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**Bottom-up Classification of Content  
in Networked Organizational Communication**

ICA Conference, Dresden, 22.06.2006

#2 of 18

**Agenda**

Tagging

1. Tagging – an overview

Nextspace

2. Tagging in organizations: ‚Nextspace‘

Outlook

3. Outlook: Open Questions

## What is tagging?

### Tagging

- Adding metadata („tags“) to objects on the Web (e.g. blog postings, websites, files, pictures, ...)
- Instead of a controlled vocabulary (as in centralized taxonomies), users are free to use their own conceptual associations and reference frames



### Nextspace

- e.g. tagging this picture as ‚Dresden‘, ‚Germany‘, ‚city skyline‘, ‚ICA2006‘, ‚beautiful‘, ‚to print‘, ‚been there‘, ...

### Outlook

- ➔ tagging first and foremost assists individual classification and recollection of objects

## Collaborative information management

### Tagging

- Tagging allows for collective information management as well
- Through the aggregation of tags from different users, collaborative classification systems emerge: **Folksonomies** („folk“ + „taxonomy“)
- Folksonomies contain information like
  - „other items tagged with keyword ‚A‘“
  - „other users have tagged this item with A, B, C“
  - „users who use tag A also use tags X, Y, Z“

### Nextspace

### Outlook



Signed in as JanSchmidt Sign Out Help

Home You Organize Contacts Groups Explore

Jump to: dresden

## Explore / Tags / dresden / clusters



germany, frauenkirche, saxony, sachsen, deutschland, chutz, zwinger, architecture, castle, kirche

See more in this cluster...



elbe, river, hochwasser, sunset, flood, sonnenuntergang, water, alstadt, bridge, panorama

See more in this cluster...



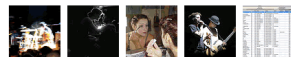
semperoper, night, oper, nacht, semper, opera

See more in this cluster...



schnee, winter, snow

See more in this cluster...



dolls, dresdendolls

See more in this cluster...

These are the most recent photos tagged with dresden. See more...



Tagging

Nextspace

Outlook

del.icio.us / tag / orgcomm

your bookmarks | your network | inbox | links for you | post

All items tagged orgcomm → view yours, popular

< earlier | later >

The World As Best As I Remember It: Broken Windows Theory save this  
by poluaides to OrgComm Development ProjectManagement Management ... saved by 102 other people ... 16 hours ago

Open Source Intelligence save this  
by jennmonroe to opensource wikipedia academics collaboration orgcomm research ... saved by 2 other people ... on march 29

Here's an Idea: Let Everyone Have Ideas - New York Times save this  
by jennmonroe to collaboration opensource research technology workplace orgcomm ... saved by 160 other people ... on march 27

Father of Wiki Speaks Out on Community and Collaborative Development save this  
by jennmonroe to wiki orgcomm opensource collaboration ... saved by 40 other people ... on march 21

Tech makes working harder, not easier | CNET News.com save this  
by jennmonroe to technology research orgcomm workplace cmc communication ... saved by 13 other people ... on feb 25

Organizational Blogs and the Human Voice: Relational Strategies and Relational Outcomes save this  
by jennmonroe to research cmc orgcomm communication technology ... saved by 32 other people ... on feb 2

Rough Type: Nicholas Carr's Blog: Open source's other advantage save this  
by jennmonroe to orgcomm technology cmc ... saved by 15 other people ... on jan 31

Scenes from the Culture Clash save this  
by jennmonroe to workplace communication orgcomm trends ... saved by 11 other people ... on jan 18

Blogging at the Center for Citizen Media | Conversations in Citizen Media save this  
by bitcop to digital-citizen orgcomm activism weblogs journalism ... saved by 39 other people ... on jan 7

Why companies monitor blogs | CNET News.com save this  
by bitcop to orgcomm ... saved by 4 other people ... on jan 3

Building Research Skills save this  
by jennmonroe to orgcomm research ... saved by 1 other person ... on dec 2, 2005

Making libraries more delicious: Social bookmarking in the enterprise | urlgreyhot save this  
by jennmonroe to tags technology information library workplace orgcomm cmc ... saved by 60 other people ... on sept 24, 2005

Communication Nation: How effective is your workplace communication flow?

