

# Keeping and Re-Finding Information on the Web: What Do People Do And What Do They Need?

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**This study (Keeping Found Things Found - KFTF) investigated the methods that people use in their workplace to re-access web information. People were observed using many different methods to keep web information for later use including the use of Bookmarks (or Favorites), self-addressed email, hand-written notes, and paper print-outs. Each keeping method provided a range of functions but none of the observed methods allowed for all desired functions. Participants in the KFTF study were also tested for their ability to return to a web site and several re-finding methods were observed and identified. When prompted with web site descriptions they had generated three to six months earlier, participants had a 95% or better success rate in returning to the cued-for web sites. Moreover, two thirds of these re-finding methods required no explicit keeping behavior. Common re-finding methods included the use of: 1.) A search service. 2.) Partial completion of a site's web address and acceptance of a suggested completion to this address (the auto-complete function). 3.) Hyperlinks from another web site. Results underline the importance of a reminding function. This paper also reports the data collected from a web survey conducted after the keeping and re-finding observations. 214 participants completed the survey. The data from the survey validated and elaborated the various methods that people use to keep web information for later re-use that were identified in earlier observational studies.**

## Introduction

How is new information integrated into a person's existing information environment? And how can a person remember to use information later when a need for this information arises? We call this the challenge of Keeping Found Things Found or KFTF.

Through our project of the same name<sup>1</sup> (<http://kftf.ischool.washington.edu>) we seek to understand better how people meet the KFTF challenge on the Web. How do people organize web information for re-access and re-use? How can tools help?

The Web poses special challenges with respect to the KFTF problem. The Web is increasingly everything informational. Its hyperlinked content engages us in many different aspects of our lives – and pulls us in many different directions. Within a session of web use we are likely to encounter much more information than we are able to analyze in the time we have available. We often look for ways to insure that we can return to a promising-looking web site for further study later on. And, once we have determined that the information of a web page is useful, we want to be sure that we can retrieve this information, in some form and with reasonable speed and ease, when a need for this information arises some weeks or months later.

The computer mediates our access to the Web and the computer can also help – through tools and the keeping methods these tools support. Facilities of web browsers such as bookmarking (“Bookmarks” in the Netscape

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Navigator, “Favorites” in the Microsoft Internet Explorer) or history lists are built with this in mind.

In the KFTF project’s investigations of web use in the workplace (Jones, Bruce, Dumais, 2001; Jones, Dumais, Bruce, 2002), people were observed to use several different methods for keeping web information. Many of these methods are “outside the box” of a participant’s web browser. For example, several participants sent web addresses (URLs) to themselves along with notes regarding relevance and actions to be taken. Participants also pasted URLs into documents. For some participants these documents were internally structured, through headings and subheadings, into a scheme for the organization of web addresses and web information. For other participants, documents with web addresses were part of a larger external organization of folders and subfolders. For some participants, keeping methods went beyond the computer altogether. For example, one participant printed out web information with the intent of filing this information in a paper-based filing system. One person even volunteered that she jotted down URLs on “sticky notes” which she then pasted around the edges of her computer monitor!

In this paper we report the results of a complementary workplace study that focused on the methods that people use to re-find web information. The paper also reports the results of a survey that was designed to further explore the types of keeping methods that people use.

## Related work

Just as the challenge to keep found things found can arise in many different areas of our lives, relevant research comes from studies in several domains. Here we selectively review studies into the organization and use of personal files, email and the Web.

### *Organizing Personal Documents*

In a study of the way people organize the papers in their offices, Malone (1983) observed that people tend to organize papers into “piles” and files. Piles are located spatially around the office and serve as a kind of short-term memory. In particular, piles often provide a *reminding* function – a paper or document in view may remind the person of an action still to be performed. However, people have increasing difficulty keeping track of the contents of different piles as their number increases. One strategy for remedying this situation, observed in the Malone study, was to transfer papers to a much larger, longer-term storage where papers are placed into named folders or files.

