

Knowledge, Attitudes, and Practices of Web 2.0 Applications among Engineering Students: Implications for Academic Libraries

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Abstract

Currently, Web 2.0 applications are an essential tool for students. It is an easy-to-use interactive and multi-purpose digital platform that can be used to make any information global efficiently in a short time. Due to modern technological discovery, sharing knowledge and interaction globally has become an easy task. Web 2.0 applications provide easy communication tools for students. This helps the student in searching, collecting, and disseminating information, leading to better communication between groups. The trend of interaction, knowledge sharing, social networking, and blog writing has significantly increased the use of the Internet among college students. Many academic libraries have started using these Web applications to provide better and up-to-date services to their users. Presently, the use of Web 2.0 applications to deliver its services to users in academic libraries, particularly in engineering college libraries, has started growing. However, studies show that the academic use of these devices is still decreasing at the college level. The knowledge, attitude, and preferences of Web 2.0 applications among engineering college students lead to better and effective use of these Web tools in libraries. The main objective of this study is to identify and determine the knowledge, attitudes, and practices of engineering college students on Web 2.0 applications. The survey method has been used to collect primary data. A self-administered questionnaire has been used to collect primary data from 900 undergraduate engineering students, who have been selected by purposive sampling methods. Out of the total questionnaires distributed, 87% (783) of the questionnaires were filled. A simple percentage calculation chart method under descriptive statistics was used to analyse the primary data collected. Research results show that most students have considerable knowledge of specific Web 2.0 applications such as Gmail, Google drive, social networking, social bookmarking, blogs, wikis, RSS feeds, and Grammarly. This study shows that women use Web 2.0 applications more than men. Most students learn about Web 2.0 applications through friends and colleagues. It also shows that most students have a good understanding of Web

2.0 applications and use these applications to interact and share information. In short, it was found that Web 2.0 applications are the best user-friendly tool for students to learn and share scholarly information with each other.

Keywords: Web 2.0 Applications, Web Technology, Social Networking, Engineering Students, Academic Library

Introduction

Web 2.0 applications are also known as participative and social websites that emphasise user-generated content for end-users. The term Web 2.0 was coined in January 1999 by Darcy Dinucci, who served as an information architecture consultant in electronic information design. In the virtual world, the Web 2.0 application allows its users to collaborate through social media, as well as to have conversations. Web 2.0 application simplifies the process of information sharing and interaction between users. It encouraged collaboration, communication, and sharing information on a digital platform. The main feature of Web 2.0 applications is that it provides the facilities of social networking, blogs, user-created websites, self-publishing platforms, social bookmarking, and tagging. Users can make access to the data on the Web 2.0 application as per their wish, and also implement some control over that data. Web 2.0 applications provide equal opportunities for users to share information and interact. Web 2.0 applications provide the facilities of information sharing, as well as retrieval, tagging, interaction, blogs, and self-publishing. Through Web 2.0 applications like social networking sites and blogs, a library can provide better facilities and services to its users in less time.

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Finally, social networking sites and blogs are fairly rapid solutions for moving library services and resources into Web 2.0 applications. These applications have been integrated into an organisation, with feedback from its members. Web 2.0 applications are gradually becoming well-established in many areas of life, as more adolescents identify and grow attached to these powerful contact tools. In the same way, libraries and librarians worldwide are using Web 2.0 applications to encourage services, share information, and connect with users. Therefore, the researcher surveys to examine the knowledge, attitudes, and practices of user services on Web 2.0 applications among engineering college students.



PIET Central Library

The PIET Central Library came into existence in 2006, with a seating capacity of around 264 seats. The library is available daily from 9.00 am to 9.00 pm and the opening hours of the library on Sundays and holidays are from 09.00 am to 4.00 pm. The library has a rich collection of 50,000 books, 156 printed national and international journals, 26 magazines, and 11 newspapers. Further, the library has access to 7,000 e-journals and databases, and 18,310 video lectures of IITs in the electronic repository. PIET Central Library is fully computerised with Koha Library Management Software and provides its services through Local Area Network and Wide Area Network. OPAC and social networking are also being used to share library collection information to its users. The library has tried to add thousands of e-books of renowned national and international publishers to the e-repository, to enrich the students. The library has provided an Internet lab and book bank facilities for the convenience of its users. According to InOut Management Software that is used in

PIET Central Library, 7,457 visitors have been recorded as visiting the library per month. The total marks for circulation during this period were 3,200 books per month; 5,000 books per month were consulted by members of the library. In addition, the library provides the facility of anti-plagiarism software to detect and investigate plagiarism. It has been specially developed to help students prepare for entrance and competitive exams.

