

## Communication With Folksonomy in technical libraries

Mahshid Eltemasi\*

M.S. of Library and Information Science Dept.,  
University of Tehran,  
Thran, Iran  
eltemasi@ut.ac.ir

Nader Naghshineh

professor of Library and Information Science Det,  
University of Tehran  
Tehran,Iran  
nnaghsh@ut.ac.ir

Niusha Zohoorian Fooladi

Phd .Student of library and Information Dept,  
UM University of Malaya,  
Malaya,  
niusha\_zohourian@yahoo.com

**Abstracts-** Libraries and librarians should know how to communicate with users. We outline a unified approach for building a library of collective communication operations that performs well on a cross-section of problems encountered in real applications. The folksonomy is a new method for effective communication with library users.

Internet librarianship, Library 2.0 and Webinomics are but few examples of the terms that have come to affect our Net-Centric existence. Cooperative organization of web-based resources or Folksonomy is yet another facet of this existence. But it is used for digital library and net-work communication , totally it used for electronic based or Net-based materials, so it is not really in keeping with the fact that it does not cover the physical libraries.

This paper presents the experience gained in using Folksonomy and establishing a Library 2.0 system in a technical University Library for bulding an effective library communication. Using a variation of Referral Technical Research Service for a limited period, a 30 day snapshot of query language employed by the patrons was developed. A team poured over the data to analyze both the queries and the results in order to discern patterns. The pattern(s) were used to optimize tagging and services. Using a cognitive construct to better understand tagging relegation by the patrons, this tagging was extended to tangible library information assets. So, our methodology is Operational Research method.

In essence, two levels of access was incorporated, one level being static and based on library practice, and the other being a level dynamically shifting based on the customer profile and cognitive style. The result of this was more user communication and visit of library materials.

**Keywords-**folksonomy,Library2.0, Web2.0, Datamining, Library communication

### I. PREFACE

Now, in world communication is very important, but it have more importance in Library and information science, because libraries or information centers are interacting with

human. So, libraries and librarians should know how to communicate with users.

Librarians to achieve this goal need a communication system.Today, Internet connections has increased sharply; E-mail, Chat, Social Net-works, and etc are some of these.

The world in which ideas and information are created, shared, and documented – the world of scholarly communication – is undergoing some of the most phenomenal transformation in the history of recorded knowledge. One can point to past pivotal events in these centuries-old traditions (whether it is the invention of the printing press, or the establishment of scientific societies), but more recent technologies and concurrently changing norms have prompted a sea change of unusual scale and impact. While technology has enabled new venues and models for communication, it has also motivated the various stakeholders in the library communication arena in both subtle and not-too-subtle ways (Pradt Lougee, 2004).

Every Library, great and small, whether in major urban centers or in the back mountains of Zagros, use a form of classification for bringing about order to their collections. The running joke here in Iran is that some Librarians take this to an extreme of even classifying their own personal life. However, the common classification schemes are still based on and aimed at printed sources. There is a degree of physicality inherent in this statement. Every classification aims at tagging a printed, tangible source. But the internet resources or what is often termed as *Soft-Sources* do not often lend themselves easily to such classification. Yet we still maintain that the primary mission of classification and cataloging is to deliver the appropriate information item, on time to the appropriate client .

We are also faced with the reality that most of our client are predisposed to satisfy their information queries through internet, databases and electronic resources. In fact, there is an ISL test whereby the Library & Information Science graduate students are required to mine for information without the benefit of their laptops and UT Digital library. Known as the E-deprivation, the test is part of students' training for cognitive flexibility.

There is also a new possibility accorded to libraries via social softwares. It is now possible to turn Libraries into collaborative ventures, through implementation of various community-building tools. The stakeholders would redefine the library holdings and importance within their own frames of reference (Eltemasi & Naghshineh, 2009)

Folksonomy (also known as social tagging, social indexing, social classification, and collaborative tagging) is the practice and method of collaboratively generating and managing tags to annotate and categorize content. Metadata is generated not only by experts but also by creators and consumers of the content. Usually, freely chosen keywords are used instead of a controlled vocabulary (folksonomy,2008).

