

WEB 2.0 AND FOLKSONOMY

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Abstract

Web 2.0 services are expected to replace desktop computing applications for many purposes. Tagging is not a new concept to library professionals. But what is new is that tagging is being done by everyone, no longer by only a small group of experts. These tags are being made public to share with others. The development of the internet and search engines led users to do their own searching. In the Web 2.0 environment, users are also doing their own content creation and management. This paper describes the folksonomy approach to organizing the content, its pros & cons, and its application in libraries.

Keywords: Tagging, Folksonomy, Web 2.0, Social Tagging, Social Bookmaking

1. Introduction

The emergence of web 2.0 technologies is making the users part of the systems or services. Contrary to earlier technologies, web 2.0 technologies allow users to contribute to the system or service. This enables users to add a personal touch and update the content based on their context. Blog, Wiki, RSS, Pod Casting, Instant Messaging, Social Networking, etc are some of the web 2.0 technologies.

Web 2.0 is a set of economic, social, and technology trends that collectively form the basis for the next generation of the Internet—a more mature, distinctive medium characterized by user participation, openness, and network effects. Web 2.0 is the second generation of web services which emphasis on collaboration and sharing, social networking: blogs, wikis, tagging and thus leverages the “wisdom of the crowd”.

The wealth of information being created on the Internet is not being properly organized. To add to the woes, Web 2.0 technologies allow users to generate more & more content in less time. But, most of the Web 2.0 technologies have the flexibility to allow user to describe the content using keywords, categories, or labels. This helps in identifying the content from the user context and helps for future retrieval.

Folksonomy is important field of web 2.0 services. User index resources by themselves with free keywords, which are called tags. There are a lot of services online, especially for index bookmarks. Del.icio.us is here the most famous one. But its not the only benefit, that users can index the resources, they can also find who has saved the same resources like them, and which keywords they take. The usages of keyword can be presented in a tag cloud, where common used tags are bigger than tag which are used rarely.

2. What is Tagging?

Central to Web 2.0 is the idea of Tagging – adding keywords to content in order to categorize it. This is similar to subject indexing but without a controlled vocabulary. Though the concept of tagging is not new to library professionals but what's new is that the tagging is done by everyone and the same is made available to public.

To classify a digital content like a piece of information, a photo, an audio file, etc, users can choose a tag which is meaningful to them. Most of the sites allow users to create more than one tag to content. This gives the flexibility for the user to create more number of tags which are appropriate to the content as per his/her context or understanding. Once these tags are assigned to the content, they will act as index terms which will help in the future for retrieving the content.

A tag is a keyword that is added to a digital object (e.g. a website, picture or video clip) to describe it, but not as part of a formal classification system. The concept of tagging has been widened far beyond website bookmarking, and services like Flickr (Photos), YouTube (video) and Odeo (podcasts) allow a variety of digital artifacts to be socially tagged.

3. Why do people tag? The following are some of the reasons as to why people tag a piece of information [1]

Personal Use - People have a common goal of cataloging their own information.

Community - The social nature of tagging stimulate a sense of community by sharing it with others. Offers a chance to view what people have tagged with content, also how others categorized a particular resource.

Massive rate of publication online between mediums such as blogs, wikis, etc. make a controlled vocabulary impossible.

4. Definition of Folksonomy

As per Vander Wal, Thomas [2], "Folksonomy is the result of personal free tagging of information and objects (anything with a URL) for one's own retrieval. The tagging is done in a social environment (usually shared and open to others). Folksonomy is created from the act of tagging by the person consuming the information."

The essence of folksonomies is that the tags assigned are chosen by the user. A key feature of a folksonomy is that tags may be reused many times, providing information about the popularity of the tags themselves as well as information about emerging areas of interest.

5. Need for Folksonomy

Tagging keywords to a digital content was the practice started during digital era. It helped the authors or creators to attach related keywords to the digital content so that it becomes easy to identify the same. But this had a control on the way the author or creators attach keywords to the digital content – Only they can attach a keyword from their perspective. This has the limitation of seeing things from others perspective.

Weinberger, David [4] says that there are two key differences that will explain the current increase of interest in folksonomy --

Firstly, folksonomy allows not only authors or creators to tag the content but the users can also tag the content from their perspective. When it comes to searching for this piece of content, the any user can get this content if he/she describes this content from author or other users' perspective. For e.g, a web site may be tagged by the author as content management whereas one

user may tag it under a specific company because a case study or some related information is available there and another user may tag it under content management vendor analysis, etc. These users will tag the page differently from the author and differently from each other because the page means something different to each of them. So, any user searching for any of these tags will find the same site.

Secondly, folksonomy is social. For example, at <http://del.icio.us>, users enter bookmarks (URLs) they want to remember, adding a word or two – tags – so that they can retrieve them later. Del.icio.us users can see not only everyone else's bookmarks, but also all the bookmarks tagged with a particular word. For example, if you enter <http://flicker.com/>, you can see all the tags del.icio.us users have tagged with this URL, like “flicker” or “photos” or “images”, etc.

