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Creatures of Habit or Convenience? Users Still Use Browser Bookmarks and Email to Save Information

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Summary. As users browse or search the Internet for information, it is not uncommon for them to save URLs or links for future reference or share a link with a friend or colleague. This article summarizes the results of an online survey which examined how users save information on the Internet. Specifically, it examines how often users save information, the methods by which they save, why they save, and the difficulties they encounter while saving. Results of the survey indicate that users regularly save information they want to reference later and think it is important to do so. However, despite the prevalence of new online tools to facilitate saving online information, users are still using browser-based bookmarking and copying/pasting of URLs into email or documents as the primary methods of saving. Being able to access bookmarks from multiple computers and methods to facilitate bookmark organization were identified as key areas of improvement.

INTRODUCTION

The methods by which users save information has been the topic of many studies over the past decade (Jones, Dumais, & Bruce, 2002; Bruce, Jones, & Dumais, 2004; Aula, Jhaveri, & Kaki, 2005). Previous studies have explored user strategies for searching, finding, and re-finding information. These strategies include the use of browser Bookmarks (or Favorites), e-mailing web addresses (URLs) to themselves or others, printing specific web pages, saving pages directly to their computer, and saving URLs to a separate document. One problem that has been repeatedly identified with saved information is accessing it at a later time or trying to re-find specific information (Nishimoto & Toda, 2006; Wen, 2003). Users often forget what they save or what they use as a text reference to the URL and/or have little structure in how the Bookmarks are organized.

Recently, online tools have been developed to facilitate the bookmarking process and help the user organize and maintain their saved information. Delicious (www.delicious.com) is a social bookmarking service, which allows users to save bookmarks using "tags", which results in an improved organizational structure; Delicious bookmarks are also available from any internet computer. Users can also use this tool to share their bookmarks with others (and vice versa). Other online tools offering similar functionality have also been developed (e.g., Yahoo! Bookmarks, FoxMarks, StumbleUpon, Digg, Google Lists, and Yahoo! Buzz).

At present, with the proliferation of social networking applications, saving information has become more of a social behavior. Evans and Chi (2008) found that searches resulted in sharing of the information with others 58.7% of the time. They also found that users interacted with others both before and after the search process. In another study, Dearman, Kellar, and Troung (2008) found that individuals accumulate a significant amount of information daily and are willing to share it with anyone who may be interested. However, due to the lack of easy methods of sharing, individuals rarely do so.

Purpose

This study examines the current state of saving to determine how it has changed in recent years by surveying individuals. In particular, we discuss how often users save information, the methods by which they save, why they save, and the difficulties they encounter while saving. In addition, we provide feedback from users on how the saving process can be improved.

METHOD

Participants

Overall, 602 individuals (323 male, 270 female; M age =28.62, SD=9.74) completed the survey. Respondents were asked how often they used the Internet in a week. Over 60% reported using the Internet at least 25 hours per week with 38% using it over 40 hours per week. The primary reasons for using the internet included e-mail, entertainment, and social networking. The majority of respondents (92.7%) used Google as their search engine with the browser Firefox (55.5%), Chrome (38.9%), and Internet Explorer (33.9%).

Materials

A survey querying saving behavior of Internet users was used to collect information on bookmarking. The survey was created using the online tool ConfirmIt! All questions allowed multi-select checkboxes as options. The number of questions completed by participants depended on their reported saving habits (the more saving behavior reported, the more questions regarding these behaviors were asked).

Procedure

The survey was available via an online experiment management system at a Wichita State University and distributed to others through corporate networks and social networks such as Facebook. Survey responses were gathered from November 2009 to January 2010.

RESULTS

Respondents were given the following scenario to consider as they completed the survey: Imagine that you are doing an online research-based task such as planning a trip, researching a product you might purchase, collecting references for a work or school project, learning about a new topic, etc. You spend some time doing research using your web browser (i.e., Internet Explorer) and search engine (i.e., Google). You find several websites with interesting/relevant information. While answering the next set of questions, think about what you would normally do with such information (URLs or links to web pages).

