Innovative Uses of Web 2.0 Technologies:
Social Tagging and Folksonomies in Practice

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Abstract: Social tagging or "folksonomies" (user-created descriptive metadata) are an emergent phenomenon of social web applications. Tagging, born out of the user's need to take ownership over the mass of digital information, enables a user to create his/her own vocabulary for items of interest. Tagging is often messy and disruptive, but somehow it manages to work and even fosters a sense of community. This session will look at tagging as a new tool for empowering library users. Learn why you might want to apply folksonomies to library applications and how giving up control can bring users back into the library.

Rough Outline:
1. Examples of Social Tagging
2. Definition(s)
3. Use Cases for Libraries
4. How can it be applied in libraries? (Demos/code example from a library application)
5. Why does tagging work?
6. What are the limitations of tagging?
7. Next Steps for Libraries
8. Further References and Sources
What are we going to talk about?

- Show some examples
- Define Social Tagging and Folksonomies
- Suggest some possible library applications
- Talk about pros and cons of Tagging
- Show you where you can learn more
- Open floor for questions
Social Tagging - What's it all about?

- Open Web Applications
  - **Flickr**
    - http://www.flickr.com/photos/tags/
  - **del.icio.us**
    - http://del.icio.us/tag/
  - **Technorati**
    - http://www.technorati.com/
  - **Amazon**
    - http://www.amazon.com/gp/tagging/cloud/
Social Tagging - What is it?

- **Tagging**: act of assigning descriptive metadata to items; allowing users to add and share their descriptive metadata

- **Tag**: user-added descriptive metadata

- **Folksonomy**: term coined by Thomas Vander Val to describe a working tagging system; combination of “folk” and “taxonomy”
Social Tagging - Library Use Cases

- Find additional access points in library catalog
- Assign friendly terms to indexes and databases
- Create communities of practice around library articles
- Organize a series of web pages for a library guide
- Give user opportunities to label library web pages
Social Tagging - Library Use Cases (cont.)

- Library Applications
  - Electronic Theses and Dissertations (ETDs) @ MSU (http://www.montana.edu/etd/)
  - PennTags: University of Pennsylvania Libraries (http://tags.library.upenn.edu/)
  - WPopac – Plymouth State University Libraries (http://www.plymouth.edu/library/opac/)
  - Steve: The Art Museum Social Tagging Project (http://steve.thinkdesign.com/)
Social Tagging - Why does it work?

- Embraces social nature of web – wisdom of crowds
- Currency – able to classify quickly
- Scales to large datasets – ease of application
- Offers a broader discovery model – browsing/learning
- Adaptable – expresses the desires of user population
- Maps and displays simple relationships between items
Social Tagging – What’s the hitch?

- Lack of precision – synonyms, term drift
- Lack of true hierarchy
- Vulnerable to “gaming” of the system
- Lack of a controlled vocabulary
- Users can be wrong
Social Tagging - When to use it?

- Establish an architecture of participation
- Organize resources for a company intranet
- Allow a class to collaborate and build a reference guide
- Build and refine library controlled vocabularies
- Anytime there is a browse or search function
Social Tagging - Further References

Articles:

Ontology is Overrated by Clay Shirky
http://www.shirky.com/writings/ontology_overrated.html

Metadata for the Masses by Peter Merholz

Social Bookmarking Tools (I) by Tony Hammond
(from D-Lib Magazine, April 2005 Vol. 11 No. 4 ISSN 1082-9873)
http://www.dlib.org/dlib/april05/hammond/04hammond.html

The Structure of Collaborative Tagging Systems by Scott A. Golder and Bernardo A. Huberman (white paper from Information Dynamics Lab, Hewlett-Packard)

Resources/Tutorials:

ZoomClouds (http://zoomclouds.egrupos.net/)
TagCloud (http://www.tagcloud.com/)
Create your own tag clouds for your site with these hosted options

You’re It! A blog on Tagging (http://tagsonomy.com/)
Learn more about the tagging community and monitor recent discussions

FreeTag (http://getluky.net/freetag/)
An open source Tagging/Folksonomy module for PHP/MySQL applications

unalog (http://unalog.com/about/)
A social bookmarking tool based on python and ZODB; available for download
Questions?

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Social Tagging – MSU ETD Code Examples

Selected code from item.php (tagging section of Montana State University ETDs)

```php
<?php
//start session to enable session variables
session_start();
if (isset($_POST['submit_check'])) {
    $message = "Add a tag to this item.";
    $refreshURL = $_SERVER['REQUEST_URI'];
    header("location: $refreshURL");
} else {
    $message = $_SESSION['message'];
}

............................

<h2 class="mainheading">Related Tags:</h2>
<ul>
    <li>
        <?php
            //Get id value from url
            $id = $_GET['id'];
            //Request all matching items from tag table
            $getTags = mysql_query("SELECT * FROM matchTag JOIN tag WHERE matchTag.item_id=$id AND matchTag.tag_id=tag.tag_id ORDER BY dc_tag ASC");
            if (!$getTags) {
                die ('<p>Error performing query: ' . mysql_error() . '</p>');</p>
            }
            //Display each tag item in a row
            while($row=mysql_fetch_array($getTags)) {
            }
        </li>
</ul>

<?php
//grab id value from url
$item_id = $_GET['id'];
// assign value of current url to page
$pageURL = $_SERVER['REQUEST_URI'];
//Set open value for section of editTag form to display
$params = (count($_POST)) ? $_POST : $_GET;
$section = $params['section'];

//Set up conditional logic for display of tagItem form sections
if ($section == add) //If the section is the addTag section
{
    //print out message about status of tags (add or delete)
}
```

