

Selection of Reference Management Tools for Creation and Managing the References for Academic Purposes: A Comparative study

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Abstract

With changing times the publishing industry has adopted various standards of reference, bibliographic standards in publishing the electronic content such as books, articles, theses and dissertation, websites, data, e-publications, videos, white papers and more. Managing of such references is becoming challenging day by day for users. To overcome this problem, many references management tools are available in IT environment to collate and manage citations and references to help the users, research scholars and faculty. However with the advent of reference management tool. It has been possible to correct format for citing references in research papers. It is also important to remember that scholars don't have to wed their self to any one tool as each has its pros and cons, and one can use different tools for different purpose. One can usually exchange references/citations between different tools quite easily, so if a researcher start using one tool and decide to move to a different tool, researcher can transfer all their references/citations and not have to go out and find them again. Following are the major reference management tools which discussed in this paper 1) Mendeley 2) Ref works 3) Bibliotext 4) Zotero and 5) Endnote. A comparative study has been done for available reference management tools which may help the users to decide which one is the appropriate and more user friendly for their research work. The paper studies the problem which occur while using the reference management tools and how to overcome those problem using alternative tools and converter etc.

Keywords: Reference, Citation, Reference Management Tools, Information Communication and Technology, ICT. Bibliographical Management Tool.

0 Introduction

“In a world of e-research, there are more data sources available than ever, which means researchers need highly efficient ways to manage vast amounts of information easily.[1]. Bibliography and reference are playing major role in information communication technology (ICT) era. Based on bibliographic or meta-data users can retrieve the required information from web or online databases. As we know, how bibliographies are important for building full text or bibliographic database, Simultaneously how important the bibliographic standards are for sharing and exchange of data. In same manner, references are very much important in academic and research work of researcher, technologist, scientist and authors etc. Researchers need to keep their referred records in systematic manner and use them in their work with suitable citation style which will further help them as well as content developers to build the citation work done by an author or researcher.. Publishers and programmers are also coming forward to put their efforts and to the reference management tools (RMTs), which helps the users in managing, creating and sharing the references for their work. Presently in market many reference management software’s (RMS) are available such as Mendeley, Refworks, Biblio Text, Zotero, End Note etc.

In this paper efforts are made to pull out the features of above mentioned RMTs which help users to select the best one for their work. It also helps in further work of writing the paper, thesis, book or book chapter etc.

1 Purpose of RMTs

RMT has become very essential tool to build the references and maintain the uniformity in references for the easy and accurate retrieval of literature. RMT serves the following purpose in academic works

- Importing citations from bibliographic databases and websites.
- Gathering metadata from PDF files
- Allowing organization of citations
- Allowing annotation of citations
- Sharing managed PDFs with colleagues

- Data import/export with other databases through standard metadata formats (e.g., RIS, BibTeX)
- Producing formatted citations in different styles
- Working with word processing software to facilitate in-text citation
- Reducing the workload of authors in writing of citation & references, formatting them, thus save the time
- Sharing references with each other

2 Reference Management Tools

2.1 Mendeley: (www.mendeley.com), was developed in 2008 by a Web 2.0 start-up. Mendeley offers a free package with the option to upgrade for more individual and shared storage space. It offers both a desktop and web version. Mendeley Desktop, a free and crossplatform desktop application, automatically extracts metadata, full-text and cited references from research papers to minimize manual data input when setting up a local research paper database. It then enables researchers to manage, tag, full-text search, cite in Word and LaTeX, and share research papers, thus providing researchers with usage value independent of any network effects. The companion website, Mendeley Web, can be used for backing up research papers, creating a public research profile, and connecting to like-minded researchers. Mendeley Web already displays the pervasiveness of research papers, authors, journals and tags as measured by Mendeley Desktop. Elsevier takeover the mendeley in 2013'[2].

2.2 RefWorks : (www.refworks.com), developed in 2001 by a business unit of ProQuest, is a web-based RM that requires a fee-based license. Individuals can purchase a subscription, but institutional accounts provide more options and features. 'Refworks is a powerful online research management, writing and collaboration tool designed to help researchers at all levels easily gather, organize, store and share all types of information and to instantly generate citations and bibliographies. Refworks also provide a unique featue of Refmobile service which allowing researchers to access their citaitions from any web-enabled mobile device Users can view and

add references, jot notes, and work with groups of references in folders as well as new folders.’
[3]

2.3 BibTeX : is reference management software for formatting lists of references. BibTeX was created by [Oren Patashnik](#) and [Leslie Lamport](#) in 1985. It is written in WEB/Pascal. It was designed to be used in combination with the typesetting system LaTeX. You need to type each reference only once, and your citations and reference list are automatically formatted consistently, in a style of your choosing. The format is now widely supported by reference managers that work with Microsoft Word and other authoring tools, and by online bibliographic databases such as Google Scholar. BibTeX references are stored in a plain text database with a simple format’[4].

