# Study on the Intelligent Terminal Innovation of Personalized Active Service of Mobile Library

## —A Case Study of Zhejiang University of Media and Communications

### Xuefen Xie[1]

[1] Zhejiang University of Media and Communications, Hangzhou, Zhejiang, 310018

**Keywords:** mobile library; personalized active service; intelligent terminal innovation

**Abstract:** Traditional library and mobile library in the modern development of the product presents a complementary relationship. This paper discusses how to perfect the personalized active service of mobile library in intelligent terminal, and make mobile library and traditional library more harmoniously supplement each other, so as to bring a better reading experience for readers, which will undoubtedly need us to explore more.

## 1. Introduction

With the continuous development of information technology, more and more network platforms have begun to build on smart terminals. Mobile libraries are the product of this change. However, the existing traditional libraries still have a shortage, and there are still more breakthroughs in the service model. The application capabilities of active services for mobile terminals in mobile libraries are also uneven. Information technology personnel in colleges and universities still need to provide supportive guidance to help users make good use of software and hardware tools for academic creation. Therefore, the adoption of mobile The library's innovative exploration explored a more complete service model to meet the new needs of readers in the new era.

## 2. The Necessity of Innovative Exploration on Intelligent Terminals of Mobile Library

With the continuous development of information technology, mobile smart terminals have been more and more widely used, showing a rapid development trend. Mobile Intelligence is developing toward smarter, environmental-friendly, cloud-based, and converged technologies along with emerging cloud technologies [1]. As the main consumer of electronic products, the holding rate of mobile intelligent terminals in college students is increasing year by year, and mobile intelligent terminals such as mobile phones have almost become the "standard configuration" of each college student. With the continuous updating of various smart terminal applications, it is expected that the vast majority of college students' mobile phone consumption will be generated by data, broadband services, and content services. This change shows that college students' reliance on mobile smart terminals will become stronger and stronger. More and more university students are becoming accustomed to using mobile smart terminals for entertainment and consumption. This has also brought about changes in reading habits, as compared with traditional The pattern of reading in the library, college students began to use mobile smart terminals for convenient and fast e-reading, the dependence and utilization of electronic resources are gradually increased [2]. The traditional library service must be advancing with the times, so that traditional libraries and mobile libraries can be better developed and integrated, so that libraries can survive and continue in the wave of electronicization.

As a new product of information technology development to a certain stage, mobile library is not a substitute for traditional library, but is complementary to traditional library in function. Only by continuously improving the functions and other aspects of the mobile library can the traditional library be better developed. In general, the differences between traditional libraries and mobile libraries are as follows:

First, in terms of service scope, due to restrictions on the locations and opening hours of traditional libraries, the readers facing can only be specific groups of people. This greatly limits the scope of services of the library from time and space; mobile books The service of the museum is not limited by time and space. Digital libraries in different regions can form a consortium to provide the same services to readers in different regions. The library can be carried around at any time. The resources are highly shared and traditional books can be shared. The service of the hall has expanded from space and time. Second, from the perspective of service content and methods, traditional libraries use circulation and reading as the focus of their work. Librarians are mainly responsible for purchasing, cataloging, and other work. They are cultural workers. At the same time, due to the influence of traditional library retrieval methods, readers spend most of the time spent on the retrieval process in the retrieval process, which is not conducive to the rapid dissemination of information; mobile library is based on information collection and analysis, reference and consulting. Web navigation is the center. Librarians serve readers as informants and are educators. The mobile library connects the OPAC system of the library by setting personal space, and uses mobile phones or mobile devices to log in to achieve self-service mobile services such as collection query, renewals, appointments, loss of hot books rankings, and consulting. Thirdly, from the perspective of the number of resources and updating, the traditional library's library resources are mainly in the form of paper. The storage capacity is limited, there are deficiencies in the types and number of resources, and it is impossible to meet the borrowing needs of all people at the same time, but also for the latest resources. It cannot be updated in a timely manner; the resources of mobile libraries are not only limited to text, but also include video and audio resources. The resource richness far exceeds that of traditional libraries [3].

Mobile library has advantages that cannot be possessed by traditional libraries. With the development of science and technology, it is undoubtedly the trend to develop and perfect mobile libraries. Therefore, how to improve the service model of mobile libraries is of utmost importance.

## 3. The Current Usage of Mobile Library

The most common form of mobile library is the mobile phone library, which relies on wireless networks to extend the services of traditional libraries to the outside of the library through the mobile phone platform. There are already quite a few mature technologies. For example, the National Library of China has already launched a mobile library, the Palm Country Map, and provides readers with a variety of services such as reader services, online services, online reading, and online audition.

The mobile library application downloads e-books from the Internet or collections of literature resources, and reads them anytime and anywhere; it can also browse, retrieve, and download the library's electronic resources online through wireless Internet access devices, instead of just physical libraries. service method.

