

Project Cover Sheet

Project	MTagger Usability Evaluation <i>Comparative Evaluation</i> Conduct a comparative evaluation of various social bookmarking applications that are similar to MTagger in their features, purpose and/or user group to discover best practices and potential areas for improvement.
Committee & Members	Usability Working Group Suzanne Chapman (chair), David Carter, Michael Creech, Shevon Desai, Karen Downing, Anne Karle-Zenith, Molly Kleinman, Shana Kimball, Ken Varnum (stakeholder) Matt Schultz, Jacob Solomon (student interns)
Report Info	Report Author(s): Matt Schultz and Jacob Solomon Contact Information: ul-usability@umich.edu Report Date: June 2008; Last Revised: June 2008
Objectives	The Usability Working Group is interested in discovering how other libraries and social web developers have designed and implemented bookmarking and tagging.
Methodology	Method – Comparative Evaluation Usability Interns researched popular platforms that are currently providing online bookmarking and tagging services. Attention was paid to how these sites handle issues known to exist in MTagger as well as how these tools provide users with features that go beyond MTagger’s current implementation. Dates of study: June 2008
Results & Analysis	Many tagging systems incorporate features for organizing and using tags that emphasize tagging as a productivity tool with a high degree of social interactivity and which cater towards information-encountering more than traditional searching.
Recommendations	MTagger should consider the application of the presented features, particularly those related to organizing and displaying tag information and building collaborative communities, to distinguish it from the “competition” and more fully meet the needs of the University of Michigan community.

Introduction

As social bookmarking and tagging applications become more prevalent throughout the Web, they become increasingly diversified. Tagging systems designed for increasingly specific user bases, functions, or application of tagging are emerging. As new systems emerge, new innovations and interfaces are developed in an effort to more precisely apply tagging to the variety of emerging settings. MTagger is an example of a tagging system designed for a specific user base and a specific application of tagging: to create a folksonomy from the University of Michigan's library resources and incorporate outside Web resources into that folksonomy for use by the Michigan community. By evaluating some tagging systems with perceived relevance to MTagger, it is hoped that greater insight can be attained into tagging behavior, interface design, and how best to develop a tagging system which meets the needs of MTagger's specific user group.

Five systems were identified as having important relevance to MTagger:

- *CiteULike*'s audience resembles the academic and research community that MTagger also seeks to serve, although on a larger scale.
- *del.icio.us* is the most popular social bookmarking system on the Web, and it was felt that an evaluation of its success would prove useful, even though it has the broadest target user group of all Web users tagging all Web content.
- *PennTags* most resembles MTagger in that it is a tagging application developed within a University library Web system.
- *LibraryThing for Libraries*, a library-based tagging application used predominantly in public libraries; and
- *Libmarks*, another library-based tagging application.

Each of these systems was explored exhaustively, with tasks simulated and specific points of comparison with MTagger's interface sought out. Each site is summarized below, noting the key features of relevance to MTagger and insights into possible applications of these features in MTagger.

Findings

CiteULike

<http://www.citeulike.org/>

CiteULike is a social bookmarking application designed for tagging, storing and sharing articles from academic journals. It is meant for use in an academic setting by students, teachers and researchers as a way to collaborate on projects and build communities around those with shared interests and research goals.

Important features

- CiteULike* presents a tag cloud as a box on the upper right hand side of every page, making it viewable from the top of the screen without scrolling. This tag cloud presents the “most active” tags, and has another search field within the tag cloud, which lets users filter down just the tags within that cloud. So as a user begins to type, non-matching tags instantly disappear with each letter entered. When viewing a particular user’s or group’s tags, this tag cloud on the right only lists that user’s most active tags.
- A search field is at the top right corner of every page. Entering queries into this field brings the user to a page which lists three sets of results. First, a list of all users who have a relationship to the search query (such as having tagged an item, or the query is a user name or they belong to a group related to the query). Second, a list of groups related to the query is presented. Third, a list of items related to the query. In most cases this is a list of items with a given tag, but the search function searches all metadata for matches and displays those results. The results are not presented in any distinguishable order; while it appears that more recent items and more popular items are likely to appear at the top of the search results, the exact formula is not evident. There is no way to sort the results.

