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Law and the Semantic Web

Legal Ontologies, Methodologies,
Legal Information Retrieval, and Applications

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Foreword

by Roberto Cencioni

At the Lisbon Summit in March 2000, European heads of state and government set a new goal for the European Union — to become the most competitive knowledge-based society in the world by 2010. As part of this objective, ICT (information and communication technologies) services should become available for every citizen, and for all schools, homes and businesses.

The book you have in front of you is about Semantic Web technology and law. Law is something omnipresent; all citizens — at some points in their lives — have to deal with it. In addition, law involves a large group of professionals, and is a multi-billion business world wide. Information technology is important because it that can improve citizens' interaction with law, as well as improve legal professionals' work environment. Legal professionals dedicate a significant amount of their time to finding, reading, analyzing and synthesizing information in order to take decisions, and prepare advice and trials, among other tasks. As part of the “Semantic-Based Knowledge and Content Systems” Strategic Objective, the European Commission is funding projects to construct technology to make the Semantic Web vision come true. The articles in this book are related to two current foci of the Strategic Objective¹:

- Knowledge acquisition and modelling, capturing knowledge from raw information and multimedia content in webs and other distributed repositories to turn poorly structured information into machine-processable knowledge.
- Knowledge sharing and use, combining semantically enriched information with context to provide actionable meaning, applying inferencing and reasoning for decision support and collaborative use of trusted knowledge between organizations.

This book is a good example of bringing together two communities: the IST research and development community and the legal community. In other words, it brings together technology *providers* and technology *users*, an essential requirement for building scalable and usable Information Society technology.

Luxembourg
November 2004

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¹ http://www.cordis.lu/ist/workprogramme/wp0506_en/2_4_7.htm

Foreword

by Joaquín Bayo Delgado

In recent years, many initiatives have been taken to update the working methods of the administration of justice to the continuously changing environment of ICT services. The judiciary, in the larger sense of the word, has particular needs of its own, but it also shares common problems, and possible solutions, with other knowledge-based activities.

As in any other field, the Web has become the crucial reference for any work tool to be designed. The computer is no longer the tool as such, or it is better to say that the Web is the global computer that everyone uses. The approach, then, is how to take the most from this global instrument without being overflowed with information, a situation almost as bad as if no information was available.

Many reasons explain the reluctance of the judiciary to taking up ICT services: legal changes may be needed before we can introduce these technologies (videoconferencing may be an example), there is a tendency to tradition and secrecy amongst jurists in general and judges in particular, etc. But there are two main reasons shared by jurists with other professionals, namely the information overload and the lack of a cyberculture. The Semantic Web overcomes these two barriers by helping in finding the relevant information and by doing so through a friendly interface.

But some other considerations are relevant when judicial work is analyzed in the context of the Web. Three areas are to be distinguished: the internal workflow in the court, the final decision making, and the openness towards citizens. At first glance it may seem that the Semantic Web is irrelevant in some of those areas, but a closer view shows that that is not the case. The internal workflow is not an automatic process. The stakeholders (judges, but also registrars and staff personnel) do make decisions that need information and present complexity. Interim decisions are, in many cases, fundamental. The example of a judge on duty can illustrate the idea. Therefore, in this area workflow applications and knowledge ontologies have to be developed. In practice the latter are missing: knowledge is being transmitted through personal contacts among experienced and in experienced judges, registrars, public prosecutors, etc., and little information is available, not only in the Web but also in local databases. Interim decisions are frequently disregarded but they are the basic know-how for legal professionals.

The final decision making process is the main area where information is needed. Legal systems, namely continental law and common law, are increasingly merging. The European Union legal system is an example. But because of the Anglo-Saxon cultural predominance in the Web, and in informatics in general, ontologies pay attention basically to case law. This is very useful even in continental law systems, but there are some areas where knowledge of applicable statute law is crucial and not so easy to reach. Administrative law may be the clear example. There, the constant legislative production, both at the European and the national levels, makes it necessary to have a knowledge tool for the judiciary. This is becoming also true in

other legal areas, such as civil and criminal, where European and international law has to be increasingly taken into account; and frequently it is not, due to the lack of easy and friendly access. The Semantic Web is the means to achieving this access.

