Citation Management Software Tools: a Comparison with Special Reference to Zotero and Mendeley

Lambodara Parabhoi
Professional Assistant
Indian Institute of Advanced Study
Shimla
Email:suresh19871987@gmail.com

Arabinda Kumar Seth
Assistant Librarian
The Prameya
Summa Real Media Pvt. Ltd. Bhubaneswar
Email:arbind.seth@gmail.com

Sushanta Kumar Pathy
Assistant Librarian
Indian Institute of Technology, Kanpur
Email: spathy@iitk.ac.in

Abstract

The main focus of this paper is to compare and investigate the different functions of Zotero and Mendeley. Both the software's are getting popular among research and academic community. Mendeley, a desktop and web program with feature of social media functions, and use for gather, cite and create bibliographic. It can be combined with different other features available online. Zotero having the same functions and is open source citation management software used for creating bibliography, citation and storing bibliographical data. Both have web plugging feature and standalone version

Keywords

Citations management software; Bibliographic management software; Citations manager; Mendeley; Zotero

Electronic access

The journal is available at www.jalis.in

Journal of Advances in Library and Information Science
ISSN: 2277-2219 Vol. 6. No.3. 2017. pp.288-293

INTRODUCTION

During the last few years research work and publication of research article has been growing significantly. With the advent of Information Communication Technology (ICT) writing a research paper has become easier. Previously different citation style like APA, MLA, and Chicago etc. were used which was very complex and difficult to use. It was also difficult to remember the pattern of the citation style. With the growing invent of different citation management software (CMS), writing of the paper and bibliographic references are easy. It also resulted that the scholars and researchers are frequently using the reference management software (RMS) for their research works. There are variety of citation management software (CMS) available in the market some are paid and some of them are freely available namely Zotero, Mendeley, End note and RefWorks etc.

LITERATURE REVIEW

A study was conducted by (Francese, 2010)May 2011 at Tallinn University (TLU), Estonia to analyze the use of Reference Management Software by the academic community. It was found that, the usage of RMS was low and not well supported by a proper knowledge. (Gilmour & Cobus-Kuo, 2011) stated that the reference management software is widely used among the researchers in the field of health and natural sciences. The comparison of the four reference management software RefWorks, CiteULike, Zotero and Mendeleyare also derived. It was also discovered that choosing of RMS is depending on the needs of the users.(Zaugg, West, Tateishi, & Randall, 2011) on their article titled "Mendeley: Creating communities of scholarly inquiry through research collaboration" stated that Mendeley is a free and web-based tool used for organizing citations and found out how Mendeley helpful for academic community. Study conducted by(Francese, 2012) discovered that researchers used CMS for their research work to manage the bibliographic citation. According to (Glassman& Sorensen, 2012) students and researchers has trust on CMS for the use of organized, citation and references for their research papers and other documents.(Steeleworthy & Dewan, 2013) pointed that the librarians and researchers have been used citation management systems as research tools to help scholars, organize, improve workflows, and save the time. In their opinion, RefWorks is continued to be a prominent RMS tool in Canada. Studyalso

examined the import capability of Mendeley, RefWorks, WizFolio, and Zotero citation management software.(Gunn, 2014)mentioned that, Mendeley is Desktop software use for organizing and collaborating.(Sujit K Basak, 2014)in the comparative study among two citation management of software RefWorks and Zotero foundthat RMS playing an important role for researchers, whereasMendeley can help to find out and import more details information from the Google Scholar then Zotero. The study also found that among RefWorks, Mendeley, and EndNote, Mendeley was superior CMS in terms of importing bibliographic data from Google scholar.

What is Citation Management or Bibliography Management Software?

According to ODLIS a reference Management Software is a "Application software designed to enable researchers to collect bibliographic references quickly and easily, cite them properly, organize them effectively, and share them with others"(ODLIS,2017).
Another definition has given by Telstar's a Reference Management Software "enables an author to build a library of references by entering the details of each reference in a structured format. They usually support mechanisms for organizing sets of references by tagging or use of 'folders', and will generate references, citations or bibliographies in a range of referencing styles"(TELSTAR, 2017).

Why Citation Management Software?

