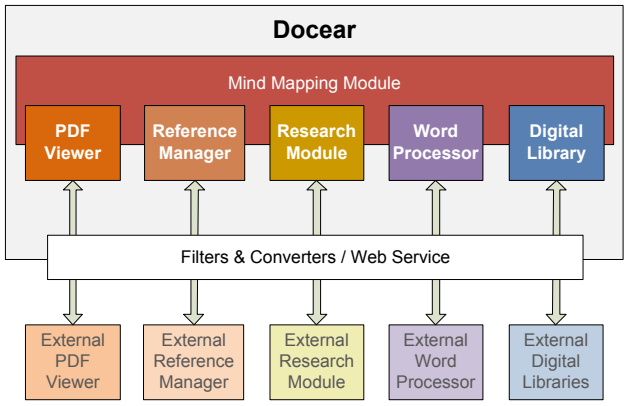

Figure 2: The components of Docear

In the following, the unique features of Docear are introduced.

2. A HOLISTIC CONCEPT

By integrating several software tools into a software suite, data exchange between the different tools is facilitated respectively made possible. All kind of items and information (documents, annotations, references, ideas, etc.) is available wherever the researcher might need it – in the reference manager, the PDF reader, while creating a paper draft and so on. For instance, when a user opens a PDF, the PDFs metadata (author, year, journal, etc.) is displayed[2]. Also, the user may drag & drop a PDF to a draft of a new article and the bibliographic data is inserted automatically as a citation[2].

3. MODULAR COMPOSITION AND USE OF STANDARD FORMATS

Each of Docear's modules is exchangeable, except the mind mapping module. That means users not liking Docear's PDF viewer, reference manager or search engine may use another one instead or in addition to Docear's solution. Also, all data is stored in standard formats, e.g. BiTeX for references, PDF (ISO 32000) for annotations in documents, and as Open Document Standard (.odt) for text documents. Additional converters help importing and exporting data *from* respectively *to* other applications.

4. FREE FULL-TEXT ACCESS

Docear searches the Web for academic articles[3] (similar to *Google Scholar* and *CiteSeerX*). Currently, around 2 million articles including full-text are in Docear's database. Additionally to the standard search functionality, Docear automatically searches the database for literature when an article is mentioned in a document read by the user. For instance, Docear links entries in the reference list of a PDF with their full-text (compare Figure 3 and Figure 4)[2].

5. INFORMATION STRUCTURING AS MIND MAP

Docear utilizes the power of mind maps for structuring information. Mind maps are well suited to structure document collections, the content of documents respectively annotations, and references. They may also be used to draft documents because the structure of a mind maps is similar to an outline. Docear provides a superior solution for structuring information in contrast to other solutions, using simple lists or social tags (which may be used in Docear in future versions additionally).

6. METADATA EXTRACTION

Docear extracts metadata such as title and author from PDF files. Additional metadata such as the year and journal is retrieved from Docear's bibliographic database[3]. With the extracted metadata users can structure their document collection and automatically insert references into their written articles.

7. RECOMMENDATIONS

Docear offers recommendations for scholarly literature and in future versions for conferences and journals the user could publish in, authors working on similar projects as the user, and for research grants the user could apply to. Potentially, these recommendations are of high relevance because Docear should be able to determine the interests of the users very well: Due to Docear's complete software suite, Docear knows what users are searching for, reading, which passages in a document interest them most, and what a user is currently working on.

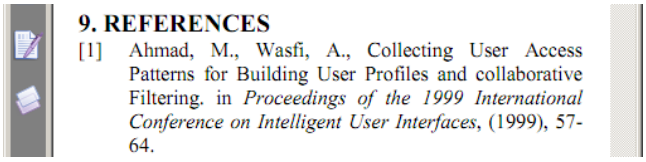

Figure 3: Original entry in a reference list

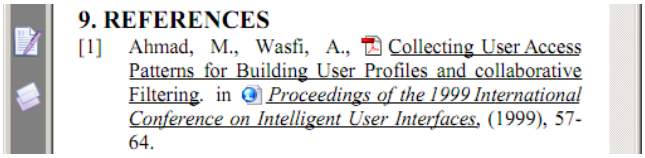

Figure 4: Modified entry by Docear linking to the full-text

8. REFERENCES

[1] R. Torres, S.M. McNee, M. Abel, J.A. Konstan, and J. Riedl. Enhancing digital libraries with TechLens. In *Proceedings of the 4th ACM/IEEE-CS joint conference on Digital libraries*, pages 228–236. ACM New York, 2004.

[2] Joeran Beel, Bela Gipp, and Christoph Mueller. 'SciPlore MindMapping' - A Tool for Creating Mind Maps Combined with PDF and Reference Management. *D-Lib Magazine*, 15 (11), November 2009, Brief Article.

[3] Joeran Beel, Bela Gipp, Stefan Langer, Marcel Genzmehr, Erik Wilde, Andreas Nürnberger, and Jim Pitman. Introducing Mr. DLib, a Machine-readable Digital Library. In *Proceedings of the 11th ACM/IEEE Joint Conference on Digital Libraries (JCDL'11)*, 2011.

[2] Not yet implemented

[3] In cooperation with *Mr. DLib* [3]