

The Future Agenda of the Reference Management Tools

Kamala Mohanty
National Institute of Technology
Tadepalligudam
Andrapradesh, India
kmohanty123@gmail.com



ABSTRACT: Citation and Reference Management (RM) has always been a crucial part in the study of scholarly publications. The management of these references has mostly been the sole responsibility of the author until now as they collect, maintain and format. There are the tools to assist in this regard, whereas both the commercial and open sources offer varying degrees of support for user specific needs. In the past few years, we witnessed the arrival of a large number of new tools with greatly expanded functionality. Most of the newer reference managers focus on the collaborative aspects of collecting references and writing manuscripts. A number of these newer tools are web-based in order to facilitate this collaboration, and some of them are also available for mobile devices. Many reference managers now have integrated PDF viewers (sometimes with annotation tools) for scholarly papers. This studied the available online reference tools and indicate the future functions of these tools. These tools are expected to play a role in reference linking.

Keywords: Reference Management (RM), Citation Tools, Open Source References, Online Reference Tools

Received: 10 June 2017, Revised 9 August 2017, Accepted 14 August 2017

© 2017 DLINE. All Rights Reserved

1. Introduction

Reference Management is a time consuming process for every one involved in it such as information professionals, users and intermediaries when it is done manually. In the past, references are used to be written on index cards and stored in boxes. Reference management software allows for the digitalization of the personal collection of relevant scholarly publications. Reference Management Tools help scholars to create and manage their lists of references for research projects. Most tools are designed to organize citations into specific formats for the preparation of manuscripts and bibliographies. Many search tools provide ways to download references into reference management tools.

2. Reference Manager- Preliminaries

Reference management software or **citation management** software or personal bibliographic **management** software is a software for scholars and authors to use for recording and utilising bibliographic citations/references. The reference manager supports

researchers in performing three basic research functions: searching, storing, and writing (M. H. Fenner 2010). It helps researchers find relevant literature, allows them to store papers and their bibliographic metadata in a personal database for later retrieval, and allows researchers to insert citations and references in a chosen citation style when writing a text.

3. Automatic Discovery of Reference Data from Online Databases

3.1 DOIs and Other Persistent Identifiers for Bibliographic Information

The Digital Object Identifiers and the persistent identifiers are applied to different types of materials such as journal or document papers, datasets and author datasets. The “DOI has emerged as the most widely used standard for digital resources in the publication world” in the words of Brace (2009). Duggan(2008) has introduced a system for generating unique and persistent identifiers for one or more entities within a network. This is an enhancement towards clustering related documents and publications.

3.2 Automated Management of PDF Files

A few reference management tools can able to extract metadata and bibliographic data from PDF files which enable automatic reference building. Mendeley and Zotero have this feature.

3.3 Open Access for Easier Access to Full-text Content

In open access process till a part of the scientific literature is available and when authors try to share the publishers do not accept and this impediment is a major constraint.

3.4 Web-based Reference Management for Easier Collaboration and Use Across Multiple Devices

The development of online collaboration tools enable the researchers to share and contribute to the scientific growth in recent years.

4. Early Studies

Reference management software has been a useful tool for researchers since the 1980s. In those early years, tools were made ad-hoc, and some were based on the dBase II/III database management system (Bertrand and Bader, 1980; Kunin, 1985). In a short period of time a market was created and commercial products were developed to provide support to this type of information resources. The need of researchers to systematize scientific literature in both group and personal contexts, and to integrate mechanisms into scientific production environments in order to facilitate and expedite the process of writing and publishing research results, requires that these types of applications receive almost constant attention in specialized library and information science literature. The result of this interest is reflected, in bibliographical terms, in the publication of numerous articles almost exclusively devoted to describing, analyzing, and comparing the characteristics of several reference management software products (Norman, 2010). Using these studies it is possible to trace use and consumption patterns in scientific information along with production and publication processes. The review and study of the contents of these articles, over an extended period of time, can provide data on the evolution of user needs, industrial life cycles, and the development of evaluation processes of software tools geared toward scientific information management. A significant number of publications have focused on providing researchers and professionals with the information needed to decide which tool is best to meet their needs. To that end, several authors have provided individual or overall assessments of the tools available, in accordance with several criteria and approaches. Although Moore (1991) originally suggested an evaluation grid for highlighting features in reference management software, it is only recently that some basic proposals have been published in order to develop specifically designed evaluations for these tools (Marino, 2012). Many bibliographic management tools have been identified and studied extensively in literature and their features are also comparatively addressed. These studies (Zhang 2012, Natasha Simons 2012) conclude that each has its own features and limitations and no individual system can be rated as the best among the available tools.

