

2014

# BioTechnology

*An Indian Journal*

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**FULL PAPER**

BTAIJ, 10(19), 2014 [11140-11145]

## Construction of library information ecosystem based on knowledge service

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### ABSTRACT

Library information ecosystem is designed to maximize the satisfaction of the users and gradually optimize the library service system, so as to constantly innovating its service function and maximize the value of the service system. Seeing from the traditional library service system, the cognizance of service principal and environment is narrow, and the relationship between services is simple, thus, the library service system can't meet users' requirements to information resources. This essay focus on the exploration and research process of knowledge services, making the ecological service thought integrate into the construction of library service system. Besides, it also illustrates the inner relationship between ecological niche and information space, and systematizes the construction of ecological service chain, so as to idealize the construction of information ecosystem. Through the research of system construction and function dimension, this essay is designed to lay a solid foundation for the exploration work in the future.

### KEYWORDS

Library; Knowledge service; Information ecosystem; Construction and research.



## INTRODUCTION

Library is a main source of information resources in people's daily work, study and lives. The scientific construction and continuous optimization is the essence to transform the construction thoughts of traditional library service system. The relationship between users and library can be optimized by library information ecosystem, through which the information ecosystem can be efficiently transformed, so as to gradually idealize the library service system. This essay is illustrated in the following three aspects: the concept and theory of infosphere library, the construction of ecological service system based on users' requirements, and the function dimension of ecological service system based on users' requirement. The pertinence to the construction of information ecosystem increases constantly.

### CONCEPT AND THEORY OF INFOSPHERE LIBRARY

#### Infosphere

Infosphere is a new vocabulary to describe the future of global informationization, which can't be found in the English dictionary. Infosphere refers to the process that human is forced into a new environment due to the rapid development of Internet and E-commerce. Now, the function of Internet is to connect the individual website together, making people to receive data, handling and sending emails. However, Infosphere, a global communication network, is a new space for people to communicate. The integration of database and information gives birth to a three-dimensional space, which is a gigantic, inter-related miracle with different nations and races participated. In the coming future, the integration of global Internet will change the characteristic of individual Internet. Internet will not only serve as a media for people to communicate, but also create a global Internet ecosystem, in which people could engage in all sorts of activities. This is Infosphere<sup>[1]</sup>.

#### Ecological niche

Many scholars would be unfamiliar with Ecological niche, an academic term. It is raised by Grillet, an American ecologist, in 1917. It refers to the unit that the ecological species group occupies in its basic life, mainly in physical space. However, ecological niche is the space unit in the redivided of habitat. In 1972, Elton expanded the definition. He took the functional relationship between organism and environment into the definition of Ecological niche. Thus, it deepened the definition of the status and role of species communities.

Species can only survive in specific ecological environment. "Every species has its biosphere in axis of ecological factors, the two ends are the tolerant limitation of the species, the range of the biosphere is called ecological amplitude, also known as ecological niche." The ecological niche of single factor can be seen in Figure 1.

