESSIONAL QUALITY AND COMPETENCE

¹HAIBIN ZHANG, ²JIE YU, ³JING ZHAO

¹Library of Handan College, Handan 056005, CHINA

E-mail: 1307657668@qq.com

ABSTRACT

Evidently, 21st century is an era of science and technology. In particular, with the popularization of computer and information technologies, a qualified talent shall know about computer and IT in a new era. As information technologies develop and advance forward, unprecedented convenience has been brought for people and great contributions have been made, due to which broader space is available for human development. In the past few years, certain progress has been made in China's library resources and management, driven by the development of computer and information technologies. To optimize library resources and management, information technologies and library resources have been gradually integrated, by which certain achievements have been made. To adapt to such development trend, it is necessary to make more efforts to explore and study the integration of information technologies and library resources, including the key of integration, the impacts of integration upon librarians' functions and roles, role of information technologies in management and approaches to integrate library resources & information technologies for better cultivating librarians' innovative spirit and practical skills, etc. Intensive research and exploration on these aspects are of great significance for guiding librarians' practices. Thus, this paper studies and analyzes the impacts of the integration of information technologies and library resources upon librarians' professional quality and competence. First of all, it analyzes the connotations of the integration of modern information technologies and library resources. Next, it explores the features of librarians' work in the era of information technologies. Finally, it analyzes the impacts of the integration of information technologies with library resources on librarians' professional quality, competence and roles. The analysis and research are conducted in this paper in hope of providing references for related businesses.

Keywords: *Information Technologies, Library Resources, Integration, Librarians, Professional Quality, Professional Competence*

1. INTRODUCTION

At present, the science and technology are developing rapidly all over the world, while informatization is becoming a major trend for the development of world economy and society. Besides, information technologies focusing on network and multimedia technologies have obviously become creative tools for people to improve their capacities. To adapt to the development and application of current information technologies, library resources and information technologies need to be integrated, which is dispensable for reforming libraries of most Chinese universities and is a hot topic. Thus, this paper studies and examines the influences of the integration of information technologies and library resources upon librarians' professional quality and competence based on existing relevant research

outcomes as well as related management experience and practices in university libraries[1-4].

2. EXAMINATION ON CONNOTATIONS OF THE INTEGRATION OF MODERN INFORMATION TECHNOLOGIES AND LIBRARY RESOURCES

To examine the influences of the integration of information technologies and library resources on librarians' professional quality and competence, it is necessary to preliminarily acquire a clear idea about "integration". In a word, integration is a challenging job with space for innovation. Effective integration is helpful for improving librarians' management skills and improving work efficiency. In addition, it is an operation mode by which attempts are made to extend partial advantages of libraries to enhance overall competitiveness. For

instance, to realize “integration”, some libraries centralize books on economy, trade and technology, trying their best to put them in the same reading room for reading and browsing, which is a type of literature integration. Change previous approaches to divide reading & browsing zones. Traditionally, reading and browsing zones are divided according to carriers (such as books, CD, journals and internet resources, etc) and contents of literature (e.g. social and natural sciences). In some libraries, recent years’ books are put together in a reading room for reading, browsing or borrowing. Meanwhile, relevant librarians are appointed to provide guidance, which is also a kind of integration, namely the organic integration of resources and services. Additionally, purchasing guidance is offered according to the technical attributes of a platform, which belongs to integration as well, namely the integration of technologies and information resources[5].

For library management, the essence of integrating information technologies and library resources lies in the use of information technologies as cognitive tools for improving library management and services as well as literature collection under the guide of advanced library running concept. Furthermore, information technologies are applied as tools for the communication between librarians and users. With the utilization of information technologies in library resources, various library resources can be efficiently integrated with management elements and service procedures to generate agglomerative effect. At last, a great reform will be realized for library management, namely to compose a “users-centered” framework and service mode “dominated by librarians”, for providing diversified, high-quality and integrated services.