The majority of the respondents (97%) indicated that they save information in some manner. Most respondents (77%) reported that being able to save information was important to them but they admitted that they spend little effort on this task.

How is information saved?

The majority of respondents (55%) reported using 2-3 methods of saving information. The most common way to save information was through Bookmarks or Favorites, followed by e-mailing links to themselves, saving URLs in tabs within the browser, and saving URLs in a document (Figure 1). Seventeen percent reported that they print the pages of interest as a method of saving. Taking photos with a mobile phone, other means of saving not listed in the survey, and saving to the desktop were the less common methods given as a way to save links. Only 3% of the respondents indicated they do not typically save URLs.

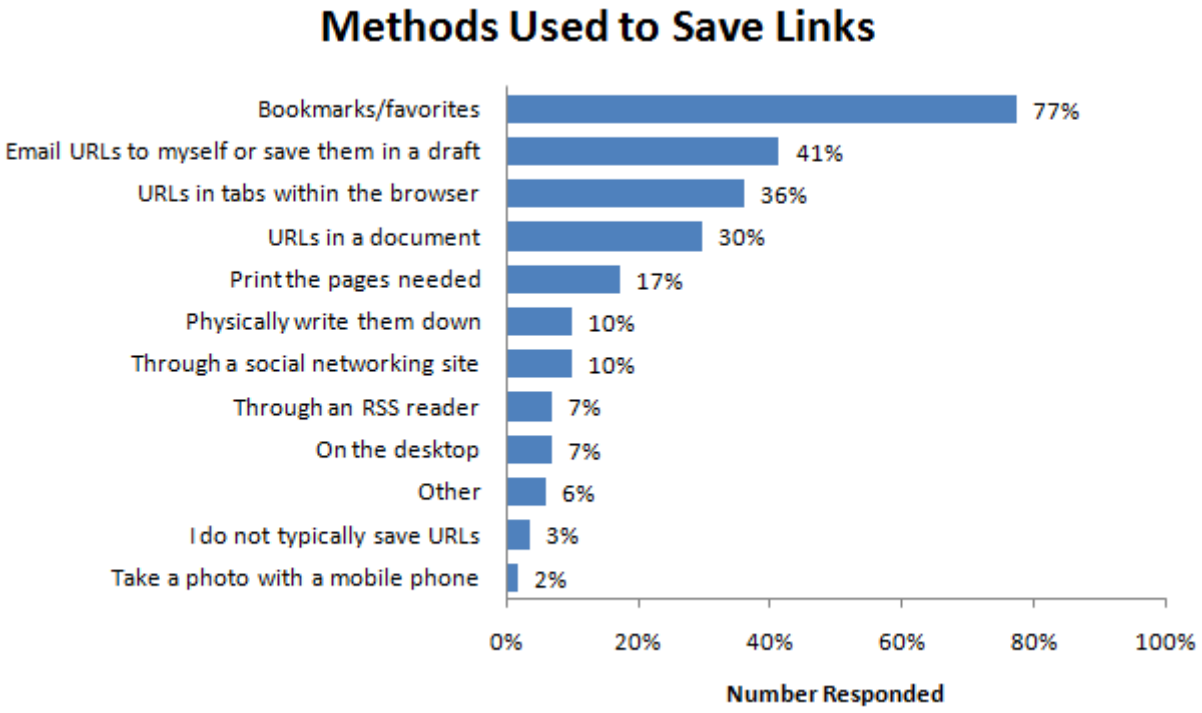

Figure 1. Bookmarking methods used to save links.

Of those using Bookmarks or Favorites, the majority reported using the feature that was associated with their browser (See Figure 2). Respondents were less likely to use an online bookmarking tools such as Google Bookmarks, Delicious, Yahoo!Bookmarks, FoxMarks, StumbleUpon, Digg, or Yahoo!Buzz. Only 39% of the sample reported using an online tool in addition to browser-based Bookmarks and Favorites. Of those, the majority (75%) reported using only one tool in conjunction with browser Bookmarking.