The screenshot displays the search results for the query "usability" on the CiteULike platform. The page is divided into several sections:

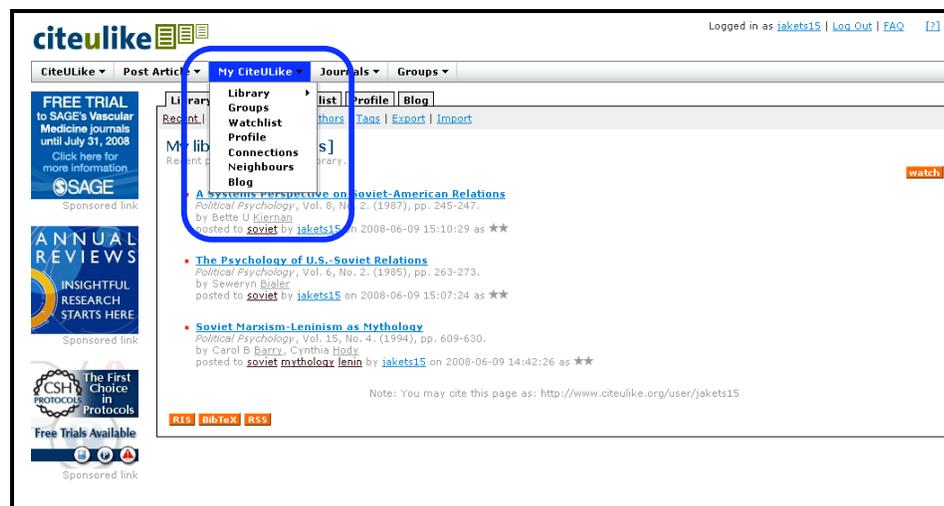
- Search results for: usability [501 articles]**: This section shows the search criteria and a list of users interested in the query, including rickl, stevekuan, Torsten_Holmer, wigelius, abellogin, aku8000, Najko, flgeyer, shawn, velasco, robertlischke, bbroke, mrajanen, KAllendoerfer, sgilliland, malenitah2, franzkurfess, eelke, yardi, bangb, LexUT, emerson, SuzanneThompson, akkun_choi, maike, sga72, marcela, mdjimenez, and tumo R13.
- Groups interested in: usability**: This section lists several groups, including CHISEL, HCI-IHTE-TUT, CSCW, digital_youth, Blog_and_Wiki_Research, folkconomy, Ubicomp, Librarians, Wikinedia, club, and what_is_a_library.
- Articles discussing: usability**: This section lists three articles:
 - Student-run usability testing**: Software Engineering Education & Training, 2000. Proceedings. 13th Conference on (2000), pp. 123-131. by NQ Wahli. posted to usability by malenitah2 to the group CHISEL on 2006-09-26 03:57:53 as ★★ along with 3 people.
 - Techniques for managing a usability test**: Professional Communication, IEEE Transactions on, Vol. 37, No. 3. (1994), pp. 143-148. by L Kantner. posted to usability by malenitah2 on 2006-09-26 04:03:35 as ★★ along with 1 group.
 - Current practice in measuring usability: Challenges to usability studies**: International Journal of Human-Computer Studies, Vol. 64, No. 2. (February 2006), pp. 143-148. by Kasper Hornbaek. posted to usability by vsuh on 2007-06-13 07:09:14 as ★★★★★ along with 9 people.
- Everyone's Tags**: A list of tags including 3d, algorithm, algorithms, alignment, analysis, annotation, architecture, assessment, attention, bacteria, bayesian, behavior, bioinformatics, biology, book, brain, cancer, classification, clustering, collaboration, communication, community, complexity, context, control, culture, data, database, design, development, dna, crossophila, dynamics, ecology, economics, education, energy, evaluation, evolution, expression, fmri, gene, genetics, genome, genomics, graph, history, human, information, interaction, language, learning, management, memory, method, methodology, methods, microarray, mobile, model, modeling, and more.

Callout boxes highlight the "Omnipresent tag cloud" and "Randomized search results".

- Upon initially registering for *CiteULike* and tagging one’s first item, *CiteULike* opens a popup window where a tag can be entered. After clicking “Post,” within the same popup window, *CiteULike* offers the user the chance to either close the window or go to their personal “Library” of tagged items. Text explaining this option is presented in the popup window, along with a

hyperlink in the text. If the user wants to close the window, they just close it as they would any window in a browser. If the user chooses to see their library, the library opens up in the popup window. The size of the window is not an issue, as the library fits nicely and is easily viewable. But as it is a popup window, the browser's toolbars and buttons do not appear. After the user posts their first article, this option is no longer presented. Instead, only the option to close the window is offered.

- *CiteULike* attempts to focus on the social, collaborative nature of academic work and promotes the benefits of building collaborative communities around research and academics. A user must create a “profile” when registering which requests the user’s affiliation, interests, photograph and any other information the user wishes to provide. *CiteULike* also allows users to create groups based on specific interests or projects. Groups can collaboratively tag and manage articles. Users can also establish “connections,” similar to adding “friends” in *Facebook*. *CiteULike* also keeps track of “neighbors,” or users who have tagged the same item.



Applications to MTagger

CiteULike has important relevance to MTagger because they are aimed at serving similar communities. Both are systems meant to give users in an academic and research setting have access to information by developing folksonomies for academic material. *CiteULike*'s focus on building communities and on the social nature of this work is especially noteworthy and differs from MTagger's approach. *CiteULike* feels that the productivity value of tagging is greatly enhanced by building communities and groups of users with shared interests and goals. MTagger does not incorporate the features used by *CiteULike* that build these types of communities and promote the “social” side of tagging.