Concretely, the integration of information technologies and library resources mainly covers following four connotations. Firstly, realize the integration of information technologies with the literature of various disciplines collected in libraries. In this respect, the use of information technologies is indicated from “collection”. After integration, various modes of collection will be realized by taking literatures as carriers or based on disciplines. Secondly, realize the integration of information technologies and business procedures. In this aspect, information technologies are primarily utilized for reorganizing and supporting business procedures of libraries. After integration, the “collecting, borrowing, reading and consulting” will be integrated rather than separated by previous

separation mode. Thirdly, realize the integration of information technologies and management services. In terms of this, information technologies are mainly utilized for supporting libraries’ management services. After integration, three outcomes will be achieved as follows: 1) the contents will be enriched to make it more convenient to obtain resources; 2) services will be deepened to be closer to users; 3) the interactions with users will be reinforced by carrying out some activities. In brief, a service-oriented management mode is to be realized (shown in Figure 1). For Example, computer network (shown in Figure 2) can be used as carrier to boost the interactions between libraries’ demand and supply. Besides, librarians can also exchange with users to share resources. Fourthly, realize the integration of information technologies and human resources. As regards this, information technologies are principally utilized for supporting libraries’ management of human resources. After integration, horizontal library organizations will be established and human resources will be properly allocated, while the management benefits will be finally maximized. From aforementioned four aspects, it can be fully reflected that information technologies are used as tools for multi-level integration in libraries. Eventually, information technologies play an instrumental and comprehensive role in libraries’ management of resources[6].

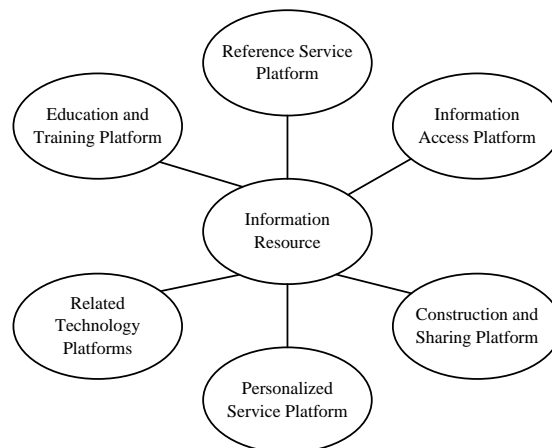


Figure 1: Service-oriented Management Mode of a Digital Library

3. EXPLORATION ON THE FEATURES OF LIBRARIANS’ WORK IN THE ERA OF INFORMATION TECHNOLOGIES

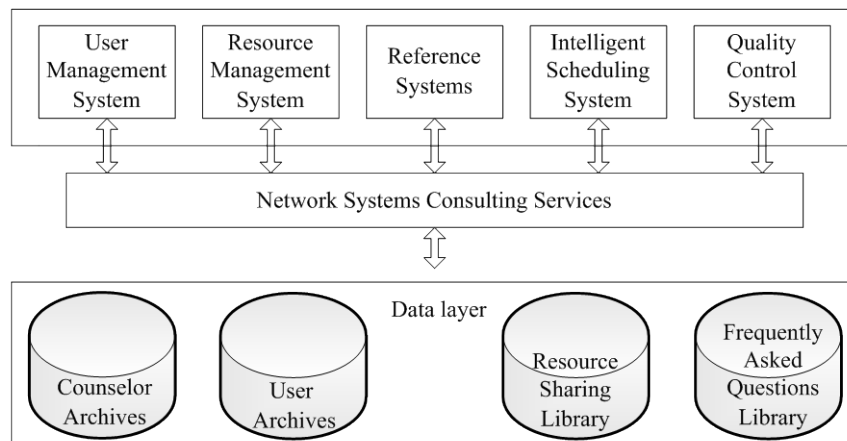


Figure 2: Internet Service Mode of a Library

In the era of information technologies, the management mode has changed in libraries, so has the features of librarians' work which are mainly revealed from following aspects:

3.1. Need for Librarians to Serve as Administrators of Library Information Resources

No matter the traditional mode is implemented or in current era of information technologies, librarians surely shall perform their functions as administrators. Nonetheless, more attentions shall be paid to develop library information resources on the internet in the era of information technologies, which is one of the necessary strategies for developing libraries at present. Network-based library information resources are becoming more and more abundant, most of which can be retrieved through internet. However, internet resources are decentralized, numerous, confused and disorderly at present, due to which most information is occasional, having not been refined and sorted out. As a consequence, it is rather troublesome for users to retrieve information. Thus, librarians need to efficiently manage, organize and control "material collections" well. Meanwhile, there is a need for them to comprehensively deal with various library information resources on the internet, further refine and coordinate the resources in order that information resources can become more structuralized and orderly. It is necessary to sort out the information resources in certain order and establish a unique database for collections, so that the information resources on the internet can really become indispensable parts of libraries[7].

