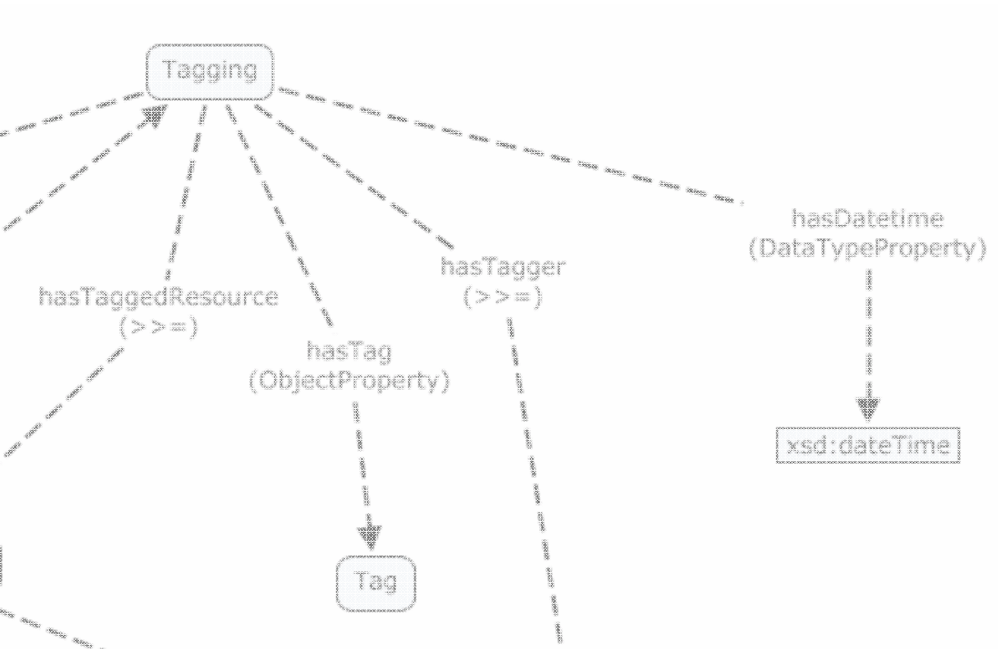


TagOnt – Towards a Common Ontology for Tagging



Project Presentation
Intelligent Web Workshop
HFU, 28.06.2006
Torben Knerr

Agenda



1. What is Tagging / Folksonomy?
2. The Need for a Common Tagging Ontology
3. Related Work
4. Development of TagOnt
5. Current Status
6. References

Definition of Folksonomy



- „Folksonomy is the result of **personal free tagging of information** and objects (anything with a URL) for one's own retrieval. The tagging is done **in a social environment** (shared and open to others). The act of tagging is done **by the person consuming the information.**”

(Thomas Vander Wal)

- Folksonomy is „distributed human intelligence”

Comparison with Taxonomy



Folksonomy	Taxonomy
example: del.icio.us	example: Ebay
created by it's users	created by domain specialist
flat structure	hierarchical structure
unrestricted, free-form tagging	controlled vocabulary
social context	usually no social context
find, explore	browse
problems: synonyms, ambiguity	problems: vocabulary problem

Why is tagging important?



- Tagging works especially well in the internet [1]
 - Low barriers to entry
 - Direct feedback
 - Individual and community aspects
- Growing popularity, tons of applications
 - Tag your bookmarks, blogs, photos, academic references, music, real events, places...

[1] X. Wu, L. Zhang, and Y. Yu, "Exploring social annotations for the semantic web" (2006)

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Current Model for Sharing Data: RSS [2]



- RSS syndicates web content (e.g. news) based on XML
- RSS is used to share data in current tagging systems
- In tagging systems, an RSS feed might contain:
 - ...certain user's bookmarks and associated tags
 - ...most popular bookmarks tagged with X
 - ...most recent bookmarks from user X with tag Y
- Plus, RSS is widely adopted...

[2] *D. Winer, "RSS 2.0 Specification" (2002)*

...but RSS is limited!



