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Article in *Library Hi Tech* · June 2011

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Received February 2011  
Revised February 2011  
Accepted February 2011

### Abstract

**Purpose** – This column seeks to explore the potential of personal information management (PIM) and reference management to offer more than easy citation of information sources and the creation of bibliographies. The emphasis is on the role librarians and information professionals (hereafter referred to only as librarians) can play in raising awareness of the potential of PIM and reference management and issues to be considered. The end goal is increasing quality, productivity, collaboration and creativity in the use of information. Over the next few issues, the column will share impressions from personal research in the field of information behaviour and PIM, analysis from the subject literature, exploration of the software as such, and trends noted through various means.

**Design/methodology/approach** – The column will be written against the background of research from information behaviour, information organisation, PIM and information curation, as well as alerts on software development in this regard and social bookmarking.

**Findings** – There are many issues where librarians can help end-users to consider the implications of PIM and reference management and to contextualise their job and task, as well as other information needs such as studies and teaching, against what technology can offer.

**Originality/value** – Although much has been published on the individual issues addressed here, there is no knowledge of other attempts to take a holistic view to the responsibility of librarians to support people from all spectrums to benefit from PIM and reference management.

**Keywords** Information, Librarians, Information management, Computer software

**Paper type** Research paper

### 1. Introduction

Over the last three decades much has been published on various facets of personal information management (PIM) and the use of reference management software (Jones, 2007; Peele, 1983). More recently the curation of personal information has been promoted (Whitaker, 2011). Without going into a full review, it seems that the literature can be roughly divided into:

- discussions of software features, problems with software, and evaluations and comparisons of software (Fitzgibbons and Meert, 2010; Gomis *et al.*, 2008; London *et al.*, 2010; Mead and Berryman, 2010; Zimerman, 2010);
- information behaviour regarding the collection and management of information for future use (Jones, 2007; Lansdale, 1988; Smith and Baker, 2007; Whitaker, 2011); and
- initiatives by librarians on training and support (East, 2001; Harrison *et al.*, 2005).



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Although very useful, these publications mostly take a singular focus and do not portray holistically the issues end-users need to consider to gain more in terms of quality, productivity and creativity when using information. Barreau *et al.* (2009), Bergman *et al.* (2008), Elswiler (2009), Jones (2007) and Whitaker (2011) are exceptions in taking a wider look at PIM. Although librarians often prefer practical, to-the-point guidelines and advice, this article will also link to theory and publications in the field before taking a more practical look in future contributions.

For purposes of discussion the term “end-users” will refer to the users of software for PIM and reference management, and the term “librarians” will also imply information professionals.

According to Jones (2007, p. 435) personal information management (PIM) “refers to both the practice and the study of the activities a person performs in order to acquire or create, store, organize, maintain, retrieve, use, and distribute the information needed to complete tasks (work-related or not) and fulfil various roles and responsibilities (for example, as parent, employee, friend, or community member)”. PIM is closely related with the use of software for personal databases as well as software for managing references or citations.

Obvious reasons for PIM, reference management and information curation, are well noted: people collect, organise and manage information or references to sources with information so that it is easy to find the information again when needed, to cite the information and to create bibliographies. It can also support organised information sharing. Jones’s (2007) call for “keeping find things, find” is often cited. With a few exceptions such as Beel *et al.* (2009), Coughlan and Johnson (2009), Giglia (2010), and Muldrow and Yoder (2009) little has, however, been said about creativity, collaboration and increasing productivity and quality. And then there are also the frequently asked questions: why keep information if it can be found again with ease (Whitaker, 2011) and how much time and effort should be spend on PIM?

From their training and background librarians can bring a wealth of knowledge on information behaviour and information practice, technology supporting information organisation and retrieval, the information landscape and information infrastructure, information literacy, information organisation, information management, information curation and information use and exploitation, that can help the end-users of PIM and reference management software to move to a next level of quality orientated, collaborative productivity and creativity. Basic training and continuing professional development (CPD) opportunities available to librarians should prepare them to offer such support.