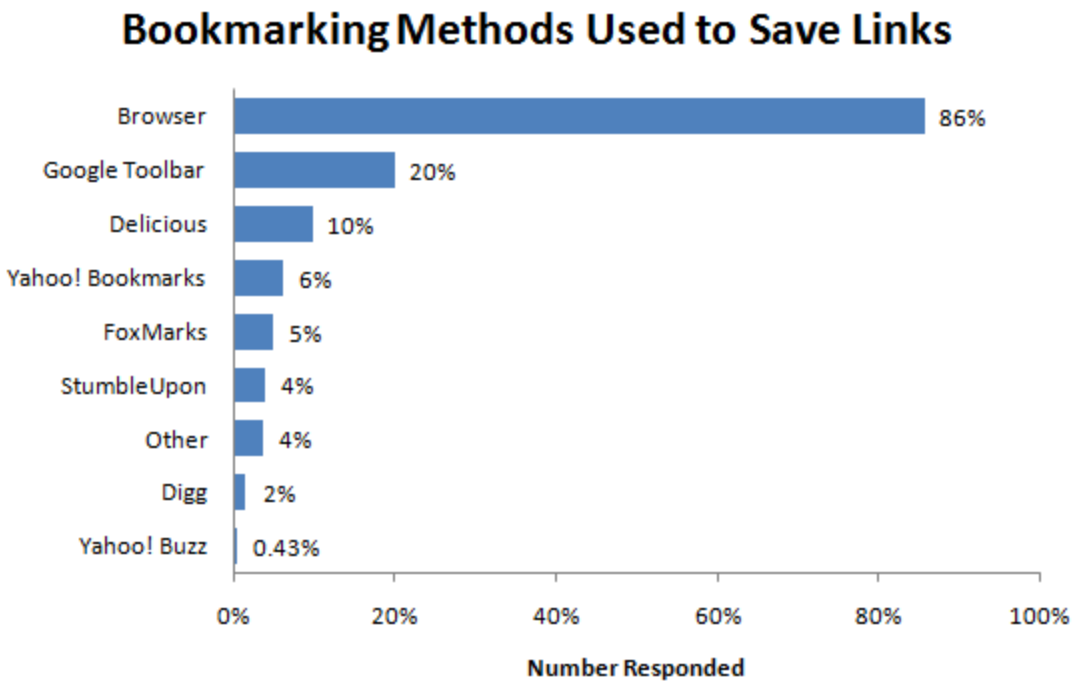

Figure 2. Bookmarking methods used to save links.

How often do users save information and how often do they retrieve the information they save? Most respondents (61%) indicated that they save bookmarks as needed. Twenty percent revealed they seldom save bookmarks and 19% reported that they save bookmarks frequently. In terms of retrieving saved bookmarks, almost half (48%) said they accessed them as needed and 33% indicated that they access them frequently. The majority of respondents reported that they seldom (50%) or never (23%) delete bookmarks.

What browsers are used for saving?

Firefox was the most commonly used browser for saving Bookmarks (64%). Approximately 60% of respondents reported using one browser; 31.6% reported using two browsers.

How are Bookmarks organized?

When asked how bookmarks are organized, approximately 60% of the respondents indicated they use tags and folders while the remaining 40% indicated that they do not typically organize their Bookmarks.

Are users saving links through Social Networks or RSS Readers?

Only 10% of respondents indicated that they save links through social networking sites or applications. Of these respondents, 68% use Facebook and 51% use Twitter. Only 7% of the respondents indicated that they save links through a RSS Reader (the majority using Google Reader).

Why do users save information?

When asked why they save information, the most frequently cited reasons were related to helping them work more efficiently, such as references to links that they use frequently,

references to personal information, or simply general interest in the topic. The least frequent reasons included saving information for music/video/book lists, recipes, event planning, or for sharing the information later with others (Figure 3).