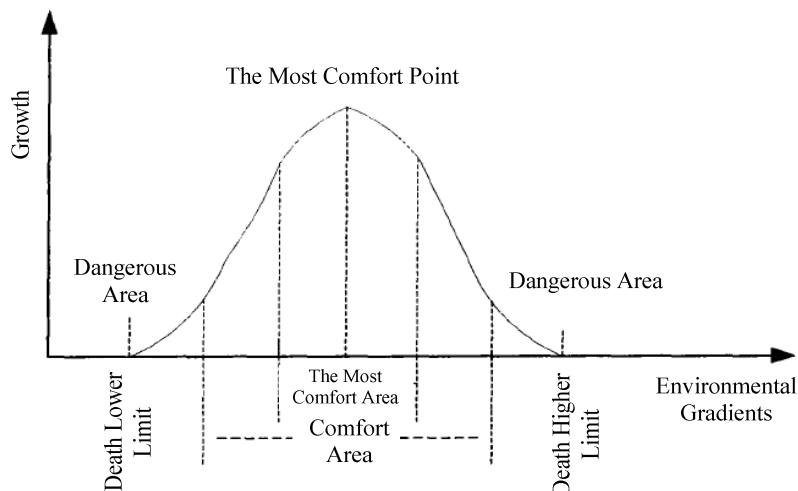


Figure 1 : One-dimension ecological niche

### CONSTRUCTION OF ECOLOGICAL SERVICE SYSTEM BASED ON USERS' REQUIREMENTS

#### Main body

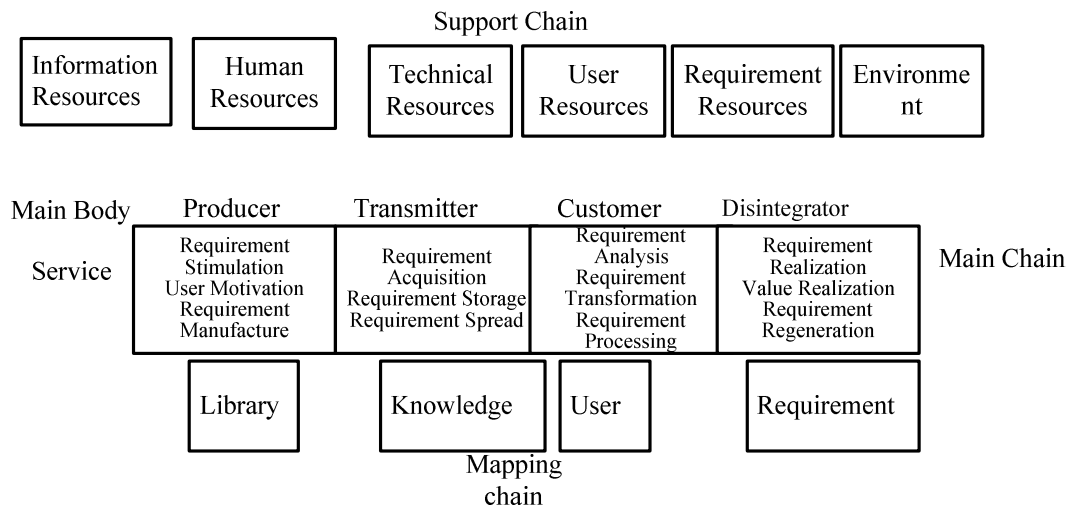
Main body refers to the organization and people who participate in the operation process of library ecosystem. Organization refers to library, whereas people refer to the librarians and the users.

#### Ecological environment

Ecological environment based on users' requirements mainly refers to all the influence factors in the process of eco-service, including the consequences that caused by the interaction of influence factors.

### Ecological service chain

Ecological service chain refers to the communication between the participated factors in the service process and a subtle relation to maximize the service function. The relation is complicated, because it has many factors involved, like persons, objects and so on. (See Figure 2)<sup>[2]</sup>.



**Figure 2 : Ecological service chain based on users' requirements**

The construction of library ecological service chain can be mainly divided into three parts: main chain, support chain and map chain. Main chain refers to the people in the system. The service function can be exerted through the effective exchange of information. The perfection of these relationships can directly improve the service quality and the utilization of library information resources, thus the ecological service system can also work efficiently.

## FUNCTION DIMENSION OF ECOLOGICAL SERVICE SYSTEM BASED ON USERS' REQUIREMENT

### Improvement of relationships

Improvement refers to the effective transformation of the inner contact between library and users, so as to further optimize the relationship between the supplier and receiver of the service. In the process of transformation, both of them are the essential part in the system construction. The purpose to provide the service is more than a responsible cognition, but the only way to optimize the ecological service system. In the process, the construction of ecological service system is developing from a disorder one to a scientific one, which is the theoretical foundation and guarantee of the ecological service system.