5. Tools of Reference Management

Reference Management Tools help scholars to create and manage their lists of references for research projects. Most tools are designed to organize citations into specific formats for the preparation of manuscripts and bibliographies. The comparison of the four products are given by Gilmour (2011). From the large number of available reference managers, we have chosen five popular products that are described in more detail below.

5.1 Mendeley

Mendeley is a reference manager developed in 2008 by a London-based start-up. Its strength lies in its networking and collaborative features, and also in providing facilities for easily managing PDF files. It offers both a desktop and a web version with synchronized bibliographic information, allowing access from several computers and collaboration with other users. PDF files can be imported into Mendeley desktop and metadata such as authors, title, and journal are automatically extracted.

What Mendeley does?

- **Reference manager:** Generate citations and bibliographies in Microsoft Word, OpenOffice and LaTeX.
- **Read and annotate:** Open PDF's and capture thoughts through sticky notes and highlighting of text.
- **Add and organize:** Import and organize PDF's from your computer, EndNote, Papers or Zotero
- **Collaborate:** Connect with colleagues and securely share your papers, notes and annotations.
- **Backup, sync and mobile:** Access your papers on the web, iPhone or iPad.
- **Network and discover:** Discover papers, people and public groups.

5.2 Zotero

Zotero is a popular open source reference manager, originally developed in 2006 by George Mason University's Center for History and New Media as a plugin for the Firefox browser. The newer Zotero Standalone offers the same functionality but runs as a separate program and works with Firefox, Chrome, and Safari. Zotero also includes a hosted version in order to synchronize references across devices and share them in private or public groups. It consists of two components: desktop software and a web application. Zotero File Storage is a cloud-based syncing and storage solution for PDFs, images, web snapshots, and any other files attached to your Zotero libraries. Allows users to create groups and share references.

Contribution of Zotero

- Zotero has a certain number of styles installed, download additional styles
- PDF organizer, drag and drop.
- Offer Word-processor integration for Windows or Mac OS (MS Word, Open Office).
- Add citations to your document – Choose and even change your choice of reference format and citation format.
- Allows the creation of personal profiles, which may include CVs, research interests, etc.
- Synchronize for access to data from anywhere: log on with your ID and sync.

5.3 CiteULike

CiteULike is a free online reference manager and social bookmarking tool developed in 2004 and sponsored by Springer Science and Business Media. It is a free online reference manager primary intention to act as a social networking tool by letting users search for related articles or helping users to connect with researchers who have similar interests. References are primarily entered via a bookmark let that captures bibliographic content in web pages. New entries are public by default and are added to the common library, but entries can be also made private. Users can assign tags to entries which make it easier to organize and search through content. References can be exported in BibTeX and RIS formats. The social networking features are the strength of CiteULike. Users can create profiles, connect with other researchers, and create and join groups where they can collaborate on library content.

5.4 End Note

EndNote is a commercial reference management software package produced by Thomson Reuters. Endnote is one of the most popular reference managers and has been around for more than 20 years. It allows the collection of references from online resources and PDFs. References from bibliographic databases can be imported into EndNote libraries. Full-text can be imported

too. EndNote provides plugins for Microsoft Word and OpenOffice. References can be exported to BibTeX. While EndNote does not include any collaborative features, EndNote Web provides the functionality for collaboration with other users. Users can give group members read/write access to their references and import references from other people's libraries. Endnote also integrates with other bibliographic tools produced by Thomson Reuters, including Web of Science and ResearcherID.

5.5 RefWorks

RefWorks is a commercial web-based reference manager by ProQuest. The Write N Cite utility enables the integration of references into Microsoft Word where in-text citations and reference lists can be formatted into various styles. RefWorks makes it easy to collaborate with others as all references are stored in the web-based version. The Write N Cite utility can also work offline, but RefWorks is not the right tool for researchers with intermittent or poor internet connectivity.

6. Discussion

We have extensively studied the features, characteristics and contributions of the five generators.

We can discuss the issue from different views. Basically the automatic online reference tools are able to extract meta and bibliographic data and compile the database in various standards. The studied five products may vary in terms of the amount of information they generate and the method in which they compile. They solve the purpose of automatic dataset generation. However some of them go beyond the point. One aspect is the reference linking which ultimately enable to cluster related publications. Reference management tools need to beyond their boundaries and enable scientific processing of documents.