Compared with China, the construction of mobile libraries in Europe, the United States, Japan, and the developed countries with communication technology started earlier. From 2000 to 2001, Japan had taken the lead to open a mobile phone book search system. Since then, European and American countries have successively launched library mobile services. Among them, the United Kingdom first launched the "International Mobile Library Conference," and the United States library community has also combined software developers and information service providers to develop library-specific software. The scope of library mobile services [5].

In general, the mobile library service model is divided into several types: First, short message service. On the one hand, the short message service provides the library with a reminder for the expiration of the subscription. On the other hand, the reader uses the instructions to take initiative to inquire the library for information such as book information. This kind of service model is relatively more mature, can provide the necessary service for the reader quickly and in time, and the cost is very low, so this service is the earliest kind of service. However, the short message service is simple in content and has poor interactivity. It cannot provide more detailed and complicated service content, and it is difficult to meet the needs of readers. Second, WAP services. WAP service is a

web-based service model. The homepage of the mobile library website includes various functions such as collection query and query saving, which is convenient for readers to access and query. WAP services can provide dynamic information of many libraries to meet the needs of readers. Third, the mobile client. With the rapid development of emerging electronic products such as smartphones and tablet computers, the application of mobile clients has also been widely promoted. For example, the cloud bookstore client launched by Shanda Literature, the software client for Founder's Apabi Reader, Superstar Digital Library, and the dedicated client combined with the hardware and software of Amazon Kindle and Hanwang's Hanwang's electronic paper book. 6]. This type of client is more specific than the WAP website. The service is more comprehensive and complete. Users can download the client and enjoy many services such as searching, renewing, and booking. Fourth, QR QR code service. QR QR code can store a large number of different forms of information, but also low cost, easy to use, already has a university to provide two-dimensional code service, as long as the corresponding two-dimensional code scanning and decoding, title, author, book number, collections, etc. Book information will be displayed. Fifth, I-MODE service mode. Through the use of a simplified HTML editing website, the WAP website is converted to the I-MODE website, which provides collection inquiries and book renewal services. The library of this model is still relatively small [7].

Based on massive information resources and cloud service systems, the Mobile Library of Zhejiang Institute of Media and Communications provides readers with a one-stop solution for resource search and acquisition, self-service lending management and information service customization through handheld mobile terminal devices such as mobile phones and ipads. Readers can sponsor inquiries and complete the loan, and anyone can obtain comprehensive information services at any time and any place. The following are the major points in the specific functions:

First, personalized service experience. By setting up docking between the personal space and the library's OPAC system, self-service mobile services such as collection queries, renewals, appointments, due reminders, popular book rankings, and consulting services are realized. And can freely choose information quiz, press release, announcement notice, new book recommendation, borrower due reminder, popular book recommendation, appointment booking notice and other information exchange functions.

Second, a one-stop search based on metadata. The system uses metadata integration technology to fully integrate Chinese and foreign languages books, periodicals, newspapers, dissertations, standards, patents, and other documents inside and outside the museum, and implements one-stop search, navigation, and full-text acquisition of resources on mobile terminals. service.

Third, free subscription experience. The integrated RSS subscription function effectively provides users with personalized information services. Including more than 45,000 kinds of epub e-books, 87 million newspapers, magazines, videos, information, and other nearly 30 kinds of channel classification, allowing users to be able to read their own desired information at any time, to provide users Personalized reading experience with multiple sources of information.

Fourth, cloud service sharing. The superstar mobile library integration service system has access to a powerful cloud sharing service system. The platform provides 24-hour document delivery services. E-books and journal articles can receive e-texts via email. The number of regional and industry alliances accessing the system of document sharing cloud services has reached 78, and 723 libraries have been added. Within 24 hours, the satisfaction rate of document delivery requests is over 96% in Chinese literature and over 90% in foreign language documents.

For the function innovation of the mobile terminal intelligent terminal, the author carried out a questionnaire survey in this school. The survey respondents were university students. A total of 300 questionnaires were sent and 246 effective questionnaires were retrieved. The results of the survey are shown in Table 1.

According to surveys, 43% of students hope to have related functions such as adding friends, including recommending books with friends, and reading books and commenting on each other. 9% of students hope that mobile libraries can take advantage of digital libraries. The resources provided are not limited to words. They can also include recommendations for related movies and TV series

adapted from books, radio dramas, etc. to achieve a more comprehensive reading experience. Current topics related to current affairs production will be recommended accordingly, such as the selection of Mo Yan works based on the event that Mo Yan won the Nobel Prize for Literature, and current events will promote library resources. 6% of students hope to have the function of book reservation and can more easily borrow the books they want to borrow. Thirty-nine percent of students want the function of an expired book reminder. Although the current software will display the expiration time of the books, it will not be reminded, and readers are required to check the Internet regularly. This is inconvenient. The students hope that the updated smart terminal can remind readers of the expiration date by email or SMS, thus reducing the default rate. In addition, 3% of the students hope that the mobile library intelligent terminal can cooperate with the electronic reading room to display the dynamic use of the computer in the electronic reading room and reduce the embarrassment that the students have no room for the electronic reading room.

