

MOBILE APP AND THE LIBRARY SERVICES

Ajay Shanker Mishra*, Jai Krishna Jha**, Sachin Kumar Umre***

Abstract *This paper presents brief introduction about the Mobile application technology and its use in library services. The paper also review types of mobile app, mobile apps for librarians and information professionals community, highlighting specific apps that are available to librarians and briefly describing the salient features of app as well as the benefits and potential drawbacks. Author trying to notes important considerations, such as security, reliability, availability, and cost, of which library information professionals need to be aware prior to using mobile apps in their instruction. This paper also discusses the many aspects why we mobilized? And the future plan.*

Keywords: *Mobile Apps, Library Apps, Reference Apps, Mobile Learning, Mobile Devices, Mobile, Iphone, Goals and Strategy*

INTRODUCTION

Since personal computers became available in homes and schools, development in educational technology has progressed at an accelerated pace [1]. In these days every and each information available and accessible via www. Information seeker can obtain relevance information via various search tools or information discovery tools. In 2010 The International Telecommunication Union (ITU) estimated that more than 5 billion mobile subscriptions would exist worldwide, which more than tripled home Internet access [2]. ITU also predicts Web access from mobile devices will exceed access from desktop computers within the next five years [3].

These statistics are now true; with advancements in mobile technology and the rise in smartphone use, people are taking advantage of being connected to data wherever they are. Now mobile phones aren't just only uses for calling: they can able to access multiple applications such as e-mail, search the www, video chat, calling, and play games.

Even mobile devices like iPad and iPod touch can bring social media, productivity tools, and entertainment literally into the palm of your hand. Therefore, information professionals should be exploring mobile devices as a way to connect with all respective user community.

Creating a library application ("app") or mobile Web site that allows patrons to access library hours, view their library account or even search databases is easier than most people think. This paper describe about the mobli app, and strategic goals and examples of library app, should help libraries begin to plan and implement their own unique

mobile presence globally. Mobile apps can potentially help today's students by providing ubiquitous access to library e-resources, OPAC, Library digest, news and multimedia learning materials along with more channels for interaction etc.

CONCEPT OF MOBILE APP

App is shorthand for application, or software that typically runs on a mobile device [4]. In these day's mobile phone maker industries companies offers more advanced computing ability and connectivity than a contemporary basic feature phone. A Smartphone is a example of one of them smartphone mobile phone that offers multiple applications to user and a tablet is essentially a lightweight mobile computer with touch screen. Apple iOS and Google Android are two examples of popular smartphone/tablet platforms. Mobile device companies and computer scientist define the term "Mobile app" in different ways some definitions are listed below:-

A small application that runs on a smartphone and a tablet is called an app. Different app development tools are needed for different operating systems (platforms). For example, Apple apps are typically developed within the X-code environment in Objective-C programming language and can be deployed to iPhone, iPod Touch, or iPad, whereas Android apps are typically developed in Java language and deployed to Android devices [5].

In general Mobile App is shorthand for application, or software that typically runs on a mobile device. There seems to be an app for everything these days. There are apps that provide access to Library e-resource list, OPAC, information or bulletin of a library, news email, social networking sites,

* Library Information Assistant, IISER Bhopal, Madhya Pradesh, India. Email: ajaym@iiserb.ac.in; amajaybhai@gmail.com

** Superintendent Library, IISER Bhopal, Madhya Pradesh, India. Email: jkja@iiserb.ac.in

*** Librarian, U. G .College, Bohani, Madhya Pradesh, India. Email: umresachin@gmail.com

newspapers, and podcasts. The number of apps that have been downloaded continues to grow at an incredible pace.

FEATURES OF A MOBILE APP

There are some features of mobile app as listed below:

- Mobile applications are consist of software/set of program that runs on a mobile device and perform certain tasks for the user.
- The beauty of the app is that it allows users to access specific resources or services without having to open a web browser first [6].
- Simplicity of mobile app for the library user should be the main motto of any mobile app. convenient user interface, simple login or registration and authentication should be in a mobile app. Keep in mind this main feature of a mobile application. All the content should be accessed in the simplest way possible. Let clients perform every action with ease and secure way, and you will not lose them. That is the thing that keeps mobile apps going and makes them popular.
- Good performance of App. The speed of applications or page loading mustn't keep users waiting. However, issues such as this, are usually checked by quality assurance, which is a part of a smart mobile application or software development.
- Security is the main concern of any software application. Security related problem faced by the many of the mobile user's this is vital to many apps. It is one of the first topics of discussion between you and software developers. No leaks of the users' private information are allowed.
- Support and updates are one of the primary issues. To build a long-standing app, you need to consider support and updates. Maintain the server. Ensure that your content is made up of up-to-date, relevant information.
- Analytics is essential feature of a software application. As a mobile app developer, one key component is to incorporate analytics into your mobile app. This feature allows tracking users, and getting the full information about user information seeking behavior. On the basis of this information, you might see, in which way to upgrade the app.