These two aspects make folksonomy highly useful. The folksonomy movement says, in effect, that we're not going to wait for the experts to deliver taxonomy. Instead we're just going to build one ourselves. It'll be messy and inefficient, but it will be good enough. And, most important, it will be ours, reflecting our needs and our ways of thinking.

5.1 Advantages of Folksonomy

The following are some of the advantages of Folksonomy [3]:

- **Multidimensional:** Users can assign a large number of tags to express a concept and can combine them.
- **Meaningful words / Local (natural) Language:** Users can use words that have meaning for them. These words are likely to be current and reflect local usage.
- **Sharing:** Tags can be shared, creating knowledge through aggregation. This is an easy way for people to participate.
- **Multifaceted:** Instead of having to store an item in a single folder, it can be tagged with many different terms and each of these could be used to generate an instant collection.
- **No formal Training required:** Tagging is very quick, simple and straightforward. Users can apply tags without formal training in classification or indexing.
- **Inexpensive:** Low/No Cost alternative to a traditional taxonomy for cataloging Web-based resources.
- **Dynamic:** The changes in concepts/subjects can be updated by the users at any time.
- **New Descriptors / Representations:** With individual perspective new descriptors / representations for content will emerge.
- **Flexible:** Anyone can tag anything with anything so there are no rigid constructs.

5.2 Drawbacks of Folksonomy

The following are some of the drawbacks of Folksonomy [3]:

- **Predominantly user centric:** Since the folksonomy is user centric, each user may tag the same content differently, and also a user may tag the same content inconsistently over a period of time.
- **Over tagging:** Too many tags on content can make search and retrieval meaningless – recall is high, but precision is low (lots of irrelevant results).
- **Inconsistency:** Misspellings, different punctuations, capitalization, variations in spelling all show up as different tags and cannot be used for filtering and navigation. Different

terms may be used for the same concept (again by different users or by the same user – users will not necessarily be consistent. Regular indexing and cataloguing rules such as singular vs plural forms, use of hyphens and spelling conventions are not established in a folksonomy.

- **Lack of Synonym Control:** A search will not give a complete results list due to lack of synonym control.
- **Lack of Hierarchy:** Folksonomies are flat; there are no parent- child relationships, no sub-categories. Makes for a less robust classification system than the traditional taxonomy. This limits the ability to add context to tags.
- **Lack of Context:** The same term can be used for different concepts. Typically, no information about the meaning of a tag is provided. For e.g., the word “play” could occur in an educational resource collection in the drama context or the games context.
- **Lack of Precision:** Folksonomies don’t have any hierarchical relationships, making searches less precise.
- **Lack of Recall:** Because of lack of synonym control, a search of a folksonomy will not affect a complete results list because of the use of similar tags. For e.g, a search for cat will usually not retrieve resources which have been tagged with kitten, feline, or tabby.
- **Susceptible to Spam:** Because these systems are open, spammers and/or unethical users out to corrupt a system could propagate bad tags.

Overall, tags are uncontrolled and are not connected to each other by a reference structure, which in formal systems is used to link related terms and narrower or broader terms. A more subtle issue is that people may behave differently (consciously or unconsciously) when tagging other people’s items as opposed to their own. The objectivity of a professional indexer is not necessarily a feature of social tagging. The creation and application of tags by users who are not experts in information management leads to the problems described above.

However there are also clearly great benefits in user tagging and folksonomies, especially in the richness, currency, relevance and diversity of the terms used, and the collections of resources created. It is important to try to retain those qualities in any attempt to control folksonomies.

6. Application of Folksonomy in Libraries

As per Zoellner, Kate [5], most librarians recognize that library users have difficulty finding information using the library catalog, because the catalog is based on complex cataloging standards (i.e., Anglo-American Cataloguing Rules) that categorize items under Library of Congress Subject Headings. While librarians are familiar with these subject headings, and how to use them to find resources, most other people today are not. Before online catalogs, library users who wanted to access a library’s materials saw value in learning the subject headings. With online catalogs, it became possible to search for items using keywords; the need to learn subject headings diminished, and the subject terms within the catalog lost value for most library users. And yet, the keywords that people think to use for a search often do not translate into terms within the catalog. For example, a student may search for plays and retrieve no results, because the catalog describes plays with the (subject) term drama.

Some libraries are utilizing tagging technologies to address this situation, allowing library users to define how items are described. The aim is to allow a local folksonomy to develop (collectively, over time) that makes discovering resources easier for library users. Library users’

tags are currently a supplement to traditional cataloging rules that libraries use to describe items, not a replacement for the standards (which continue to hold value for libraries).