CiteULike's features create an interface which fosters an “information encountering” approach to information seeking. *CiteULike* does not work efficiently as a way to find a specific article. Search results are not presented in a clear order, there are no filters or easy ways to sort results, and often unnecessary metadata is searched and affects the results. This greatly contrasts with MTagger, in which search results are presented in clear order, can be filtered, and very little metadata is included which can skew results. An important question which arises from this contrast is which approach is a better fit for tagging in an academic setting. The MTagger approach may be somewhat more consistent with its users’ conceptualizations of information retrieval and previous experience, as it more closely mirrors a traditional database retrieval system, with the important distinction being a user based approach to cataloguing in place of librarians. But it is possible that this system is redundant to the more established library retrieval systems, which may explain why *CiteULike* has taken a less traditional approach.

CiteULike's system should allow for significantly more serendipitous information encountering because of the way it positions users with similar interests and goals closely to each other and encourages them to share information and interact. MTagger stands to benefit from examining the potential effects of incorporating more social networking aspects into the application as a way to distinguish tagging from other facets of the library system as a unique approach to information seeking which can enhance productivity.

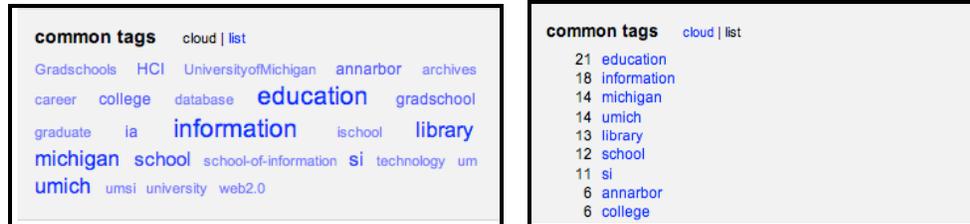
del.icio.us

<http://del.icio.us/>

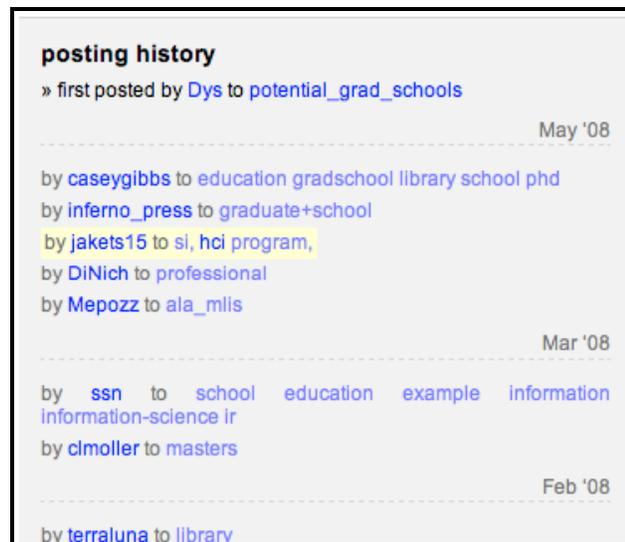
The social bookmarking Web application *del.icio.us* is a tool for tagging, organizing and sharing bookmarks. It is built for all Web users to bookmark items from the entire Web.

Important features

- *del.icio.us* does not feature a tag cloud on its home page, instead displaying a list of “hot items.” Nor does a tag cloud appear when viewing a particular tag. A tag cloud consisting of all the user’s tags appears on the right side of each user’s page. Also, underneath each bookmark, a link is provided to view the user notes and the recent tagging history of that particular item. On that page a tag cloud of “common” tags, or tags which the item has been given, is displayed. An interesting aspect of the *del.icio.us* tag cloud is the ability to switch between viewing tags as a cloud or as a list. Viewing as a list shows all tags in order of the number of items under that tag, with the number appearing to left of the tag in the list. The cloud does not list the number but visualizes it by adjusting the size of the text in relation to the tag’s popularity. Switching between the two views does not affect the content in the main center section of the window. All changes occur within the tag cloud.



- A search field appears at the top right of every page along with a drop down menu to allow the user to search in all of *del.icio.us* just their own bookmarks, or the Web. Searching in *del.icio.us* searches tags as well as link titles. Search results display any items the user has tagged at the top, followed by other items displayed in no apparent order.
- *del.icio.us* promotes itself as a tool for maintaining access to bookmarks from any computer, as well as a way to “discover” the things that others have already found. It emphasizes the personal motivations for tagging and bookmarking but encourages people to have fun looking at and discovering what other people find interesting.
- *del.icio.us* offers a “posting history” which allows the user to see an approximate history of who has tagged an item and when, grouped by month.



