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Barbara S. Chaparro, Editor

Patterns of Information Sharing Among Inner and Outer Social Circles

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Summary. With the proliferation of social networking applications, sharing information online has become more common for information that users encounter. This article summarizes the results of an online survey which examines how users share information they encounter on the Internet. Specifically, it examines how often users share information, the kinds of information they share and with whom, the methods by which they share, and the difficulties they encounter while sharing. Results of the survey indicate that the methods for sharing information were consistent across inner and outer social circles, but different for sharing with the public. Suggestions for improving the ability to share are discussed.

INTRODUCTION

Social capital consists of the resources accessible to individuals through the basis of social structures (Coleman, 1988). Social capital explicitly resides within the relationships between individuals. The value of social capital depends on the type of relationships formed with others. Generally, social capital can be described as bridging or bonding (Putman, 2000; Ellison, Steinfield, & Lampe, 2006).

Bridging social capital facilitates our learning of new information and perspectives from acquaintances and other individuals with whom one would have weaker ties (Ellison, Steinfield, & Lampe, 2006). This is in contrast with bonding social capital, which is developed with those that are close (e.g., close family/friends, spouse/partner) and provides a basis for emotional support (Ellison, Steinfield, & Lampe, 2006). Close (or inner) social circles are maintained with bonding social capital, while outside (or outer) social circles are driven by bridging social capital.

Weak ties can be considered just as important as strong ties. In some situations, weak ties are developed for particular purposes such as work, creating dialogue, or indulging in shared interests (Aguiton & Cardon, 2007; Dearman, Kellar, and Troung, 2008). Weak ties may be developed when an individual and another party become acquainted with each other through a mutual interest (Dearman, Kellar, and Troung, 2008). One example would be two individuals communicating because they are both interested in football and belong to the same online community. Another common example would be bloggers publishing information to start a dialogue with their readers about a particular topic (Aguiton & Cardon, 2007).

Individuals have found relationships based on weak ties to be particularly valuable in certain contexts or because they provide certain types of information (Dearman, Kellar, and Troung, 2008). For

instance, individuals may seek out others that have experience in situations or where another person may have expertise. In both cases, the other party with the knowledge may be someone unknown, and in order to gain that information, the individual would need to develop weak ties with the knowledge holder.

Online tools, such as Delicious (www.delicious.com), have been developed to facilitate the bookmarking of web links and, in turn, also provide a venue to share their saved information (Lee, 2006). Delicious is a social bookmarking service, which allows users to save bookmarks using "tags" which are then used to create an organized structure that is easier to search and are available from any internet computer (see Figure 1). The system is set up where saved bookmarks are shared with others (and vice versa). When users have a sense that other individuals are present in Delicious community, they were more likely to provide additional information on the links they saved. In sense, they were more altruistic (Lee, 2006). Other online tools offering similar functionality have also been developed (e.g., Yahoo! Bookmarks, FoxMarks, StumbleUpon, Digg, and Yahoo! Buzz).

Online tools dedicated to sharing upon finding information do not really exist; users instead have created strategies to accomplish this task through the applications they use every day. For example, e-mail, instant messaging, or micro blogging (e.g., Twitter) may be used to share information in addition to the traditional methods of face-to-face communication or telephone (Owens, Shaikh, & Chaparro, 2010).

Figure 1. Tagging structure used on Delicious

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 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 how individuals share links to information. In particular, we discuss how often users share information, the kinds of information they share and with whom, the methods by which they share, and the difficulties they encounter while sharing. In addition, suggestions for improving their ability to share are discussed.

METHOD

Participants

Overall, 602 individuals (323 male, 270 female; M age = 28.62, SD=9.74) completed the survey. Participants reported a wide variety of occupations, but most respondents were either students (32.1%) or employees that worked in IT or engineering (33.2%). Other occupations included sales and marketing (9.3%), education (5%), consulting (4.5%), service industry (3.8%), management (3.7%), healthcare (2.8%), and media (2.7%). Approximately half of respondents reported having a college degree (54.3%).

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 331-item survey querying both saving and sharing 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 ranged from 14 to 329 depending on their reported saving and sharing habits (the more saving and sharing behavior reported, the more questions regarding these behaviors were asked). The survey was divided into two sections; one section queried saving behavior and the other queried sharing behavior. This article only reports on sharing behavior. (Readers are encouraged to read a summary of saving behavior in Usability News 12.2 "Creatures of Habit or Convenience? Users Still Use Browser Bookmarks and Email to Save Information".)