Literature Review

This section looks at previous research on Web 2.0 applications. Based on many studies, it has been found that Web 2.0 applications are used quite often among students, due to their user-friendly and social nature. As a tool, Web 2.0 applications have proven to be more useful and beneficial than traditional Web applications, due to their universal accessibility, being cheap, being user friendly, and flexibility. Web 2.0 applications have made them much better in the form of information management. Web 2.0 applications have proven to be of considerable benefit over traditional Web applications, due to their affordability, easy accessibility, user-friendliness, functionality, and flexibility. Web 2.0 applications are becoming more attractive as information management systems. Singha and Sarmah (2015) conducted a research titled 'A new skyline of using Web 2.0 technology in endorsing the library services: A case study among LIS professionals in selected university libraries of Assam State'. He found that by increasing the use of Web 2.0 technology in libraries, there were significant and meaningful changes in the collection, services, and methods of distribution of library services. In this digital age, the libraries of the Central University of Assam need to choose Web 2.0 technology to deliver their services effectively. Although library professionals are well aware of this technology, they should try to adopt various Web 2.0 technologies and increase their utility to provide better services. Library professionals serve as a facilitator between information and end-users, so they should play their role directly. Matingwina (2014) conducted a study titled 'Knowledge, attitudes, and practices on university students on Web 2.0 tools: Implications for academic libraries in Zimbabwe'. The researcher found that students have a very positive approach towards Web 2.0 technology and they use this technology to access and manage scholarly information. The certain expectation is that students are more likely

to increase the usability of services based on Web 2.0 technology. In their study, a large number of users have demonstrated that they have never used tools such as RSS feeds, social bookmarking tools, photo sharing, and VoIP tools under Web 2.0 technology. A finding suggests that if academic libraries want to expand and extend their library services through Web 2.0 technology, they need to provide comprehensive training programmes for their users, so that the users can easily take advantage of these services by adopting them. Sarrafzadeh, Hazeri, and Alavi (2012) conducted a study on 'Knowledge and use of Web 2.0 by LIS academics in Iran'. The study was exploratory and empirical. A web-based survey questionnaire was used to collect research-related primary data, using both open- and close-ended questions. The results show that academics related to the library profession in Iran had very good knowledge of Web 2.0 technologies such as Facebook, YouTube, blogs, and wikis, although their social contact with some other Web 2.0 tools like Twitter, podcast, RSS feeds, Flickr, and Delicious were limited. LIS academics used chat tools, blogs, discussion groups, file sharing tools, wikis, SMS, forums, and video sharing tools in their teaching. The most frequent interruptions during the use of Web 2.0 technology were due to Internet filtering. Walia, P. K., & Gupta, M. (2012) studied the use of Web 2.0 technology by national libraries. In the course of this study, researchers have attempted to test eight commonly used Web 2.0 technology on websites of national libraries. Research results showed that Web 2.0 technology is rarely used on the websites of national libraries. Studies show that Web 2.0 technology is an impressive technology that is very easy, free, as well as user friendly. Web 2.0 applications should be used at the maximum level to make library services comprehensive and effective. The National Library can share the photographs of library tours, library events, library collections, staff introduction, and historical monuments to increase the usefulness of its collections and services. Chinwe, Anunobi & Ogbonna (2012) surveyed Web 2.0 use by librarians in a State in Nigeria. The finding shows that Web 2.0 technology is more popular among librarians than the level of usage. Besides, rather than blogs and wikis, social networking sites under the Web 2.0 technology are most commonly used as video sharing tools, Internet call tools, and aggregating tools. Library professionals use Web 2.0 technology primarily to interact