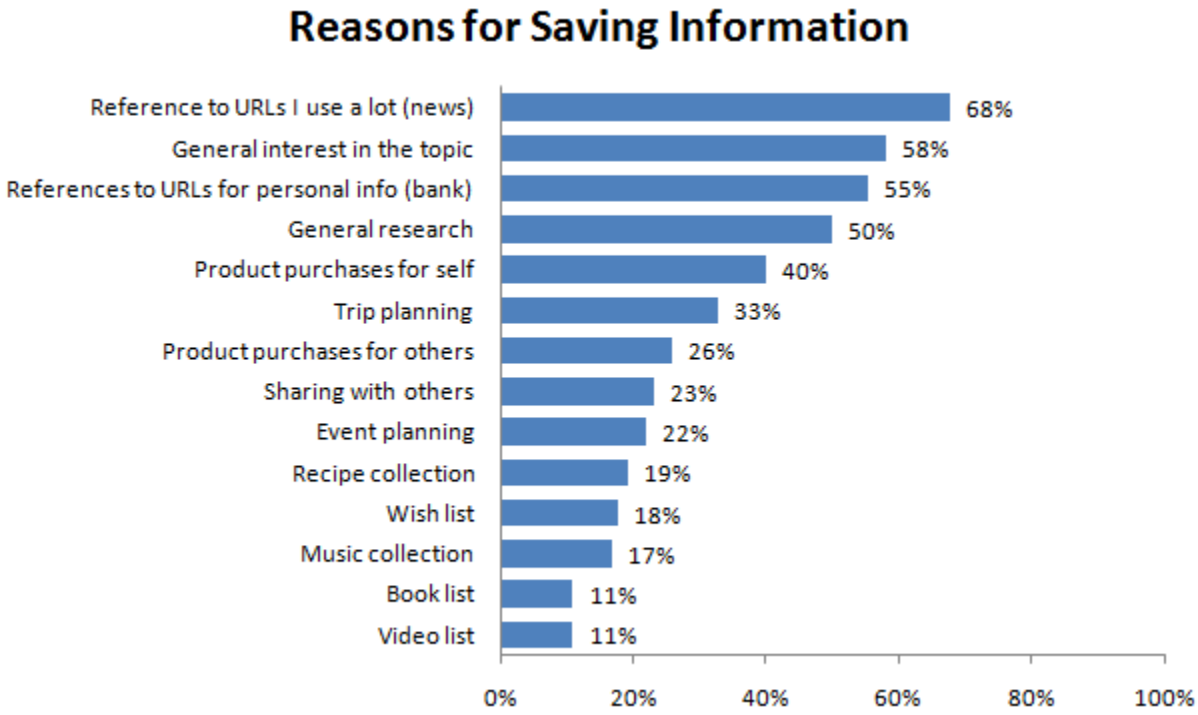

Figure 3. Reasons why users save information.

What issues do users have when saving?

Eighty percent of users reported that they experienced some issues with saving information. The areas identified as the most problematic included not being able to access the information from multiple computers, difficulty organizing it in a meaningful way, forgetting to conduct basic housekeeping tasks such as deleting or organizing, maintaining broken links, not realizing they should save the link for later reference, and forgetting to return to information that they already saved (Figure 4).