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

To assess sharing behavior, respondents were asked to think about the following scenario: *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). Would you share the information (URLs/links) with others? If so, how?*

Not surprisingly, the majority of the respondents (88%) indicated that they share information with others. Most of these respondents (88%) shared information with at least two different social groups (e.g., spouse/partner, parents). In this study, inner circles consisted of spouse/partner, parents, and close family/friends. Outer circles consisted of extended family/friends, people that work or study together, and bosses/teachers/professors. Individuals that shared links were most likely to share with members of their inner (93%) and outer circles (83%).

When respondents shared links with their inner circle, individuals more commonly shared with close friends and family, while fewer shared information with their spouse/partner, and with their parents. When sharing with their outer circle, respondents were more likely to share with co-workers or classmates (see Figure 2). Additionally, respondents shared information with their extended family and friends more than with bosses, teachers, and professors. Slightly less than half of the respondents (46%) said they would share where anyone can see it (i.e., publish to a website).

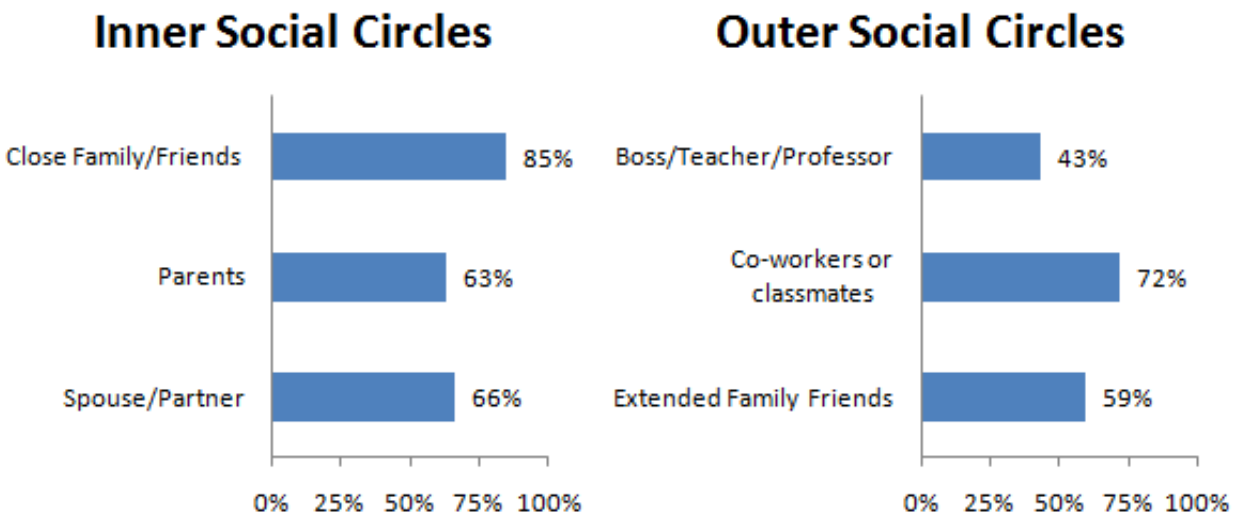

Figure 2. Percentages of users sharing to groups within different social circles

How are users sharing information?
Respondents were asked how they typically share information with others. Potential methods included e-mail, instant messaging, social networking, telephone, face-to-face communication, blogging, text messaging, etc. Three quarters of respondents used 5 or fewer methods for sharing any type of link. On average, respondents use 8-9 methods to share with their close family and friends, 7 methods to share links with their spouse or partner, 4-5 methods to share with people they study or work with, 4 methods to share with their parents, 4 methods to share with their extended family and friends, 2-3 methods to publish or broadcast information, and 1-2 methods to share with their boss, teacher, or professor.

Overall, e-mail (90%), instant messaging (66%), and social networking (65%) were the most common methods used to share links to information. Fewer respondents (14-32%) reported sharing links through documents, RSS, phone, face-to-face, via mobile devices, or blogging. Some respondents (16%) reported using type-specific websites such as sharing photos on photo websites (e.g., Flickr) or videos on video websites (e.g., YouTube). Respondents were less likely to share using means that were not listed on the survey (8% Other).