Jones and Dumais (1986), consistent with Malone’s results, observed a rapid falloff in the ability of people to

retrieve information by location cues alone as the number of information items (AP News articles in their study) increased beyond ten. Memory for names was much less subject to disruption as the total number of items increased even though, in their study, names were restricted to two characters in length.

Carroll (1982) observed great creativity in the naming of computer-based files back in the days when file names were severely restricted in length (eight or fewer characters for the users in Carroll’s study). When prompted with a file name, users were able to provide a fairly detailed, accurate description of contents on over 90% of the trials.

More recently, Barreau and Nardi (1995) observed a strong preference for what they termed “location-based” finding. Their study looked at file access among users of four different operating systems. Two of these systems, DOS and Windows 3.0, restricted file names to eight characters; the other two systems, OS/2 and Macintosh, had no such restriction. Regardless of operating system, the user’s preferred strategy was first to guess which folder a desired file was in. The user then generated a listing of files in this folder and attempted to recognize the desired file in this listing. The user sometimes sorted by name, date, file type or some other characteristic before making a choice. Users preferred not to enter the file name directly nor did they typically search on the file name. Users chose a full-text search only as a last resort.

### *Organizing Email*

Many patterns in the observed organization of email correspond to those of file system organizations. Whittaker and Sidner (1996) observed that email systems are increasingly used for *task management* and *personal archiving* in ways that parallel the use of an electronic filing system. Filing decisions – which folders to create, what to name them, how to organize them, etc. – may have an essential difficulty whether the item is an email message or a personal file. Whittaker and Sidner note that filing takes time and the folders that are created today may prove to be ineffective or even an impediment to the access of information in the future. Folders created by the users in their study were sometimes much too large (containing hundreds of items) or too small (containing only one or two items) to have organizing value. Folder names, even though originally assigned by the users, were often not descriptive of folder contents and purpose. Also, users reported an “out of sight, out of mind” problem – items placed in a folder were sometimes forgotten until well after the period of their usefulness had passed.

## Organizing Web Information

Bookmarks of the Netscape Navigator or Favorites of the Microsoft Internet Explorer, like personal files and email messages, can be named and organized into folders. We will use the generic term *bookmark(s)* to reference the comparable “file system-like” functionality provided in both Bookmarks and Favorites.

Bookmarks are a widely used web feature. In one survey of 6,619 web users (Pitkow and Kehoe, 1996) over 80% of the respondents cited bookmarks as a strategy for locating information. Abrams, Baecker and Chignell (1998), in another survey of 322 web users, reported that the size of a user’s bookmark collection grows steadily and roughly linearly over time. In their study, the average user’s collection of bookmarks exceeded 40 after a year and more than 200 after two years.

Abrams et al. (1996) also observed that, as the number of bookmarks increases, there is a steady increase in the likelihood that a user will group bookmarks into a hierarchy of folders. Problems with these folders parallel those observed for email and file folders: Folders can obscure as well as organize. It takes effort to maintain a hierarchy of bookmark folders. If not maintained, the hierarchy can quickly get out of date. Users reported difficulty determining the folder location of a bookmark. Users also reported that the name of a bookmark, by default the title of the referenced web page, was often not very descriptive. Nevertheless, very few users in their study chose to re-name bookmarks.

Users can use other means to return to a web page. Within a session of web browsing, users may use the “Back” button. Tauscher and Greenberg (1997a, 1997b) observed frequent use of the back button – accounting for 30% of all navigational actions in their study. By contrast, history lists appear to be infrequently used. Several studies (Tauscher & Greenberg, 1997a, 1997b; Byrne, John, Wehrle & Crow, 1999) indicate that history lists facilitate page access in less than 1% of page opens.