ADVANTAGES OF MOBILE APP TO LIBRARY USERS

- Search access to the library catalog.
- Access to patron accounts.

- Listing of library hours and current status.
- Contact information of libraries.
- Interactive campus/library map.
- Ask a Librarian.
- Links to mobile-friendly websites and resources.
- Apps are becoming a primary reference tools for library users looking for research related information as well as for course work information.
- Information on how to contact the library via multiple channels (chat/SMS/phone/e-mail).
- Links to mobile-enabled databases.
- Links to mobile-enabled Web 2.0 accounts, such as Twitter, Flickr, YouTube, and Facebook.
- Floor maps:
 - Information on availability of computers and group discussion rooms.
 - A webcam so users can check on congestion in the library.
 - News about library events.
 - Content for download on podcasts, videosa.
 - In the early days on the web, there are concerns that mobile apps may be redirecting users away from library-provided resources and services. In response to this concern, many medical libraries are recommending, licensing, and even developing apps. This shift also requires that libraries create mobile technology plans, design mobile marketing strategies, and develop mobile services best practices [8-10].

TYPES OF MOBILE APPLICATIONS

Before planning, strategies, or best practices can be created for a mobile app for your library, it is essential for information professionals to understand the primary types of mobile apps and their distinct features and functionalities. Knowing the strengths and weaknesses of apps can help to in library professionals decide which approach meets the needs of the both the content and the users [13]. Mobile apps in three categories as discussed below:-

- Native App
- Web App
- Hybrid App

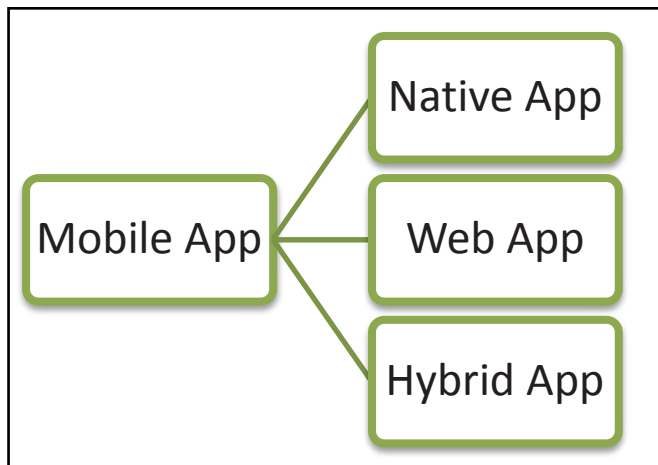


Fig. 1: Types of Mobile App

- **Native App**

Native applications refer to applications that are specifically written and developed for a specific mobile operating system. The three leading mobile operating systems are Google's Android, Apple's iOS, and Windows Phone. In order to create true, native applications, the Java programming language must be used for Android, the Objective C programming language for iOS, and the .NET framework for Windows Phone. Common, key characteristics of native applications are that these applications have unhindered access to device hardware and support all user interface and interactions available in the respective mobile operating environment [14].

- **Web App**

Web app refers to for mobile versions of websites. Really a Mobile web application is another term Web apps are not real applications; they are really websites that, in many ways, look and feel like native applications, but are not implemented as such [14]. They are run by a browser and typically written in HTML5. Users first access them as they would access any web page: they navigate to a special URL and then have the option of "installing" them on their home screen by creating a bookmark to that page.

Web apps became really popular when HTML5 came around and people realized that they can obtain native-like functionality in the browser. Once a mobile device is detected, the user-agent is redirected either to a dedicated mobile website created for that specific device or to a website that utilizes responsive web design techniques in order to provide the same content to a variety of devices [15]. Social Media site face book web application example of such type of app.