Tagging

Nextspace

Outlook

## Strengths & weaknesses of tagging

### Tagging

#### Strengths

- Low-cost, current, inclusive and decentralized
- Makes implicit associations & conceptual models explicit
- Multiple tags for objects overcome limitations of hierarchical-enumerative systems
- Allows for „discovery“ of resources
- Avoids some motivational problems of knowledge sharing systems since users tag primarily for themselves

### Nextspace

#### Weaknesses

- Lack of precision due to variability of language (e.g. synonyms, polysemy)
- „Flat space“ of tagging lacks layer of meta-information a hierarchy provides (e.g. parent-child-relations)
- Usually not suited for exact finding of resources

### Outlook

- ➔ tagging complements (rather than replaces) other systems of content classification

## Tagging in organizations

### Tagging

- For knowledge workers in organizations, tagging systems can improve...
  - ..individual information management
  - ..discovery and formation of communities of interest
- Tagging might be used to enhance other instruments of intra- and interorganizational communication, e.g.
  - Complementing and improving search applications (e.g. weighing sources with number of annotations)
  - Enriching individual users' profiles, thus giving additional information about areas of interest and knowledge
  - Aggregating tags across teams on central project sites, thus making team activities visible

### Nextspace

### Outlook

- Tagging
- Nextspace
- Outlook

- Several organizations (e.g. IBM, Yahoo) implemented tagging systems in their Intranet
- Here: Explorative analysis of two organizational networks using the „Nextspace“ technology
  - Pilot developed in 2004/2005 with funding from Austrian ministry of Innovation and Technology
  - ‚Nextspace‘ combines functionalities of weblogs, wikis, tagging systems and schedule management
  - ‚Platforms‘ consist of several ‚spaces‘; users share information within and across spaces

- Tagging
- Nextspace
- Outlook

The screenshot shows the Nextspace web interface. At the top, there is a search bar with the text "workspace" and "LiveSearch". Below the search bar is a navigation bar with the word "Übersicht" (Overview) and a user profile for "Thomas N. Burg". The main content area displays a list of posts:

- Do, 6. Apr Development-Meeting** 12:30 –15:00 by Janos Bekesi
- Mi, 29. Mrz 20:58** | Schlagworte: Developer-Meeting
- Dies und Das:
- Noch nix fixes...
- Mi, 5. Apr Brown Bag 2: Funktionales Testen in Helma** Ort: devRoom | 14:30 –15:30 by Janos Bekesi
- Di, 28. Mrz 11:26** | Schlagworte: BrownBag, unittest
- Fürs zweite Braunsbeutel-Treffen werd ich ein bisschen was vorbereiten zum Thema
- Testing**
- d.h.
- Kurze Einführung in Unit-Tests (Warum und Wie)
  - Schwierigkeiten mit Web-Applikationen
  - Wie macht das Ruby on Rails?
  - Beispiele mit Selenium (einem Test-Framework, das wir womöglich verwenden werden) oder auch Webtest
  - Ruby on Rails könnte Selenium einsetzen
  - Ausblicke auf sinnvolle Deployment-Zyklen
- Janos.

On the right side, there is a sidebar menu with the following items:

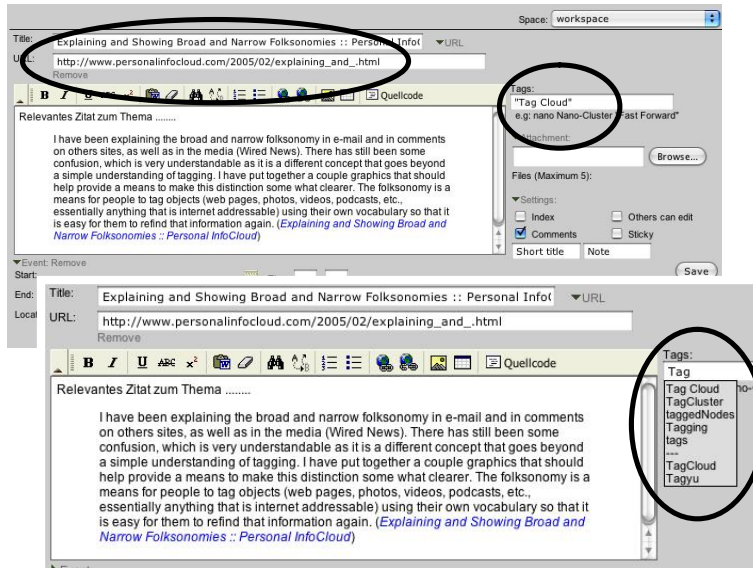
- Neuer Beitrag
- Übersicht
- Index
- Links
- Schlagworte
- Anhänge
- Feeds
- Termine
- Mitglieder
- Priorität 1
- Priorität 2
- Priorität 3
- Gelöst
- Staging
- ChangeLog
- Archiv
- Layout
- NEXTspace Feature Liste
- > Zuletzt online
- > Optionen
- > Zuletzt editiert
- > Abonnements

