

SUPPORTING NEWS READING AND DISCOVERY THROUGH DIRECTED ONSITE INFORMATION SHARING

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Abstract: Sharing has become an integral part of online content discovery. In many cases, content is relevant to members of a close-knit group, rather than all Facebook friends or Twitter followers. To explore emerging practices of directed content sharing, we implemented an integrated sharing platform associated with an online newspaper that allows members of close-knit groups to share and discover articles onsite as a part of their news consumption. The application was evaluated in a field trial. Participants reported lower sharing barriers and increased sharing frequency. They perceived value in sharing and receiving personally targeted news content. Based on these outcomes, we present design recommendations for such systems. Specifically, we contribute to the design requirements of group interfaces and directed information sharing.

1 INTRODUCTION

Although information has never been so easily accessible, many people feel overwhelmed by the amount of information available (Purcell, 2010). A wide variety of tools have been developed to aid in information retrieval and discovery, and such tools often emphasize personal information needs. However, in many cases, information is relevant to a dyad or a group. It has been shown that people often rely on friends or colleagues to pass relevant links along as they encounter them (Bernstein, 2010). In the future, content discovery will increasingly rely on sharing and suggestions (Purcell, 2010).

Recent studies (Gupte, 2009); (Leino, 2011) indicate that Social Network Services (SNS) are already bypassing email, which has been the most popular channel for directed information sharing (Bernstein, 2010). However, the increasing flood of content in SNSs is already beginning to overwhelm users (Koroleva, 2010). Keeping in touch and maintaining relationships is a strong motivator behind the sharing behavior.

So far, research has underlined the importance of weak ties (Granovetter, 1973) rather than sharing of mundane content between close connections. Compared to social interactions in real life, there is a clear gap between sharing methods provided by social broadcasting and email. It has been shown,

that in directed link sharing services, the importance of the connection is more important than social capital (Bernstein, 2010). Personal and directed recommendations are also consumed more likely than the ones that have been broadcasted (Leino, 2011).

Even though content sharing is gaining popularity as a means of finding content, most people still find and consume online news directly from the news site (Leino, 2011). The aim of the media companies providing the news service is to seek new ways to increase stickiness and engagement to their content portfolios.

In this paper, we explore practices and propose design requirements for online tools that facilitate directed onsite sharing in close-knit groups. Onsite sharing allows users to share and consume articles directly in the online newspaper domain.

We define requirements and introduce a design for an onsite toolbar prototype. To evaluate the perceived value of directed onsite sharing and the implications for social practices, a field trial was carried out over a period of ten days. We organized semi-structured interviews to gain deeper understanding about the features users would appreciate.

During the trial period, users actively shared and reported a clear perceived contrast between sharing practices in broadcast media and privately among a

close group. We contribute design recommendations for facilitating directed sharing based on the results.

2 RELATED WORK

Systems designed to connect individuals exploit voluntary willingness to share information, but they should do it in such a way that the cost of sharing, receiving and processing of content is minimal (Dearman, 2008); (Milic-Frayling, 2008). A small, clearly defined audience works best to increase the interest and expectations of shared content and the discussion around it (Bernstein, 2010). Strongly connected pairs are also more likely to share their resources (Haythornthwaite, 2001); (Wellman, 1992).

Social bookmarking and collaborative filtering have been presented as enablers of social navigation already as early as 1995 (Höök, 2003); (Maltz, 1995). These services are based on users tagging content with selected keywords. Popular services such as Diigo provide platforms for social tagging in which effectiveness depends on finding and re-finding information (Golder, 2006). By automating parts of the recommendation process, collaborative filtering aims to provide personalized content for a user with relatively low effort (Resnick, 1994). However, users know that recommendations are automatically created, rather than being direct communications.

Online chat systems, such as Internet Relay Chat (IRC) and Skype are also popular tools for sharing links during discussions. Due to their synchronous nature, instant feedback is available (Nardi, 2000). However, chats do not provide information management capabilities, and sharing is not their primary function. Chats provide a strong model for communication with close contacts and strong feeling of community. Users perceive the content created in IRC to be very communal (Olsson, 2008). Therefore, we aim to adopt this model, modify it further and move it to the web.

Bernstein et al. introduced an application called FeedMe for directed sharing interesting links from RSS feeds by email. They found that people are more likely to share directed links about interesting topics between close contacts whose interests are known to them (Bernstein, 2010).

However, the problem with most of the presented solutions is that the majority of Internet users do not use tagging services or RSS readers.

3 REQUIREMENTS

Based on the previous research, we present a scenario of use and requirements for a system that would facilitate sharing in relatively small close-knit groups.