- **Hybrid App**

A hybrid web app is an application that is neither truly a mobile web app nor a native app. Hybrid apps are a way

to expose content from existing Web sites in app format [16]. A hybrid application is a mix of both native and Web technologies that are leveraged to deliver a mix of Web content and native capabilities [17]. It is basically an application written with the aforementioned web techniques of HTML5, JavaScript APIs, and CSS, but it runs inside a 3rd party native app container. The key characteristics of a hybrid app are that they are developed with standard web languages, but typically have access to the native device APIs and hardware. Some of the well known and used hybrid mobile frameworks are PhoneGap, Appcelerator, and Appspresso [15].

MOBILE APPS FOR INFORMATION PROFESSIONALS

Today's number of the academic institution like universities, research labs, technical institution and libraries have developed own library app or adopted application software (apps) with a unique goal to spread the information to all users and every bit of information to its user. Library users are currently able to access campus information conveniently without needing a computer, and they believe mobile apps can improve their access to information. The adaptation of e-mobile technology for different types of mobile apps satisfying the information needs of a new user.

Libraries and information professionals integrate library catalogue called Web OPAC, patron accounts, library hours, rules and regulation, bulletin board, newsletters, upcoming workshop lecture and more to mobile users. Designing a library mobile Website is a great opportunity for libraries and professionals to transform user services with recent technological trends. Mobile applications can help to access Library electronic resources. Use of mobile apps in library sector as a means to connect libraries with their users, libraries may be able to reach out to more customers, resulting in stronger and better online communities for students [18].

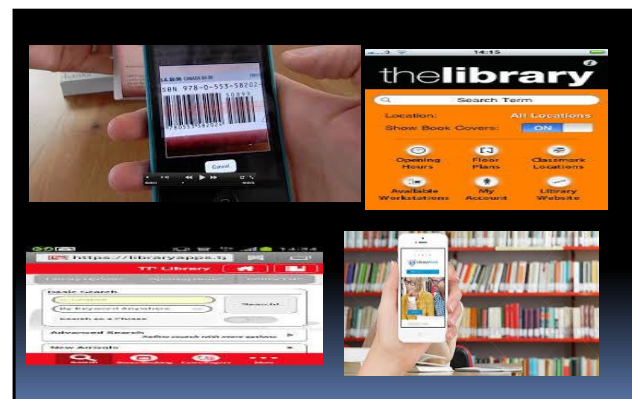


Fig. 2: Mobile apps for Information Professionals

In this section we are trying to generalize different mobile apps for the information professionals which offered various services to his/her users.

LibAnywhere: LibAnywhere (www.libanywhere.com) is another app that allows patrons to access library information such as catalogs, hours, branches, and events, and to contact reference librarians. It is available for mobile devices that run on the Apple iOS and devices that run on the Android platform. There is also a version compatible with any device that can access the internet [20]. The app itself is available for download free of charge.

Catch: Catch (<https://catch.com>) offers free and paid apps for Apple iOS and Android mobile devices. The apps allow users to create notes (via text, voice, or video) and save them to 'spaces'. The basic free plan offers users three spaces, which can be private or shared with other users, and 70MB of content per month [21].

EverNote: EverNote (<http://evernote.com>) is similar to Catch in that it allows users to save notes and sync them across multiple mobile devices and personal computers. However, EverNote allows users to save more than just notes; they can also save full

webpages or portions of pages by clipping them. Users can take photos with their mobile devices' built-in cameras or record with their mobiles' microphones and save those files in their EverNote app. EverNote allows users to collaborate with others by sharing their notes. The app is available free for both Android and Apple iOS devices. Users can upgrade to a premium account for about US\$5 (£3) per month or \$45 (£29) per year. The premium version allows users to upload more documents each month, view past versions of notes, and collaborate more effectively by allowing multiple users to edit notes [22].

Inspiration Maps: Inspiration Maps (<https://itunes.apple.com/us/app/inspiration-maps/id510173686?mt=8>) is available for Apple iOS mobile devices and is designed specifically as an educational tool for the iPad. It is a great application for creating mind maps and other diagrams. The application roughly US\$9.99 (£6.60), so it may be too expensive for each student to buy individually. However, discounts are available through Apple's volume purchase plan for educational endeavors [23]. There is also a 'lite' version that users can try for free prior to purchasing the full app.

EasyBib: EasyBib (www.easybib.com), a free mobile app available for Apple iOS and Android mobile devices, allows users to create bibliographies using MLA (Modern Language Association), APA (American Psychological Association), and Chicago style citation formats. Users can simply scan a book's barcode with their mobile device's built-in camera to add the book's citation information to their works-cited list.

If no barcode is accessible, users can manually input citation information. EasyBib will automatically put the citation in the correct MLA, APA, or Chicago style format; the user simply chooses which format he needs. Users can then email the citations to themselves to include in their assignments [24].

