SMART LIBRARY CONCEPT IN SIBERIAN FEDERAL UNIVERSITY

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Abstract: This paper examines the phenomenon of a smart library, which began in 2000s, alongside with the development of computer technology, digital storage, telecommunications, Internet and Human-Computer Interactions. This paper observes new services and programs aimed at providing better information services for university library users. The concept "smart library" appears in various contexts, as a synonym for the concept "intellectual library". Such phrases as "digital library" and "virtual library" can also be found. The term "smart" means "flexible, adaptive, extendible, acknowledging and human". Smart library is a hardware and software complex with a wide range of opportunities for searching and providing necessary information to virtual users according to their inquiries and requirements.

Introduction

"Library is a growing organism", dealing with and accommodating changes in technology, collections, and services [1]. Now the role of libraries, information services, relationship between a library and users is changing significantly. Traditional services of a library are modifying and enhancing in online environment.

Modern libraries promote availability of useful mobile information resources offered by the library, and availability of access to information from mobile devices in a field, to support research [2]. They deliver services to users via Internet, smartphones and other handheld gadgets. Modern libraries have to focus on innovations for both traditional and nontraditional library services to reach all library users through mobile devices. Internet has become an important component of library service for users in it. Via Internet readers can access nearly limitless recourses including websites offering complete full-text books and research papers. Another change is the transformation from a digital library to a smart library,

which provides such advanced services as personalized services, hypertext services, computer-aided design services, knowledge mining services, cross-media services. All these services make a digital library more active, professional and intelligent [3].

This paper emphasizes importance for a library to be flexible to changing needs and to adopt new technologies rapidly. If a library of today wants to achieve success, it must offer high quality service, the best possible satisfaction of requirements, and exhibit great flexibility in its activity. In order to achieve all these goals, it is necessary to attract specialists of a library to solving common problems [4].

Smart library of Siberian Federal University: definition, philosophy and concept

The concept "smart library" appears in various contexts, as a synonym for the concept "intellectual library". Such phrases as "digital library" and "virtual library" can also be found. The term "smart" means "flexible, adaptive, extendible, acknowledging and human" [5]. Smart library is a hardware and software complex with a wide range of opportunities for searching and providing necessary information to virtual users according to their inquiries and requirements. Another definition of smart library is a library provided services, which are interactive, innovative, informative, actual, changing and international.

An individual user is the center of the Smart Library of Siberian Federal University (see Figure 1). The main purpose of a smart library is "to satisfy" information requests of a user, using modern information technology. It is possible to study information need of a user via instruments of information technology.
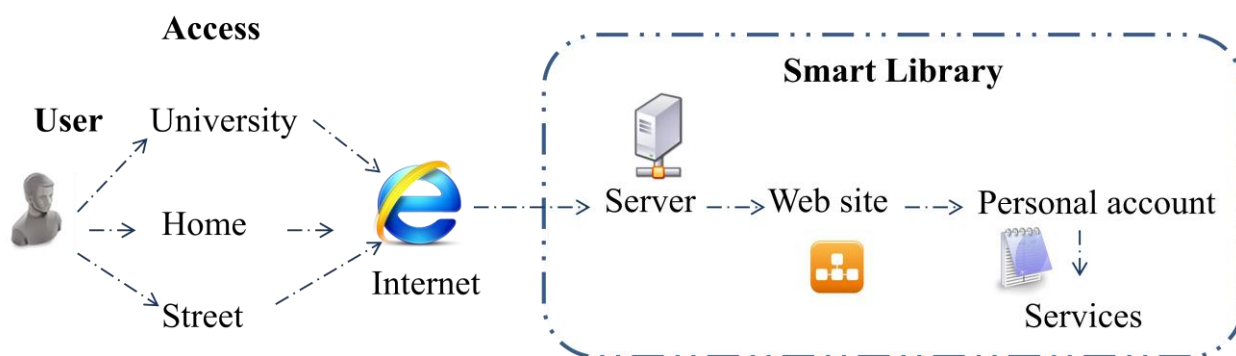

Figure 1. Philosophy of the smart library of Siberian Federal University

The most important mission of a library is to provide its readers with good services so that it is considered to be a reliable organization by the readers and it will get a good reader satisfaction as a result. From this point of view, it has essential importance to provide with online information services available from different places. Customer satisfaction is a key concern for a library as a service organization [6].