What follows is a brief description of an attempt made by a group of librarians in gaining practical experience with folksonomies within a library environment.

## II. METHODOLOGY

There was a traditional technical library, but we wanted to have an interactive relationship with our users. So, Operational Research method was used for this project, Thus the:

Folksonomy + Library services = Interactive Library Services.

In fact, this is a library project that librarians managed and analyzed information needs of users, so, they must doing data maining . this project is done in Azad University Technical Library in Iran.

## III. LITERATURE REVIEW

There are many articles about difference aspects of folksonomy, but non of them have not paid to use of folksonomy in traditional libraries. All of them are investigate folksonomy in internet.

Some of theme are:

Mika (2005) has carried out a study to construct a communitybased ontology using del.icio.us as a data source. He created two lightweight ontologies out of folksonomies; one is the actor-concept (user-concept) ontology and the other is the concept-instance ontology. The goal of his experiment was to show that ontologies can be built using the context of the community in which they are created (i.e., the del.icio.us community). By the same token, Guber is working on a system called "TagOntology" to build ontologies out of folksonomies, and in his article entitled "Ontology of Folksonomy: A Mash-up of Apples and Oranges" (Gruber, 2005) he casts some light on design considerations needed to be taken into account when constructing ontologies from tags. Hamasaki, and Takeda (2005) proposed a social bookmark system called "socialware" using several representations of personal network and metadata to construct a ommunity-based ontology. The personal network was constructed using Friend-Of-A-Friend FOAF), Rich Site Summary (RSS), and simple Resource Description Framework Schema RDFS), while folksonomies were used as the metadata. Their system allows users to browse friends' bookmarks on their personal

networks and map their own tag onto more than one tag from different friends, so that they are linked by the user. This technique will allow for efficient recommendation for tags because it is derived from personal interest and trust. They also used their social bookmark system "socialware" to design an RDF-based metadata framework to support open and distributed models. Golder and Huberman (2006) have analyzed the structure of collaborative tagging folksonomies) to discover the regularities in user activity, tag frequencies, the kind of tags used, and bursts of popularity in bookmarked URLs in the del.icio.us system. They also developed a dynamic model that predicts the stable patterns in collaborative tagging and relates them to shared knowledge. Their results show that a significant amount of tagging is done for personal use rather than public benefit. However, even if the information is tagged for personal use other users can benefit from it. They also state that del.icio.us, for most users, functions as a recommendation system even without explicitly providing recommendation.

## IV. SENARIO

We outline a unified approach for building a library of collective communication operations that performs well on a cross-section of problems encountered in real applications. The folksonomy is a new method for effective communication with library users in a technical library in Islamic Azad University.

The Islamic Azad University has the widest geographical and ethnic distribution among the Iranian Universities. It enrolls close to 1.3 million undergraduate and graduate students spread over 30 states. While the quality of service is not homogenous, the libraries located near major metropolitan areas, especially in Metro Tehran display adequate service levels. So, communication between users and information materials is so difficult.

One of these libraries, located 80 miles Southwest Tehran, has established an information support unit where a number of librarians mediate information search and delivery for both students and the faculty. The search is carried out over internet resources and the databases subscribed by the Islamic Azad University. In compliance with the information counselor protocols (Naghshineh 2003), one counselor is assigned to service several fields using a dedicated station. Every station stores and keeps records of all the phrases and keywords searched for a 30 days period. The departments served were Industrial design, Architecture, Electronic engineering, Computer Science and Mechanical Engineering.

Following the 30 days period, all searches with the resources retrieved were analyzed and data-mined. Visualization techniques were also employed to assist pattern discovery.