3.1 Scenario: Reading News

Mary is sitting in the metro returning home from work. She reads the online news of a local newspaper from their website. Mary is using a service that allows her to share content with her friends and to comment on links. The service has been embedded on the site. When she enters the site, she sees the latest headlines and, moreover, sees the headlines that her selected friends have shared. With her husband, she is following a discussion on a new daycare center that might be built nearby. She is following the news about an airline strike with her friends because she is about to spend the following weekend in Paris with them.

3.2 Requirements of the System

Based on the above scenario and previous research, we defined the following requirements.

- **Onsite Submission:** It must be possible to share a link on the domain of an online newspaper where the news content is originally published.
- **Persistent Storage:** Shared links must be stored persistently.
- **Collective Storage:** Shared links must be stored based on a group (not by a single user). Members of the group must be able to jointly manage the stored links.
- **Directed Sharing:** Users must be able to define the visibility of their recommendations.
- **Onsite Viewing:** Users must be able to simultaneously browse a website and the recommended links that are related to it.
- **Categorization:** Users must be able to categorize the recommended links based on social connections.

4 NEWS TOOLBAR CASE STUDY

To validate the concept of directed onsite sharing, we designed and implemented a toolbar that was integrated to an online newspaper. The aim of the system is to provide an efficient way to share and

discover content in close-knit groups. The onsite toolbar allows users to share news items in various channels with varying levels of privacy. These channels can be defined by users and shared with particular contacts. When shared, the channel may be simultaneously viewed and updated by its users while they are browsing and reading the news. Contacts can be invited via email or they can be searched among registered users or Facebook friends.

We wanted to increase stickiness and engagement in the news portal. Therefore, we decided to implement the toolbar as a website add-on, which is available for everyone without installation.

4.1 User Interface

The prototype consists of a toolbar integrated into the online version of a Finnish newspaper. Figure 1 illustrates the user interface of the toolbar at the top of the newspaper website. The service is implemented in the Finnish, but the screen captures have been translated into English.

Figure 1 displays the list of links that have been shared to the selected *channel*. *Channels* equal the channel concept in IRC: one user creates a *channel* and invites people or lets them join freely. Everyone in the *channel* is able to see who else are in that *channel* and can access the content. Infinite number of *Channels* can be created and managed in the system for collecting direct links to news items around a specific theme or purpose for a defined audience. Only members of the particular channel can see the content.

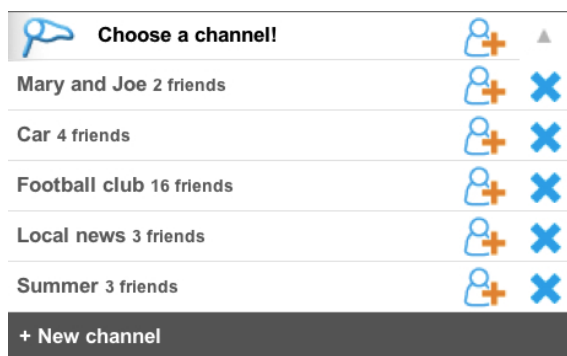


Figure 1: The channels of the specific user in the onsite toolbar.

Users can read articles by clicking the links in the toolbar. The article is then opened in the online newspaper website. The link text is the headline of the article in question.

The system is connected to Facebook. Facebook users can easily share selected items with the wider audience of Facebook as well as exploit their user account for login and invite friends.

The right-hand section is for notifications provided by the system, such as invites to channels.

The left-hand section of the toolbar (presented in Figure 2) is for managing *channels*. The middle portion is allocated for presenting the actual content, which contains collaboratively collected items. The list can be opened and closed, and the top row serves as a status bar.

4.2 Comparison to Existing Approaches

To highlight the novelty of our approach, we compare it with existing sharing methods through the requirements defined in Section 4.2. The starting point of our service was to support onsite viewing of the recommendations, and this distinguishes the toolbar from other methods.

Social Bookmarking is the closest method to our system; some systems, such as Diigo, fulfill all the requirements except for onsite viewing. “Tell a friend” via e-mail and FeedMe are similar to each other, although FeedMe’s onsite submission happens on a feed reader and not on the original website. The recommendation e-mails can be stored persistently, but not collectively, and the receivers are always defined particularly. SNS fulfills only the onsite submission requirement, whereas IM fulfills only the directed sharing requirement. Blogs are typically stored persistently and the entries can be categorized. However, they lack onsite submission and viewing, collective storage, and directed sharing. In the light of this comparison, it can be said that our toolbar is a new type of social bookmarking tool that enables onsite viewing.