Smart library has learning history data of readers, which is collected by a learning support system. By analyzing data of each reader, the system creates profile data of a reader, his/her interest, learning periods for various subjects, privacy data, and many others. When a reader starts learning a subject, the system will search the database for readers with similar profiles. By using learning history of such similar readers, the system can estimate how long will it take for the learning reader to finish the subject, what materials of the smart library might be useful for the user, what kind of librarians' support will be helpful, and so on and so forth [6].

Principles of users service in a smart library:

- Resource Accumulation.
- Resource analysis.
- Extraction of necessary information, knowledge and recommendations for satisfaction of needs of a user and improvement of library service.

Smart libraries can have different structures. For example, in the paper [7] a smart library consists of six subsystems. They are: Domain Model, Student Model, Tutor and Testing Model, Voice Stress Analyser Subsystem, Subsystem of Multivariant Optimal Module Design and Multiple Criteria Analysis, Database of Computer Learning System, Decision Support Subsystem and Graphic Interface.

The key principles of development of a smart library include an increased emphasis on client-centered and web-based models of library and information service delivery to university staff, students and researches [8]. Client-centered model of a library deals with close monitoring of needs and expectations of its clients through investment in research including community consultation, statistical analysis, client feedback, qualitative surveys. Besides, it enhances relevance and accessibility of library services. Web-based model of a library provides increased access to information services, collections and technology via web, interactive chat rooms, e-documents delivery.

This cannot be achieved without an interactive information portal. The interactive portal has to provide 24-hours-a-day, 7-days-a-week access for users to information, collections of a library, qualitative Internet resources, library catalogue, collection databases, e-document delivery, interactive e-forums, e-reference services.

Development of a smart library is also impossible without high-qualified personal. Library staff has to increase constantly skills of using new technologies, web-based services, to initiate and maintain partnerships between libraries and other organizations for resource sharing.

Personal accounts of the Smart Library of Siberian Federal University

Scientific Library of Siberian Federal University provides interactive services which are available online to users through a personal account. Personal account is intended for control and obtaining information of services in online mode, and also for flexible management of a set of additional services. Entrance to a personal account is carried out by means of a password and a login. It allows to operate flexibly a set of services, to trace relationship of the library with the readers.

Services available on a personal account are defined by a category of users (student; teacher, employee, scientist; university). Appearance of a personal account for each category of users is different.

The Smart Library of Siberian Federal University delivers services to users via the university library website (bik.sfu-kras.ru).

Student personal account has a lot of features for searching information, for subscription to thematic mailings and to services of reading.

Services available on Student personal account:

1. Electronic catalog of the Scientific Library of Siberian Federal University.
    1.1. Bibliographic search.
    1.2. Preservation of inquiries on a subject.
    1.3. Order of editions.
2. Studied disciplines.
    2.1. List of references.
3. My form.
    3.1. Literature on hands.
    3.2. Delivery history.
    3.3. Demand for extension of books.
4. Services:
    4.1. Subscription to thematic mailings (dictionary of State rubricator of scientific and technical information).
    4.2. News.
    4.3. New literature.
    4.4. Actions.
    4.5. Price-list of paid services.
    4.6. Interlibrary subscription.
5. Contact us.
6. Exit.

