

# Enhancing social tagging with a knowledge organization system

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# EnTag: Enhancing Social Tagging for Discovery

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**JISC**



# EnTag Project

## Enhanced tagging for discovery

- JISC funded project
- Partners
  - UKOLN - Koralyka Golub
  - University of Glamorgan - Doug Tudhope, Jim Moon
  - STFC - Brian Matthews, Cathy Jones, Bartek Puzon
  - Intute
  - Non-funded
    - OCLC Office of Research, USA
    - Danish Royal School of Library and Information Science - Marianne Lykke Nielsen

Period: 1 Sep 2007 -- 30 Sep 2008

<http://www.ukoln.ac.uk/projects/enhanced-tagging/>



# EnTag project

- UK JISC
- One year
- Six institutional partners
- <http://www.ukoln.ac.uk/projects/enhanced-tagging/>



# EnTag Background

- Controlled vocabularies
  - Improve information retrieval and discovery
  - But, costly to index with, especially the amount of digital documents
  - Require subject and classification experts
- Social tagging
  - Holds the promise of reducing indexing costs
  - Uses terms describing how people see the resource
  - Serendipity
  - But, tags uncontrolled,
    - missed associations
    - Relating different views
    - Highly personal (“me”, “important”),
    - Quality and ranking
    - Depth of term

## • Aim to investigate

whether use of an established controlled vocabulary can help move social tagging beyond personal bookmarking to aid resource discovery



# Rationale

- **Controlled vocabularies**
  - For information retrieval
  - Natural language control
  - Expensive
- **Social tagging**
  - Personal purposes
  - Lack natural language control
  - Free



# Objectives

- Social tagging only *versus* combined with controlled vocabularies
  - Indexing aspects
  - Influence on retrieval
- Two contexts
  - Intute subject gateway
  - STFC repository



# Intute study





# Intute <http://www.intute.ac.uk>



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Quick links



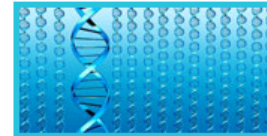
●● Science and Technology



●● Arts and Humanities



●● Social Sciences



●● Health and Life Sciences

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## Search our database of selected Internet resources

Search

### Subject area(s)

- All subjects
- Arts and Humanities
- Health and Life Sciences
- Science, Engineering and Technology
- Social Sciences

[Advanced search](#) [Subject A-Z](#) [New resources](#) [Help](#)

Browse

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[Spotlight for May](#)

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The computer mouse has celebrated its 40th anniversary.

>> [Archive](#)

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# Intute metadata

---

<b>Title</b>	<b>Slavery in New York</b>
<b>Description</b>	This online exhibition has been created by the New York Historical Society. It covers the social and political history of slavery in New York state from the 1600s until 1827 when it was made illegal. The site includes a history of slavery in the region and its connections with the Atlantic slave trade, accounts of personal experiences and digitised images of contemporary maps, prints and documents. The site also has a section for teachers with selected classroom activities and worksheets. Topics covered include: the slave trade and emancipation movement.
<b>Keywords - controlled</b>	<a href="#">slave trade</a> ; <a href="#">slavery</a> ; <a href="#">slaves</a>
<b>Keywords - uncontrolled</b>	<a href="#">African-Americans</a> ; <a href="#">New York</a>
<b>Type</b>	Papers/reports/articles/texts
<b>URL</b>	<a href="http://www.slaveryinnewyork.org/">http://www.slaveryinnewyork.org/</a> [English]
<b>Classification</b>	<a href="#">Slavery</a>
<b>Country of origin</b>	United States
<b>Date added</b>	2006-01-09

# Intute demonstrator

- 11,042 stripped records
- Politics
- Free tagging *or*  
DDC / LCSH / Relative Index
  
- MS .NET application
- Searching, simple and enhanced interfaces



# Intute demonstrator: enhanced tagging

## EnTag Project SST

Current Location: [Document Tagging Page](#)

Current User: [dstudhope@glam.ac.uk](mailto:dstudhope@glam.ac.uk)

[Log Out](#) [Help](#)

Filter By: [Everyone's Tags](#)

Main Tag Cloud

[art gallery](#) [arts](#) [arts council](#)  
[carnivals](#) [congestion charging](#)  
[cycling](#) [dance](#)  
[England](#) [Europe](#) [freedom of speech](#) [Human Rights](#)  
[music](#) [National Lottery](#)  
[planning](#) [research funding](#)  
[Russia](#) [sport](#) [topical issues](#)  
[tourism](#) [transport](#)