Citation management software is very useful for research scholars and authors for handling bibliographic contents like recording and utilizing bibliographic citations. Reference can be handled manually but software provides greater flexibility and efficiency. The need of the Citation Management Software is highly essential because of the following important reasons:

- Citations, references, bibliographies are fundamental to a good research
- They serve as foundation of scholarship
- Collecting, organizing, using references is a tedious job
- Producing bibliography a time consuming process
- Effective managing of references is very important
- It is most complicated aspect of being a researcher

Features

- Key features of citation management software (CMS) are:
- It is user friendly
- Some are freely availableas Open Source Software (OSS).
- No need of extra supporting software
- It works on both Online and Offline mode
- It is faster than the manual style of writing reference
- It is error free
- Variety of manual style in one stop
- Easy to import and export bibliographic record in different file format.
- Easy plug in with MS-Word
- Easy to save and organize, share your bibliographical information to others
- Importing/exporting of citations from databases & websites
- Gather metadata from PDF files/websites
- offer data storageoptions
- Adhere to standard formatslike RIS &BibTex
- Organization of citations within the RM database
- Adding notes & annotations to citations
- Searching & sorting within the database

Brief history of Citations Management Software

ZOTERO

The name Zotero originates from the Albanian language "to master or acquire" (Dingemanse, 2008). One of the popular Reference Management software developed by the Librarians from Center for History and New Media (CHNM) at George Mason University (GMU) in the year of 8th October, 2008. Zotero is funded by the Andrew W. Mellon Foundation, the Alfred P. Sloan Foundation and the Institute of Museum and Library Services.

Zotero Features

Some of the key features of Zotero are:

- It is developed by a group of Librarians
- It is Free (Open Source) but charges for data storage

- It is one of the best for extracting metadata from websites
- It is freely available with two different versions one is for *standalone* and another is *plug-in* with Firefox, Safari and Chrome extension.
- Zotero can easily synchronize collections among multiple computers & backs up data.
- It is work on word and open office that helps the user easy to find a document.
- It easily shares referencewith other having same interest.
- It has dropped and drags functionality.
- Zotero has facility to the users to create Groups and share their CV to the same group and individual.
- It can recognize data andimport metadata facility.
- Users can import the data from the web and save the same in library (PC).

MENDELEY

One of the impressiveamong the all bibliographic management software, Mendeley was founded in November 2007 by three German PhD students and is based in London. Mendeley was named after Dmitri Ivanovich Mendeleyev who developed the periodic table of elements and Gregor Mendel who is often called the "father of modern genetics" (Mendeley, 2010). It has special provision of additional space onpurchase separately for the institutional version of the software. Mendeley announce on 23rd September, 2013, that the S/w can be installed in iPhone and iPad. Mendeley is a tool that enables us to manage citations and PDFs using a desktop client version or through web version for network environment. Mendeley incorporates plug-in for Word or OpenOffice, so you can easily create citations and/or bibliographies as you write your papers. (MIT Libraries, 2017).It is very easy to use and also freely available for the desktop version having storage up to 2 GB.

It is taken over by Elsevier recently andMendeley established in 2008. It is available as a free package-with an option to upgrade at cost. It offers both desktop & web version ccompatibleacrossplatforms and havingcopy and paste option.

There are also other Citations Managements tools:

EndNote: It is the oldest citation management software introduced by Thomson Reuters in the year 1988) one & most popular for desktop by. Itisavailableonlicense for bothweb edition and desktop. The software is mostly used by Science and Technology community.

RefWorks: It is another popular citation or bibliography management software which is web based introduced by ProQuest in the year 2001.The software allows user to import, store, organize and manage bibliographic information. It is frequently use for text citations and bibliography. The software available in available for both web based version and desktop and Works on all major platforms.

Bibus: It is bibliographic and reference management software that allows to the users to edit, sort and search bibliographic record. It has unique features among the other OSS and Commercial Bibliographical software. It is allows user to edit, and sort, search, and bibliographic records.

NoodleBib: It is easy and user friendly Citation management tool it offer APA, MLA, Chicago and Turabian citation style.

WebNotes **:**This is a research tool. It offer user can highlight the document's save the annotated PDF documents, and webpage online.

AccountQiqqa: It is award-winning research *management software* developed or commercial and academic researchers.