In our study of web use in workplace settings (Jones, Bruce, Dumais, 2001; ) we observed no use of history lists (though one participant indicated during the interview that he occasionally used the history facility of his web browser). However, amongst the 11 participants in this study we observed many other methods of preserving web information for later web access and re-use including: 1.) Email to self. 2.) Email to someone else (and ask them for the web information or search through the sent mail folder for the reference). 3.) Print-out the web information. 4.) Save the web page as a file. 4.) Paste the web address into a document – which may or may not participate in a larger file system organization of web addresses. 5.) Add the web address to a personal

web site. 6.) Do nothing – and count on finding the web page again later via a search service. 7.) Do nothing and count on direct entry of the web address later on or, more likely, entry of the first part of the address followed by selection of one of the browser’s suggested completions. 8.) Write the web address down on paper (or possibly a “sticky note” that can be affixed to the computer monitor). 9.) Bookmarks.

We observed at least one participant use each of the keeping methods listed above in the course of the half-hour observation. During this half-hour, participants worked to complete a work-related, web-intensive task (one among a list of three they originally listed in a questionnaire). Our intent was to get an accurate and detailed glimpse of the ways in which people actually organize web information for later re-access and re-use.

## The Keeping Study

The first study in the KFTF project looked at the methods people use to keep web information for later use (Jones, Dumais & Bruce, 2002). The objectives of the study were to understand better how people go about keeping web information for later use and to understand the problems they have in doing this.

Participants completed a single one-hour session. While completing a work-related, web intensive task of their choosing, each participant was asked to ‘think aloud’ They were then interviewed to explore the reasons for observed actions and the causes for observed problems. Special attention was given to participant efforts to keep web information. 24 participants (6 researchers, 9 information specialists and 9 managers) completed the keeping study.

Participants used a large number of keeping methods. Each of the following methods was used by at least one participant during the task-based observation with the intent to keep web information for re-use: 1.) *Send email to self*, with URL referencing web page. 2.) *Send email to others* that contains a web page reference – with the intent to search the Sent Mail folder or contact recipients later to re-access the web information. 3.) *Print out the web page*. 4.) *Save the web page as a file*. 5.) *Paste into a document* the URL for a web page. 6.) *Add a hyperlink into a personal web site*. 7.) *Bookmark* the web page. 8.) *Write down the notes on paper* containing the URL and actions to be taken. 9.) *Copy to a “links” toolbar* so that the web address is always in view in the browser and can be quickly accessed. 10.) *Create a “note” in Outlook* that contains the URL and can be associated with a date. More generally, create an item in a task management or calendaring system that can then be associated with one or more dates.

Participants sometimes found a web site, commented that it looked useful, but then did nothing overtly to keep

it. When asked during the interview, participants pointed to one of the follow “do nothing” methods: 11.) Do nothing and count on *entering the URL from memory* or type in the first part of the address and then accept one of the browser’s suggested completions 12.) Do nothing, and *search for* (find again) the desired web information later on. 13.) Do nothing and *reach the web information later from a known point of access such as a web portal*.

Participants also indicated during the interview that they sometimes used more than one keeping method if they wanted to insure that web information would “stay found”. Many methods have the effect of transforming information into a different form – into paper, into an email message, into an e-document, for example. The use of several of these methods distributes web information across organizational schemes introducing a kind of “fail-safe” redundancy.

Other patterns were noted in the Keeping Study 1) Tested and untested references are often “kept” in different ways. Several participants distinguished between references to new, interesting but as yet untested, unevaluated web information and references to web pages or sites of established value. Different participants used different keeping methods or sometimes the same method in different ways to distinguish “tested” and “untested” web references. For example, one participant placed untested references at the end of her list of Favorites. She reviewed this list of Favorites periodically, either deleting a Favorite or placing it higher up on the list, at the top-level or embedded within a folder. 2) Some participants went to great lengths to maintain a single organizational scheme. 3) KFTF practices appear to vary according to job position and a participant’s general relationship to web information. For example, managerial participants in the keeping study indicated that they rarely use the Web directly to conduct research. Instead, they receive their information “second-hand” through communications with others. Email is now used extensively in this communication. Information specialists appeared to make especially conscientious use of bookmark folders as a way to organize web information.