Taggers	All doug's Tags	My Tags For This Document
<a href="#">doug</a> <a href="#">jim</a>	<a href="#">arts council</a> <a href="#">freedom of speech</a> <a href="#">Human Rights</a> <a href="#">topical issues</a>	<a href="#">arts council</a>

Document Details

<b>Title</b>	Arts Council England
<b>URL</b>	<a href="http://www.artscouncil.org.uk/">http://www.artscouncil.org.uk/</a>
<b>Description</b>	The Arts Council for England is the national funding body for the arts in England. It acts to promote the arts and distribute public money from central government and income generated from the National Lottery. Its website provides information on the history, purpose and current projects of the body. It also includes information on Arts funding in the UK, how to apply for public grants and forthcoming events. The latter includes a database of carnivals

[Suggest](#) [Tag Document](#) [Remove Tag](#) [Return To Search Results](#)

Related Headings	Dewey Hierarchy	Suggestions
<a href="#">Political Science (Politics and Government)</a> <a href="#">comparative government</a> <a href="#">local government</a> <a href="#">political ideologies</a> <a href="#">city government</a> <a href="#">rural government</a> <a href="#">villages - local government</a>	Political Science Political Science (Politics and Government) Comparative government Historical, geographic, persons treatment Local government Philosophy and theory Policy making Political ideologies Political situation and conditions	<a href="#">Comparative government</a> <a href="#">Government</a> <a href="#">Historical, geographic, persons treatme</a> <a href="#">Local government</a> <a href="#">Philosophy and theo</a> <a href="#">Policy making</a> <a href="#">Political ideologies</a> <a href="#">Political science</a> <a href="#">Political science - Early works to 1800</a> <a href="#">Political science - History</a> <a href="#">Political science - Philosog</a> <a href="#">Political situation and conditions</a> <a href="#">Politics</a> <a href="#">Politics, Practical</a> <a href="#">Standard subdivisions</a> <a href="#">Structure and functions of government</a>

# Intute demonstrator: searching

## EnTag Project **ST**

Current Location: [Document Search and Browsing Page](#)

Current User: [guest@entag.co](#)

[Log Out](#)

[Help](#)

[Post-Task Questionnaire](#)

Filter By: [Everyone's Tags](#)

Main Tag Cloud

[Aboriginal Australian local government](#) [Aboriginal Australian local government](#) [Antislavery movements - United States](#) [australian](#) [Castroism-political ideology](#) [Citizen participation](#) [Civil](#)

[and political rights of nondominant groups](#) [Civil liberties](#)

[Environmentalism - politics](#) [European Parliament - legislative process](#) [Food and drink](#) [Food safety](#) [Food safety - standards](#) [higher education](#) [independence](#) [lectures](#)

[Liberalism](#) [Liberalism - United States](#) [Local government](#) [Minorities](#) [Participatory democracy](#) [Political parties](#)

[Political persecution](#) [Political rights](#) [Political science \(Politics and government\)](#) [Political situation and conditions](#) [potato](#) [Enter and press down of](#)

Taggers

[Guest](#) [Testuser](#)

### Search For Documents

Enter your search terms

slavery new york

Search In

Tags

Titles

Descriptions

[Start Search](#)

Displaying Search Results: slavery new york

### Results

Title (Click to Open)	Description	Tags	Add Tags
<a href="#">New York divided: slavery and the Civil war</a>	This site provides free access to an online exhibition created by New-York Historical Society whi...	Antislavery movements - United States, Slave trade, slavery, Slavery and emancipation	<a href="#">Tag</a>
<a href="#">Slavery in New York</a>	This online exhibition has been created by the New York Historical Society. It covers the social ...	Antislavery movements - United States, Civil and political rights of nondominant groups, Minorities, Slavery, Slavery and emancipation	<a href="#">Tag</a>
<a href="#">Lest we Forget the Triumph Over Slavery</a>	This is an online exhibition created by the Schomberg Centre for Research in Black Culture, New Y...		<a href="#">Tag</a>
<a href="#">Anti-Slavery International (ASD)</a>	Anti-Slavery International is a pressure group which campaigns against contemporary slavery world...		<a href="#">Tag</a>
<a href="#">iAbolish: Anti-Slavery Portal</a>	The iAbolish portal is a project of the American Anti-Slavery Group which monitors and publicises...		<a href="#">Tag</a>
<a href="#">Studies in the World History of Slavery, Abolition and Emancipation</a>	Studies in the World History of Slavery, Abolition and Emancipation is an electronic journal prod...		<a href="#">Tag</a>