Many people have reported interest in PIM and reference management, and academic libraries often bring software for reference management to the attention of students and researchers. In attempting to organise and manage their personal information collections, however, even highly qualified people with good IT skills, good IT infrastructures and with strong confidence in their abilities to find information, have experienced problems, e.g. with version control, sharing information, and with insufficient space to store references and full-text; some hand the maintenance of the databases over to their secretaries (Fourie and Bakker, n.d.).

## **2. Issues of consideration for librarians**

This section will share suggestions on issues librarians can consider in taking the use of PIM and reference management to the next level – towards quality orientated,

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collaborative productivity and creativity. The suggestions are not intended as comprehensive; neither will they at this stage be explained in detail. Three suggestions are briefly explored, with others only mentioned – to be explored further at a later stage.

### *2.1 Embedding PIM and reference management in information behaviour and information practice*

The encapsulating definition of Wilson (1999) on information behaviour is widely cited, namely:

... the totality of human behaviour in relation to sources and channels of information, including both active and passive information-seeking and information use.

He also notes that information needs are not always recognized. An alternative term that often features is information practice where Savolainen (2007) explains that although both terms deal with the ways in which people “do things” (with regard to information), information practice focuses more on habits shaped by social and cultural factors. A wide spectrum of research on both information behaviour and information practice has been reported (Case, 2007; Courtright, 2007). However, these studies often stop at the seeking, searching and finding of information and do not include how people continue to organise and manage information for future use. Librarians can contribute by surveys in their institutions to determine the practices, preferences, and needs of staff for PIM and reference management. Such studies can be aligned with the work reported by, e.g. Barreau *et al.* (2009), Bergman *et al.* (2008), Jones (2007), and Whitaker (2011). Studies may also probe deeper to explore whether end-users are able to align their jobs, tasks and roles with needs for information and especially future use of information, and whether they use PIM to create a culture of information use and sharing in their institutions and to stimulate innovation and creativity – to name but a few, or whether they only use it for purposes of citation and bibliographies.

Diverse settings (e.g. institutions, countries) and diverse research participants (e.g. clinicians, students, academics, researchers in different disciplines, secretaries) may present librarians with insight into the status quo at their institutions, e.g. who is using what, how, why, and when and how information and references from PIM is shared. It may also bring to light the support end-users require from librarians. Following a study early in 2010 by Fourie and Bakker (n.d.) in which research participants shared their experiences with PIM and reference management, they are planning a study for 2011 focusing on medical libraries. Some of the issues raised in 2010 include problems with different software versions, saving references for future use, obtaining and keeping record of the full-text, and collaborating with others using different software and different reference styles.

The next question would be whether librarians should only study information behaviour and information practice regarding PIM, or whether it is their role to influence information behaviour and information practice towards increased quality, productivity, collaboration and creativity. An excellent point of departure would be for librarians to start with a survey of their own practices in PIM, reference management and especially information curation. With PIM, it might be like with the use of current awareness services, where it has been noted that very little is actually known about librarians' own use of such services (Stenstrom and Tegler, 1988). Offering more

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guidelines and advice based on personal experience, might also line up with Vyogtsky's "zone of intervention" to which Kuhlthau (2004) often refers in her work – albeit in the context of information seeking.

### *2.2 Mapping the multiplicity of objectives for PIM and reference management*

Apart from the reasons for PIM mentioned earlier, there may be many objectives for collecting information for personal use and for organising and managing it. PIM can be useful for publishing on a topic over a period of time such as for a research project and writing a dissertation or a book. It can also be useful in research supervision, training and education as easy sources for recommending references, to monitor trends and to identify research topics or questions for discussion – especially if a field is allowed for the latter. PIM can also offer an easy reference source to identify experts and contacts, or to manage one's own publications and reports (e.g. if a list and copies of publications are needed for a job interview, promotion, grant application or research rating).