## A Functional Analysis

A functional analysis helped to explain the overall diversity of keeping methods observed. People differed in the functions they required according to their workplace role and the tasks they must perform. Among the functions that participants valued, based upon comments made during the observations and interviews, are the following: 1.) *Portability of information*. Can participants take the information with them wherever they go? Paper is especially portable. 2.) *Number of access points* – related to but not the same as portability. Could participants access the information from multiple places?

From their laptop as well as their desktop computer? From home as well as work? Participants could not access the same bookmarks from several places; participants could access email from several places. 3.) *Context*. Did participants know why they saved a web address? Participants were able, through comments and subject line, to establish a context for a web address sent in an email message. The same was true for web addresses pasted into a document. 4.) *Reminding*. Saving information does little good if we don’t remember to use this information later on and in the right situation. Participants gave high marks for the reminding value of paper printouts and self-addressed email. Participants gave low marks for bookmarks. Participants commented that they often forgot to use a bookmark until too late.

Table 1: A (partial) functional comparison of keeping methods.

	Number of access points	Context	Reminding	...
Email to self	High	High	High	
Email to others	High	High	Low	
Print-out	High	Low	High	
Save as file	Low?	Low	Low	
Paste URL in document	Low?	High	High?	
Bookmark	Low	Low	Low	
Links Toolbar	Low	Low	High?	
...				

A mapping from functions to keeping methods is partially displayed in Table 1. Although some ratings are preliminary and subject to change, two things are apparent: 1.) Methods vary widely in the functions they provide. 2.) No current method provides all functions.

## The Re-finding Study

As previously stated, the aim of keeping information is that at a later point in time, the individual will be able to re-access and use the information if it is needed. The test of keeping methods, in other words, is the ability of the individual to re-find the information. The re-finding study conducted by the KFTF team, involved two one-hour sessions to set up a delayed cued-recall test of each participant’s ability to re-access valued web sites. In session 1, participants were presented with a sampling of web sites they had visited recently. For a given web site, participants rated the likelihood that they would have a

need to visit this site again over the next 12 months. For sites where the likelihood was 75% or higher, participants then provided a brief description of what they were last doing at the site and what they generally do at the site.

These descriptions were then used to generate cues which were presented to the participants 3 to 6 months later in session 2. For a given cue, participants were first asked if they recalled the web site cued. Participants then attempted to return to the cued web site as quickly as possible by whatever means they chose. Participants were each tested for 14 web sites that were selected according to a range of access frequencies (from daily access to only once or twice per year). Home pages were excluded from consideration. Thirteen participants completed the re-finding study.

Table 2: Success rates in getting back to a web site for effective cues.

Access Freq.	Obj. Suc.	Subj. Suc.	Trial time	# of Methods Tried
Low	90%	100%	1:42	1.2
Medium	98%	100%	1:07	1.2
High	100%	100%	0:47	1.0

As illustrated in Table 2, success rate in returning to a web site cued for was quite high. In cases where participants were able to recall the web site based upon the cue, success rate was at subjectively at 100% even for sites that were rarely visited in a typical week (low frequency). Participants felt they had returned to the right web site. Even by a more demanding objective measure of exact match in domain names, success rate was high.<sup>2</sup>

In only one trial out of 126 did a participant fail to re-find the web information identified in the recall test (for eight trials, participants did not recognize the web site from the cue; three additional failures can be attributed to problems with the network.) In 93% of the trials, participants successfully returned to the site using the first method they selected. Of these successful “first-try methods” the most commonly observed, in order, were 1.) Direct entry of URL. 2.) Favorites or Bookmarks. 3.) Search using a search service. 4.) Access via another web site. These methods account, respectively, for 42%, 18%, 18% and 16% of the successful first-try methods.