1 2 3 4 5 6 7 8 9

# Intute demonstrate tagging interfaces

## EnTag Project **ST**

Current Location: [Document Tagging Page](#)

Current User: [guest@entag.co](#)

[Log Out](#)

[Help](#)

[Post-Task Questionnaire](#)

Filter By: [Everyone's Tags](#)

Main Tag Cloud

[Aboriginal Australian local government](#) [Aboriginal Australian local government](#) [Antislavery movements - United States](#) [australian](#) [Castroism-political ideology](#) [Citizen participation](#) [Civil and political rights of nondominant groups](#) [Civil liberties](#)

[Environmentalism - politics](#) [European Parliament - legislative process](#) [Food and drink](#) [Food safety](#) [Food safety - standards](#) [higher education](#) [independence](#) [lectures](#) [Liberalism](#) [Liberalism - United States](#) [Local government](#) [Minorities](#) [Participatory democracy](#) [Political parties](#) [Political persecution](#) [Political rights](#) [Political science \(Politics and government\)](#) [Political situation and conditions](#) [potato](#)

Taggers

[Guest](#) [Testuser](#)

All Guest's Tags

[Aboriginal Australian local government](#) [Aboriginal Australian local government](#) [Antislavery movements - United States](#) [australian](#) [Civil and political rights of nondominant groups](#) [European](#)

My Tags For This Document

[Antislavery movements - United States](#) [Civil and political rights of nondominant groups](#) [Minorities](#) [Slavery](#) [Slavery and emancipation](#)

Document Details

Title	Slavery in New York
URL	<a href="http://www.slaveryinnewyork.org/">http://www.slaveryinnewyork.org/</a>
Description	This online exhibition has been created by the New York Historical Society. It covers the social and political history of slavery in New York state from the 1600s until 1827 when it was made illegal. The site includes a history of slavery in the region and its connections with the Atlantic slave trade, accounts of personal experiences and digitised images of contemporary maps, prints and documents. The site also has a section for teachers with selected classroom activities and worksheets. Topics covered include: the slave trade and emancipation movement.

[Suggest](#)

[Add a Tag](#)

[Remove Tag](#)

[Return To Search Results](#)

Automatically suggested matches

Find appropriate context(s)

[Slavery and emancipation](#) [Emancipation](#) ----- End of Political Science ----- [Discriminatory practices and slavery](#) [Extension of slavery](#) [Slavery](#) [American fiction-1830-1861, ...](#) [American poetry-1830-1861, ...](#) [Authors and nation pictures](#)

Explore hierarchy around the selected context

[Political science](#) [Slavery and emancipation](#) [Emancipation](#)

Select/edit relevant tags

[Amistad \(Schooner\)](#) [Antislavery movements - United States](#) [Emancipation](#) [Political science](#) [Slave insurrections](#) [Slave trade](#) [Slavery](#) [Slavery - political science](#) [Slavery and emancipation](#)

# Intute demonstrator: Enhanced interface

Suggest

Automatically suggested matches Find appropriate context(s)	Explore hierarchy around the selected context	Select/edit relevant tags
<p><b>Slavery and emancipation</b></p> <p>Emancipation</p> <p>----- End of Political Science -----</p> <p>Discriminatory practices and slavery</p> <p>Extension of slavery</p> <p>Slavery</p> <p>American fiction-1830-1861, ...</p> <p>American poetry-1830-1861, ...</p> <p>Authorship, emancipation, history</p>	<p>Political science</p> <p><b>Slavery and emancipation</b></p> <p>Emancipation</p>	<p><a href="#">Amistad (Schooner)</a> <a href="#">Antislavery movements - United States</a> <a href="#">Emancipation</a> <a href="#">Political science</a> <a href="#">Slave insurrections</a> <a href="#">Slave trade</a> <a href="#">Slavery</a> <a href="#">Slavery - political science</a> <a href="#">Slavery and emancipation</a></p>

# Intute user study 1

- Questions
  - Choice of tag
  - Retrieval implications
- Participants
  - 28 UK politics students
  - Little tagging experience





# Intute user study 2

- Data collection
  - Logging
  - Three questionnaires
- Four tagging tasks
  - Two controlled, two free
  - Tag 15 documents in each task



# Intute user study 3

- Hypothetical group project scenario
- Instructions
  - 5 to 10 min per document
  - Open document but focus
  - Try consider enhanced suggestions where appropriate