Table 1 shows the percentage of respondents that used each method and with whom. Generally, more personal method, such as instant Messaging or using e-mail, were used to share with inner and outer circles. Less personal methods that facilitate wide dissemination of information were used to share with the public (e.g., publish). Of those that shared links with inner and outer social circles, they reported using e-mail, instant messaging, and social networks frequently. Unsurprisingly, more personal methods, such as by telephone or face-to-face, were used almost exclusively with inner and outer social circles. Text messaging and sharing links by adding them to a document and then sending the document were more common, but not used exclusively to share with inner and outer social circles.

E-mail and instant messaging were used less frequently among those individuals that share links with the public. Instead, social networking, Twitter, and blogging were more commonly used to share with the public. Several methods, such as publishing to RSS feeds, using type-specific websites (e.g., Flickr, YouTube), and Other were reported as being used less frequently by all social groups.

Table 1. Sharing methods with inner and outer social circles and the public.

Method	Inner Circle *(n=455)*	Outer Circle *(n=408)*	Public *(n=226)*
E-mail	91%	97%	28%

Instant Messaging	63%	69%	19%
Social Networking	62%	67%	57%
Twitter	19%	22%	32%
Blog	15%	16%	28%
Documents	25%	31%	5%
RSS Feeds	10%	10%	11%
Telephone	20%	19%	1%
Face-to-face	32%	32%	3%
Text messaging	28%	29%	8%
Other	7%	7%	6%
Type-specific Website	15%	14%	10%

When social circle groups were decomposed into social groups (e.g., spouse/partners, parents, close family/friends) some differences in methods were noted (see Table 2). In inner social circles, respondents that shared with parents reported using instant messaging and social networking less often than when they shared with a spouse/partner or close family and friends. In outer social circles, instant messaging was used more frequently when sharing with those that the respondents worked or studied with than their boss/teacher/professor, or extended family and friends. This is likely due to the prevalence of instant messaging in the workplace and on campuses. Additionally, sharing links via documents was most common with one's boss/teacher/professor or with co-workers or classmates.

More formal or "official" channels were used to share links to information with one's bosses/teachers/professors (refer to Table 2). Methods such as e-mail, instant messaging, by adding links to documents and sending the documents were the primary methods of sharing links, while social networking, text messaging, or by telephone were less commonly used. This is likely due to these mediums of sharing not being readily accessible to sharers. It may be deemed as inappropriate to 'friend' one's boss or teacher on a social network or exchange telephone numbers to facilitate text messaging or telephone calls. It is more commonly accepted to send such links to information by e-mail, instant messaging, or through documents.

Table 2. Sharing methods by social group.

Method	Spouse / Partner *(n=324)*	Parents *(n=311)*	Close Family / Friends *(n=415)*	Extended Family / Friends *(n=291)*	People I work or study with *(n=351)*	Boss / Teacher / Professor *(n=211)*	Public *(n=226)*
E-mail	85%	83%	85%	75%	78%	74%	28%
Instant Messaging	59%	29%	55%	36%	53%	31%	19%
Social Networking	52%	34%	60%	56%	42%	18%	57%
Twitter	15%	8%	17%	17%	16%	10%	32%
Blog	12%	8%	13%	12%	11%	8%	28%
Documents	21%	18%	18%	14%	24%	31%	5%
RSS Feeds	8%	5%	7%	8%	7%	4%	11%

Telephone	16%	18%	16%	11%	10%	5%	1%
Face-to-face	29%	27%	27%	19%	21%	19%	3%
Text message	26%	16%	25%	17%	18%	8%	8%
Other	5%	3%	6%	4%	3%	2%	6%
Type-specific Website	14%	11%	13%	10%	6%	2%	10%

What types of information are being shared?
Respondents were most likely to share links related to news (73%), fun/humor (59%), general information (58%), videos (50%), and photos (48%). A smaller group (30%-43%) of respondents indicated they share links related to school/research, hobbies, products, local information (restaurants, etc.), and music. Few respondents (4%-14%) share links related to sports, books, recipes, and other types of information (see Figure 3).