Applications to MTagger

MTagger and *del.icio.us* are highly comparable applications that serve a similar function on two different scales. *del.icio.us* serves the entire world across the entire Web, whereas MTagger serves the University of Michigan community and is focused mostly on University library resources. A comparison of the two should seek to explain the extent to which MTagger improves upon what

del.icio.us provides to focus on the needs and attributes of its distinct user base. In other words, why should a member of the Michigan community use MTagger when *del.icio.us* is available?

Currently, the most significant advantage to MTagger is its relationship with the library catalogue and collections. However, this relationship could theoretically be replicated in *del.icio.us*, at a cost of lower accessibility to the Michigan community. It is evident from the comparative evaluation with *del.icio.us* that MTagger may suffer from a lack of distinction from *del.icio.us*, which may be contributing to its low use. Where MTagger allows the users to tag items and store that list of items organized by their own tags, *del.icio.us* offers the same opportunity to users in addition to bookmarking, sharing and other social features. Exploration of ways that MTagger can distinguish its purpose and more precisely match the needs of its specific user base is strongly recommended. In particular, examining ways to tighten the already existent Michigan community in its academic and research goals could prove to be highly valuable to MTagger.

There are elements of the *del.icio.us* interface that may also provide insight into improvements of MTagger's interface. The customizable tag cloud, with two forms of viewing tags, could potentially benefit those users who are as of yet unfamiliar with tagging or may not understand exactly what a tag cloud represents, while still allowing experienced users to see information in a more visualized manner. Also, the "posting history" employed in *del.icio.us* provides useful information to the user regarding the timeline of a particular tag.

PennTags

<http://tags.library.upenn.edu/>

PennTags is a social bookmarking tool designed by The University of Pennsylvania to assist its educational community by allowing students, faculty and staff to organize information both within and beyond the university's library resources using tags. Users can locate materials using library search tools or via the Web, tag these items with relevant keywords, create projects, and continue to interact with the tags of other Penn users.

Important features

- The Projects option allows individual users to organize digital resources in a focused fashion for their personal academic/productivity purposes.

Cyberinfrastructure
A PennTags Project by brogan

tagged cyberinfrastructure by brogan ...on 19-FEB-07

7 things you should know about ... Cyberinfrastructure
from Educause

tagged cyberinfrastructure by brogan ...on 14-OCT-07

atkins.pdf (application/pdf Object)

The 2003 seminal "Atkins report" prepared by NSF's "Blue-Ribbon Advisory Panel on Cyberinfrastructure," entitled "Revolutionizing Science and Engineering Through Cyberinfrastructure."

tagged cyberinfrastructure by brogan ...on 18-MAR-07

CTWatch Quarterly: The Shape of the Scientific Article in The Developing Cyberinfrastructure

Clifford Lynch. 2007. CT Watch Quarterly, 3 (3), 5-10.

tagged cyberinfrastructure scholarship_is_changing by brogan ...on 14-OCT-07

cyberinfrastructure - Google Scholar

Google Scholar search of "cyberinfrastructure," March 18, 2007, about 1,550 hits.