# STFC repository study



# Complementary study

- 10 authors depositors
- ACM classification scheme
- Questions
  - Purpose and use of tags
  - Value of controlled vocabulary
  - User interface



# STFC demonstrator

Untitled Document - Mozilla Firefox

File Edit View History Delicious Bookmarks Tools Help

http://epublicns02.escdc.fed.cclrc.ac.uk/MTest/new\_file.html#

Google

Logged user: Bartek Active thesaurus: Inspec

**TAG CLOUD**

- Maxwell equations
- einsteinium
- Einstein-de Haas effect
- Electricity

**Measurement of the Kinetic Energy and Lattice Constant in hcp Solid Helium at Temperatures 0.07 - 0.4K**

**Author:** M A Adams (CCLRC), J Mayers (CCLRC), O Kirichek (CCLRC), R B E Down (CCLRC)

**OAI Item Identifier:** oai:epubs.cclrc.ac.uk:work/36697

Current thesaurus path:  
electric field effects > **electric breakdown**

**Narrower terms**

- [avalanche breakdown](#)
- [discharges \(electric\)](#)
- [semiconductor device breakdown](#)
- [trees \(electrical\)](#)
- [vacuum breakdown](#)
- [Zener effect](#)
- [Go to the top](#)
- [Add keyword](#)

**Related terms**

- [arcs \(electric\)](#)
- [corona](#)
- [electric strength](#)
- [electrical faults](#)
- [fault currents](#)

**FREE TAGS**

- particle physics
- most wanted

**CONTROLLED TAGS**

- electric field gradient
- digital subscriber lines
- condensation
- character sets

CONFIRM

Done

# Approach

- Separate demonstrator
- Supervised sessions
  - Logging
  - Task worksheet
    - Tagging own papers
    - Tag cloud, own tags, controlled vocabulary



# Intute study results



# Number of tags

- 7,568 tags in total
- 278 tags per person
- 94 + 751 documents tagged (controlled + free task)
  
- More in simple
- More in free, esp. in enhanced





# Tag selection

- Simple interface:
  - 91% freely assigned
- Enhanced interface:
  - 71% freely assigned
  - 17% controlled tags
- Other features (both interfaces):
  - 8% other taggers' tags
  - 2% main tag cloud
  - < 1% own tag



# Browsing for tags

- Simple interface
  - 73% others' tags
  - main tag cloud and own tag less (17% and 10%)
- Enhanced interface
  - 74% controlled vocabulary
  - 18% others' tags
  - DDC captions problem



# Retrieval implications 1

- *Versus* search engine
  - All tags: new access points for 36% documents
  - Controlled tags: new access points for 69% documents
- *Versus* subject indexing
  - > 90% tags new access points



# Retrieval implications 2

- Search terms
  - More in tags than in (un)controlled keywords (up to 3x)
- Free *versus* controlled tags
  - Analysis under way
  - Hypothesis: if pre-coordinated, more facets



# Post-questionnaires 1

- Post-task
  - Familiar / easy / satisfied / certain
  - Useful: own tags, DDC disambiguation pane, DDC suggestions
  - Not useful: main tag cloud, others' names, hierarchical DDC pane



# Post-questionnaires 2

- Post-study
  - Easy to learn and useful in real life
  - Simple
    - + Simplicity, speed, freedom of choice
    - No suggestions
  - Enhanced
    - + Suggestions
    - Inappropriate suggestions, cluttered interface, many steps



# STFC study

- 6 tags per document
- 67% free tags
- Value of consistency
- Usable in real life
- Is it the right controlled vocabulary



# Some observations

- Users are willing to add tags – using a controlled vocab more than free text
  - By and large they understand why its useful
    - Good search terms = good retrieval
  - But they need help
    - Automation, suggestions, good interfaces
    - Support for different styles of interaction
  - Also need flexible and targeted controlled vocabularies need to be supplied
  - “Web 2.0” features need to be thought through very carefully
    - “tag clouds” not a success
    - Need much better structuring and presentation
    - integrated
- Interaction between tag clouds and structured vocabs needs further investigation
  - Develop a flexible user focussed vocab from tags
  - “structured folksonomy”





# Conclusions

- Controlled vocabulary suggestions valued if appropriate
- More access points potential
- Value of consistency for IR



# Further research

- Qualitative analysis (scheduled)
- Enhancements
  - Controlled vocabulary
  - Auto suggestions
  - Interface
- Motivation for tagging