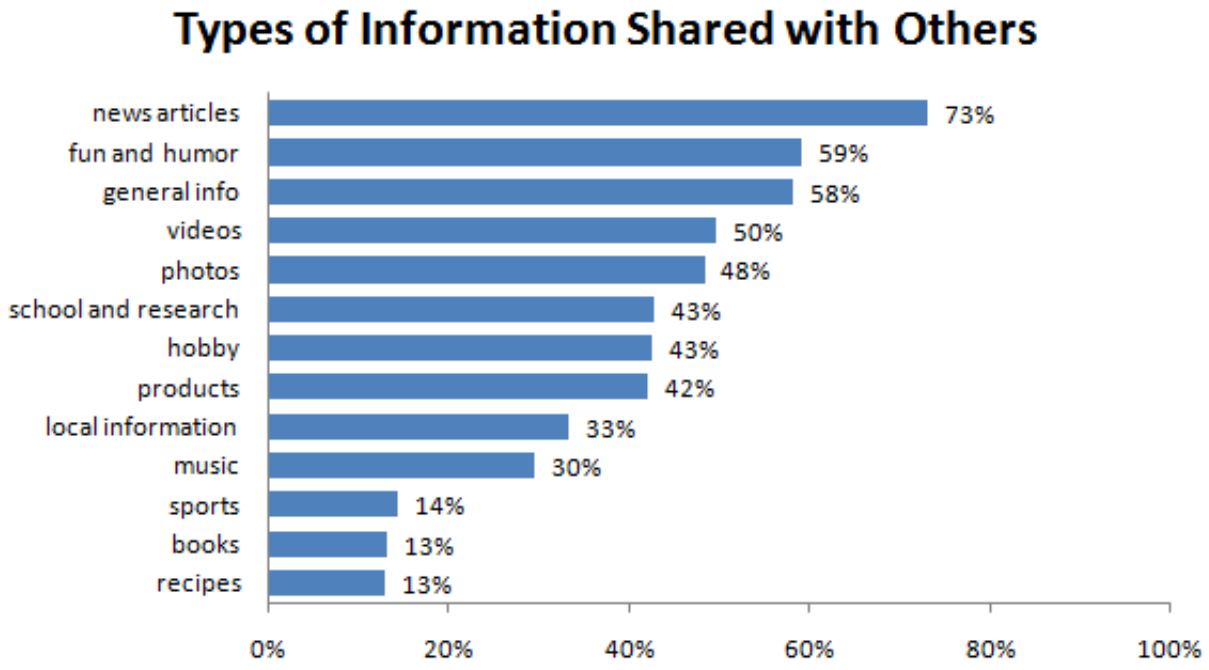

Figure 3. Types of information shared.

Table 3 shows the percentage of respondents sharing various types of information and with whom. In general, respondents reported sharing more types of information with their inner circle. The exceptions were with sharing school-related information, which was more commonly shared with one's outer circle and sharing books or other types of links, which respondents shared similarly between inner/outer circles and the public. The most frequently shared types of links (e.g., news, fun/humor, general information) across inner/outer social circles and the public were the same.

Table 3. Percentages of respondents that shared types of links to information with social circles and the public

	Inner Circle	Outer Circle	Public

Type of Link	Inner Circle (n=455)	Outer Circle (n=408)	Public (n=226)
News	66%	56%	46%
Fun/Humor	56%	41%	44%
General Information	53%	47%	38%
Videos	44%	30%	37%
Photos	45%	33%	31%
School Information	27%	38%	12%
Local Information	30%	17%	13%
Products	40%	14%	13%
Hobbies	38%	25%	27%
Sports	11%	6%	8%
Books	10%	8%	10%
Music	25%	16%	21%
Recipes	12%	4%	4%
Other	2%	3%	3%

Some slight differences between groups were noted when social circles were separated into social groups (see Table 4). Generally, the most common types of links were consistent across groups with few exceptions. Within the inner social circle, photos and product information were more likely to be shared with parents than with spouse/partners or close family/friends. In the outer circle, the most substantial difference in the type of information shared occurred with people that were their bosses/professors/teachers. School information was most commonly shared with bosses/professors/teachers. Finally, sharing with the public (publishing links) mirrored the overall trend of sharing different types of information.

