Chapter 13
Folksonomy
The Collaborative Knowledge Organization System

Katrin Weller
Heinrich Heine University of Düsseldorf, Germany

Isabella Peters
Heinrich Heine University of Düsseldorf, Germany

Wolfgang G. Stock
Heinrich Heine University of Düsseldorf, Germany

ABSTRACT
This chapter discusses folksonomies as a novel way of indexing documents and locating information based on user generated keywords. Folksonomies are considered from the point of view of knowledge organization and representation in the context of user collaboration within the Web 2.0 environments. Folksonomies provide multiple benefits which make them a useful indexing method in various contexts; however, they also have a number of shortcomings that may hamper precise or exhaustive document retrieval. The position maintained is that folksonomies are a valuable addition to the traditional spectrum of knowledge organization methods since they facilitate user input, stimulate active language use and timeliness, create opportunities for processing large data sets, and allow new ways of social navigation within document collections. Applications of folksonomies as well as recommendations for effective information indexing and retrieval are discussed.

INTRODUCTION
A key problem facing today's information society is how to find and retrieve information precisely and effectively. Substantial research efforts concentrate on the challenges of information structuring and storing, particularly within different sub-disciplines of computer science and information science. In this context, information retrieval studies focus on methods and algorithms to enable precise and comprehensive searching of document collections (Frakes & Baeza-Yates, 1992; Stock, 2007a). In addition, techniques of knowledge representation have been established (Cleveland & Cleveland, 2001; Lancaster, 2003; Stock & Stock, 2008). Most prominent are approaches of document indexing:
i.e., assigning content-descriptive keywords to
documents. This enhances retrieval techniques and
 aids users in deciding on a document’s relevance.
Different knowledge organization systems (KOS)
are developed to support sophisticated document
indexing. Common examples of KOS include
classification systems (taxonomies), thesauri, and
controlled keywords (nomenclatures).

Recently, a well-known problem of indexing
documents with content-descriptive metadata has
been addressed from a new, user centered perspec-
tive. Within the so-called “Web 2.0” (O’Reilly,
2005), web users have begun publishing their own
content on a large scale and started using social
software to store and share documents, such as
photos, videos or bookmarks (Gordon-Murnane,
And they have also begun to index these documents
with their own keywords to make them retrievable.
In this context, the assigned keywords are called
tags. The indexing process is called (social) tag-
ging, the totality of tags used within one platform
is called folksonomy. A tag cloud is a popular
method for displaying most frequently applied
tags of a folksonomy visually (Figure 1).

Thus, a folksonomy is an indexing method open
for users to apply freely chosen index terms. Peter
Merholz (2004) entitles this method “metadata for
the masses”; the writer James Surowiecki (2004)
refers to it as one example of “the wisdom of
crowds.” The term “folksonomy”, as a combina-
tion of “folk” and “taxonomy”, was introduced in
2004 by Thomas Vander Wal and cited in a blog
post by Gene Smith (2004). Smith uses the term
“classification” for paraphrasing folksonomies.
This term arouses a misleading and faulty con-
notation. The same holds for the term “taxonomy.”
Folksonomies are not classifications or taxono-
mies, since they work neither with notations nor
with semantic relations. They are, however, a new
type of knowledge organization system, with its
own advantages and disadvantages.

**BACKGROUND**

**Knowledge Organization Systems**

Knowledge representation methods are ap-
plied to provide a better basis for information
retrieval tools. This may basically be done in
two ways: by abstracting the topics of a docu-
ment and by indexing a document, i.e., assigning
text-descriptive keywords or placing it into a
concept scheme (Cleveland & Cleveland, 2001;
Lancaster, 2003). For indexing documents with
text-descriptive keywords, different types of
knowledge organization systems (KOS) have
been developed. The most important methods
 – classifications, thesauri and nomenclatures –
comprise a controlled vocabulary, which is used
for indexing. The vocabulary of classifications
and thesauri usually has the form of a structured
concept hierarchy, which may be enriched with
further semantic relations, e.g., relations of equi-
vallence and concept associations (Peters & Weller,

Recently, two new developments have en-
tered the spectrum of KOS: folksonomies and
ontologies (Weller, 2007). They complement
traditional techniques in different ways. Folk-
sonomies include novel social dimensions of user
involvement; ontologies extend the possibilities
of formal vocabulary structuring (e.g., Alexiev
et al., 2005; Davies, Fensel, & van Harmelen,
2003; Staab & Studer, 2004). Both have revived
discussions about metadata on the web (Madhavan
et al., 2006; Safari, 2004) and have increased the
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