In effect the users would have tagged their required information upon retrieval, thus contributing to a useful database of tagging commonality. In reality, the keywords suggested by both students and the faculty were free formed and were stored without any vocabulary control, so it was

very user friendly and it result was more satisfied and effective communication.

The essence of Folksonomy is the combined wisdom of web users in collection, organization, management and dissemination of information. However, as part of knowledge management strategy the combination of these two different tagging practice would point out explicit islands in the tacit seas (Hicks, Dattero and Galup 2007).

In effect the research aimed at finding a low tech means of establishing a bridge between two systems that provided a means or method for making automatic prediction about the interest of a user. This is often done in marketing and in certain sub-domains of psychology by gathering information about the likes or dislikes, or taste, from other users. This mode of automatic prediction is also a form of filtering known as collaborative filtering (Goldberg, et al. 1992). The basic notion of such approach is that those who concurred in the past are likely to agree again in the future. The

recommender system we often come to see in sites such as Amazon and some digital libraries are in effect one such collaborative filtering (CF) system.

Interestingly enough it seems also that the information is valued as long as it has been already filtered (or in internet parlance, ranked and rated) by other people (Origgi 2008). One aspect of such ranking system when viewed in the light of Folksonomic analysis could be the mapping of the cognitive styles employed in such rating system.

## V. FINDINGS

Following a 30 days period, a snapshot of the keywords and phrases was made. The following results were obtained:

1. There were a large number of common or redundant keywords. When the frequency of a word is high, there is a high degree of certainty that it would be accepted as a main tag.

TABLE I. NUMBER OF REPEATED WORDS

| Number of users | Number os keyworda/phrase to one information resource | Number of Repeated words |
|-----------------|---|--------------------------|
| 700             | 3060  | 3009                     |

So, most of users words are repeted and librarians removed them. Because, Repeat can prevent effective communication between user and information source.

2. Different people offered different versions of a particular word. This is especially important when you deal with Persian Script whereby you can combine or separate the suffixes. This lead to serious thinking about the kind of

recommender system envisioned for the library. So, in all languages and particular in persian language there are more form of some words, thus, To create a healthy relationship should Subtilize to this point.

3. Homonyms and synonyms provided in farsi as well as pidgin argot and woring spelling and maining, posed the biggest challenge.

TABLE II. NUBER OF SYNONYMS & ECT

| Number of users/Keywords | Number of synonyms | Number of worings | Number of homonyms |
|--------------------------|--------------------|-------------------|--------------------|
| 700/3060                 | 805                | 323               | 428                |

4. Lack of any subject hierarchy. It seemed that the users considered all subjects to share the same value in ranking and rated them as such.

5. With respect to information resources such as images and drawings, instead of articulating search terms, users often express their emotions. There seemed to be no consensus on categorization of such emotives.

In order to surmount the issues confronting the project, it was decided that instead of creating a alphabetical list of tags presented by the users and then linking the relevant resources to this list, the information counselors make a limited intervention. In what that, for the lack of any better terms, could be described as a controlled folksonomy, the following actions were taken:

- A consensus was reached to adopt one term from among the similar tags offered. The information Counselors made effort to have more diversified information resources available on the subject.

- While acknowledging language variances only one form was used in the tag (applicable only to Persian Language)

- Homonyms were identified
- Subject Specialists were recruited to overcome the issues of semantic as well as misspelling mistakes.
- A shifting thesaurus function for the tags was envisioned.

- A/V sources were given a folksonomic tags

The library was thus able to develop an internal, web-based thesaurus or tag book. Users accessing the library webpage would encounter a page containing a list of tags that they had determined, This tag list has been reviewed by experts. The tag list is supported by the sources retrieved from databases, the electronic resources and even print resources held by the library. Thus when a user clicks on one of the entries on the list, another page would open that contains a summary of the database articles with pertinent links, bibliographic information on the library books along with retrieval and ranking codes. The list would also indicate the availability of non-print materials. The result of this senario was better communication between users and information materials in physical library, while in traditional library communication system to create interest for users in

using library information resources was a difficult problem, because they can not find their necessary information resource, so, they were discouraged from library then not come to the library and caused to lack of formation of proper library communication.