Table 1 College Students' Expectations for Mobile Library Function

| Features | add friend | Various forms of recommendation | Book appointment | Due reminder | Electronic Reading Room Computer Usage |
|---|---|---|---|---|---|
| proportion | 43% | 9% | 6% | 39% | 3% |

It can be seen from the survey that readers are particularly valued for adding friends and related functions. In addition, many people hope that mobile libraries can exert their advantages and provide more abundant resources and service content, such as video and audio resources and computer use in electronic reading rooms. The situation, these are services that traditional libraries cannot provide anywhere and anytime readers have needs. In addition, in terms of book retrieval, the author believes that digital resources can be integrated. For example, the collected book resources are divided into chapters, so that full-text level knowledge points can be retrieved and searched more comprehensively [8].

## 4. Innovation Exploration on Intelligent Terminal of Mobile Library

The personalized customization of the mobile library can be adjusted according to the interests and hobbies of the readers, and personalized services can be tailored to the individual habits of the readers, helping readers quickly obtain the required information. Including the system and the staff's targeted book recommendation to the readers, the readers to personalize the collection resources, so that readers get a better reading experience.

The personalized customization of the mobile library intelligent terminal can be roughly divided into two categories. One is to recommend the user behavior through prediction. This means that the mobile library intelligent terminal obtains the characteristics of the reader by analyzing the feedback of the user's search history, reading history, etc., and then predicts the user's preferences and wishes according to the characteristics, perceives the user's needs and capabilities, and senses the future development. Situations, etc., to make more appropriate book recommendations. The other is the recommendation for social relations. Sinha et al. once proposed in 2001 that users like the recommendations from the surrounding friends more than the information recommendation system recommended, and Salganik et al. also indirectly verified this view in 2006. They believe that in the information recommendation system, the information service demand calculated by the user's historical behavior is not as important as the social influence [9].

The active service library broke the traditional passive and conservative service model of libraries, provided services to readers, further expanded the service space, enriched service content, and facilitated service objects [10]. Compared to traditional libraries, the active service library's information service system helps to better communicate with readers, and strengthens the relationship between readers and readers, readers and libraries, and is conducive to the library's The promotion of resources is more convenient for the use of smart terminals in mobile libraries.

The active service mobile library generally includes two types of system automatic service and

manual service. The system automatic service is to add more and more detailed system service contents and manual services to smart terminals. On the one hand, online help columns can be set up on mobile smart terminals to facilitate readers to get help in a timely manner or rely on network communication tools to communicate with readers. Actively provide readers with information consulting or information presentation services; mobile library can actively send library information, such as lectures and exhibitions, to readers, and set up short message platforms to push library information for users. In addition, the library mobile positioning service; mobile library uses GPS positioning technology to determine the reader's location in order to provide readers with a variety of related information services, to facilitate the reader. On the other hand, various special events can be held on platforms such as the Internet to actively promote readers' knowledge of library resources and retrieval of literature information, expand the popularity of library resources, and increase the utilization of library databases. After the active service mobile library's system automatic service and manual service are combined, the two complement each other and can extend the space and time of the mobile library's use and service to limitlessness, truly realizing readership in all regions and all time domains.

## 5. Conclusion

With today's highly developed information technology, how to make better use of mobile library intelligent terminals is of great significance to the survival and development of traditional libraries. The personalized and active mobile library intelligent terminal proposed in this paper is an innovative exploration of the service model of the mobile library under the current situation. Combining personalized services with proactive services to expand the service capabilities of mobile libraries, improve the quality of library information services and provide readers with more convenient and comfortable services. This model also needs to be further improved in theory and practice with the help of practical applications and related technologies.

## References

[1] Lu Fan Research on the Development Trend of Mobile Intelligent Terminals [J] Modern Communication 2011(11)184

[2] [4] Wei Zhangjuan Application of Mobile Phone Intelligent Terminal in University Libraries of Our Province [J] Jintu Academic Journal 2013(1)134

[3] Cao Yifan The difference between digital library and traditional library[J] Inner Mongolia Education and Vocational Education Edition 2012(8)

[5] [6] [7] Huang Yan Development of Digital Libraries in the Mobile Internet Era [J] Journal of Medical Informatics 2013(7)

[8] Wu Yunshan The new model of library service under the ubiquitous knowledge environment——Information Commons [J] Library World 2013(1)

[9] Zhang Xingwang, Li Chenhui, Mai Fanjin Transforming Big Data Knowledge Service: A New Model of Information Mobile Referral Service for Big Data [J] Books & Information 2013 (4)

[10] Chen Wenji Construction of Library Proactive Service Information Platform [J] Library and Information Forum 2013(1) 101