In fully exploiting the value of PIM and reference management there should be multiple reasons and objectives, which would also imply good understanding of the types of publications that are (and in fact need to be) collected. It has often been noted that it is difficult for people to identify and express their information needs (Case, 2007). It may thus easily be that end-users experience similar difficulties in exploring the use of PIM and reference management fully and to link these to their jobs, tasks, roles, academic studies, community involvement, personal life, and perhaps even issues they need to pursue in promoting their careers. It seems a pity to limit the use of PIM to the most obvious reasons such as citations and bibliographies.

My role as a supervisor may mean that I will also include documents on post-graduate supervision, research methods, and websites with useful resources and links. It would also mean that I would use PIM to share information with post-graduate students.

Through careful reflection and especially through focus group interviews (which can offer the stimulation of viewpoints by different participants), librarians may learn more about the multiplicity of objectives for PIM and reference management. Mind map or idea map software may be useful in depicting findings from surveys that can again be shared with end-users, as well as other librarians, i.e. findings on reasons and objectives for using PIM which are wider than citing sources and compiling a bibliography. Considering the growing possibilities offered by technology, it seems worthwhile for librarians to collect information on the jobs, tasks, roles, interests and expectations of end-users and to map these against the features of PIM and reference management software. It might be useful for librarians to use, e.g. a brainstorming session or other means of idea generation such as De Bono's six hats to explore the use of PIM and reference management amongst themselves and to their own benefit, to share these with end-users, and then to generate more ideas by following similar methods with end-users.

### *2.3 Vast landscape of information and the information infrastructure to consider*

Information is no longer only available in familiar formats such as books, articles, conference papers, research reports, theses, dissertations, brochures, standards and patents. Apart from these being available in printed and electronic format, there are websites, web pages, blogs, messages on discussion lists, entries in wiki's, photo's,

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video's, clips, emails, podcasts, and webcasts, unpublished smaller pieces of information, graphs, tables, newspaper clippings, and personal contacts that might be of interest. Different formats might be needed for different purposes or a combination might be needed. End-users need to be alerted to the variety of formats they need to consider, and the potential value of such formats, e.g. graphical material can enhance teaching and conference presentations.

In addition there is a very vast information infrastructure end-users can explore to collect information for PIM. Information is no longer only available through databases, publishers, organisations, conference organisers, museums, archives and governments, and institutions (including academic institutions). It is also available through websites, web search tools, social networking tools, and blogs. A growing number of resources are available to search for information for free: databases, digital libraries, institutional and open access repositories, and social bookmarking services. End-users need to be alerted to the resources and components of the information infrastructure that will best fit their purposes – their role, job, tasks, objectives, etc. Collecting information on such a wide scale would enhance the scope and possibly also the quality of information if selected with care, but would take a lot of time from any individual raising the questions: why keep record of “found things” if it can be found with ease again by using all the sources mentioned? Although too time intensive for the use of one person, taking a wider look at what can be collected and which resources might be used, can certainly benefit collaborative work.

#### *2.4 Other issues for consideration*

There are many other issues librarians can consider – first amongst themselves (practice what you preach) and then with end-users. Such issues include the training of end-users to move beyond explaining how to use the software and dealing with technical issues. Although these are very important, end-users should be prepared to think more holistically in terms of what is available and how they can benefit in their tasks and careers. Librarians can also get involved in studying collaborative information seeking and using this with insights gained from collaborative work to work with end-users to plan carefully structured collaborative PIM. The role of retrospective searching and current awareness (alerting) services in contributing to PIM and noting trends and changes in terminology, as well as reconsidering the evaluation of software supporting PIM and reference management can be considered. Each of these can be dealt with separately and will be explored further. What, however, is especially important is to explore if and how PIM and reference management can contribute to creativity and productivity.

### **3. Conclusion**

In reconsidering how they approach the issues of PIM and reference management, reading wider on the issues, collecting data from the staff of their institutions and studying their own information behaviour regarding PIM, librarians can learn much that can be shared amongst themselves as well as with end-users. Although this column contribution briefly touched on the issues librarians should consider to make a difference, there is much more to explore. A good point of departure might be how librarians can monitor the subject literature and other option to note what is happening

with PIM, reference management, information curation and their supporting software – that is, setting up alerting services and exploring means of sharing and reflection.

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