By implementation of this project we can increase use of library.

#### REFERENCES

- [1] Birdsall, W.F (2007) "Web 2.0 as a Social Movement." *Webology*, 4(2), Article 40. Available at: <http://www.webology.ir/2007/v4n2/a40.html>,2007.
- [2] Eltemasi, M. Naghshineh, N (2009) " Benefiting from the hive: Folksonomy in technical libraries" In *Iatul 2009 conference*.
- [3] folksonomy. wikipedia foundation.( 2008). <http://en.wikipedia.org/wiki/Folksonomies> (accessed 5 10, 2008).
- [4] "Folksonomy definition and Wikipedia". Retrieved May 7, 2007, from <http://www.vanderwal.net/random/entrysel.php?blog=1750>.
- [5] Gruber, T. (2005). "Ontology of folksonomy:A mash-up of apples and oranges". *AIS IGSEMIS Bulletin*, 2(3&4).
- [6] Golder S., & Huberman B. A. (2006)."Usage patterns of collaborative tagging systems". *Journal of Information Science*, 32(2):198-208.
- [7] Goldberg, D. Nicols, D. Oki, B. M. and Terry, D (December 1992) "Using collaborative filtering to weave an information tapestry." *Communications of the ACM (ACM)* 35, no. 12 : 61-70.
- [8] Graham, P. (2005). "Web 2.0". Retrieved January 15, 2007. from <http://www.paulgraham.com/web20.html>.
- [9] Hammond, T., Hannay, T., Lund, B., & Scott, J. (2005) "Social bookmarking tools (I): A general review." *D-Lib Magazine*, 11(4).
- [10] Hicks, R. C. ; attero, R. D; and Galup, S.D.( 2007) "A metaphor for knowledge management: explicit islands in a tacit sea." *Journal of Knowledge Management* 11, no. 1 : 5-16.
- [11] Kroski, E (2005) "The hive mind: Folksonomies and user-based tagging". Retrieved May 7, 2007, from <http://infotangle.blogspot.com/2005/12/07/the-hive-mind-folksonomies-and-user-based-tagging/>.
- [12] "Library 2.0" Retrieved May 7, 2007, [http://en.wikipedia.org/wiki/Library\\_2.0](http://en.wikipedia.org/wiki/Library_2.0).
- [13] Mika, P. (2005). "Ontologies are us: A unified model of social networks and semantics". In **Proceedings of the Fourth International Semantic Web Conference (ISWC 2005)(LNCS)**.
- [14] Galway, Ireland.
- [15] Naghshineh, Nader.(2003) "Infonauts: transcultural issues in information societies." In *Information and IT literacy :enabling learning in the 21st century*, edited by Alan Martin and Hannelore Rader, 284. London: Facet publishing.
- [16] Origgi, G (2009)"Designing wisdom through the Web: The passion of ranking." *la vie des idees*. 09 30, 2008. [http://www.laviedesidees.fr/IMG/pdf/20080930\\_origgi\\_ENG.pdf](http://www.laviedesidees.fr/IMG/pdf/20080930_origgi_ENG.pdf) (accessed 02 12, 2009).
- [17] Pradt Lougee, W (2004) " Scholarly Communication & Libraries Unbound: The Opportunity of the Commons" . Available from [http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.90.1493.\[20,oct,2010\]](http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.90.1493.[20,oct,2010]) .
- [18] Voss, J.(2006) "Collaborative thesaurus tagging the Wikipedia way" (v2; 2006-04-27; <http://arxiv.org/abs/cs.LR/0604036>) page 3 .[[Wikimetrics]] research papers, volume 1, issue 1 [http://www.librarycrunch.com/2005/10/working\\_towards\\_a\\_definition\\_o.html](http://www.librarycrunch.com/2005/10/working_towards_a_definition_o.html)