and share information with their friends and professional colleagues, as well as to make profiles public. The study concludes that the use of Web 2.0 technology is being reduced by librarians due to lack of personal interest, computer skills, motivation and facilities, and limited access, which if properly addressed, may increase the use of Web 2.0 technology. Tyagi (2012) found in his study that Web 2.0 technology is very popular among academic communities and they are using it with great interest in their learning process. Chua and Goh (2010) conducted a study of Web 2.0 technology in library websites. Research shows that libraries in North America use Web 2.0 technology more heavily than their European and Asian counterparts. Among all libraries, the most popular of the Web 2.0 technology is Blog and RSS, followed by instant messaging, social networking services, wiki, and social tagging applications, respectively. The difference in the usefulness of Web 2.0 technology between academic and public libraries is not statistically more significant. Majumdar and Shukla (2008) paper, 'Web 2.0: Implications on library', shows that Web 2.0 technology is being used widely, as well as being interpreted. It is a matrix of dialogues and a user-centered Web. A Web 2.0 technology is highly capable of socialising information, sharing information, and increasing its usefulness for the development of any society.

Research Objectives

The main purpose of this survey is to review the knowledge, attitudes, and practices related to Web 2.0 applications among engineering college students. Explicit objectives are as follows:

- To find out the knowledge levels of engineering students on Web 2.0 applications.
- To determine the attitude of engineering students on Web 2.0 applications.
- To find out the adoption and use of Web 2.0 applications like blogs, LinkedIn, Facebook, Twitter, YouTube, and so on, by engineering students for searching and sharing information.
- To find out the usefulness of Web 2.0 applications among engineering students.
- To find out the main purposes of using Web 2.0 applications by engineering students.

- To determine the various difficulties faced by engineering students when using the Web 2.0 applications.

Scope and Limitation of Research

There have been a lot of studies on Web 2.0 applications worldwide, but few studies are available on the subject of the use of Web 2.0 applications among engineering students in this exacting field. The present study is generally confined to the engineering students studying in the academic library of Haryana, and therefore, only engineering students are included as a sampling population. A special engineering college library in Haryana has been selected as the research area. The Central Library of Panipat Institute of Engineering and Application has been selected for taking research samples.

Research Methodology

The researcher has used a descriptive survey method to collect primary data related to research. From the target population of 3,000 engineering students, 30% have been selected as the research sample by the researcher. That is, out of the students who visited the Central Library of Panipat Institute of Engineering and Application, Haryana, a total of 900 students were asked to fill the questionnaire as a research sample. A well-structured questionnaire was prepared and distributed to a total of 900 students visiting the Central Library of the college to meet the academic objectives. Out of the total questionnaires distributed, 87% (783) of the questionnaires were found to be filled. For the convenience of the students, the questionnaire covered two types of questions, including dichotomous questions and multiple-choice questions, so that they could provide their feedback on Web 2.0 applications. A simple percentage calculation chart method under descriptive statistics was used to analyse the primary data collected.

Data Analysis

Chart 1 shows the sex ratio of the respondents. The research found that a majority of the respondents in the total research sample were female (59%), while men made up 41%.

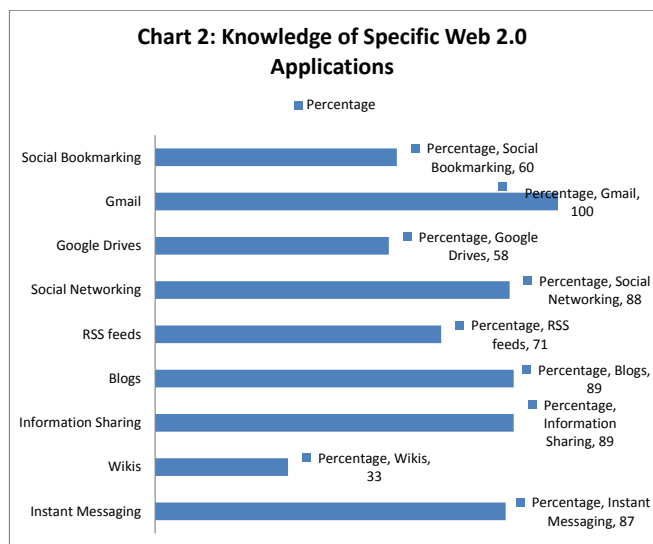
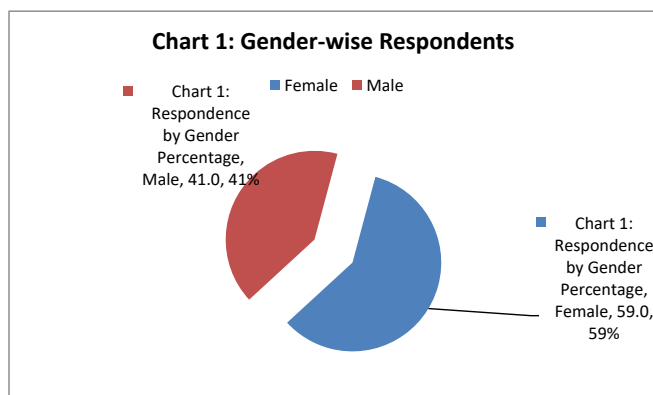