Different between Zotero Vs Mendeley

Criteria	**Zotero**	**Mendeley**
Web based	It is use in Firefox and web extension	Yes Mendeley also web based application having extension with GoogleChrome
Developer(s)	Developed by Center for History and New Media (CHNM) at George Mason University (GMU)	Elsevier
Software	Zotero is open source software.	whereas Mendeley contains some proprietary

		code
License	Affero General Public License (AGPL)	Proprietary license
Cost	Software package is feely available on website https://www.zotero.com/ There are three different levels of accounts; There are three different levels of accounts; the basic free version allows for 300MB of personal 2 GB, $20/year and for 6 GB, $60/year and for Unlimited data you have to pay $120/year(Zotero.org,2017)	Software is feely available on website http://www.mendeley.com but with limited feature.For usingthe advance feature, extra payment has to be paid. The basic free version allows a user to save personal data up to 2. It can be extend with three different accounts for Plus account offer 5 GB space with $4.99 , Pro account offer 10 gb with $9.99 and Max account offer unlimited space with $14.99 (Mendeley.com, 2017)
Import	Yes, Zotero can import citation from different databases and in different formats namely BibTeX, BibLateX, RefWorks, BibIX, RIS, TEI etc.	Yes, Mendeley have the facilities to import quality in different formats like RIS , EndNote XML and BibTex,
Export	It offers variety of format to export the biographical data like BibTeXRefer /BiblX, RIS and BIbliontology, etc.	It also compatible with BibTeX EndNote (XML) and RIS
Plug-in	It has plug in utility with MS Word and LibreOffice. Also Zotero standalone is having add on facilities on well-known web browser like Firefox, Google Chrome, Safari and Opera Connector	Mendeley also having plug in with MS Word, Open Office and Google docs
Storage	Up to 300 MB free,Unlimited local storage and data syncing; 100MB free Zotero web space with larger plans available on purchase (access from guides.lib.washington.edu)	Free storage web space up to 2 GB. Also option of increasing the volume of storage on payment basis along withavailability of purchase of the Intuitional Version of the product.
Developed year	It was developed in the year of 2006	It was developed in August 2008
Citation Style	It covered more than 1000 styles	It has over 4000 styles
Installation	It is easy to install	Mendeley can easily be installed
Operating System	Zotero is platform independent. It can work in all operating system like Windows, Linux, Mac etc.	Mendeley also work in Windows, Linux and Mac.
Automatic journal abbreviation lists	Zotero can automatically create abbreviate journal list in Version 4.0 and later	Version 1.10 and later has the feature of automatically abbreviates journal in Mendeley
Linking facilities to PDFs or other type of materials	It has compliant with OpenURL and user can do theattachments and snapshots	Mendeley has also same feature
Retrieve PDF citation data	It can extract the metadata and citation in pdf format	Mendeley has also same feature
Annotations/Highlighting in PDFs	Zotero do not have this facilities	Whereas Mendeley can highlight the pdf and read them.
Add notes to references	Yes, user can add note to the reference and document	Mendeley has also same feature
Field Search	It is searchable to all the fields	Yes, search can be done by author, title, publication names, year & notes
Advanced Search	It is searchable to all the fields	This feature is missing
Create a bibliography	Zotero can create biography as RTF HTML and can Copy plain text to clipboard	Mendeley has also same feature
RSS Feeds	RSS features available	RSS features available
Version	Zotero is frequently updated their versions 4.0.29.5 standalone and Firefox is the latest version 4.0.29.6 for	Mendeley is still in beta so developers are constantly working for the improvement. Latest version is 1.16.1 Desktop version.