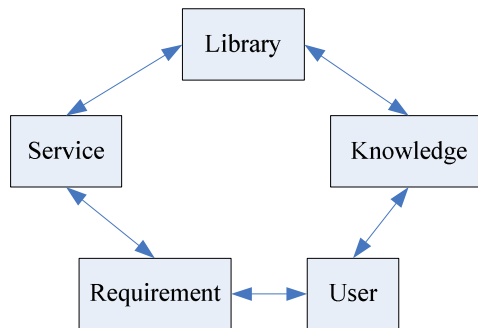
### Efficient and health information exchange

The exchange of information is one of the basic method to improve their service quality based on the users' requirements, and also an essential method for the transformation of material, energy and information. First, library should exert an efficient and convenient processing in the inner information exchange to ensure the smooth exchange of information. And then, the operability should also be strengthened constantly. As to the process of information exchange, the timeliness principle and the effectiveness of the information should be improved, so as to maximize the quality of the exchanged information. This is an essential part of information exchange cost. Second, libraries should improve the ecological service system in an all-round way, so as to effectively control the basic process of the information exchange. In this way, the information can be effectively screened, the links of information reorganization can be increased, and the quantity of information output can be improved constantly. The health of this information exchange process can be effectively guaranteed. Besides, the users' information needs can be conveyed to every customer timely.

### Integration capacity of ecological service chain

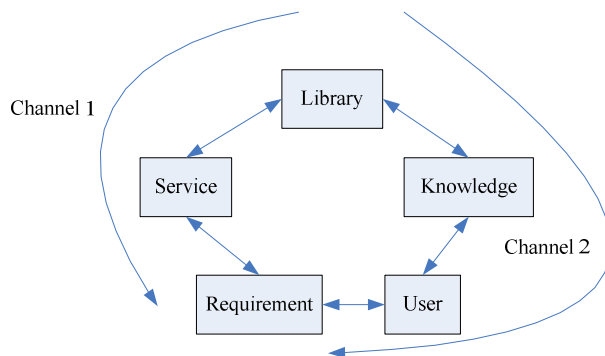
The comprehensive capacity of ecological service can be reflected in the following several aspects: first, effective arrangement of users, users' needs and other relevant information; second, exert close and effective integration of the three above factors through relevant technology and management system to make it a integration operation system; third, improve the coordination and coincidence among the users, users' needs and information resources, so as to strengthen the stability and cohesiveness. These three aspects play a decisive role in the rapid and health development of ecological service chain, and also produce positive change when faced with the peak of the development.

As to the research of the integration capacity of ecological service chain, the exploration can be exerted in the following five aspects. First, effective stimulation to the system can be applied according to the users' needs, which could maximize the effectiveness of the system in the arrangement process of the information resources. This gives full expression to the combination of users' needs and ecological service system<sup>[4]</sup>. Second, active collection and arrangement work should be done according to the users' requirements, and also should be strengthened based on the satisfaction of users' basic requirements, and ultimately surpass the users' requirements. Third, for the development of library, the ecological service system should be innovated to broaden its development prospect, so as to make the service concept and service management methods meet the innovation requirements. Forth, effective cooperation and exchange should be promoted among libraries to innovate the organization form and management. The optimization of ecological service system should be guided by knowledge, so as to realize the improvement of integration capacity between library and knowledge. Fifth, the maximized satisfaction of users reflects the maximum value of ecological service chain integration capacity. As a transient process of satisfying the users, it shows the integration capacity of the ecological service chain, which is shown in Figure 3.



