
Editorial

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Biographical notes: Miguel A. Sicilia obtained his Degree in Computer Science from the Pontifical University of Salamanca, Madrid, Spain in 1996 and his PhD from Carlos III University in 1999. From 1997 to 1999 he worked as an Assistant Professor and later as a part-time Lecturer at the Computer Science Department of the same university. He also worked as a Software Architect in e-commerce consulting firms. From 2002 to 2003, he worked as a full-time Lecturer at Carlos III University, after which he joined the University of Alcalá. His research interests are primarily in the areas of adaptive hypermedia, learning technology, and human-computer interaction, with a special focus on the role of uncertainty and imprecision handling techniques in those fields.

Miltiadis D. Lytras obtained his PhD from the Athens University of Economics and Business-AUEB. He is the Editor-in-Chief of IJML. He is a Faculty Member in the Computer Engineering and Informatics Department-CEID (University of Patras), Department of Business Administration-BMA (University of Patras) in the Technology Education and Digital Systems Department-TED (University of Piraeus) and in the International MBA program of AUEB (www.i-mba.aueb.gr). Since 1998, he is a Research Officer in ELTRUN, the Research Center in the Department of Management Science and Technology at the Athens University of Economics and Business. His research focuses on semantic web, knowledge management and e-learning, with more than 50 publications in these areas. He has co-edited nine special issues in international journals and has authored and edited six books. He is the founder of the Semantic Web and Information Systems Special Interest Group in the Association for Information Systems (www.sigsemis.org) and served as the Editor-in-Chief of three international journals while he is Associate Editor or Editorial Board Member in five more.

The *International Journal of Metadata, Semantics, and Ontologies* (IJMSO) was conceived as a project in the ancient Athens city, in a spring night, fertile in ideas and desires. The seminal intention was that of providing coherence to a number of disparate research topics and tendencies under a common label and conceptual paradigm. These topics included metadata description and usage, Semantic Web research, formal ontology and its applications, and meta-modelling. The notion of ‘metadata’ appeared to us as the underlying notion common to all of those aspects of modern systems engineering.

The term ‘metadata’, understood in a general sense, simply refers to ‘data about data’. In consequence, research on metadata is concerned with the theoretical and practical aspects of layering, arranging, and maintaining information in meta-levels for specific purposes. Because most metadata-based systems have specific purposes and contextual constraints, metadata research can be thought of

as a specialised engineering discipline, in which methods, tools, and techniques to build solutions with given economic or contextual constraints are the important elements to be considered. Nonetheless, metadata is in many cases approached from a de-contextualised perspective. This is the case of research efforts that aim at building ‘general-purpose metadata schemas’. This connects metadata research closely with disciplines such as philosophy and mathematics. In that direction, semantics (i.e., the interpretational frameworks for metadata) determine to some extent the possibilities of information processing, thus raising the question of which representational frameworks are better suited for which specific applications. Furthermore, metadata when in use is expected to result in improvements in daily human activities related to information seeking. This broadens the scope of metadata research to empirical studies related to human-computer interaction and psychology, for which

experimental methods are relevant. This succinct portrait of our view of the topic of metadata research is intended to provide our readers with a figure of the coverage of IJMSO. Emphasis should be given to the fact that a variety of scientific approaches are included in the scope of IJMSO, including gathering and organising empirical evidence, experimental designs, comparative assessments, formal and mathematical approaches, system engineering and evaluation, and theory or critique oriented essays.

Consequently, IJMSO welcomes research contributions of a very diverging nature. They obviously include experience and evaluation of concrete metadata-based applications and reports on the design of metadata schemas and framework in a general sense. But we also encourage researchers to elaborate critical essays and reflective studies, which could help in building the grounding theory from the disparity of approaches.

We believe that the contents of this inaugural issue that are briefly described below reflect the diversity of perspectives and methodological paradigms of ‘metadata researchers’, which range from experimental designs to pure mathematical frameworks for the modelling of metadata.

In the first paper of this inaugural issue, Greenberg, Spurgin, and Crystal provide a review of the current state of metadata generation research, as a preparatory step for an extensive report on the preferences of experts regarding the combination of automatic and human-driven activities in the practice of metadata generation.

Dogac et al. address in the second paper a common problem in metadata research, the semantic interoperability of systems that share the same domain. Concretely, the notion of *archetype* is used as the conceptual paradigm for the interoperability of healthcare systems. Furthermore, the authors provide a description of the approach in terms of the *ebXML* specification, an open standard for interoperability of business systems through the internet.

In the third paper, Bellomi and Cristani report on an application of document classification that combines automated and human-driven activities, along with a

discussion of the methodological aspects inherent to such concrete approach to metadata creation.

The fourth paper authored by Corcho provides an overview of existing techniques and tools for the creation of ontology-based metadata, which is particularly relevant for the provision of shared semantics in the context of the Semantic Web vision. The author also discusses some of the main research prospects in that direction.

Goldbeck and Parsia conduct us in the fifth paper to considering the important aspect of trust in metadata. Concretely, they describe a method for the inference and composition of reputation for Semantic Web resources. This scheme can be used for filtering information based on a minimum trustworthiness rating, which directly affects usability in information seeking interfaces.

Sakkopoulos, Tsakalidis, and Kanellopoulos report in the sixth paper a metadata-based system and its associated web service architecture. Service discovering and mining using semantic representations enhance the functionality of the system, which represent a paradigmatic architecture of metadata-intensive systems.

The seventh paper further discusses the topic of Semantic Web Services. In this case, Arroyo and López-Cobo provide an overview of the main aspects that are in the focus of current research in Semantic Web Services as a metadata-intensive and shared semantics extension of the service-oriented paradigm to application distribution.

The issue finishes with a short essay on the three words that give name to this publication, intended as a manifesto for the pluri-disciplinary scope of IJMSO. We hope that this essay motivates metadata researchers to consider submitting to IJMSO papers describing their recent research outcomes, framed in the global notion of ‘metadata research’.

The editors have to acknowledge the help of many friends and colleagues in the process of reviewing, selecting, and editing the pages of this first issue of IJMSO. We must also acknowledge the support of Inderscience staff and specially the encouragement of Dr. M. Dorgham in the initial steps of this project. Also, this work could not have been possible without the patience and support of our families.