

# 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/)  
<http://www.flickr.com/photos/tags/>
  - [del.icio.us](http://del.icio.us/tag/)  
<http://del.icio.us/tag/>
  - [Technorati](http://www.technorati.com/)  
<http://www.technorati.com/>
  - [Amazon](http://www.amazon.com/gp/tagging/cloud/)  
<http://www.amazon.com/gp/tagging/cloud/>  
<http://www.amazon.com/gp/product/tags-on-product/0596007655/>

# 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/)  
(http://www.montana.edu/etd/)
  - [PennTags: University of Pennsylvania Libraries](http://tags.library.upenn.edu/)  
(http://tags.library.upenn.edu/)
  - [WPopac – Plymouth State University Libraries](http://www.plymouth.edu/library/opac/)  
(http://www.plymouth.edu/library/opac/)
  - [Steve: The Art Museum Social Tagging Project](http://steve.thinkdesign.com/)  
(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](http://www.shirky.com/writings/ontology_overrated.html)

[Metadata for the Masses](#) by Peter Merholz

<http://www.adaptivepath.com/publications/essays/archives/000361.php>

[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)

<http://www.hpl.hp.com/research/idl/papers/tags/tags.pdf>

## 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
//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 (!$getTags) {
            die('<p> Error performing query: ' . mysql_error() . '<p>');
        }
        //Display each tag item in a row
        while($row=mysql_fetch_array($getTags)) { ?>
            <a id="tag<?php echo $row["tag_id"]; ?>" href="/results.php?tag=<?php echo $row["dc_tag"];
?>"><?php echo $row["dc_tag"]; ?></a>
            <?php } ?>
        </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

{ //do this

//print out message about status of tags (add or delete)
```

```

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

```

```

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

```

```

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

```

```

} else { //And finally, if section matches none of the conditions, display default editTag link

```

```

echo "<p id='toggle'><a title='open edit tags form'"
href='./item.php?id=$item_id&section=add'>Add/Edit tags</a></p>\n";

```

```

} //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;
```