Table 4. Percentages of respondents that shared types of links to information with social groups

Type of Link	Spouse/ Partner (n=324)	Parents (n=311	Close Family/ Friends (n=415)	Extended Family/ Friends (n=291)	People I work or study with (n=351)	Boss/ Teacher/ Professor (n=211)	Public (n=226)
News	60%	46%	54%	41%	49%	46%	46%
Fun/Humor	52%	33%	53%	41%	32%	14%	44%
General Information	51%	40%	42%	37%	41%	36%	38%
Videos	40%	25%	40%	29%	22%	11%	37%
Photos	45%	41%	43%	38%	21%	13%	31%
School Information	19%	13%	20%	11%	39%	47%	12%
Local Information	30%	14%	24%	15%	15%	7%	13%
Products	38%	31%	27%	15%	7%	5%	13%

Hobbies	30%	15%	34%	24%	16%	12%	27%
Sports	8%	5%	11%	7%	3%	2%	8%
Books	8%	6%	8%	5%	6%	7%	10%
Music	20%	9%	23%	16%	10%	3%	21%
Recipes	10%	8%	10%	5%	2%	2%	4%
Other	2%	1%	1%	1%	3%	2%	3%

Why are users sharing information?
Individuals shared links for a variety of reasons. The most common reasons for sharing were benevolent. When asked for what purpose one shared links, the participants answered that they thought the recipient would be interested (89%), the recipient would find it funny (80%), or it was related to a hobby of the recipient (65%). Similarly, when asked why they share links with people, participants responded that they share links to help someone (82%) or to make them smile (80%).

What issues do users experience when sharing information?
Participants were asked to report any issues they experience when sharing links (see Figure 4). The most frequently mentioned issues involved not being able to tell if the recipients benefited and not receiving feedback from recipients about the links they shared. A little less than half of those reporting issues stated that they were unable to track how many individuals have seen or shared the item.

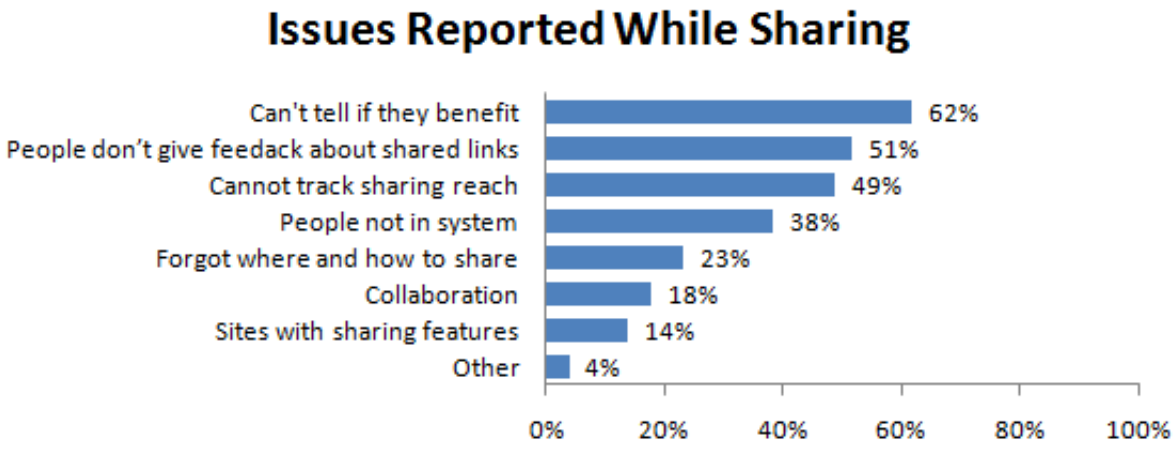

Figure 4. Issues reported while sharing information.

How do users want to share information?
Participants were asked to reflect on the "perfect" method for sharing URLs/links. Respondents provided a variety of comments, which were classified into 10 major themes. Table 5 provides a description of the themes.

Table 5. Suggested themes related to how users would like to share information.