As the Web is a universal environment, other legal professionals and many citizens are also present in it. So the e-court (electronic-supported court) will develop into a cybercourt, as the next step, i.e., the court will go out to cyberspace. And new challenges and problems will appear. It will not only be the judiciary using the Web but also the legal professionals and citizens using it to interact with the courts and, therefore, retrieving information. It is a wholly new concept of the old “public hearing,” limited until now to the final phase of most proceedings and to the physical environment of the courtroom. The information flow becomes bidirectional. Semantic techniques will also be applied.

Several potentially conflicting aspects have to be borne in mind, though. The level of cyberculture knowledge is anything but homogeneous among citizens, and these differences are even greater between citizens and corporations. Equal opportunities of defence must be guaranteed. Other fundamental rights are also at stake, among them privacy and data protection. Here again the cultural differences play an important role. The tension between privacy and transparency (access to documents) is not understood in the same way worldwide, and does not play the same role in political and judicial decisions. Nor can data protection be seen just as the right to privacy in the European Union and its members and other countries. E-courts now, and future cybercourts, have to be designed in full compliance with the legal requirements that protect those fundamental rights, and privacy-enhancing technologies must be implemented.

Many of these ideas and problems are analyzed in this book, entitled “Law and the Semantic Web.” Its editors have gathered 15 papers most relevant to the analysis and to finding proper solutions for these questions. Efforts like this bring us closer to these future of legal and judicial practice.

Brussels
November 2004

Joaquín Bayo Delgado
Judge
Deputy European Data Protection Supervisor

Preface

The book you have in front of you is based on the celebration of two international events related to the Semantic Web and the legal domain held in Edinburgh, UK and Barcelona, Spain. The first event was the Workshop on Legal Ontologies and Web-Based Legal Information Management held on June 28, 2003, Edinburgh, UK, which was part of the 9th International Conference on Artificial Intelligence and Law, ICAIL 2003. The second event was the International Seminar on Law and the Semantic Web held on November 20–21, 2003, Barcelona, Spain. Papers have been revised since then according to the specific topic of this book.

For legal professionals, dealing with information and knowledge is an essential part of their daily work. They are “knowledge workers” and vulnerable to suffering from phenomena like information overload. Technologies that can help in overcoming this problem could result in a significant improvement in productivity. In this book, we hope to show to legal professionals the potential value of Semantic Web-related technology for their profession.

The Web has profoundly changed the way we communicate, do business, and perform our jobs. We can communicate at very low cost with almost anyone at anytime. We can initiate and (to some extent) conclude online business transactions. We have access to millions of resources, irrespective of their physical location and language. All these factors have contributed to the success story of the Web. However, at the same time, those success factors also cause one of the Web’s main problems: information overload. This is where the Semantic Web comes in. “The Semantic Web is an extension of the current Web in which information is given well-defined meaning, better enabling computers and people to work in cooperation” [Tim Berners-Lee, James Hendler, Ora Lassila, *Scientific American*, May 2001]. Semantic Web technology aims at the automatic processing of content, thereby enabling people to delegate tasks to software. With this book, for researchers and practitioners of the Semantic Web, we hope to show that the legal domain is a challenging and interesting area for performing research and for developing applications.

This volume contains 15 papers on topics relevant for law and the Semantic Web. The papers are structured in three parts. Part I sets the context; it introduces the relevant concepts, describes some of the final users (legal professionals), and puts into historical context how legal professionals think about the use and application of the law. Part II presents theoretical papers concerned with the construction of legal ontologies, both from a legal and a methodological point of view. Part III collects several papers describing applications of Semantic Web-related technology to the legal domain.

We would like to thank the organizers of both events, as well as the International Program Committee that guaranteed the high quality of the papers. The organizers of

the Edinburgh workshop were Joost Breuker, Aldo Gangemi, Daniela Tiscornia and Radboud Winkels, and the Program Committee included Trevor Bench-Capon, Richard Benjamins, Danièle Bourcier, Cristiano Castelfranchi, Rose Dieng, Caterina Lupo, Paulo Quresma, Heiner Stuckenschmidt, Erich Schweighofer, Andre Valente and John Zeleznikow. The organizers of the Barcelona seminar were Pompeu Casanovas, Marta Poblet, Jesús Contreras and Richard Benjamins.

We would also like to acknowledge various publicly funded R&D projects, including SEKT (IST-FP6), Esperonto (IST-FP5), Netcase (PROFIT) and Iuriservice (PROFIT).

December 2004

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