Three of these methods, accounting in aggregate for 76% of the successful first-tries, require no explicit keeping method. Some participants indicated that they

were increasingly relying on these “do nothing” methods – especially the use of direct entry and searching – to return to web information.

Consistent with the overall success rate for first-try methods, participants took an average of just under 1 minute to return to a web site. Variation is large. Some trials took as long as five minutes to complete and involved a sequence of methods for re-accessing a web site. For example, one information specialist used the following sequence of methods before finally re-accessing the site: 1.) try to re-find from another web site, 2.) use search service, 3.) try direct entry of URL, 4.) look in paper file folder; before successfully re-finding the website in the cued recall test. Only 6%, of the recall trials involved participants using three or more methods to access a web site seems. Nevertheless, during the observations of the re-finding study, participants occasionally expressed frustration at not knowing where to “go” in order re-access a web site.

## Survey

The keeping and re-finding studies have been supplemented with a survey. The aim of the survey was to collect data on the behaviors that were observed in the observational studies; to determine, from a larger sample of participants, if the list of observed keeping methods is complete and how frequently people use each method. The survey was administered online from the KFTF website <http://kftf.ischool.washington.edu/> for a period of one month (January 2004).

<sup>2</sup> By the objective measure [www.irs.org](http://www.irs.org) did not count as a match of [www.irs.gov](http://www.irs.gov), for example.

## Sample

During this period 214 individuals responded to the survey (see Table 3). A majority of respondents were within the age range of 40-59 years (60.75%) and female (65.89%). The most common occupations were librarian (49.53%); researcher (19.63%); manager (9.81%) and student (4.67%). Other professions represented in the sample include editor, systems analyst, office manager, programmer, web developer and account manager.

Table 3: Gender, age and occupation for the sample

Sample n=214	Percentage
<b>Gender</b>	
Male	26.64%
Female	65.89%
Not specified	7.48%
<b>Age</b>	
20-29	4.21%
30-39	18.22%
40-49	23.83%
50-59	36.92%
60 and above	10.75%
Not specified	6.07%
<b>Occupation</b>	
Librarian or information specialist	49.53%
Researcher	19.63%
Manager	9.81%
Student	4.67%
Others	16.35%

## Keeping methods

The survey instrument asked respondents to indicate whether they had ever used each of the thirteen methods that were identified in the keeping study (see table 4). Most of the respondents had used many of these keeping methods. The data appearing in Table 4 ranks the methods in order from those most commonly used by individuals in the sample. These data show that most people in the sample indicated that they had, at some point in time, used the keeping method of “Creating a bookmark or favorite” (89.72%). Other keeping methods that had been used by a majority of the sample are “Send email to self” (77.57%), “Print out the web page”

(77.10%), “Do nothing to save but search again to re-access” (66.36%), “Paste the URL into a document” (59.81%), “Write down the web address (URL) on paper” (56.54%), “Do nothing to save but enter the URL directly” (52.74%), “Send email to others” (52.34%) and “Do nothing to save but access via another web site” (51.87%). The keeping method that had been used by the least number of participants in the sample was Personal Information Management software. Only 18.22 % of the respondents had ever used this form of software to help them keep web information for re-use.

Table 4: Ranking of Keeping Methods

Method	Percentage
Make a Bookmark or Favorite	89.72%
Send email to self	77.57%
Print out the web page	77.10%
Do nothing to save but search again to re-access	66.36%
Paste the web address (URL) into a document.	59.81%
Write down the web address (URL) on paper	56.54%
Do nothing to save but enter the URL directly	53.74%
Send email to others	52.34%
Do nothing to save but access via another web site	51.87%
Save the web page as a file	50.93%
Add a hyperlink to a personal web page	33.18%
Personal Toolbar or Links	28.50%
Use Personal Information Management Software	18.22%
Not Responded	0.47%