Topic	Frequency *(n=92)*
Single or double-click access from URL to service (e.g., right click "Share")	25%
Integration into the browser	24%
Integration into other services (e.g., Facebook, Twitter, blogs, e-mail, instant	

Integration into other services (e.g., Facebook, Twitter, blogs, e-mail, instant messaging)	21%
Improvements on an existing service	18%
Online-based service (e.g., Delicious, Facebook)	16%
Incorporation of respondent's saving methods into sharing workflow	15%
Ability to quickly select individuals or groups to share information	15%
Sharing analytics (e.g., who and how many visit links, time spent at shared links, number of people shared, etc.)	11%
Access to friends/contact lists	10%
Feedback about quality of shared links	5%

Some example comments from respondents included:

- *"Automatically sync bookmarks from my browser to a web interface where I can view them privately. For each bookmark/folder/tag, add a 'share' button that brings up something like the Google Docs sharing wizard (I can choose people to share with by e-mail address and include a note that is sent to them along with the link)."*
- *"One click to choose where to send link with comment to my choice of destination social web. Profiles and defaults set to ease use. Able to share with groups within networks easily (so just family, etc.) and privately."*

DISCUSSION

Results from this survey demonstrate that sharing information is a common activity, especially with inner and outer social circles. By large, the methods used to share links remained remarkably consistent across both inner and outer social circles. Generally, when an individual shares with someone in an inner or outer social circle, their method of sharing tends to be more personal and requires more individual attention (e-mail, social networking, instant messaging, face-to-face, telephone). This is in contrast to sharing with the public, which tends to use methods that are capable of disseminating information to a wide audience (e.g., social networking, blogging, RSS feeds, Twitter).

Overall, the types of information across shared social circles and the public (through publishing) were also consistent with the exception of sharing school-related information. This minor difference was likely due to the groups of individuals in the outer social group possibly having a vested interest in school- related material. It is not uncommon for classmates to share material and it would be expected that students communicate with their teacher or professor about school-related material. Additionally, to an extent, employees may have an interest in sharing school-related material with their supervisors, especially if the employer provided tuition reimbursement.

The biggest issues associated with sharing primarily dealt with knowing the extent to which links were further shared, knowing if the recipients benefited, and not receiving feedback about the shared links. Most common “wish list” features included integrating it into the browser and allowing individuals to send links to other services to allow easy sharing.

Ease and accessibility are central to the most common requested features for sharing information. Sharers requested that sharing functionality be built directly into the browser, accessible through right-clicking on the browser screen. While this seems like it would make sharing easier, it would be necessary to make sharing functionality updatable where services can be added and removed, given the rapidly evolving nature of services on the Internet. A more feasible solution would be to place sharing functionality directly within websites (see Figure 5). This places the responsibility of updating and control of content on the publishers. However, neither of these solutions allow for sharing analytics (tracking reach) and a system for providing feedback about the quality or perception of the

analytics (tracking reach) and a system for providing feedback about the quality or perception of the link.

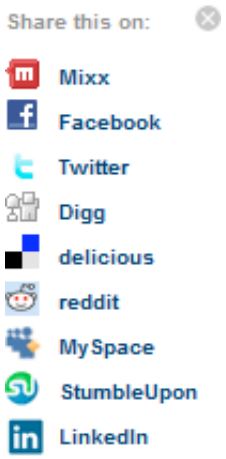

Figure 5. Example of sharing widget offered from inside the CNN website.

REFERENCES

Aguiton, C., & Cardon, D. (2007). The strength of weak cooperation: an attempt to understand the meaning of web 2.0. Communications & Strategies, 65(1), 51-65.

Coleman, J. S. (1988). Social capital in the creation of human capital. American Journal of Sociology, 94(Supplement), S95–S120.

Dearman, D., Kellar, M., & Truong, K. (2008, Novemeber). An examination of daily information needs and sharing opportunities. Proceedings of the CSCW 2008 San Diego, CA (pp. 679-688).

Ellison, N. B., Steinfield, C., & Lampe, C. (2006). The benefits of Facebook “friends:” Social capital and college students’ use of online social networking sites. Journal of Computer-Mediated Communication, 12, 1143-1168.

Evans, B. M., & Chi, E. H. (2008). Towards a model of understanding social search. Proceedings of the CSCW 2008, San Diego, CA (pp. 485-494).

Lee, Kathy J. (2006). What goes around comes around: an analysis of del.icio.us as social space. Proceedings of the CSCW 2006, Banff, Alberta, Canada (pp. 191-194).

Owens, Shaikh, A. D., & Chaparro, B. S. (2010). Creatures of habit or convenience? Users still use browser bookmarks and e-mail to save information. Usability News, 12 (2). Retrieved October 18, 2010 from http://surl.org/usabilitynews/122/saving.asp.

Putnam, R. D. (2000). Bowling alone. New York: Simon & Schuster.
