

Building a Meaningful Web: From Traditional Knowledge Organization Systems to New Semantic Tools

Gail M. Hodge
Ila, Inc.
gailhodge@aol.com

Marcia Lei Zeng
Kent State Univ.
mzeng@kent.edu

Dagobert Soergel
Univ. of Maryland
ds52@umail.umd.edu

Abstract

This Networked Knowledge Organization Systems/Services (NKOS) workshop focused on the transformation of traditional knowledge organization systems (KOSs) to new forms of knowledge representation that are being developed to support a more semantic-based, meaningful Web environment. The goal of the workshop was to identify principles from more traditional practices that can contribute to the design of new knowledge organization systems and ways to exploit the extensive intellectual capital available in traditional KOSs when developing new KOS tools.

Traditional KOSs include a broad range of system types from term lists to classification systems and complex thesauri. Term lists may be simple authority lists. Classification systems put resources in broad groups or "buckets". Traditional thesauri are built on broader-narrower, synonymous and associative (or related term) relationships. These and other traditional KOSs were developed in a print environment or in the early days of computerized databases to control the vocabulary used when indexing and searching a specific product, such as a bibliographic database, or when organizing a physical collection such as a library.

New forms of knowledge representation include ontologies, topic maps, and other semantic Web components. The relationships between concepts in these tools are richer. In particular, the associative relationships and broader-narrower relationships are defined in more detail. New semantic tools emphasize the ability of the computer to process the KOS against a body of text, rather than support the human indexer or trained searcher. These tools are intended for use in the broader, more uncontrolled context of the Web to support information discovery by a larger community of interest or by Web users in general.

While the traditional KOSs and newer tools are related, the development of the newer forms of KOS tools has, on the whole, not taken advantage of traditional KOSs. There is little understanding of how traditional tools can be transformed for the demands of the Web environment

and whether there are lessons that can be learned from the decades of development and maintenance of these traditional systems.

This workshop compared the traditional KOSs and new approaches to improving the semantic capabilities of the Web. Best practices and lessons learned from the development, maintenance and use of traditional KOSs were identified. Descriptions of projects involving the transformation of traditional KOSs to newer forms emphasized the transition process, including the analysis of the traditional KOS, and the characteristics of the KOS that could be carried through to the new tool. The presenters also discussed the degree to which the traditional KOS and the new tool would be used together in the future, whether there would be parallel or separate maintenance activities, etc.

Presenters described the development of specific Web service functionality applicable to KOSs. The benefits of this service-based approach and the possibility of universal or community-based KOS services were explored.

In addition to formal presentations, the workshop participants gave brief updates on their work or interest in this area. A facilitated discussion identified areas where standards, best practices, technologies, or more research are needed to take advantage of the investment in traditional KOSs when developing new tools.

NKOS is an ad hoc group devoted to the discussion of KOSs as networked interactive information services to support the description and retrieval of diverse information resources through the Internet. This is the 6th in a series of NKOS workshops held in conjunction with JCDL. More information about NKOS is available from <http://nkos.slis.kent.edu/>.