Respondents were then asked to indicate how often they used each keeping method in a typical week using a 6-point scale (1-Several times a day, 2-Daily, 3-Two or more times a week, 4-About once a week, 5-Less than once a week, and 6-Never). The data in Table 5 summarizes how frequently participants use a keeping method over a typical week. Creating a Bookmark or entering a URL as a Favorite was reported as the most frequently used keeping method in a typical week for participants in the sample. On average, respondents reported that they made a Bookmark or Favorite two or more times per week (see Table 5). The next most frequently used methods are actually leaving methods. Participants indicated that they chose to “Do nothing to

save but search again for re-access” and “Do nothing to save but enter the URL directly”, about once per week. Participants in the sample did not typically use the keeping methods of “Personal toolbar or links” and “Personal information software.”

Table 5: Usage Frequency of Keeping Methods Used in a Typical Week

Keeping Method	Median
Send email to self	5
Send email to others	5
Print out the web page	5
Save the web page as a file	5
Paste the web address (URL) into a document.	5
Add a hyperlink to a personal web page	6
Do nothing to save but search again to re-access	4
Do nothing to save but enter the URL directly	4
Make a Bookmark or Favorite	3
Do nothing to save but access via another web site	5
Use Personal Information Management Software	6
Personal Toolbar or Links	6
Write down the web address (URL) on paper	5

In question 1 of the survey, participants in the sample were asked to select only those keeping methods they had used at some point in time (the data in Table 4). Data from the survey revealed that most participants had used approximately 7 of the keeping methods listed. When asked which methods were used at least once per week, the data from the sample revealed that participants use on average 5 of the 13 methods with this degree of regularity (see table 6).

Table 6: Average Number of Keeping Methods Used

	Mean	Median	Mode	Std. Dev.	Max	Min
Methods ever used	7.16	7	8	2.79	13	1
Methods used at least once a week	4.87	5	6	2.54	12	0

It is interesting to note that the number of keeping methods used at least once per week was consistent across the various groups represented in the sample (see table 6).

Table 7: Comparison of Numbers of Keeping Methods across Occupations

	Mean	Median	Mode	Std. Dev.	Max	Min
Librarian, information professional	4.96	5	3	2.64	12	0
Researcher	4.64	5	6	2.15	9	1
Manager	5.24	6	6	1.79	8	2
Student	5.3	4	4	2.62	10	1
Other	4.5	4	4	2.45	10	1

To specify this observation further, the data were examined to find out what proportion of the participants in the sample reported using specific methods at least once per week. These proportions were then ranked to identify the 5-7 keeping methods that are likely to comprise the standard repertoire for participants. The data appearing in Table 7 show the top 7 keeping methods. 79.91% of participants in the sample “Make a Bookmark or Favorites” at least once per week; 54.20% “Do nothing to save but search again to re-access”; 50.94% “Do nothing to save but enter the URL directly”; 43.45% “Send email to others”; 40.18% “Do nothing to save but access via another web site;” 35.51% “Send email to self.”

Table 8: Keeping Method ranked by proportion of participants using the method at least once per week

Methods	Percentage
Make a Bookmark or Favorite	79.91
Do nothing to save but search again to re-access	54.20
Do nothing to save but enter the URL directly	50.94
Send email to others	43.45
Do nothing to save but access via another web site	40.18
Print out the web page	39.71

Send email to self	35.51
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The data were then analyzed in an effort to reveal the 5-7 methods most likely to comprise the repertoire of keeping behaviors for the occupational groups represented in the sample. This data appears on Table 9.

Table 9: Comparison of Frequency of Keeping Method across Occupations. (Numbers indicate the percentage of respondent who report using a method at least once per year.