By adding tagging abilities to library resources, libraries are enabling library users to more actively participate in how resources are described. This process will ideally lead to localized folksonomies that better meet the needs of specific communities, fostering resource discovery in new ways. Importantly, tagging, social bookmarking, and folksonomies are part of the larger online social world. These practices and services will likely continue to be enhanced and grow, and libraries will evolve with the development of these new information technologies.

Tagging can be applied to the LMS for editing the subject headings from the user point of view and there by enhancing the indexing and relevancy of the searches, making the collection more dynamic. Tagging would greatly facilitate the lateral searching.

6.1 Few Examples

Thunder Bay Public Libraries (TBPL) internet links are available on del.icio.us at <http://del.icio.us.com/tbpl>

University of Pennsylvania's PennTags (<http://tags.library.upenn.edu/>) is a self-hosted social bookmarking application. PennTags not only acts like a typical social bookmarking application, it also is integrated directly into the library's online catalog. Catalog records show tags, and library patrons can use PennTags to create resource lists for class projects easily. Because it is campus-specific, PennTags doesn't capitalize on the power of mass tagging in the same way LibraryThing does, but it has been successful for student and faculty personal use.

SOPAC or the social library catalog integrates tagging directly into the Ann Arbor District Library (AADL - <http://www.aadl.org/>), MI library catalog. Anyone can create an account on the AADL web site and begin tagging. User tags are displayed in catalog records as well as viewable in a catalog wide tag cloud. Getting back to tagged resources is as easy as logging into an account and clicking on My Tags. Users can also rate, review, and comment on items in the catalog.

LibraryThing www.librarything.com
<http://www.librarything.com/work/660415>
University of Pennsylvania
<http://tags.library.upenn.edu/>

7. Folksonomy-based systems: Some of the most popular, widely used folksonomy-based systems are -

- Del.icio.us (www.del.icio.us) – Delicious [6] is a social bookmarking service that allows users to tag, save, manage and share web pages from a centralized source. With emphasis on the power of the community, Delicious greatly improves how people discover, remember and share on the Internet.
- CiteULike (www.citeulike.org) – CiteULike [7] is a free service to help users to store, organise and share the scholarly papers they are reading. When users see a paper on the web that interests them, they can click one button and have it added to their personal library. CiteULike automatically extracts the citation details, so there's no need to type them by the users. It all works from within users web browser so there's no need to install

any software. Because users library is stored on the server, users can access it from any computer with an Internet connection.

- Connotea (www.connotea.org) – Connotea [8] is a free online reference management for all researchers, clinicians and scientists. Saving references in Connotea can be done by saving a link to a web page for the reference, whether that be the PubMed entry, the publisher's PDF, or even an Amazon product page for a book. Connotea will, wherever possible, recognise the reference and automatically add in the bibliographic information. In Connotea users assign keywords (or 'tags') to their references. Connotea shows all the tags users have ever used, so it's easy to get back to a reference once users saved it.
- Flickr (www.flickr.com) – Flickr [9] is an image and video hosting website, web services suite, and online community platform. In addition to being a popular Web site for users to share personal photographs, the service is widely used by bloggers as a photo repository. Its popularity has been fueled by its organization tools, which allow photos to be tagged and browsed by folksonomic means.
- Furl (www.furl.net) – Furl [10] is a social bookmarking site that makes it easy to save, share, and explore favorite web pages. LibraryThing (www.librarything.com) – Library Thing [11] is an online service to help users catalog their books easily. Users can access their catalog from anywhere—even on their mobile phone. Because everyone catalogs together, Library Thing also connects users with the same books, comes up with suggestions for what to read next, and so forth.

8. Recommendation

Folksonomy is a new opportunity for users to participate in organizing the content. New applications based on this concept should be developed. At the same time, it is also essential to investigate the pros and cons so that it may be used appropriately. The new applications may also have a top level categorization done so that users can browse through the content sets. Also, users should be able to add tags to them. This will have both the positive aspects of categorization and folksonomy approaches.

9. Conclusion

Web 2.0 technologies have been adopted by the group of libraries to recalibrate the processes and the paradigms of the library and information services. This new model is all about the amalgamation of the various tools and technologies of the web 2.0 into the library services. Web 2.0 is not just a technology or a thing but a new paradigm and a state of mind. The heart of Library 2.0 is user-centered change. It is model that encourages constant and purposeful change, inviting user participation. The library has had a web-presence for many years, and with Library 2.0, its patrons will be joining it. There is a certain need for implantation of Web 2.0 technologies in libraries.

Folksonomy represents some of the good and bad aspects organization of content. Its uncontrolled nature is disorganized, suffers from problems of imprecision, ambiguity, etc when compared to a well developed controlled vocabularies. Conversely, systems employing free-form tagging encourages users to organize content in their own ways. These systems are highly responsive to user needs and vocabularies. Overall, transforming the creation of explicit metadata for resources from an isolated, professional activity into a shared, community activity by users is an important development. These aspects should be explored and considered for future systems development.

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