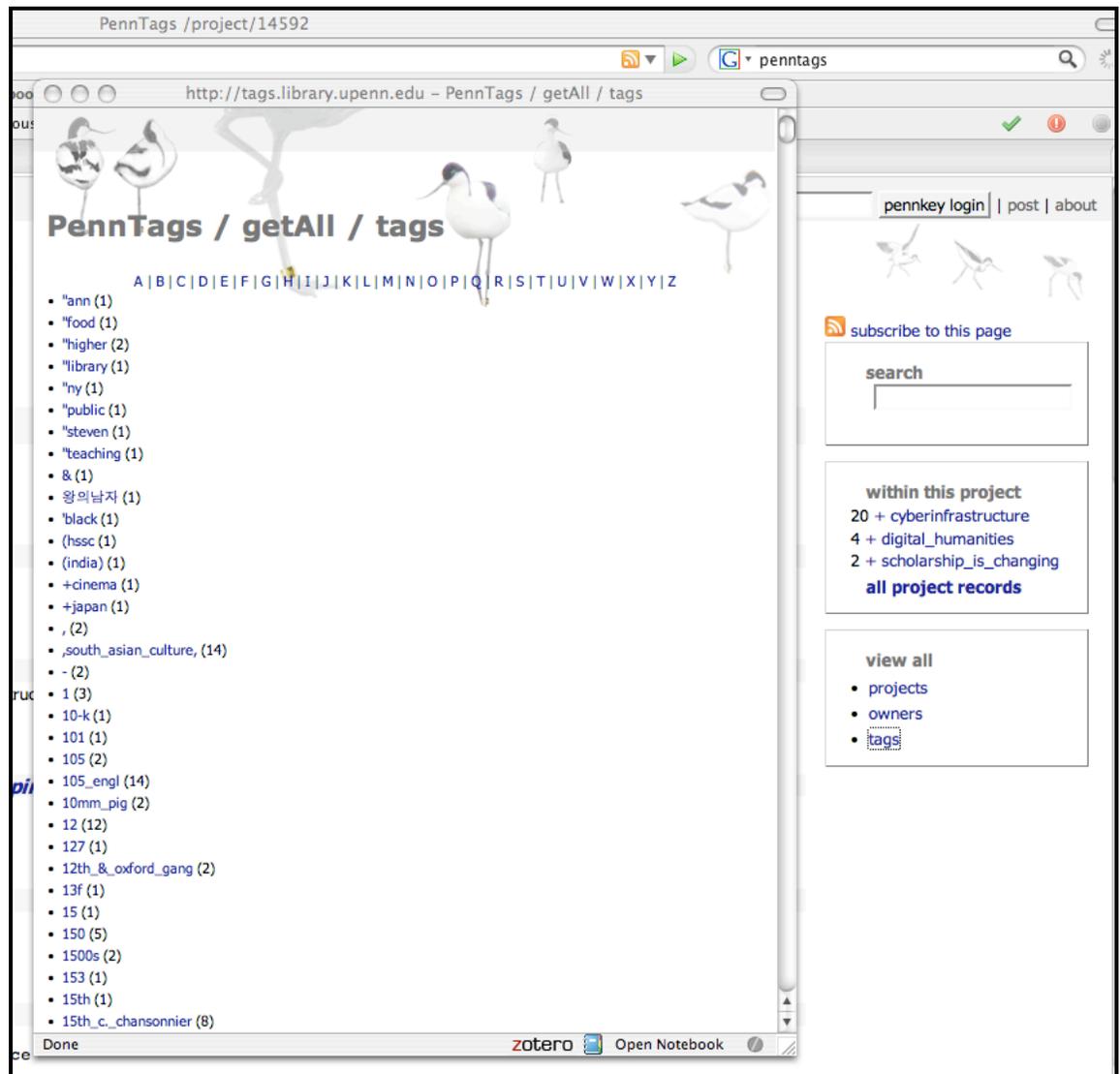
tagged cyberinfrastructure by brogan ...on 18-MAR-07

- Users can create Posts, which are essentially user-defined content (no library records or URLs) such as Notes-to-Self, or annotations.

Navigation bar containing: [pennkey](#) [login](#) | [post](#) | [about](#)

The [post](#) link is circled in blue.

- *PennTags* makes use of pop-up windows to handle display and access of Tags, Projects and Users; re-directs open a new tabbed window.



- Mouse-overs on individual tags display the frequency with which that particular keyword has been applied throughout the system.

Application to MTagger

In feedback from interviews, potential and representative users of MTagger have expressed interest in the ability to organize tags in more intuitive and personalized ways similar to the Projects which *PennTags* currently provides its users. One interviewee described herself as an ‘anti-social bookmarker’ who had switched from applications such as *del.icio.us* to Google Notebooks because it allowed her to grab snippets of information rather than entire websites or articles. *PennTags* Posts currently accounts for this type of use. The designers of MTagger may want to consider this ability to build upon the predominant motivation of personal productivity. Finally, to assist users in their search goals and to add an extra layer

to assist with prioritization, the ability to view the popularity of any given tag up front can make such processes all the more efficient.

LibraryThing for Libraries

<http://www.librarything.com/forlibraries/>

LibraryThing for Libraries provides libraries with a suite of powerful Web 2.0 features, including book recommendations, listings of alternative editions, and tag-based discovery. Libraries can embed this suite of features into their existing online catalogs; at the item level record users can view the tags that *LibraryThing* users have applied to that particular title, and also choose from among a listing of books that have been similarly tagged within *LibraryThing*. Tags cannot be applied from within the Library's catalog.

