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Guest Editorial

The advancements in communication technology, developments of online databases, and unlimited growth of the Internet-based information have accentuated the need to restructure and reorganise information in a more effective way. Classification, indexing and thesaurus form the backbone of organisation of knowledge and have a key role in information retrieval systems. However, the unsystematic nature of the net-based information and the invisible Web have endorsed development of new retrieval tools to semantically map the subject domains. Currently, large number of research projects and experiments are being carried out to create semantic Web for interlinking the concepts. While the thesaurus approach offers one-to-one relationship, an ontology attempts to capture and co-ordinate one-to-many relationships among concepts. It is a powerful tool to classify domain specific information on the Internet with its roots in taxonomy.

This special issue of *DESIDOC Journal of Library and Information Technology (DJLIT)* on Ontology covers five papers contributed by library science professionals, researchers, independent scholars, and information scientists from India and Nanyang Technological University of Singapore. The focus of articles is on unfolding the concept of ontology, understanding its roots, and its applications in Semantic Web—all accompanied by extensive literature review.

Use of ontology by researchers in artificial intelligence (AI) for problem solving methods and knowledge-based systems is pointed out by Gokhale, Deokattey and Bhanumurthy in their paper. Their discussion on different ontology development tools like Ontolingua, WebOnto has further culminated into explaining its relevance to problem-solving methods employed in the field of AI. The link between classification and ontology in the context of LIS is illustrated through an extensive coverage of literature in this paper. A sample domain ontology on energy amplifiers using INIS data base is presented.

Deshpande and Kumbhar have taken a comprehensive review of recent literature on construction and applications of ontology. Literature reported in *LISA* in 2009 and that up to July 2010 in English language is reviewed by them under definitional analysis of ontology, construction of ontology, matching ontology for integration, and uses of ontology. The literature review clearly brings out domain specific nature of ontology.

Patkar in his article on Passage to Ontology has underlined the importance of non-standard approach for organising information in the digital age. He has highlighted some of the characteristic features of traditional tools for organising information and later explained the major differences between the print and digital material from the access point of view. He opines that the tools, which could control the print material, would not be adequate to handle the digital material, thus making the automatic processing of information critical. The diversity and unity of the concept of ontology from the stand point of view of philosophy, computer science, and with its proximity to library and information science (LIS) forms the central theme of this paper.

Paper by Khoo, *et al.*, from Nanyang Technological University of Singapore, on construction of disease treatment ontology as an enhancement to existing medical taxonomies is highly specialised. It is based on analysis of two medical abstracts on colon cancer therapy. The paper presents an overview of medical ontologies, top level of disease treatment, the disease class, the effect class, the condition class, and the evidence class. An example of disease treatment information extracted from a medical abstract is appended to the main article, which clearly is a case of knowledge discovery.

The limitations of the World Wide Web, which have grown from hypertext to semantic Web are brought out by Giri in his paper. The concept of semantic Web, its development, relationship with AI, and semantic Web technologies are further explained in the context of ontology. The steps involved in the construction of ontology, the ontology languages and its role in developing semantic Web are the major areas emphasised in his paper.

The heterogeneous structure of information on the Web, both semantically and syntactically, necessitates the development of a standard format for digital information exchange. An ontology can show a one-to-many contextual relationship with flexibility—much suitable for Web environment. It makes use of both standard terms as well as free text terms. It represents a set of elements where concepts and terms in a specific knowledge area can be co-related systematically.

The central focus of all the papers in this Special Issue is on the fact that exploring new methods for organising information suitable for the Web environment is the demand of time. There are challenging opportunities offered by these new avenues wherein there is potential for research. Library professionals can be the stakeholders of the same and can take advantage because it is yet at an infancy stage.

I am grateful to Dr A.L. Moorthy, Director, DESIDOC for inviting me to be the Guest Editor of this Special Issue. I am also indebted to all the contributors for their cooperation and timely submission of the manuscripts. It is hoped that this issue will kindle a new thought in LIS professionals to offer services with higher degree of precision.

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