**Figure 3 : Conceptual model of ecological service chain integration capacity**

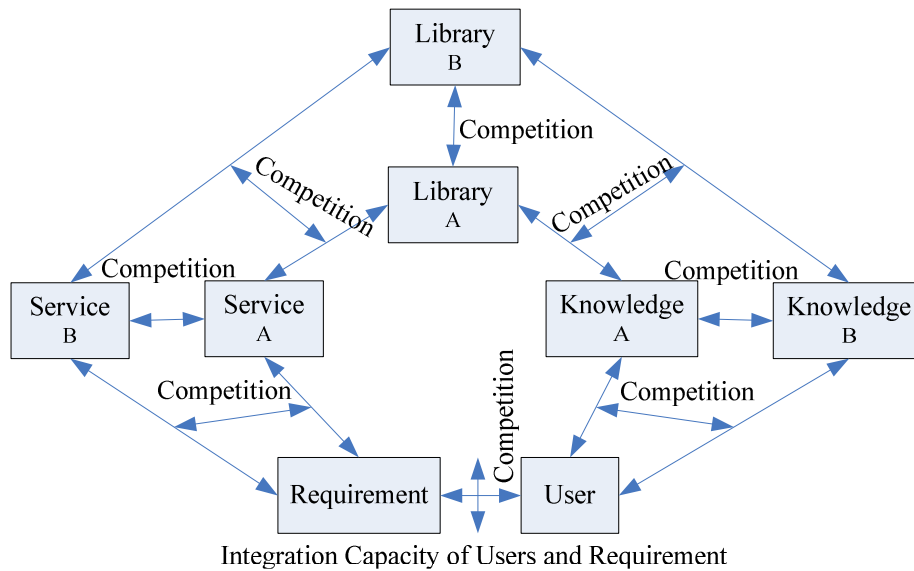
From the above model, the inner relationship among library, service system, needs, users' information and knowledge system can be understood comprehensively. Take library and needs for example, the processing of users' needs by the library can be reflected in two ways. First, in the systematic serving process, libraries should humanize the service model and improve its service capacity and quality, so as to meet the users' requirements to the libraries. In the above several factors, the internalization process of knowledge should be started with to give full expressions to the Externalizing factor of the libraries. Second, in the service process, library should further their study on users' requirements and also make the users' requirements accept the specific collaborative study. This would integrate the knowledge and the users' requirements to stimulate the users to improve their personality, information consciousness and information literacy. Users' requirements can be guided in the process and the quality and quantity of their information requirements can be strengthened constantly, so as to improve their information requirement level and strength. As is shown in Figure 4.



**Figure 4 : Two basic methods from library to requirements under the conceptual model of ecological service chain integration capacity**

In the research of library ecological service system based on users' requirements, the research of ecological service chain should be an essential part. In the future development of library, the arrangement of users' resources should be strengthened to improve the competitiveness of library on the users' requirements. Actually, it is a competition on the comprehensive capacity of ecological service chain. The library should implement an active exploration on the effectiveness of the operation process to stimulate a close relationship between the service chain and the development of the library. The library should also collect and arrange the users' requirements actively and strengthen the process of the operation system to

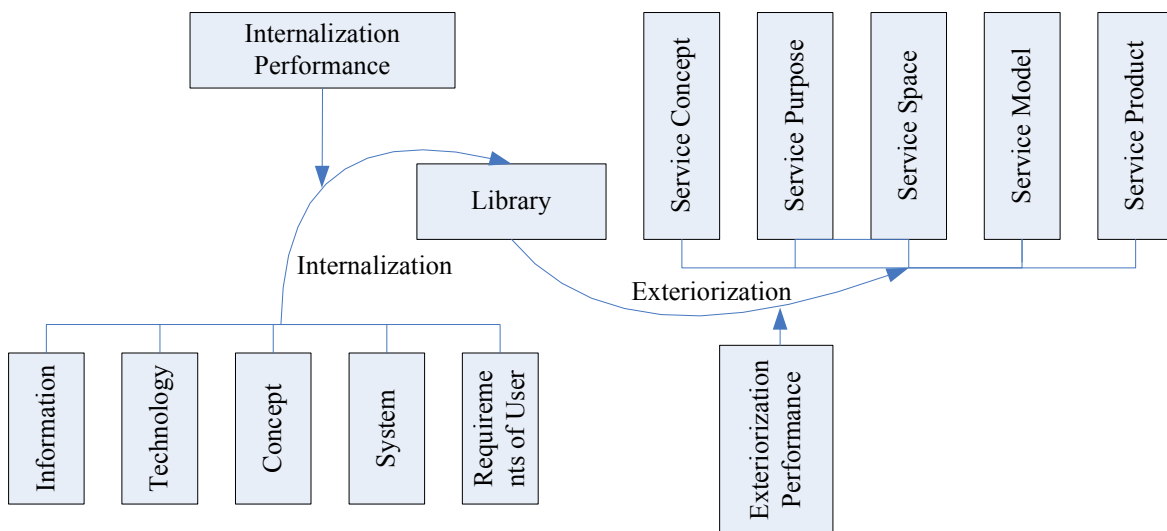
effectively integrate the users' requirements. Then, it will exert a positive impact on the improvement of the competitiveness, and gradually give fully play to the advantages of the ecological service chain. In this way, library is clearly about the users' requirements and expands the resources that the users need. As is shown in Figure 5.