Important features

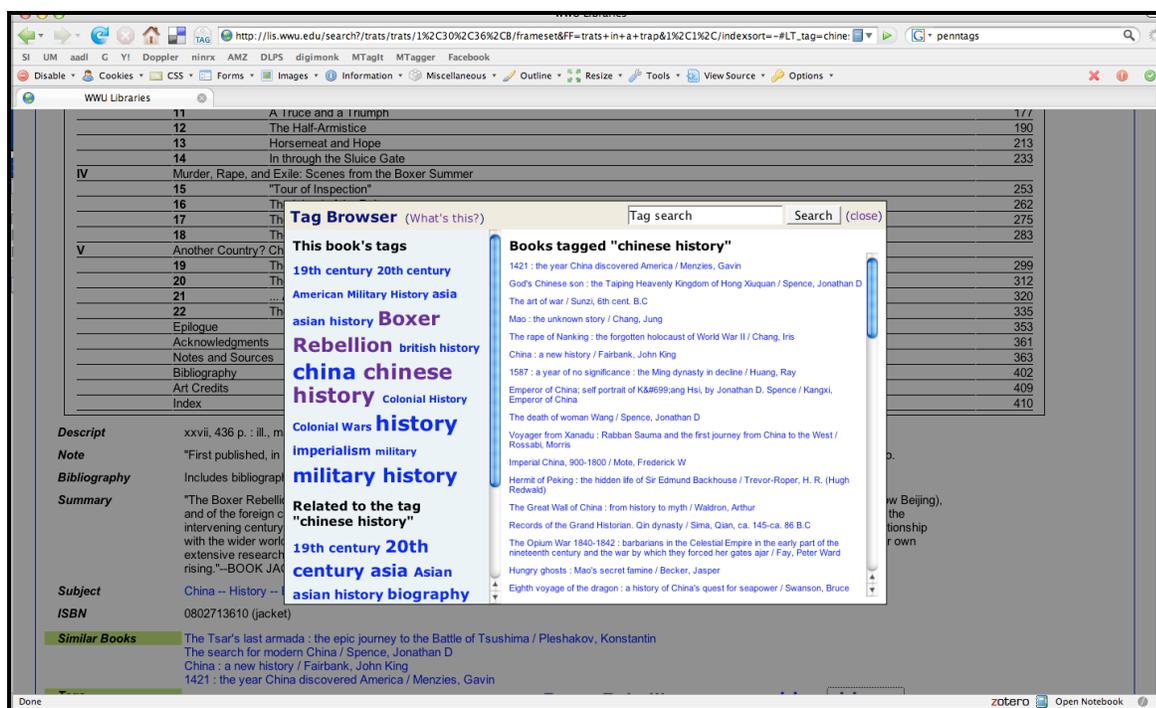
- Displaying items and titles at the item record level which have been similarly tagged along with the item being displayed is a helpful and intuitive way to assist, intrigue and impress a user all at the same time. Placing these alternative titles in close proximity to a tag cloud also communicates the association and makes the tag metaphor more clear to unseasoned users.

The screenshot shows a detailed item record for a book. At the top, there are navigation links: Notes and Sources, Bibliography, Art Credits, and Index. The main content area includes the following fields:

- Descript**: xxvii, 436 p. : ill., maps ; 24 cm.
- Note**: "First published, in somewhat different form, as *Besieged in Peking* in Great Britain in 1999 by Constable and Company, Ltd."--T.p. verso.
- Bibliography**: Includes bibliographical references (p. 402-408) and index.
- Summary**: "The Boxer Rebellion is a panoramic chronicle of the uprising and ensuing two-month siege of the eleven foreign ministries in Peking (now Beijing), and of the foreign community in Tientsin (now Tianjin), during the summer of 1900—the repercussions of which have echoed throughout the intervening century. It left tens of thousands of Chinese dead, precipitated the end of dynastic rule in China, and has tainted China's relationship with the wider world to this day. It is also a richly human story." "Relying on the diaries, letters, and memoirs of the defenders, and on her own extensive research from both Chinese and Western perspectives, Diana Preston portrays the dramatic human experience of the Boxer rising."--BOOK JACKET
- Subject**: China -- History -- Boxer Rebellion, 1899-1901
- ISBN**: 0802713610 (jacket)
- Similar Books**:
 - The Tsar's last armada : the epic journey to the Battle of Tsushima / Pleshakov, Konstantin
 - The search for modern China / Spence, Jonathan D
 - China : a new history / Fairbank, John King
 - 1421 : the year China discovered America / Menzies, Gavin
- Tags**: 19th century 20th century American Military History asia asian history **Boxer Rebellion** british history china chinese history Colonial History Colonial Wars **history** imperialism military **military history**

A blue rounded rectangle highlights the 'Similar Books' and 'Tags' sections. A small link 'Permanent URL for this record' is visible in the bottom right corner of the record area.

- Clicking on a tag at the item record level opens a new window and dulls the display in the background. The new window permits the user to see all the items in the catalog which have been tagged with that keyword, shows all the tags for the current item under inspection, and lists the tags for items which were similarly tagged.



Application to MTagger

Currently MTagger suffers from a number of users being unable to make an association between tags and the items under display in the library catalog. To make matters worse, it appears that the concept of tagging in general is not immediately intuitive to many users. *LibraryThing for Libraries'* approach to displaying similar items using the power of user-defined tags (at the same time that they conceal this mechanism), as well as placing it in proximity to a tag cloud, communicates the expansive power of tags in a very subtle but obvious way. Opening a new window in the context of the currently displayed item record allows the user to consider the new options available to them without getting enticed away from their previous search.