An example of Student personal account interface in Scientific Library of Siberian Federal University is presented on the Figure 2.
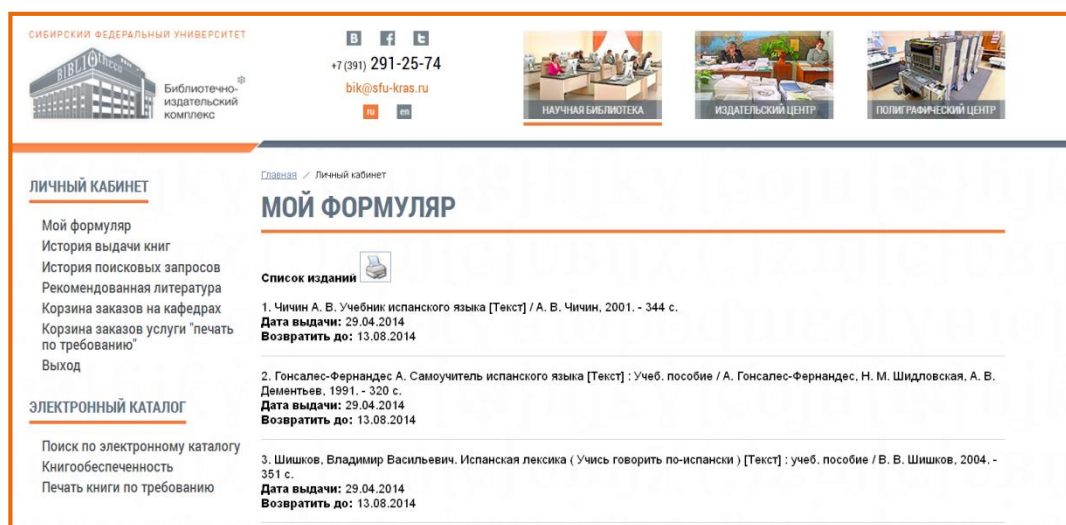
Figure 2. Student personal account interface in Scientific Library of Siberian Federal University

Teacher personal account interface is similar to Student personal account interface. But it has more features and services: "Taught disciplines", "List of references", "List editing", "Statistics of appeals to editions", "Prices of publishing houses, "Order form" and "My publications in e-library".

Services available on Teacher, Employee or Scientist personal:
1. Electronic catalog of the Scientific Library of Siberian Federal University.
   1.1. Bibliographic search.
   1.2. Preservation of inquiries on a subject.
   1.3. Order of editions.
2. Taught disciplines.
   2.1. List of references.
     2.2. List editing.
     2.3. Statistics of appeals to editions.
3. My form.
   3.1. Literature on hands.
   3.2. Delivery history.
   3.3. Demand for extension of books.
4. Prices of publishing houses, order form.
5. My publications in e-library.
6. My publications in Web of Science and Scopus.
7. Services:
   8.1. Subscription to thematic mailings (dictionary of State rubricator of scientific and technical information).
   8.2. News.
   8.3. New literature.
   8.4. Actions.
   8.5. Price-list of paid services.
   8.6. Interlibrary subscription.
9. Contact us.
10. Exit.

Another group of users exists in SFU Scientific Library – university staff. Certain services are available for this group as well.

Services available on University staff personal account:
1. Connection of a teacher profile with his/her personal Research ID.
2. Connection of a teacher profile with codes of scientific classification (dictionary of State Rubricator of Scientific and Technical Information, etc.).
3. Formation of reports for Research Department of the University.
4. Security of editors in the Library.
5. Formation of statistical reports (for example, appeals to full texts).

By means of a personal account, libraries can organize service to removed readers at higher level and keep access to library services for Krasnoyarsk region population.

Personal account has to have such main features [9]:
-     Flexibility – ability to deal with changing requests and demands.
-     Understanding – ability to meet clients' need, ability in finding, selecting assessing, organizing and managing sources of information.
-     Focus on IT – ability to contribute to development of information technology.
-     Expansibility – ability to create new services, which provide users with more opportunities.
-     Innovation – ability to use new technology and propose new services, ability to support mobile clients efficiently, new tools to deliver services.
-     Functionality – physical, technological and environmental conditions that guarantee optimal library use via remote access.

Personal account has to save the time of our readers [10]. Personal account allows users to personalize their library homepage by adding features and the most useful links for quick and easy access to the information they need.

Conclusion

This research shows that a new type of service development may require rethinking library's overall mission with a focus on new information technology. Smart library focuses on use of technology in a library and is designed to be very collaborative learning environment, where participants are encouraged to contribute ideas and information [11]. Smart library improves traditional and nontraditional library services, improves users' library experience and enhances opportunities for students learning.

Libraries are facing increased expectations from users, and challenge of developing technologies including: Web 2.0, e-books, digitations and a problem of archiving digital content.

Web-based technology provides users and information professionals with powerful and flexible tools for information dissemination. The worldwide web allows libraries and museums of all sizes to share their collections with the world 24 hours a day. However, the reality of transforming home-made resources into web format is often a frustrating and time-consuming process [12].

This paper emphasizes the need for a library to be flexible to adapt to changing needs and adopt new technologies rapidly [13]. The top priorities for all libraries are: greater use of new technologies and interactive communication.

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