5 EVALUATION

Our analysis is based on semi-structured participant observation interviews.

5.1 User Study

Ten participants were recruited purposively to participate in a ten-day usage period. The criteria for the purposive sampling were that they were already reading the online version of the newspaper and that they were adults. The set of ten users consisted of three couples and one group of colleagues. At the

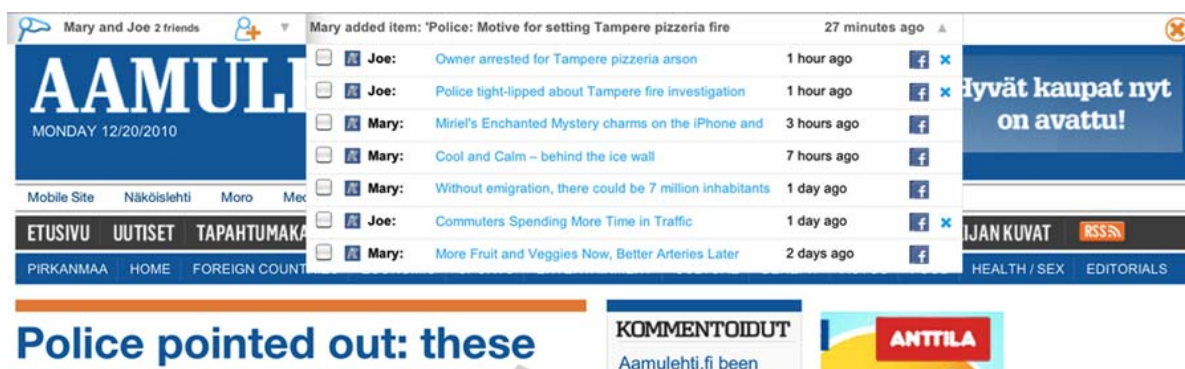


Figure 2: Screen capture of the onsite toolbar presenting the most recently added articles in the shared channel called “Mary and Joe”, which is shared by two people.

beginning of the ten-day usage period, participants received a simple instruction letter. The purpose of the usage period was to observe how the participants would use the service and how the system could extend interpersonal communication.

After the ten-day period, participant-observation interviews were conducted. The in situ interviews were organized in the natural browsing environment of the participants, such as at home or at work. The interviews were video recorded to obtain accurate data, such as contents of the different channels from the computer screen. The interviews were semi-structured in order to follow interesting paths indicated by the participants. The aim was to extensively explore the contents of each personal account. After the interview, each participant filled in a questionnaire. The video recordings were transcribed verbatim, and the computer-screen information was transformed into tables. The data were analyzed using qualitative content analysis in conjunction with the screen information in table form.

5.2 Participants

The participants were selected to represent three different types of existing social groups. They were recruited through word-of-mouth.

The mean age of the participants was 28 years; many of the older people who we tried to recruit seem to prefer the paper version. Based on the questionnaire data, six participants out of nine were members of Facebook, and few of them used IM services. They did not use social bookmarking services, and only one had a Twitter account. None of our participants was very active in recommending content online. Sharing information about news articles face-to-face, or asking the other person to come to view the screen, were common practices.

Team 1 consists of a married couple living in a long-distance relationship during the last eight months. They had shared apartment announcements by email but had not shared news items. They used the system to keep in touch and often continued to discuss the items on Skype.

Team 2 consists of two sisters and their spouses. One of the couples is married. And the other couple lives together. They have shared news face-to-face but never with online services. They used the system to distribute interesting, locally relevant articles and to continue discussions.

Team 3 consists of four colleagues working together in a department store. They have also become friends and enjoy discussing personal matters. One of them was sick during the interviews. All of the group members used the system to share work-related articles and articles related to their private life. They also shared amusing articles to uplift the spirit at the workplace.

6 RESULTS

Participants mostly shared news related to local issues or to familiar people, culture or entertainment; they shared items that they knew would interest the recipient. Participants told that they always logged-in to the service immediately when they accessed the news site.

In directed sharing, content is often targeted towards the recipient. Participants found this approach suitable for intimate sharing for mundane items that supported their existing interpersonal communications. Content was selected carefully by thinking of the receivers and their perceived interests.

Links were often used as references to back up

earlier statements from unmediated discussions. Couples were most likely to continue offline discussions by using the content as references. Many participants reported that they used to share and discuss articles by showing them to the recipient in person from the computer screen.

Participants were sharing links related to local issues and to people they knew. In many cases, local issues were considered interesting to the group but not relevant enough for larger audience.