Chart 2 shows the level of knowledge related to Web 2.0 applications among students. The research results found that a majority of the respondents had a good knowledge of Web 2.0 applications like Gmail (100%), blogs and information sharing (89%), social networking (88%), instant messaging (87%), RSS feeds (71%), and social bookmarking (60%). However, few respondents were aware of Google drive (58%) and Wikis (33%).

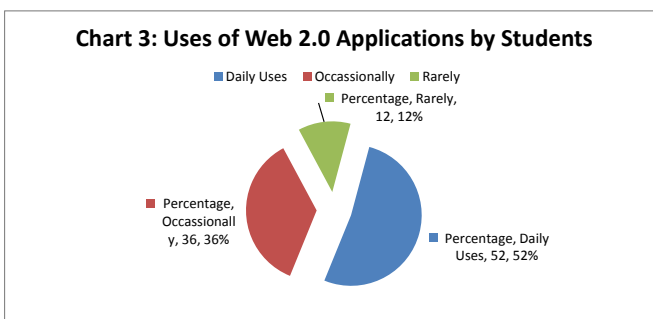


Chart 3 shows students' use of Web 2.0 applications. It was found that most respondents use Web 2.0 applications

regularly (52%), while some respondents use Web 2.0 applications occasionally (36%), and a small number rarely (12%) use Web 2.0 applications.

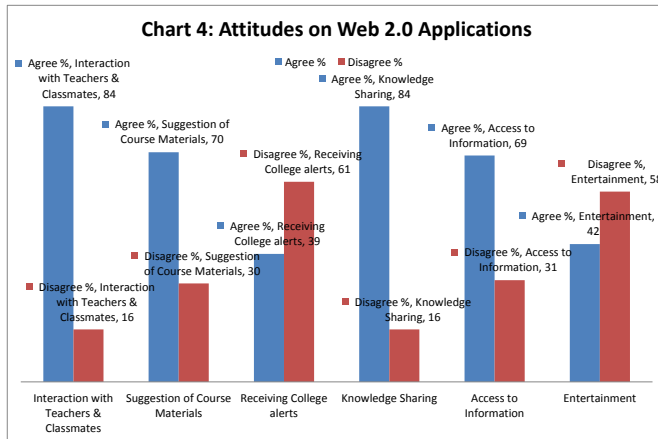


Chart 4 shows students' attitudes on Web 2.0 applications. It was found that most respondents agree that they use Web 2.0 applications for interaction with teachers and classmates (84%), knowledge sharing (84%), suggestion of course materials (70%), and access to scholarly information (69%). Some respondents disagree that they use Web 2.0 applications for receiving college alerts (61%) and entertainment (58%).

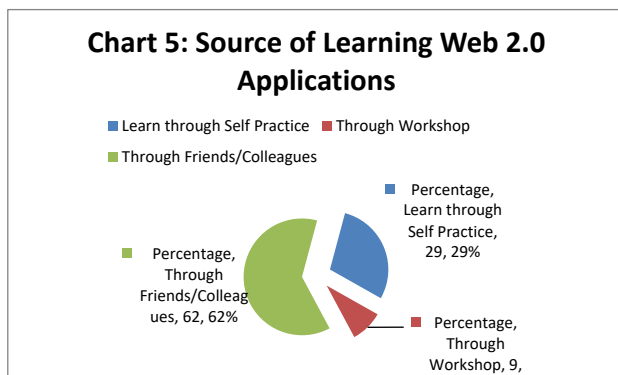


Chart 5 shows the source of learning Web 2.0 applications among the students. A majority (62%) of respondents learned about Web 2.0 applications through friends and colleagues, while a few learned through self-practice (29%) and workshops (9%).