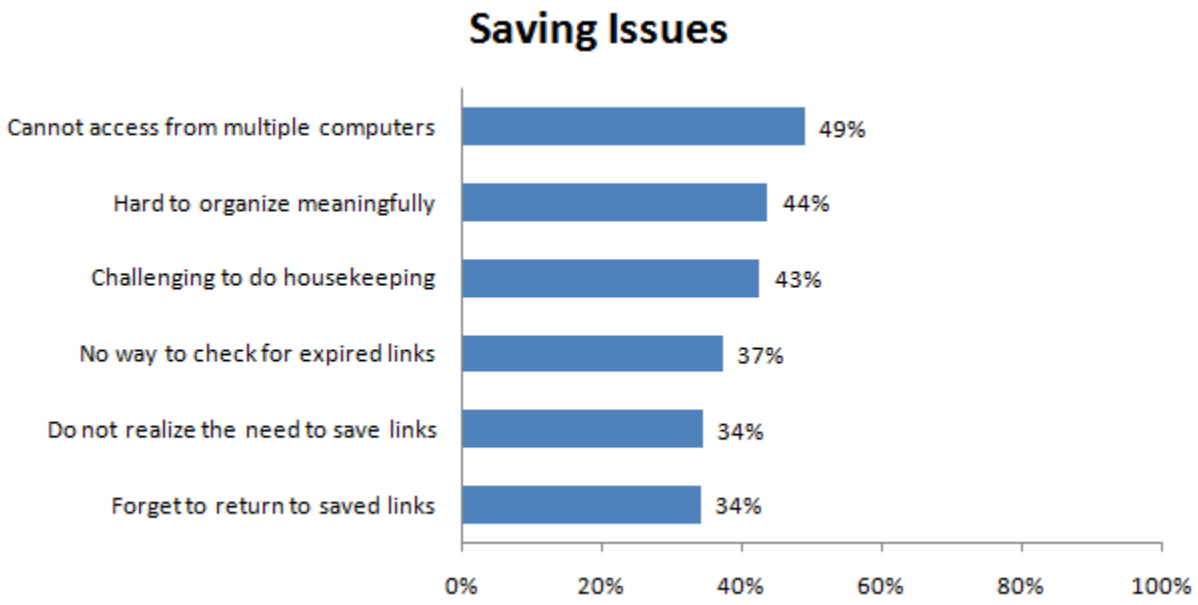

Figure 4. Issues related to saving information.

Other issues identified to inhibit saving were identified as:

- When I return to a saved URL/link, I cannot recall why I saved it (25%)
- Challenging to share URLs/links with others (24%)
- Using the method is more work than just re-searching and relocating the URL/link (19%)
- Hard to export a list to e-mail or document to allow for collaboration (19%)
- It is hard to relocate saved URLs/links in my system (18%)
- No control over the order of the URLs/links in folders/containers (17%)
- Must login to the tool when I need to save a URL/link (16%)
- Must install a tool on my computer or in my browser (14%)
- No control over the order of the folders/containers in the tool (11%)

Respondents were also asked to write comments describing specific features that may improve the process of saving (Figure 4). They identified having a better way of organization, accessibility from any computer/device, better integration with their internet browser, office programs, or online services like Twitter, Facebook, or Delicious, improved methods of housekeeping, improved ease of use, and help with re-finding saved information. Some example suggestions from participants included:

- "If I had a tagging system, I would save more links and be able to find things again."
- "[I would like the] ability to organize URLs into folders/categories."
- "I would love a system that would allow me to share bookmarks across machines and also one that would check for dead bookmarks and alert me/give me the option to delete. The notion of being 'reminded' to visit bookmarks is intriguing - if there's some logic behind the reminders, and a way to turn them off if they are annoying, that would be great."