The problem with sharing links in public broadcast media, such as Twitter or Facebook, is the untargeted nature of the sharing method. The perception of interesting content varies widely between individuals. Many of our participants would like to discuss content between close-knit groups rather than have such content curated by distinct acquaintances.

Participants frequently compared the system to Facebook. They felt that there were two different categories for sharing news content. Some items would be important to everyone and therefore were good Facebook material. The second category was more private and was intended for a small number of people. Some items were considered to be generally important to a wider target audience. It is important to note that only a small number of shared links belonged to this category.

In SNS or collaborative sharing, the amount of likes or recommendations is considered to be the measure of an interesting article. During the field trial, participants shared items that they considered particularly interesting. The relevance of the recommendation was considered as the most important factor, not the amount of links available.

Contrary to public commentary, many participants confirmed that the barrier for adding comments to news items and discussing them online would be significantly lower if commenting was a self-moderated activity between small and meaningful groups of people. It was also considered important that all participants would be interested in the topic in question. Facebook provides a possibility to comment on recommendations among friends, but the overall visibility of the comments is unknown to participants, except to the original sharer.

Shared news articles can function as reminders of intended action. The reminder can be there for the person reminding, the recipient or both. In many cases, such items are still referred to as ambient information and not as a critical to-do item. Notifications and awareness of synchronous use were frequently mentioned in the interviews.

One popular use case was quick access to the

most relevant news in a busy situation. Directed sharing was considered as a suitable means of filtering.

7 DISCUSSION

We suggest that sharing as a part of direct, onsite content consumption will help users to discover interesting news content more efficiently. The aim is to provide access to personalized pre-filtered content that is known to be interesting. As the motivation for using the service is to consume news, users are not very cautious about spamming in comparison to user interfaces that forward the content to others without knowing their motivation.

As expected, content was largely shared based on the interests of the recipients, and in many cases, it was relevant only to that particular group in the context in which it was mentioned. Many participants felt that the tone in active public discussion around news articles was usually negative. They felt that private discussion inside the group would be more positive and constructive.

Our current solution had two problems. The first was the lack of a possibility to privately discuss items, and that content was limited to one source of news. If the whole range of services provided by the media company were available enhanced with commenting, then many participants would use the application. Reasons for not using this type of system were preferences for paper versions and face-to-face communication.

An alternate solution would be to allow users to add external links, and thus provide a system that would work as a universal bookmarking application. However, during the interviews, users were more concentrated on news content than on web content in general. Clearly specified domain might help users to construe content better. Interviews also highlighted the problem of information overload. People would like to receive content suggestions, but the current flood of content, even in SNSs, overwhelms them.

Based on our findings, we contribute design recommendations for future systems to facilitate directed onsite sharing.

- **Support for groups should be easily available.** Users should be aware with whom they share and who will see the content. The cost of selecting groups while sharing should be kept minimal.
- **Efficient for everyone.** System should be easy to adopt and should not require installation. Users

should remain logged-in constantly while they are online.

- **Provide Notifications.** Users would like to be aware when someone has added new content to the system even when they are not browsing the news.
- **Support for discussions.** Applications should support voluntary online discussions.
- **Semi-synchronous feedback.** Users would appreciate the possibility of using the discussion channel as a semi-synchronous chat if there were more than one user online at a given moment.
- **Persistency for asynchronous use.** All information, including links and chat conversations, should be available to users who were offline during the activity.

We were able to test our application with a limited number of users and within limited amount of time. This research was conducted in an explorative way to investigate users' thoughts, and our contribution is more with regard to implications for future designs. To reach a full understanding of wider audiences, the system should be a publicly available and it should be tested during a longer period of time. Further data collection is required to determine how the service affects interpersonal relationships and whether social connections enable users to construe content more efficiently.

8 CONCLUSIONS

Directed onsite sharing enables users to share and discover mundane content among close-knit groups, to simultaneously browse the news and to broadcast publicly relevant articles to SNSs. Users perceive broadcasted and directed sharing approaches differently, which leads to different practices and needs. The native toolbar was used to share mutually important and local content with members of the group. Recipients' interests were the focus. Particularly in contrast with the broadcast nature and self-presentational aims of many link-sharing services, the barrier for sharing is lower and the reported frequency is higher. Users want to remain aware of with whom they share and what others have shared. They are more eager to discuss within small circle of friends about local and current things that are relevant to them, instead of contributing to the public discussion. Based on our results, we presented recommendations for design for future applications facilitating directed onsite sharing.

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