- There is no concept of a „tag“ in RSS
 - ➔ Use of non-standard representations for a „tag“
 - ➔ Non-interoperability
- Not ready for the Semantic Web (except RSS 1.0)
 - ➔ not machine-processable

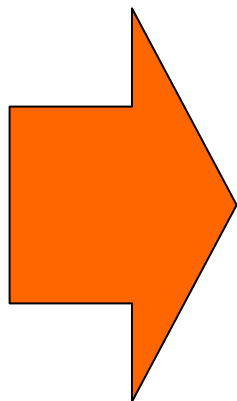
Representing tags in RSS



```
<!-- RSS 1.0 item in del.icio.us feed -->
<item rdf:about="http://dannyyayers.com/2005/10/03/semantic-web-starting-points/">
  <title>Semantic Web Starting Points</title>
  <link>http://dannyyayers.com/2005/10/03/semantic-web-starting-points/</link>
  <dc:creator>ukio</dc:creator>
  <dc:date>2006-04-24T10:04:33Z</dc:date>
  <dc:subject>links rdf semanticweb</dc:subject>
  <taxo:topics>
    <rdf:Bag>
      <rdf:li resource="http://del.icio.us/tag/semanticweb"/>
      <rdf:li resource="http://del.icio.us/tag/rdf"/>
      <rdf:li resource="http://del.icio.us/tag/links"/>
    </rdf:Bag>
  </taxo:topics>
</item>

<!-- RSS 2.0 item simpy feed -->
<item>
  <title>Raw » Semantic Web Starting Points</title>
  <link>http://dannyyayers.com/2005/10/03/semantic-web-starting-points/</link>
  <description></description>
  <category>rdf</category>
  <category>links</category>
  <category>semanticweb</category>
  <author>ukio</author>
  <pubDate></pubDate>
</item>
```

So why do we need an ontology?



- **Interoperability**
(Agreement about the concept of „tagging“ on a semantic level)
- **Machine-Processability**
(Making data available for the Semantic Web)

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Related Work



- Basic tagging = **{user, resource, tags, time}**
- Only three approaches trying to formally define the concept of a „tagging“

„Ontology of Folksonomy“ [3]



- Pros:
 - New ideas: +/- tagging, cross-application tagging
- Cons:
 - Only informal description of ideas, there is no ontology!
 - Does not consider the time of a tagging

[3] T. Gruber, *“Ontology of folksonomy: A mashup of apples and oranges”* (2005)

„Tag ontology design“ [4]



- **Pros:**
 - Only approach with a defined ontology in OWL
 - Reuse of existing ontologies (e.g. FOAF)
- **Cons:**
 - Too simplistic design
 - Does not allow for cross application tagging

[4] R. Newman, *“Tag ontology design”* (2005)

Microformats: „rel-tag“ and „xFolk“ [5]



- Pros:
 - Being used in the real world!
- Cons:
 - using XHTML to describe semantics, thus not suitable for the Semantic Web
 - Very limited representation of a tag (see example)

[5] B. Gibson, “xFolk (RC1), Draft specification” (2005)

Microformats: „rel-tag“ and „xFolk“



- xFolk example:

```
<div class="xfolkentry"> <!-- changed -->
<div>
  <a class="taggedlink" href="http://www.sifry.com/alerts/archives/000306.html"> <!-- changed -->
    Sifry's Alerts: technorati launches Related Tags
  </a>
</div>
<div class="description"> <!-- changed -->
  Ever wanted to see what posts are related to other posts, what tags
  are related to others? Now you can! Just check under the Tag
  description on most tag pages, like this one, or this one, and you'll
  see the patterns. Can you smell the emergence?
</div>
<div class="meta">
  <a rel="tag" href="/fpgibson/folksonomy">folksonomy</a> <!-- changed -->
  <a rel="tag" href="/fpgibson/technorati">technorati</a> <!-- changed -->
</div>
</div>
```