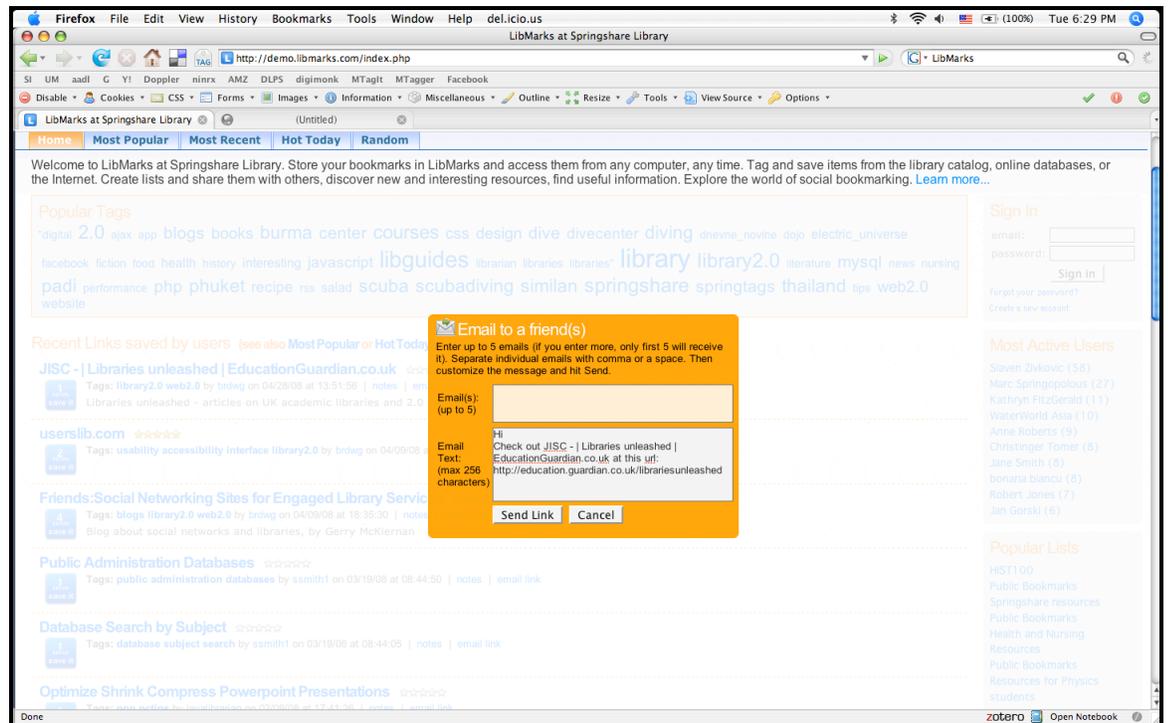
LibMarks (SpringShare)

<http://demo.libmarks.com/>

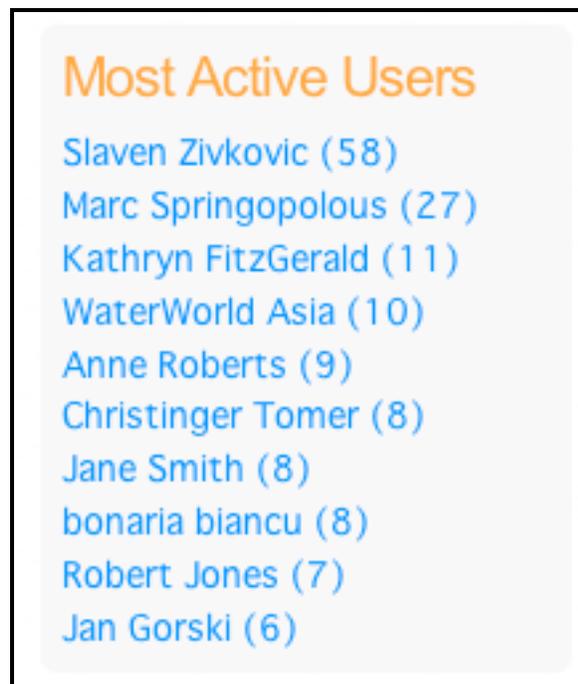
LibMarks is a social bookmarking application that can be added to an existing library catalog with a snippet of JavaScript code. Subsequently, any item record that a user encounters that seems interesting or helpful for their purposes allows them to save it to *LibMarks*, and apply tags at their leisure for easy reference later. Within their *LibMarks* account users can organize their saved items from within the library and across the web, as well as share their items with other *LibMarks* users. *LibMarks* uses a popularity scheme for its saved items similar to Digg.com, and ranks the most active users.