Chart 6 indicates the usefulness of Web 2.0 applications among students. The analysis found that a majority of respondents are used to Gmail (93%), blogs (89%), social networking (86%), Google drive (82%), and Grammarly (69%), while a few use social bookmarking (54%), wikis (33%), and RSS feeds (27%).

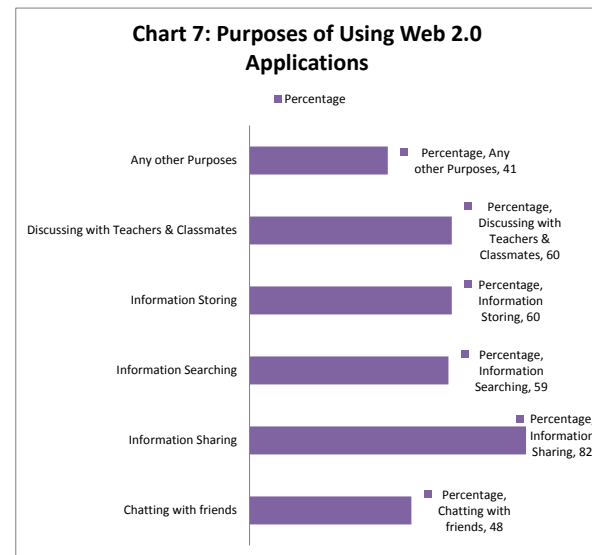
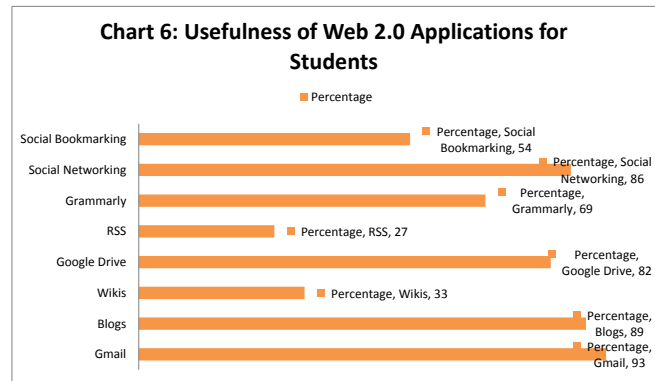


Chart 7 shows the purpose of using Web 2.0 applications by students. The study found that a majority (82%) of respondents use Web 2.0 applications for information sharing, followed by interaction with teachers and classmates (60%), information storing (60%), and information searching (59%), while a few use Web 2.0 applications for chatting with friends (48%) and other purposes (41%).

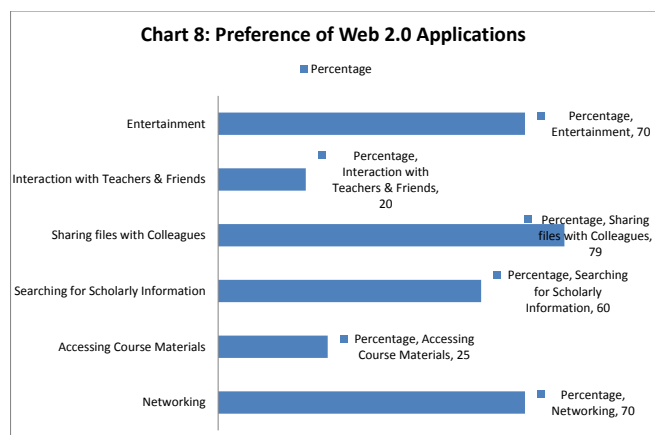


Chart 8 indicates the preference of Web 2.0 applications by the students. A majority (79%) of respondents have preferred Web 2.0 applications for sharing files with colleagues, followed by networking and entertainment (70%), and searching for scholarly information, while a few preferred Web 2.0 applications for accessing course materials (25%) and interaction with teachers and friends (20%).