**Figure 5 : The competition on users and requirements between libraries based on the ecological service chain integrate capacity**

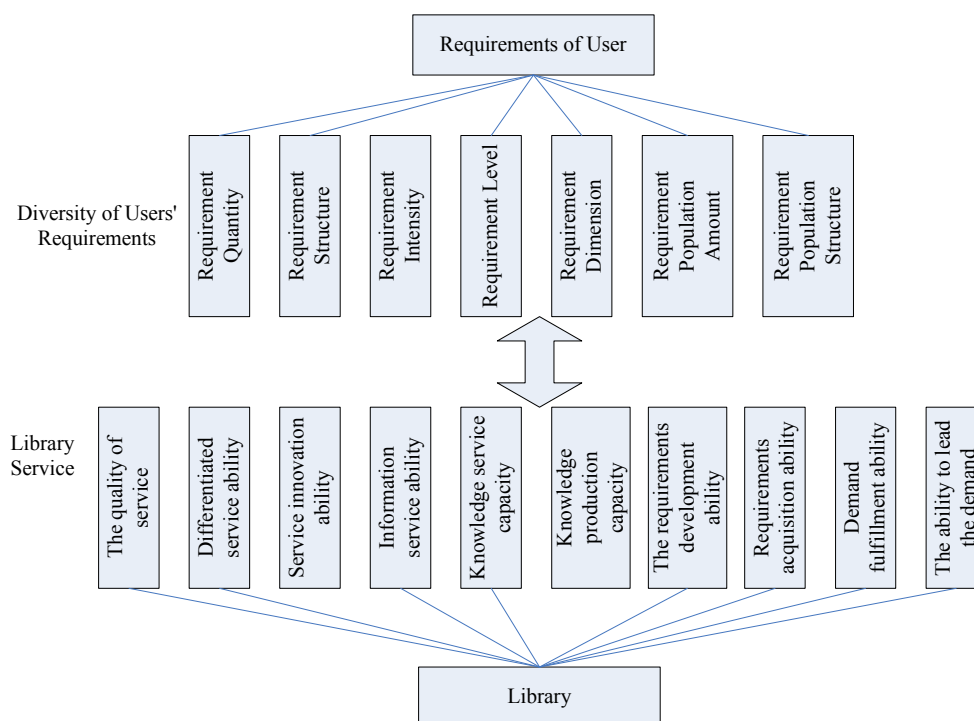
**Keep the balance of ecological service system based on users' requirements**

Through service system construction, service model and content innovation and service product manufacture, libraries express their service concept and purpose. Also, they establish the service space and service model to provide services and commodities to meet the requirements of users, and thus give birth to the library's unique social existence<sup>[7]</sup>. Internalization is a process of absorption and integration, whereas exteriorization is a process of manufacture, innovation and creation. The balance between the two requires the library to properly handle the two processes to stimulate the coordinate development of them. As is shown in Figure 6.



**Figure 6 : Internalization and exteriorization balance based on service**

Keeping the balance between the diversity and library services. Diversity factors include the quantity, structure, intensity, level, dimension, population amount and population structure of users. Library services include service volume, differentiated service capability, innovation service capability, information service capability, knowledge service capability, knowledge manufacture capability, requirement development capability, requirement acquisition capability, requirement implementation capability and requirement facilitation capability. As is shown in Figure 7.



**Figure 7 : The balance between the diversity of users' requirements and library services**

## CONCLUSION

As is shown above, this essay is designed to illustrate the construction of library information ecosystem based on knowledge service. Through the specific discussion on the concept and theory of infosphere library, the inner relationship between space information and library is clarified. The construction process of ecological service system based on users' requirements is illustrated from this perspective, and its development direction is clarified from different dimensions.

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