# Nextspace: Tagging objects

Tagging

Nextspace

Outlook

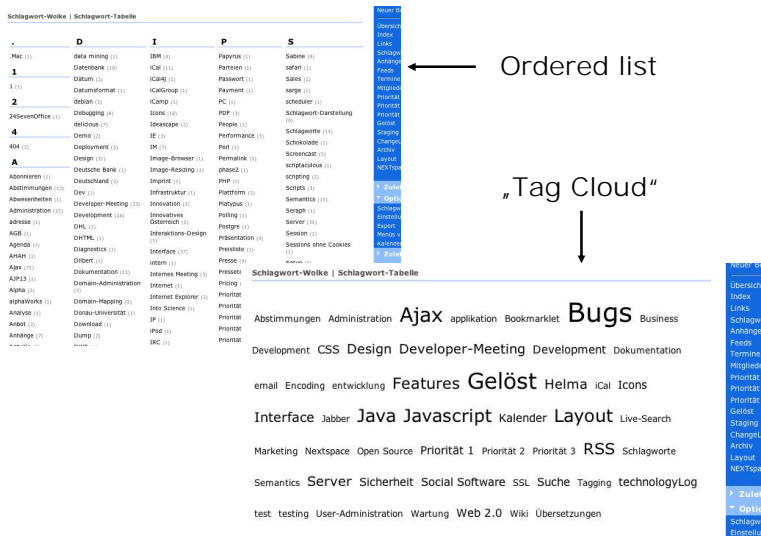


# Nextspace: Displaying Tags

Tagging

Nextspace

Outlook



## Nextspace: Navigating with tags

Tagging

Nextspace

Outlook

**Schlagwort: Javascript** Subscribe to individual tags

Verknüpfte Schlagworte

[Ajax](#) (10), [Bilder](#) (3), [Bookmarked](#) (1), [Browser](#) (3), [Debugging](#) (4), [Design](#) (3), [Development](#) (1), [Eclipse](#) (3), [entwicklung](#) (1), [Excel](#) (1), [Features](#) (3), [Google](#) (2), [Helma](#) (1), [Hyperwave](#) (1), [Image Resizing](#) (1), [Interface](#) (0), [Java](#) (4), [JSP](#) (1), [Kalender](#) (1), [Lightbox](#) (1), [Mozilla](#) (1), [On Demand](#) (1), [Priority: 1](#) (1), [Priority: 4](#) (1), [python](#) (1), [Sicherheit](#) (1), [Tabelleinkalkulation](#) (1), [Tagging](#) (1), [testing](#) (1), [Web 2.0](#) (1), [Weblog](#) (1), [WebOS](#) (1), [webtest](#) (1), [Wiki](#) (1), [WYSIWYG](#) (1), [XML](#) (1)

"Javascript" Schlagwortgruppen Associated tags and tag bundles

**Samstag Sa, 1. Apr**

[Lightbox Plus](#) Thomas N. Euro

**Mittwoch Mi, 29. Mrz**

[Lightbox 15 v2.0](#) Thomas N. Euro

[Prototype Javascript Windows](#) Janos Bekas

**Montag Mo, 27. Mrz**

[JsUnit](#) Thomas N. Euro

[On-Demand Javascript - Ajax Patterns](#) Thomas N. Euro

[Bookmarklet Builder](#) Thomas N. Euro

**Samstag Sa, 25. Mrz**

[A Base Class for JavaScript Libraries](#) Thomas N. Euro

**Freitag Fr, 24. Mrz**

## Descriptive measures

Tagging

Nextspace

Outlook

	Platform A	Platform B
Context	technical and business development of 'Nextspace' itself	EU-funded research project with 10 project partners
Started in	Aug 2005	Nov. 2005
No. of users	33	84
Spaces	14	4
Postings	1809	593
Unique Tags	1070	314
All Tags	4293	1586
Tags/Posting	2.37	2.67