Method	Librarians	Researcher	Manager	Student	Others
# of respondents	106	42	21	10	35
Send email to self	40.57	30.95	33.33	20	31.43
Send email to others	46.23	40.48	57.14	30	34.29
Print out the web page	43.40	38.10	23.81	60	34.29
Save the web page as a file	20.75	23.81	38.10	40	34.29
Paste the web address (URL) into a document.	35.85	26.19	47.62	40	31.43
Add a hyperlink to a personal web page	18.87	16.67	9.52	20	17.14
Do nothing to save but search again to re-access	51.89	59.52	52.38	70	51.43
Do nothing to save but enter the URL directly	50.94	52.38	57.14	70	40.00
Make a Bookmark or Favorite	83.96	64.29	95.24	70	80.00
Do nothing to save but access via another web site	38.68	30.95	57.14	50	42.86
Use Personal Information Management Software	10.38	28.57	19.05	10	17.14
Personal Toolbar or Links	21.70	30.95	9.52	40	25.71
Write down the web address (URL) on paper	33.02	21.43	23.81	10	14.29

The 5 most commonly used keeping methods for each occupational group in the sample in rank order were:

Librarian:

1. Make a Bookmark or Favorite

2. Do nothing to save but search again to re-access
3. Do nothing to save but enter the URL directly
4. Send email to others
5. Print out the web page

Researcher:

1. Make a Bookmark or Favorite
2. Do nothing to save but search again to re-access
3. Do nothing to save but enter the URL directly
4. Send email to others
5. Print out the web page

Manager:

1. Make a Bookmark or Favorite
2. Do nothing to save but access via another web site
3. Do nothing to save but enter the URL directly
4. Send email to others
5. Do nothing to save but search again to re-access

Student:

1. Make a Bookmark or Favorite
2. Do nothing to save but search again to re-access
3. Do nothing to save but enter the URL directly
4. Print out a web page
5. Do nothing to save but access via another web site

It is significant to note that, of the five most commonly used keeping methods for each of the occupational groups represented in the sample; at least two of the methods regularly used require no keeping behavior. For students, 3 of the 5 top ranked keeping behaviors fall into this category. As stated earlier in this paper, the KFTF research team has been interested in studying the behaviors of *keeping* and *leaving* information for re-access and re-use. The popularity of the “Do nothing” or leaving behaviors that appear in the data collected from the survey sample, suggest that participants in the sample are reasonably confident of 1) their ability to remember information left in situ, and 2) their ability to find that information again..

## Conclusions

There are a number of conclusions that can be drawn from the keeping study, re-finding study and survey that were conducted by the KFTF research team. It is interesting to note, for example, that people use a diversity of methods when confronted with the challenge of keeping and organizing web information for re-access and use. Each of these methods is selected because it has a particular set of functions that will help the individual to

keep the found information available for use at a later point in time. But no one method that was observed in the study, presented the user with every function that he or she might need. Many participants, therefore, used several keeping methods and selected the method that was most appropriate (and functional) according to the purpose that the information was likely to serve in the future. Generally people have a repertoire of between five and seven keeping methods that they are likely to use as regularly as once per week. These methods remained fairly consistent across the various professional groups that participated in the KFTF survey. The most common, regularly used method for keeping information was to make a Bookmark or Favorite but the second most common method was to do nothing—in this case the participants indicated that they would find the information again if they left it where it had been found or encountered.

The reason for this choice of keeping method is revealed by the data in the re-finding study. When faced with the challenge of re-finding information, most people are successful. The re-call trials that were conducted during the re-finding study demonstrated that re-finding success rates were high and the first method chosen by each participant usually worked. It was interesting to note that two of the top five most commonly used methods that participants chose for re-finding web information actually required no keeping methods.

The KFTF study is continuing its investigation into the compelling and widespread challenge of managing the many forms of information that play so fundamental a role in our daily working and personal lives. A second survey has been mounted on the KFTF website to collect additional data on the functionalities of keeping methods. The project has recently entered a prototype design, building and evaluation phase. Further empirical work is planned for the exploration of personal information collections and the methods that people use to represent and organize information that they have assembled to support the tasks and interests they wish to pursue.

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