Trello: Trello (<https://trello.com>) is a great collaboration tool. It allows users to create cards with different tasks on them and organize the cards into various lists on their boards. The cards can include due dates and notes, and users can attach documents, photos, and videos to them. Users can add collaborators who can add notes to cards and work together in real time. Tasks can be assigned to different collaborators and users can set up email notifications and reminders [25].

AccessMyLibrary: AccessMyLibrary (www.gale.cengage.com/apps/aml/CollegeLibrary/) is a free mobile app, available to both Android and Apple iOS users, that works in conjunction with a college or university library's Gale databases. Students and faculty log in with their university email addresses to access the online resources available to them from Gale. This allows students to find full-text articles from electronic journals and other scholarly publications and read them on their mobile devices.

ArticleSearch: ArticleSearch (<https://itunes.apple.com/us/app/articlesearch/id401914624?mt=8>) is a free mobile app designed for Apple iOS devices. It allows users to search for scholarly articles and other academic publications. Users can perform basic or advanced searches, read abstracts, and even get the full text of articles. They have the option of saving articles or sharing them with others via email or text message [26].

Reference Manager Mobile Apps: Reference management software, citation management software or personal bibliographic management software is software for scholars and authors to use for recording and utilizing bibliographic citations (references). Citation software helps us:

- Import citations from your favorite databases and websites.
- Build and organize bibliographies.
- Format citations for papers.
- Take notes on articles and save them in your collection of citations.
- Save and organize PDFs, screenshots, graphs, images, and other files for your research.

Now number of Mobile app for bibliographic management software are available in the form of mobile application some of the listed herewith:

1. Zotero: Zotero (zotero.org) is open source citation management software. The mobile version of Zotero allows you to access and edit your Zotero library on your tablet or

mobile phone. The Zotero Bookmark let allows you to save items from your mobile device's browser directly to your zotero.org account. While there are no official Zotero apps for mobile devices, there are several third party solutions Like: Android Apps: Zandy, Zojo, Zed Lite etc.

2. Mendeley: Mendeley (mendeley.com): is a tool that enables you to manage citations and PDFs securely access Mendeley on any computer through the desktop client, web browser, or using your mobile app. Your library is backed up in the cloud and always available to you.

3. Redcube: ReadCube (<https://www.readcube.com>) is the recent program on the scene. ReadCube users can search PubMed and Google Scholar from within the program itself. Users can take notes on their PDFs as they read, and can later search within their own annotations. Users can download the app from <https://play.google.com/store/apps/details?id=com.readcube.mobile&hl=en>

4. Endnote: EndNote (<http://endnote.com>) is a subscription based reference management tool of Thomson Reuters. End note provide web based and desktop program to manage the citations. The iPad app EndNote for iPad recent version (updated on June 2017) is available on <https://itunes.apple.com/in/app/endnote-for-ipad/id593994211?mt=8>.

E-Resource Publisher or Aggregators App: The application of mobile based app provide easy solutions for easy and 24/7 access to e-resources. In technological era or information era, the use of e-resources in the academic world has become fashion of the day. Users can easily interact and download the full-text information in the electronic format. For easy access and also for easy updation many publishers and aggregators developed the mobile application.

ACS Journals: The American Chemical Society launched the mobile based app called "ACS Mobile". ACS Mobile used Apple; Android platform, the app provide full-text access when connected using internet.

The app available on <http://pubs.acs.org/page/tools/acsmobile/index.html>

Patron can access to new ACS ASAP Articles, personalized across the entire portfolio of 40 peer-reviewed ACS Journals, feed of the "Latest News" from *Chemical & Engineering News Online*, Filter and Search, Offline Reading, Personalization.

RSC Journals: The Royal Society of Chemistry facilitate with app called RSC Mobile. RSC Mobile used Apple; Android platform, the app provide full-text access when user connected with internet facility.

The app available on <http://www.rsc.org/Publishing/Platform/RSCMobile.asp>

ScienceDirect: The Elsevier is the world leading publisher of Physical Sciences and Engineering, Life Sciences, Health Sciences, and Social Sciences and Humanities. content. ScienceDirect Mobile application SciVerse, ScienceDirect provide Apple; Android mobile application, registered users can use this app. It's a subscription based app. The app available on <http://www.info.sciverse.com/sciverse-mobile-applications/overview>

Some other publisher like: Springer (Mobile app; Springerlink), Aggregator Ebsco (Mobile app; EbscoHost) provide the mobile based application to easy sharing the universe of knowledge

CONCLUSION

In this paper we have concluded the mobile app and features of a mobile app with its advantages to library professionals and also for user community. The article also concluded the several mobile apps which are available for library professionals.