Internet Librarian 2006                         Jason A. Clark, Monday, October 23, 2006
$message

//print out form to add tags (add)
$form = '<form id="tagItem" method="post" action="$pageURL">
<input type="hidden" name="submit_check" id="submit_check" value="1" />
<input type="hidden" name="item_id" id="item_id" value="$item_id" />
<fieldset>
<legend>Add tag to this item</legend>
<input class="text" type="text" name="dc_tag" id="dc_tag" value=""/>
<input class="submit" type="submit" name="submit" id="submit" value="Add" />
</fieldset>
</form>

elseif ($section == delete) { //if the section is the deleteTag section, do this

//print out message about status of tags (add or delete)
$form = '<form id="tagItem" method="post" action="$pageURL">
<input type="hidden" name="submit_check" id="submit_check" value="1" />
<input type="hidden" name="item_id" id="item_id" value="$item_id" />
<fieldset>
<legend>Delete tag from this item</legend>
<input class="text" type="text" name="dc_tag" id="dc_tag" value=""/>
<input class="submit" type="submit" name="submit" id="submit" value="Add" />
</fieldset>
</form>

} else { //And finally, if section matches none of the conditions, display default editTag link
$form = '<p id="toggle"><a title="open edit tags form" href="./item.php?id=$item_id&amp;section=add">Add/Edit tags</a></p>

} //end the statements

//set logic to act based on hidden submit_check field in form
if (array_key_exists('submit_check', $_POST)) {

//Sets the current date as variable for tag_update
$dc_tagDate = date("Y-m-d H:i:s");

//Declare form variables for submitting the data
$dc_tag = $_POST['dc_tag'];

//Escape special characters for submission to database.
$dc_tag = addslashes($dc_tag);

//Convert HTML special characters in database value for use in an HTML document.
$dc_tag = htmlspecialchars($dc_tag);

//Check to see if tag exists - if it does don't add to db
$checkifTagExists = "SELECT DISTINCT * FROM tag WHERE dc_tag='$dc_tag';"
if (!($record = @mysql_query ($checkifTagExists)))
{die("h2">Cannot connect to database: '. mysql_error() .'"</h2>);

//Find out how many rows are available
$rowsFound = @mysql_num_rows($record);

//If the SQL query has results ...
if ($rowsFound > 0) {

$_SESSION["message"] = "Last tag already exists. Try adding a similar tag. <a title="close form" href="./item.php?id=$item_id">[x] close</a>"; 
} else {
//Run SQL Query for creating tag for tag table
$addtoTagTable = "INSERT INTO tag SET dc_tag='$dc_tag', dc_tagDate='$dc_tagDate"; 
if (@mysql_query($addtoTagTable)) {
    echo('<h2>New tag added to tag table.</h2>'); 
} else {
    die('<h2>Error adding new tag to tag table: ' . mysql_error() . '</h2>'); 
}

//Check to see that tag_id was given a unique value > 0
$tag_id = mysql_insert_id();
if ($tag_id > 0) {
//Assign variables for inserting tag data into match_tag table
$tag_id = mysql_insert_id();
$item_id = $_POST['item_id'];
} else {
    die('Tag requires unique id: ' . mysql_error()); 
}

//Run SQL Query for inserting tag data into match_tag table
$addtoMatchTagTable = "INSERT INTO matchTag SET item_id='$item_id', tag_id='$tag_id"; 
if (@mysql_query($addtoMatchTagTable)) {
    $_SESSION["message"] = "Last tag added successfully. Add another? <a title="close form" href="./item.php?id=$item_id">[x] close</a>"; 
} else {
    die('<h2>Error adding new tag to match_tag table: ' . mysql_error() . '</h2>'); 
} 
} 
?>
Table schemata for selected Montana State University ETD database tables

--
-- Database: `etd`
--

# Table structure for table `item`
#
CREATE TABLE item (  
  item_id int(8) NOT NULL auto_increment,  
  dc_title text NOT NULL,  
  dc_creator varchar(75) NOT NULL default 'admin',  
  dc_description text NOT NULL,  
  dc_publisher varchar (50) NOT NULL default 'Montana State University',  
  dc_contributor varchar(75) NOT NULL default '(committee chairperson)',  
  dc_date datetime NOT NULL default '0000-00-00 00:00:00',  
  dc_type varchar (45) NOT NULL default 'Electronic Thesis or Dissertation',  
  dc_format varchar (30) NOT NULL default 'application/pdf',  
  dc_identifier text NOT NULL,  
  dc_language varchar (30) NOT NULL default 'en',  
  dc_coverage varchar (75) NULL,  
  dc_rights text NOT NULL default 'Accessible under copyright for educational purposes.',  
  dc_degreeName varchar(30) NULL,  
  dc_degreeLevel varchar(30) NULL,  
  dc_degreeDiscipline varchar(75) NULL,  
  dc_degreeGrantor varchar(50) NOT NULL default 'Montana State University',  
  PRIMARY KEY  (item_id),  
  FULLTEXT KEY full_index (dc_title,dc_creator,dc_description,dc_contributor)  
) TYPE=MyISAM;

# Table structure for table `matchTag`
#
CREATE TABLE matchTag (  
  item_id int(8) NOT NULL default '0',  
  tag_id int(8) NOT NULL default '0',  
  PRIMARY KEY  (item_id,tag_id)  
) TYPE=MyISAM;

# Table structure for table `tag`
#
CREATE TABLE tag (  
  tag_id int(8) NOT NULL auto_increment,  
  dc_tag varchar(255) NOT NULL default '',  
  dc_tagDate datetime NOT NULL default '2006-00-00 00:00:00',  
  PRIMARY KEY  (tag_id)  
) TYPE=MyISAM;