The studied tools exhibits various characteristics such as annotation, sharing, data migration and sorting, searching and organization. A few such as Mendeley and Zotero offer word-processor integration.

The required feature is the reference linking which can bring the related publications in to a group and enable optimum retrieval.

7. Conclusion

Reference management has become easier, cheaper, and more social in the past few years, and this trend will continue. We will see the integration of unique author identifiers (ORCID, etc.) into bibliographic databases and reference management tools and this will facilitate the discovery of relevant literature and the automatic updating of publication lists. We will increasingly see citations of datasets and other non-text content. Digital identifiers for content and support for the open Citation Style Language will also increase, as will the availability of open bibliographic information. Three areas still need improvement: Firstly, the automatic importing of the references of a particular publication, and the integration of reference managers into authoring tools. Secondly, the word processor plugins for reference managers still do not work together, and some of the newer online authoring tools (Google Docs, etc.) need to be better integrated with reference managers. Finally, instead of having references in plain text, which makes it difficult to get to the full-text and reformat it into a different citation style, publishers, institutions, and funders should start to ask for reference lists in standard bibliographic formats using digital identifiers.

References

- [1] Bertrand, D., Bader, C.R. (1980). Storage and retrieval of bibliographic references using a microprocessor system. *International Journal of Bio-Medical Computing*. 11 (4) 285-293.
- [2] Childress, D. (2011). Citation Tools in Academic Libraries. *Reference & User Services Quarterly*. 51 (2) 143–152.
- [3] Cibbarelli, P. (1995). Cibbarelli's surveys: user ratings of bibliographic citation management software. *Computers in Libraries*, 15, 25–40.
- [3] Lorenzetti, D. L., Ghali, W. A. (2013). Reference management software for systematic reviews and meta-analyses: an exploration of usage and usability. *BMC Medical Research Methodology*, 13 (1) 141.
- [4] Gilmour, Ron., Cobus-Kuo., Laura. (2011). Reference management software: a comparative analysis of four products. *Issues in Science and Technology Librarianship*. Summer, 1-12. Available online: <http://www.istl.org/11-summer/refereed2.html>
- [5] Horsler, Paul (2013). The free, web-based Endnote Basic offers a new collaborative edge whilst remaining a true reference

management tool. Available online: <http://blogs.lse.ac.uk/impactofsocialsciences/2013/05/10/endnote-basicooffers-new-collaborative-edge/>

[6] Patashnik., Lampion, L. (1997, 2006). BibTeX.org - Your BibTeX resource. Retrieved 21 November 2008, 2008, from www.bibtex.org.

[7] Spence, Muneera U., (2005). Graphic Design Collaborative Processes: a Course in Collaboration. Oregon State University: Philadelphia, Pennsylvania.

[8] Thomson Corporation. (2006, 2008). About Us. Retrieved November 27, 2008, from EndNote Online: <http://www.endnote.com>

[9] Thomson Corporation. (2006, 2008). Product Information. Retrieved November 6, 2008, from Procite Online: <http://www.procite.com/pcinfo.asp>.

[10] Vogel, D.R., de Vreede, G.J.(1999). The organizational application of GSS: a comparison across time and national boundaries, *In: Proceedings of the 10th EuroGDSS Workshop, Delft, the Netherlands, Faculty of Technology, Policy and Management* .

[11] Wierzbicki, A. P., (1982). A mathematical basis for satisfying decision making, *Math. Modell.*, 3, 391–405.

[12] Zhang, Yingting . (2012). Comparison of Select Reference Management Tools, *Medical Reference Services Quarterly* . 31 (1) 45-60.

[13] Simons, Natasha. (2012). Implementing DOIs for Research Data. *D-Lib Magazine*, May/June. 18, Number 5/6.

[14] Brase, J. (2009). DataCite — A global registration agency for research data. COINFO '09 Proceedings of the 2009 Fourth International Conference on Cooperation and Promotion of Information Resources in Science and Technology: 258.

[15] Duggan, Matthew. (2008). System and method for generating unique and persistent identifiers US Patent No. 20080010366 A1. 2008.

Author Biography



Kamala Mohanty is working at the National Institute of Technology at Andrapradesh in India. She is working on online information structuring, and information management. She further does research in scientometrics and related domains.