3.2. Need for Librarians to be Guide of Library Information Resources in the Era of Information Technologies

With the rapid development of science and technology, the information resources are changing faster and faster on the internet. Furthermore, on the internet, there is a huge and unlimited amount of diversified information resources. These years, the information flow has been constantly increasing at a faster speed on the internet, as a consequence of which users have met plenty of difficulties in seeking the resources they needed. Thus, librarians shall serve as guide of library information resources, whose functions are pretty important. Specifically, librarians shall not only help users find the resources they need within the shortest time, but shall also develop databases by fully utilizing network technologies, so as to provide users with more complete retrieval system for libraries' data and catalogues, making great breakthrough over traditional libraries.

4. NEED FOR LIBRARIANS TO BE TRAINERS OF USERS IN THE ERA OF INFORMATION TECHNOLOGIES

At present, the educational level has been improved in China, so most people have grasped certain computer information technologies, whereas they still encounter numerous difficulties when they search library information resources, because they lack relevant knowledge and skills to search as well as some approaches to independently acquire library information resources and various electronic literature resources. All these problems severely

impact users' demand for library information resources. Thus, it is fairly important to carry out some necessary training for users. Librarians can achieve aforementioned uncompleted goals by different flexible means such as special lectures, online teaching and short-term training, etc[8].

5. NEED FOR LIBRARIANS TO BE QUALITY CONTROLLER OF INFORMATION RESOURCES IN THE ERA OF INFORMATION TECHNOLOGIES

Network information technologies are deficient in compulsory force of restraints, so it is rather hard to prevent information resources from being disseminated. In this case, some people spread rumors, fabricate information about pornographic violence and disseminate false information, etc by using network as tool for committing crimes, which harms the interests of individuals, groups and even nations and countries. Therefore, it is necessary for librarians to control the quality of information resources and set certain internet retrieval protocols for databases (e.g. Figure 3) if necessary. In this way, resources are restraint and controlled to certain extent, to achieve the goal of effectively integrating good resources and evading "bad" resources. To achieve these, librarians need to provide users with correct, valuable and essential information, really playing their roles as quality controller of information resources.

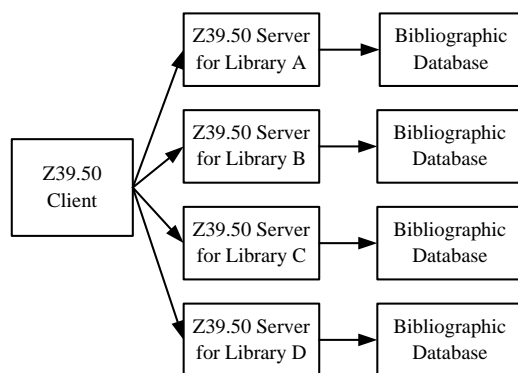


Figure 3: Application of Internet Retrieval Protocols for Databases in Integrating Library Information Resources

6. IMPACTS OF THE INTEGRATION OF INFORMATION TECHNOLOGIES AND LIBRARY RESOURCES UPON LIBRARIANS' PROFESSIONAL QUALITY, COMPETENCE AND ROLES

As computer information technologies become more and more widely used in libraries, changes have occurred to the management and service concepts of modernized libraries in which computer is specifically utilized. Computer technologies are integrated into the literatures of various disciplines to further utilize and development these literatures, for the purpose of fully mobilizing users' enthusiasm about using library resources. Furthermore, librarians, users and literatures are organically integrated by information technologies to further optimize the management services in libraries. In this case, convenient and open environment is created for users to conveniently and independently share literatures. Meanwhile, librarians' dominant roles and users' subjective roles can be fully indicated. As modern information technologies and library resources are integrated, librarians' professional quality and competence have been improved, as a result of which management becomes flexible, open, diversified and dynamic. Moreover, librarians get more cooperative and interactive in management, while the relationships between librarians and users become diversified and equal. In this way, librarians need to change traditional methods for providing services, make necessary improvement and innovations, transforming their functions and roles. Only in this case can the information technologies be efficiently integrated with library resources.