Important features

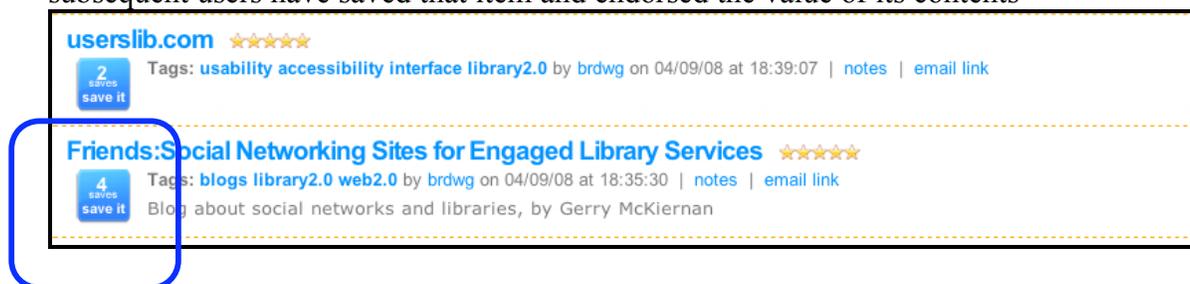
- *LibMarks* provides users with the ability to email any of their contacts directly from within the system and alert them to an item of interest.



- *LibMarks* displays the top ten most active users within the sidebar of the user interface to applaud current users and introduce the motivation of competition



- Items which have been saved are prioritized by the number of times that subsequent users have saved that item and endorsed the value of its contents



Application to MTagger

MTagger has struggled with finding a structured way for the system to build upon its current user base. As with many Web 2.0 applications and systems, 90 percent of MTagger's power is wielded by 10 percent of its users and is marked by a high abandonment rate. MTagger needs a mechanism to encourage further use.

LibMarks offers one possible solution by making it possible for current and enthusiastic users to email discovered material to their co-workers, fellow students, friends and acquaintances. Furthermore, to help push MTagger into the realm of those who enjoy tagging as a means for self-promotion and influencing users and communities, the ability to applaud various users for the value of the information they have discovered and endorsed is essential. Currently, *LibMarks* offers two intuitive implementations for doing so that should be considered: a simple user rating system that serves synchronously as a bookmarking action, and displaying the system's most active and/or reliable users.

Conclusions

Having observed a number of features across a host of social bookmarking/tagging applications that have similar goals and user bases to MTagger, two primary areas stand out wherein these alternative applications are serving their users more appropriately.

The first area pertains to the degree to which these applications have incorporated a number of features to help their users organize their own materials intuitively, as well make connections with one another over shared intellectual interests. Features such as *PennTags*' Projects and *CiteULike*'s Groups are two great examples of this expansion beyond the simple collecting ability that defines MTagger at the present time. Furthermore, it is clear that some sites such as *LibMarks*, with its e-mail feature, have seized upon the evangelistic nature that tends to characterize heavy Web 2.0 users and created the ability for users to reach out to those in their sphere of influence and either get the attention of fellow bookmarkers, or even advertise the system itself—which improves the possibility of signing on more users and expanding the base. One other characteristic of these users that is evident upon comparing these sites is that they also enjoy

associating themselves, through some form of identity construction via a Profile (as in *CiteULike*), as well as having their reputations rewarded (such as with *LibMarks*' 'Most Active Users'). Other examples are detailed above, but the overriding imperative is that MTagger must realize that its niche is the University of Michigan academic community, and its heaviest users are bound to be those who take their information gathering and re-purposing very serious and are savvy and excited about information sharing. These users need better tools and resources to accomplish their goals. Currently MTagger does a wonderful job of offering users of all levels of familiarity and experience with tagging a basic set of features. Enhancing the system with new functions like those mentioned above holds the potential for not only sufficiently meeting the needs of its core user base, but building up the capabilities of its fringe users and bringing new users into the fold.

The second area in which the sites under observation were serving their users more appropriately involves the way in which the display and application of tags and items is made available to the user. Across most of the sites being compared to MTagger, the tags themselves are made visible to the user in groupings that are easily digestible. At the impersonal level, before a user has signed on to begin tagging items or viewing their personal bookmarks/tags, the user is typically given groupings of tags under some organizational scheme such as Random, Most Popular, Most Recent, etc. Juxtaposed alongside these ordered displays of tags, the user is often served up a number of items which have previously been tagged within the system—although in a much more random fashion (as with *del.icio.us*, *CiteULike*, and *LibMarks*). It is the serendipitous nature of item-level display that seems to be the highlight of social bookmarking/tagging applications. The idea is that information finds the user, and not the other way around. Currently, MTagger appears to be attempting to embed its tagging capabilities within the process of narrowly searching the library resources. Greater effort should be made to introduce an element of informational chaos into MTagger, if for no other reason than to give users a deeper sense and purpose behind the concept and impetus of tagging. This can be implemented, as shown through the example of these comparative sites, without detracting from the more personal organizational goals that also attend MTagger.

Beyond these two major areas from which MTagger can benefit from considering, there are a number of other smaller improvements that are touched upon in the body of this report. One example is the ability to tag user-defined notes and not strictly library records or URLs; and there are several others. The Usability Working Group and the designers of MTagger would do well to take their time to consider such elements and revisit the sites inspected above for further insights.