Agenda



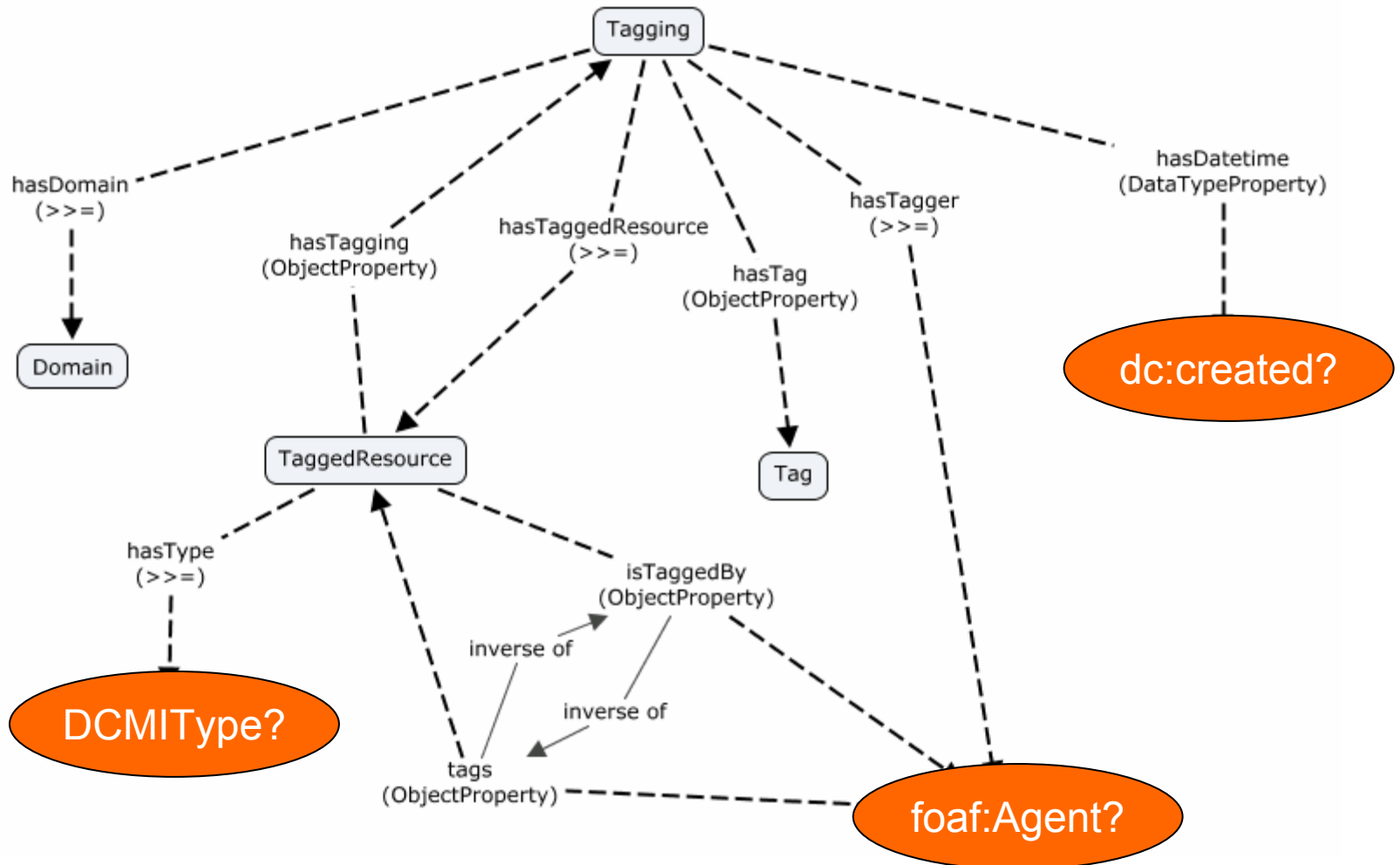
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Design Goals



- Capture ALL folksonomic information
- Allow arbitrary resources to be tagged, but record type information (e.g. image, video, text, ...)
- Allow for cross-application tagging
- Reuse existing ontologies (FOAF, DC...) where possible
- Allow for private/public tagging
- Allow for local (per domain) / global (over all domains) scope of tags

TagOnt Preview



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Current Status



- **Status**
 - Basic structure of ontology defined, refinement cycle follows
 - Researching existing ontologies to integrate
 - Finish paper writing

References



- [1] X. Wu, L. Zhang, and Y. Yu, “Exploring social annotations for the semantic web”, in *WWW ’06: Proceedings of the 15th international conference on WorldWide Web*, (New York, NY, USA), pp. 417–426, ACM Press, 2006.
- [2] D. Winer, “RSS 2.0 Specification”, <http://www.rssboard.org/rss-2-0>, 2002.
- [3] T. Gruber, “Ontology of folksonomy: A mashup of apples and oranges.” <http://tomgruber.org/writing/ontology-of-folksonomy.htm>, 2005.
- [4] R. Newman, “Tag ontology design.” <http://www.holygoat.co.uk/projects/tags/>, 2005.
- [5] B. Gibson, “xFolk (RC1), Draft specification” <http://microformats.org/wiki/xfolk>, 2005.



Thank you!

Any questions...