6.1. Gradual Transformation of Librarians' Roles from Literature Providers to Literature Guide with the Integration of Information Technologies and Library Resources

As discussed above, with the application of modern information technologies, librarians shall not simply serve as traditional information providers, but shall also work as information guide. As computer information technologies continuously develop, it gets possible for users to rapidly acquire relevant information resources from internet. Thus, users can actively obtain the resources they need rather than passively accepting libraries' literature services as before. In the mean time, librarians are not the agents for transmitting literature information and resources any more, but shall guide users how to utilize literature information and resources. It is necessary for librarians to constantly mobilize users' enthusiasm and initiative about applying literatures, improving their abilities to obtain information resources and make full use of the



resources with high efficiency. Hence, librarians' roles have changed in modernized libraries. For this, librarians shall be more capable of acquiring literatures under diversified carrier environment and this capacity is also one of core librarians' professional abilities in modernized libraries. The development and advancement of information technologies, undeniably, are great achievements, whereas it can also be found that internet is overflowed with various information resources due to such development. Besides, there are more and more information resources available for selection, as a consequence of which internet information resources compose an "information wetland" in which users shall take much time and energy in judging and choosing information sources, which intangibly increases the social costs for obtaining literatures. In addition, more and more channels are available in the internet for literature circulation. Only if the approaches to search literatures are innovated can it become more convenient for information retrieval to truly serve human beings. Therefore, professional librarians need to pay close attention to exploration and innovation, in particular, to master professional skills in find out required information resources conveniently and accurately in diversified carriers such as miscellaneous books, magazines, online databases, electronic literatures and specialized websites, etc, based on which a system shall be established to grasp the dynamics about the basic knowledge of disciplines and specialty resources, so as to achieve integrated development in information retrieval skills in specialized websites and databases, etc[9].

6.2. Needs for Librarians to Gradually Transform Their Roles from Technical Operators to Information and Knowledge Developers and Researchers with the Integration of Information Technologies and Library Resources

With the integration of information technologies and library resources, librarians, as literature developers and subjects studying management services, need to expand more multimedia interaction space for users by modernized means and prepare databases to promote unique, digital and network-oriented development of library collections, developing a variety of literatures and utilization scenarios, in order that services can be integrated, diversified and personalized. Meanwhile, librarians shall actively devote themselves to the management of libraries, related theoretical studies and practical exploration. They shall achieve mastery through comprehensive study

to provide more academic services in libraries in an era of information technologies. With such transformation, librarians' abilities to sort out literatures in diversified carriers can somewhat be improved. With the integration of information and library resources, the most suitable literatures can be promptly and conveniently provided for users as they are diversified. Compared with traditional management, such integration has remarkable advantages in conveying useful books and magazines to users. Additionally, with the application of information technologies, different categories of useful literatures shall be timely transmitted to users and readers who need the information under the situation that literatures are presented in a variety of forms in libraries. As a whole, after information technologies are integrated with library resources, librarians shall be able to collect, sort out and print literatures, and comprehensively handle the literatures in diversified forms (or the abilities to efficiently sort out diversified literature carriers). Only if librarians acquire these technical capabilities can they provide users with different literatures, efficient and comprehensive services.