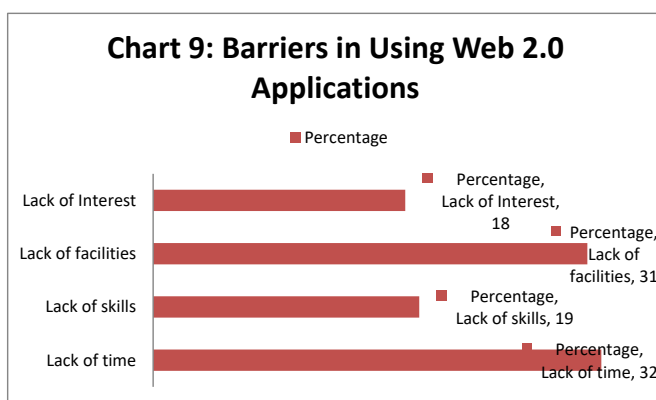


Chart 9 shows the barriers that students have to face in using Web 2.0 applications. A majority (32%) of the respondents are not able to use Web 2.0 applications due to lack of time and facilities (31%), while some respondents are not able to use the applications due to lack of skills (19%) and interest (18%).

Findings

The findings of this study have been analysed primarily based on three variables, which reflect knowledge, attitudes, and uses of Web 2.0 applications among engineering college students. As a result, the following are the major findings of this survey research.

- The study suggests that among respondents, women (59%) use Web 2.0 applications more than men, to collaborate, interact, and share information.
- The study shows that out of the total respondents, a majority have a good knowledge of Web 2.0 applications like Gmail (100%), blogs and information sharing (89%), social networking (88%), instant messaging (87%), RSS feeds (71%), and social bookmarking (60%).
- The study reveals that out of the total respondents, a majority (52%) use Web 2.0 applications regularly to interact and share scholarly information with each other.
- The findings show that most respondents (84%) agree that they use Web 2.0 applications for interac-

tion with teachers and classmates, knowledge sharing (84%), suggestion of course materials (70%), and access to scholarly information (69%).

- The findings indicate that a majority (62%) of respondents learned about Web 2.0 applications through friends and colleagues.
- The findings show the usefulness of Web 2.0 applications. In this context, a majority of respondents are used to Gmail (93%), blogs (89%), social networking (86%), Google drive (82%), and Grammarly (69%).
- The findings reveal that the main purpose of using Web 2.0 applications by students is information sharing (82%), interaction with teachers and classmates (60%), information storing (60%), and information searching (59%).
- The findings indicate that a majority (79%) of respondents have preferred Web 2.0 applications for sharing files with colleagues, networking and entertainment (70%), and searching for scholarly information.
- The findings reveal that the main barriers to most respondents when using Web 2.0 applications arise from lack of time (32%) and facilities (31%).

Conclusion

Information technology has touched all aspects of human life. It helps in effective collaboration, interaction, and information sharing, as well as inter-communication and mass communication. In this context, Web 2.0 applications are strong tools for collaboration, communication, and information sharing. It provides a platform for users to interact and share information. Today, students are also using Web 2.0 applications to simplify learning and save time in their daily lives. They use regular social networking social bookmarking, wikis, RSS feeds, blogs, Gmail, Google Drive, Grammarly, and other tools, to exchange and interact with their course-related information. The results of this study show that women use Web 2.0 applications more than men, for collaboration, interaction, and information sharing. Further, it shows that most students have a good understanding of Web 2.0 applications and use these applications to communicate and share scholarly information with their colleagues. The findings show that most students learn about Web 2.0 applications through friends and colleagues. The results show that the applications are mostly used to

disseminate information among library users, through Gmail, Facebook, YouTube, Google drive, LinkedIn, Twitter, Instagram, blogs, and Grammarly. Students prioritise Web 2.0 applications for interacting and sharing scholarly information. In short, it was found that Web 2.0 applications are the best user-friendly tools for students to learn and share scholarly information with each other.

Suggestions and Recommendations

Students are well aware of Web 2.0 applications and they are implementing them in their everyday life. They are using Google Drive for information sharing and creating blogs; Facebook; LinkedIn for interface with colleagues; YouTube and Podcasting for sharing live programmes and informative videos; and RSS feeds and other Web 2.0 tools for sharing scholarly information. This study makes suggestions and recommendations for using Web 2.0 applications to promote maximum academic use. Students need dedicated Internet bandwidths to ensure uninterrupted Internet access and are required to be technically trained. There is a requirement for adequate time to initiate Web 2.0 applications. Therefore, Web 2.0 applications can prove to be a better digital platform to effectively deliver library services to the user, which will provide information about the library collection, as well as encourage users to make the maximum use of the library.

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