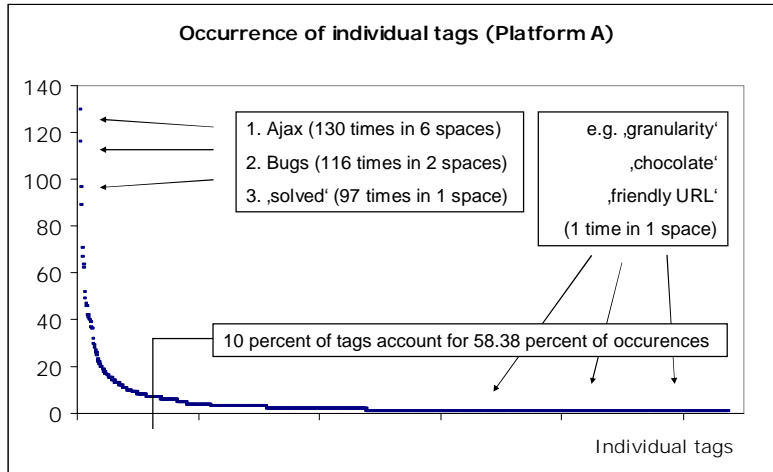
Data compiled in May 2005

### Power law in tagging

Tagging

Nextspace

Outlook

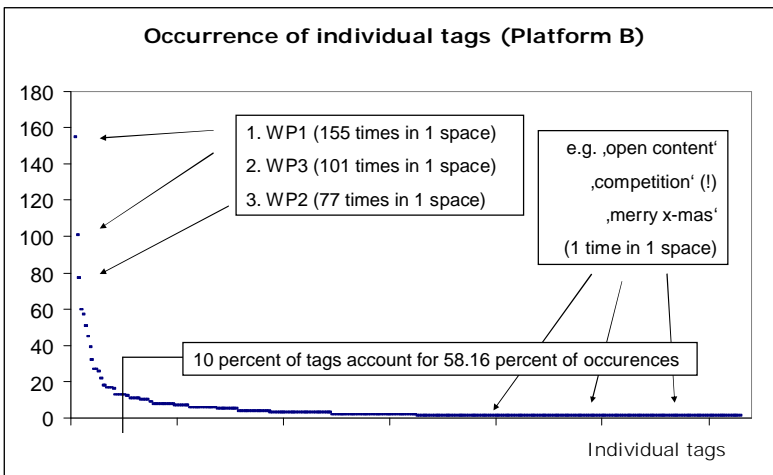


### Power law in tagging

Tagging

Nextspace

Outlook

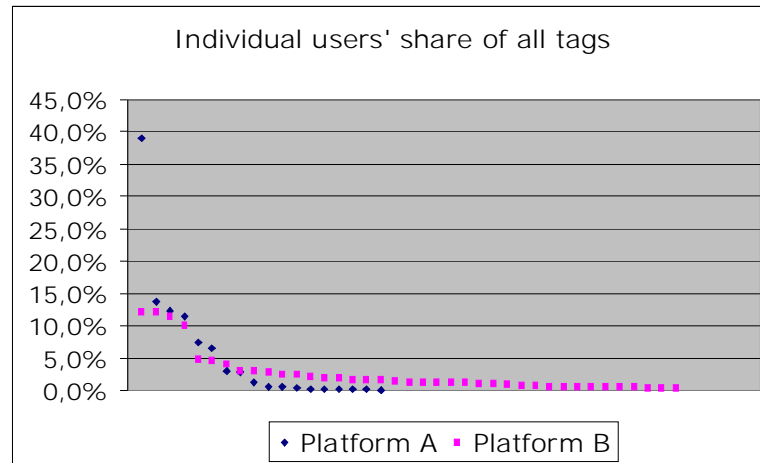


## Power law in tagging

Tagging

Nextspace

Outlook



## Open Questions

Tagging

Nextspace

Outlook

- Level of individual tagging
  - To what extent are individual tagging routines stabilizing, to what extent dynamic over time?
  - To what extent do individual tagging routines converge within and across spaces/platforms/ services over time?
- Level of collaborative classification
  - Is there a minimum size of participants/activity to allow emergence of shared frames of reference?
- Level of implementation
  - Which organizational characteristics hinder or assist implementation of tagging systems?
  - Can these systems be employed effectively in SMEs?

# Thank you!

...FoNK



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- *Hammond, Tony/Hannay, Timo/Lund, Ben/Scott, Joanna (2005):* Social Bookmarking Tools (I): A general review. In: D-Lib Magazine, Vol. 11, No. 4, April 2005. Online: <http://www.dlib.org/dlib/april05/hammond/04hammond.html>.
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