6.3. Improving Librarians' Intellectual Resources — Providing High-quality Knowledge Services with the Integration of Information Technologies and Library Resources

For libraries, knowledge consulting can best represent their quality of services and is the most fundamental part indicating their competitiveness. However, traditional libraries have always been weak in this aspect, so it is necessary to further improve librarians' intellectual resources, cultivate their fundamental skills, train their professional competence, provide necessary expert services and knowledge consulting services, etc. Of course, individual librarians' quality can be improved by two ways as follows. Firstly, introducing and retaining talents. Librarians' overall quality can be optimized by changing the group components. Secondly, fostering talents by continuing education. Train individual librarians to improve their abilities and thus finally optimize librarians' overall quality. On the whole, libraries are advantageous in collecting literatures, but they still can't meet the market demands in the industry of specialized consulting services, because libraries' value of information services still remains to be further increased. For instance, some enterprises only cost little money in consulting libraries when they work on a project, whereas a multinational consulting



company may earn RMB1, 000 by providing a consultation report. It is thus clear that there exists great difference. Nonetheless, how could such difference emerge? This deserves libraries' reflection. The cause lies in libraries' lack of intellectual resources required for specialized consulting services which mainly include technical knowledge of disciplines in specific fields, abilities to make scientific judgment of scientific resources and analyze dynamic information, as well as the capabilities of responding to social demands for market services and scientific expectation. Libraries are apparently deficient in these aspects when they provide consulting services, so it is hard to construct relevant information service market[10].

6.4. Necessity to Enhance the Cultivation of Librarians' Professional Competence with the Integration of Information Technologies and Library Resources

To improve librarians' professional abilities in modern libraries, it is necessary to effectively

integrate and reorganize modern information technologies and library resources, which is indispensable and fundamental. The key lies in organic integration of literature information resources and human resources in libraries, restructuring libraries' businesses and fostering professional librarians when objectives are clear, in order that librarians can become crucial productive power with knowledge service capabilities for libraries, to eventually enhance libraries' core competitiveness. In sum, as modern information technologies are integrated with library resources, librarians shall be capable of: 1) developing and organizing information, 2) applying modernized technologies, 3) treating readers as users, 4) conducting scientific research, 5) updating knowledge and 6) being creative in thinking. Specifically, relevant connotations of librarians' professional competence are presented in TABLE 1 as follows:

TABLE 1: Connotations of Librarians' Professional Competence

Part		Specific Contents
Professional Competence	Connotation	Professional Knowledge
		Professional Skills
		Work Attitude
	Category	Intellectual Virility
		Applicable Abilities
		Action Sexuality
		Study Sexuality
	Content	Information Developing & Organizing Skills
		Modern Technology Application Capabilities
		Reader Servicing Capacity
		Scientific Researching Capacity
		Knowledge Updating Capabilities
		Creative Thinking
	Performance	Job Performance

6.5. Need for Librarians to Constantly Explore the Transformation of Organizational Forms and Service Management Methods

With the integration of information technologies and library resources, libraries has gradually transformed traditional mode separating "collecting-borrowing-reading-consulting" (focusing on books) to a mode integrating "collecting-borrowing-reading-consulting" (treating readers as users). With the application of this new mode, service management isn't so simple as borrowing and returning, but referring to the presentation of more services by various literature carriers and multimedia to improve the quality and efficiency of services. With the utilization of modernized information technologies, librarians

generally can apply information technologies by several means as follows. Firstly, automatic management can be implemented for circulation, reading and retrieval of routine literatures, which is the lowest level of integration. Secondly, attempts can be made to reform the contents and architecture of management services to adapt to the needs of integration. Thirdly, information technologies can be integrated with resources to satisfy different users' demands. Fourthly, an environment can be provided for users to independently study and freely use literature information resources. For example, virtual information, substantial literature and internet characteristics can be combined, to transform the roles of librarians and users. In other words, librarians are major factors affecting users, instructing and guiding users correctly. Fifthly,

enhance the communication between librarians and users to construct a personalized service system, which is indispensable for the support of information technologies and multimedia. Sixthly, construct library into a center for rapid learning, so that resources can be effectively developed and utilized. Seventhly, as a new model is implemented, librarians are supposed to digitalize library resources and collect social resources.

7. CONCLUSION

In brief, modern information technologies, acknowledged as tools for integrating library resources, absolutely play a dominant role in literature utilization and development, and will become a mainstream approach to manage libraries in the 21st century. Thereby, it is necessary for China to strengthen the organic integration of information technologies and library resources with the modernization and informatization of libraries, to constantly examine the contents to be effectively integrated, corresponding approaches and strategies, as well as to improve librarians' "information literacy" and cultivate them with high professional quality and competence, in order that modernized management and services of management can be further optimized.

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