	Firefox only(Zotero.org,2017)	
Number of reference types Ex. Book, Journal,	It has Pre defined20	It has Pre defined 35
Default out format for Bibliography	Zotero has 12 default Citations format i.e. APA, MLA etc.	It has 14 default citations style format
Duplicate detection	It has the features with limited functionality	It has the feature of checking duplication
Full Text PDF search	It offer full text search of the document within the system	Yes, it facilitates full text search but within the domain of in-house created in the library.
Direct Export (from databases)	Yes it is possible to export from the specific database like PubMedvia translators	Yes, via web importer
Edit or create styles	Zotero can edit and create citations style via citation style editor	Yes it can edit and create citations style via citation style editor
Import citation info from web pages	Zotero can import citation from the webpage using plug-in extension	Mendeley has also same feature
Read-only capability	Yes (via member settings within groups)	Yes (by "follow" option through web interface)
Collaboration features	It offers collaborative feature can create and share the groups using social media	Yes Mendeley has also same feature, but add on features available on payment basis
Mobile Device Application	Yes it offers mobile device app for 3rd party Android apps, iOS and, web interface	Yes, Mendeley has also same feature
Access citations remotely	Yes, it can access citations remotely	Yes, Mendeley has also same feature
Spell Check	The feature is not available	No, the function is not available
Official website	www.zotero.org	www.mendeley.org
Language support	Zotero supports more than 30 languages up to2014	Mendeley supporting 50 language for citation and bibliography
Menu bar	It has four menu options like File, Edit Tools and Helps	Mendeley is having five menu options having an extra menu 'View' in addition to Zotero.
Product support	Zotero website offers wide-ranging ideas relating to product, queries and it includesinstructional screen casts and also get information from user groups relating to troubleshooting tips, issues	It is taken over by Elsevier with customer support service by the company
Browser independent	Yes	Yes
Trash option	Yes	Yes
Sharing libraries	Zotero has own server to share the information	Mendeley function using the web server
IOS and Android	No, Zotero do not have these app	Yes, Mendeley offer free apps
Subject Bibliography features	It cannot create a subject bibliography	No, it has not having this facility
Share data among other citation management programs	Yes	Yes
Edit or create filters	Yes	Yes
Job search	No	A user can search the job related to your subject
Suggestion	No	Mendeley help to the researcher to receive wide area suggestions related to the research area of interest of latest article, people, authors etc.
Statistic	No	User can see the statistics of your research articles viewed/ referred
Data Sharing	Yes	A user can share his/her data online

CONCLUSION

Both Zotero and Mendeley have independent features and functions which is non-overlapping and hence can be used both simultaneously. Both of them are very popular among the different users group since last few years. Both the reference management software are updating their features on regular interval based on the user's requirement. Researchers are free to choose their own software based on their requirement and computer specification. Both have capability with cross platform and compatibility with both Linux and Windows operating system. Reference management software is going to be an integral part of the researcher day by day due to the characteristics and features. It is also high time for the institutions to promote the reference management software including both Zotero and Mendeley and incorporate into the system. Guidelines and tutorials also to be shared among the researchers through orientation, awareness programmes and seminars for the knowhow of the tools and to popularize the software.

REFERENCES

[1]. Basak, S. K. (2014). Reference management software : comparative analysis of RefWorks and Zotero, *8*(11), 1972–1975.
[2]. Dingemanse, M. (2008). The etymology of Zotero|theideophone. Retrieved from http://ideophone.org/zotero-etymology/
[3]. Francese, E. (2010). The usage of Reference Management Software (RMS) in an academic environment : a survey at Tallinn University.
[4]. Francese, E. (2012). Reference management software as digital libraries : A survey at the University of Torino. *Advances on Information Processing and Management*, *1*, 293–296.
[5]. Gilmour, R., &Cobus-Kuo, L. (2011). Reference management software: A comparative analysis of four products. *Issues in Science and Technology Librarianship*, *66*.
[6]. Glassman, N. R., & Sorensen, K. (2012). Mobile computing in the library. *Journal of Electronic Resources in Medical Libraries*, *9*(3), 223–231.
[7]. Gunn, W. (2014). Mendeley : Enabling and understanding scientific collaboration. *Information Sevices and Use*, *34*, 99–102.
[8]. Steeleworthy, M., & Dewan, P. (2013). Web-based Citation Management Systems : Which One Is Best? *Partnership: The Canadian Journal of Library and Information Practice and Research*, *8*(1), 1–8.
[9]. Zaugg, H., West, R. E., Tateishi, I., & Randall, D. L. (2011). Mendeley: Creating communities of scholarly inquiry through research collaboration. *TechTrends*, *55*(1), 32–36. http://doi.org/10.1007/s11528-011-0467-y