2.4 Zotero: (www.zotero.org), developed in 2006 by George Mason University's Center for History and New Media (CHNM), is a free, open source plug-in for the Firefox browser. Once installed, the user simply clicks on an icon in the address bar to save the citation information in one's library without navigating away from the web page. At present, Zotero has an alpha version of an independent desktop client, Zotero Standalone, works on Mac OS, Windows, and Linux, offers independence from the Firefox browser.

2.5 End Note: is a commercial reference management software package produced by Thomson Reuters. Endnote is one of the most popular reference managers from last 20 years’[5]. It allows the collection of references from online resources and PDFs. References from bibliographic databases can be imported into EndNote directly. Full-text can be imported too. EndNote provides plugins for Microsoft Word and Open Office. While EndNote does not include any collaborative features, EndNote Web provides the functionality for collaboration with other users. Users share with group members, can read/write, access to their references and can import references. Endnote also integrates with other bibliographic tools produced by Thomson Reuters, including Web of Science and Researcher ID.

3 Need of comparison of RMT:

Currently many RMT are available and each one has its own features but there is no such tool which meets all the needs of researcher. The researcher has to depend on one or more tools to compile the references or create, manage & share the references. To know the more appropriate tool, the comparison of RMT is important. Following are major needs for comparison :

- User requirement V/S Software fulfillment
- Purpose of development V/S Need of user
- Compatibility
- Updated features
- Costing
- Limitations etc.

4 Methodology used for comparison of RMTs

In this study comparison is made to find out the best one among the available reference management tools. The comparison criteria include the features study and availability for users in the context of financial matter, compatibility, file format support etc.

5 Table of comparison of RMTs

4.1.1 General Features:

Features	Mendeley	Refwork	Bibtex	Zotero	End Note
Developer	Elsevier	RefWorks / ProQuest	KBibTeX developers	Roy Rosenzweig Center for History and New Media at	Thomson Reuters

				GMU	
Cost individual access.	Freely available to use with limited storage.	Not available	Free to on text based formats.	Free Open source software	US\$299.95(Basic Web version is formally free, Full version is payable.
Institutional access.	Amount varies depend upon number of users.	US\$100 per year (web-based, browser-accessed, centrally hosted program)	Free	Free Open Source Software	Amount varies depend upon number of users .
Import	Yes	Yes	Yes	Yes	Yes
File attachment	Yes	Yes	Yes	Yes	Yes
Sharing	Yes	Yes	Yes	Yes	Yes
Storage Size	2 GB Free	Unlimited	Unlimited	100 MB	Unlimited
Web based or Desktop based	Both	Web based	Both	Both	Both
Metadata	Yes	Yes	Yes	Yes	Yes
Searching Feature	Available	Available	Available	Available	Available

Table-1

4.1.2 Format Support:

Features	Mendeley	Refwork	Bibtex	Zotero	End Note
PDF	Yes	No	NO	Yes	No
HTML	Yes	Partial	Yes	Yes	Yes
Doc	Yes	Yes	No	No	Yes
RTF	Yes	Yes	Yes	Yes	Yes
RSS	Yes	Yes	No	Yes	NO

Table-2

4.1.3 Compatibility:

Software	Windows/ Linux/ Mac	Windows	Mac OS X	Linux	Unix
Mendeley	Yes	Yes	Yes	Yes	No
RefWorks	Yes	Yes	Yes	Yes	Yes
BibTeX	No	Experimental	Experimental	Yes	Yes
Zotero	Yes	Yes	Yes	Yes	Yes
EndNote	Yes	Yes	Yes	No	No

Table-3

4.1.4 Bibliographical Formats / Citation Style:

Software	APA	MLA	Chicago/ Turabian	Harvard	Other
Mendeley	Yes	Yes	Yes	Yes	6781 Styles
RefWorks	Yes	Yes	Yes	Yes	Various
BibTeX	Yes	Yes	Yes	Yes	Any BibTeX Style
Zotero	Yes	Yes	Yes	Yes	7800+ Styles
EndNote	Yes	Yes	Yes	No	6506 Styles

Table-4 [6]

5 Findings

Based on the Features comparative study of RMTs, we found mendeley is more user friendly due to the following features, Cost wise it is available freely for use up to 2 GB storage, It provide Import and export facility with File attachment, File sharing from Desktop to web & Web to Desktop (With Synchronizing Facility), and metadata generation facility from Different file formats such as PDF, HTML, DOC, RTF, RSS etc. In the context of compatibility mendeley is compatible with all the oprating systems. Based on the above features researcher can easily migrate their data from one tool to another RM tool. In the context of cost effectiveness, Mendeley, BibTeX, & Zotero are freely available to use and its features are almost similar to paid one. Only the storage capacity is limited as compared to paid one. Freely available desktop based RM tools will helps users similar like paid one using synchronies option to connecting to web.

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