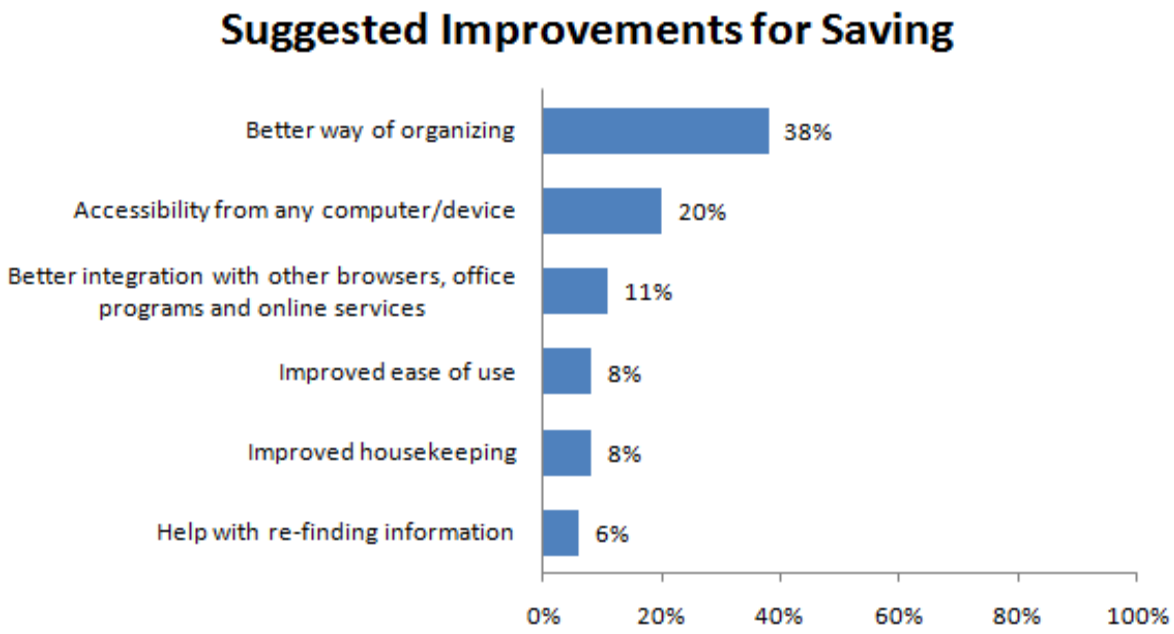

Figure 5. Suggested improvements for saving information.

Saving Summary

Results from the saving portion of the survey confirm that users regularly save information they want to reference later and think it is important to do so. However, despite the prevalence of new online tools to facilitate saving online information, users are still using browser-based bookmarking and email as the primary methods of saving. This may be due to the fact that while users want to save information, they do not want to expend much effort on the process. Nearly half of the respondents indicated that they do not organize their bookmarks at all. Clearly, this behavior contributes to their effectiveness in retrieval later. However, nearly 20% of the respondents indicated that the use of bookmarking or saving is more work than just re-searching and relocating the information.

DISCUSSION

Saving behaviors have not changed much since they were examined eight years ago (Jones, et al., 2002). Users are still using browser-based Bookmarks, e-mailing links to themselves, or pasting URLs into a document as the primary methods of saving. It is likely that bookmarking services require more effort than users are willing to expend. The browser is a convenient for saving links since it is the gateway to the Internet for the majority of individuals. Changes in recent years to e-mail have possibly increased the viability of using e-mail to save bookmarks. Online web mail services such as Google, Hotmail, Yahoo! Mail, etc. are coupled with powerful search engines, which make re-finding information easier in such systems. Using such systems would not require much more effort since it would be expected that the e-mail service would be opened frequently. This would enable users to access their saved links from anywhere their mail is accessible. Until the convenience of e-mail or browser-based Bookmarks is trumped, it is unlikely that either methodology will be replaced by another technology.

The biggest issue facing savers is accessing saved links from multiple computers. While online bookmarking services would address such issues, the majority of users is not willing to put forth the effort to use such tools or perhaps is not aware of their functionality. Many of these services require users to login which could present a barrier to entry. The convenience the browser offers outweighs the issues enough that users are not adopting the online bookmarking services.

Future research into saving links includes users' organizational models for saving information in the browser and the barriers that discourage users from using social bookmarking applications such as Delicious.

In 2010, Internet browser developers began including the ability to sync Bookmarks/Favorites from one computer to another, provided the users stayed with the same browser environment (i.e., cannot access one browser bookmarks from a different browser). Given the convenience of the browser, this will likely become the dominant method of accessing saved links from multiple computers. However, unless browser-based bookmarking syncing services allow cross-platform or cross-browser syncing, users will still have difficulty accessing bookmarks from different browsers or between devices such as smart phones and laptop computers. For instance, Microsoft Internet Explorer is not available on OS X and Safari is not available on Android based smartphones. In order to have true interoperability, standards for syncing bookmarks between systems should be developed and implemented.

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