REFERENCES

- Ben-Zvi, D. (2000) Toward understanding the role of technological tools in statistical learning. *Mathematical Thinking and Learning*, 2(1-2), 127-155.
- International Telecommunications Union, Market Information and Statistics Division Telecommunication Development Bureau, "ITU estimates two billion people online by end 2010," news release, October 19, 2010, International Telecommunications Union. Retrieved from www.itu.int/net/pressoffice/press_releases/2010/39.aspx (accessed March 9, 2011).
- International Telecommunications Union, Market Information and Statistics Division Telecommunication Development Bureau, "ITU sees 5 billion mobile subscriptions globally in 2010," news release, February 15, 2010, International Telecommunications Union. Retrieved from www.itu.int/net/pressoffice/press_releases/2010/06.aspx (accessed March 9, 2011).
- CompTIA. 'Healthcare Practices Embrace Mobile Technologies, New CompTIA Research Reveals. Retrieved from http://www.comptia.org/news/press-releases/11-1116/Healthcare_Practices_Embrace_Mobile_Technologies_New_CompTIA_Research_Reveals.aspx (accessed: January 7, 2011).
- Zhu, W., Marquez, A., & Yoo, J. (2015). Engineering economics jeopardy! Mobile app for university students. *The Engineering Economist*, 60, 291-306.
- Glassman, N. R. (2012). The mobile medical library: Is there an app for that?. *Journal of Electronic Resources in Medical Libraries*, 9(2), 147-154.

- Connolly, M., Cosgrave, T., & Krkoska, B. B. (2011). Mobilizing the library's web presence and services: A student-library collaboration to create the library's mobile site and iphone application. *The Reference Librarian*, 52, 27-35.
- Griffey, J. (2011). *Mobile technology and libraries*. New York: Neal-Schuman.
- Hanson, C. W. (2011). Libraries and the Mobile Services. [Special issue]. *Library Technology Reports*, 47(2).
- Ragon, B. (2009). Designing for the mobile web. *Journal of Electronic Resources in Medical Libraries* 6(4), 355-361. doi: 10.1080=15424060903364875. https://mobidev.biz/blog/11_key_features_of_a_successful_mobile_app#sthash.mcqn9TpD.dpuf
- <http://thenextweb.com/entrepreneur/2012/12/16/13-must-have-features-for-your-business-mobile-app/11/>
- Tay, A. (2010). Library mobile apps vs. web apps: Some analysis. *Musings About Librarianship*. Retrieved from <http://musingsaboutlibrarianship.blogspot.com/2010/09/library-mobile-apps-vs-web-apps-some.html> (accessed: January 17, 2012).
- Jobe, W. (2013). Native Apps vs. Mobile Web Apps. *International Journal of Interactive Mobile Technologies*, 7(4). Retrieved from <http://dx.doi.org/10.3991/ijim.v7i4.3226>
- <https://www.nngroup.com/articles/mobile-native-apps/>
- <https://msdn.microsoft.com/en-us/magazine/dn818502.aspx>
- <https://www.cognizant.com/InsightsWhitepapers/Hybrid-Mobile-Application-Analysis-and-Guidelines-codex888.pdf>
- Du, Y. (2015). Information use and barriers on a mobile app in distance learning. *Journal of Library & Information Services in Distance Learning*. Retrieved from <http://dx.doi.org/10.1080/1533290X.2015.1052608>
- <http://www.ala.org/offices/sites/ala.org.offices/files/content/oitp/publications/policybriefs/mobiledevices.pdf>
- Library Anywhere. Retrieved from www.libanywhere.com
- Catch, Pricing. Retrieved from <https://catch.com/learn-more/pricing/>
- Evernote, Premium. Retrieved from <http://evernote.com/premium/>
- iTunes, Inspiration Maps. Retrieved from <https://itunes.apple.com/us/app/inspiration-maps/id510173686?mt=8>
- EasyBib. Retrieved from www.easybib.com/kb/index/view/id/119
- Trello, Tour. Retrieved from <https://trello.com/tour> (accessed: 13 February 2013).
- iTunes, Article Search. Retrieved from <https://itunes.apple.com/us/app/articlesearch/id401914624?mt=8>
- Pocket. Retrieved from <http://getpocket.com/apps/>