

# Conditions for Access and Use of Legal Document Retrieval Web Services\*

Martine Boonk  
VU University Amsterdam  
Computer/Law Institute  
De Boelelaan 1105  
Amsterdam, The Netherlands  
m.boonk@rechten.vu.nl

Frances Brazier  
VU University Amsterdam  
Intelligent Interactive  
Distributed Systems  
De Boelelaan 1081a  
Amsterdam, The Netherlands  
frances@cs.vu.nl

David de Groot  
VU University Amsterdam  
Intelligent Interactive  
Distributed Systems  
De Boelelaan 1081a  
Amsterdam, The Netherlands  
davidra@cs.vu.nl

Maarten van  
Stekelenburg  
VU University Amsterdam  
Computer/Law Institute  
De Boelelaan 1105  
Amsterdam, The Netherlands  
m.vanstekelenburg@rechten.vu.nl

Anja Oskamp  
VU University Amsterdam  
Computer/Law Institute  
De Boelelaan 1105  
Amsterdam, The Netherlands  
a.oskamp@rechten.vu.nl

Martijn Warnier  
VU University Amsterdam  
Intelligent Interactive  
Distributed Systems  
De Boelelaan 1081a  
Amsterdam, The Netherlands  
warnier@cs.vu.nl

## ABSTRACT

Documentation is essential to daily legal practice. On-line access is current practice. The conditions imposed by an information service provider with respect to access and use of this documentation determine the value of such documentation. This paper identifies the need to regulate on-line service access in more open environments: to specify the conditions that hold for each individual service, providing a basis for determination of conditions for configurations of services.

## Categories and Subject Descriptors

K.5.m [Computing Milieux]: Legal Aspects of Computing—*Miscellaneous*

## 1. INTRODUCTION

On-line documentation is essential to today's daily legal practice. This documentation is acquired from a number of different information service providers. The conditions imposed by and with respect to access and use of this documentation determine the value of such documentation. Legal publishers are exploring ways to position themselves in the future market: a market in which open access to journals and case law information will be freely available. This paper explores the need for providers to specify their conditions for information provision and usage in a service-oriented market.

\*Authors listed in alphabetical order.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

ICAIL '07, June 4-8, 2007, Palo Alto, CA USA  
Copyright 2007 ACM 978-1-59593-680-6 ...\$5.00.

Service-oriented Computing (SOC) is the paradigm in which this will be needed. SOC brings together new and existing technologies in distributed systems, by standardizing the interfaces [10]. Web services are the most common building blocks in this paradigm: computational elements that can be programmed, described, published, discovered, composed and managed using standard languages and protocols. Service providers do not directly interact with human users but via intermediary software layers (other web services, software agents, web-browsers). Configurations of web services provide the functionality required for most use cases, but are most often invisible to the user.

Current web service description languages do not provide support for the specification of the conditions of service access and usage.

For legal publishers based in Europe, for example publishers that provide information on legal articles for remuneration, European directives on information society services hold: European Directive 2000/31/EC<sup>1</sup> specifies that publishers must fulfill a number of information requirements prior to the conclusion of a contract with their customers. In addition, legal publishers may themselves want to specify their own conditions for service access. For instance, publishers may want to stress the fact that the documentation accessed is subject to copyright and restrict the use of forthcoming results and materials based on this documentation. Publishers may also wish to specify conditions to exclude liability for possible malfunctioning of one of their services, and/or to indicate which Court is considered competent and which law is applicable in case of dispute.

Current standards for web services lack possibilities to express such legal requirements. This paper proposes a new approach to specification and standardization of such information, conditions and other legal restrictions for access

<sup>1</sup>Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce'), recitals 17 and 18.

and use of web services. In addition, a technical solution to embed these conditions in current standards is suggested.

The remainder of this paper is organized as follows: the next section extends the case of a legal publisher and the need for conditional access. Section 3 provides a brief introduction to service oriented frameworks based on web services. Section 4 discusses categories of legal conditions that need to be specified in legal templates in web service descriptions. Section 5 discusses the technical challenges and some possible solutions for this extension. Section 6 gives a brief discussion and conclusions and the paper ends with suggestions for future research.

## 2. CASE: LEGAL DOCUMENT DATABASE

With the availability of legal articles in open access journals and freely available case law, competition between legal publishers increases. Legal publishers are therefore looking for ways to change their business models and make their publications available in a different manner, for example on a pay-per-view basis instead of annual subscriptions for (a collection of) journals. These models would improve the possibility for consumers to use more advanced search technology, such as intelligent software agents [17]. Software agents could, for example, search a legal database on behalf of their users for interesting articles without immediately requiring an annual subscription to a particular collection of journals.

Legal professionals, on the other hand, need to access a variety of information resources. Examples are resources for case law, legislation and legislative proposals, treaties, and legal articles. Examples of resources for case law are <http://www.rechtspraak.nl> in the Netherlands and the database of the Supreme Court in the US. Examples of legislation are <http://www.overheid.nl> for Dutch legislative proposals, [http://europa.eu/index\\_en.htm](http://europa.eu/index_en.htm) for European Union law or the library of Congress for the US [1]. The latter also provides much other information. Legal professionals may start using software agents for information searches.

Well-known legal publishers are Westlaw [2], LexisNexis [3] and Kluwer [4]. Within the category of legal articles in journals, professionals are likely to need material from more than one journal and from different publishers. They are, therefore, often required to subscribe to a number of journals or collections of databases. Many established legal journals are available online and offer access to subscribers.

The types of service required by legal professionals mentioned above differ substantially from each other. Requirements and conditions for access to a service and the conditions of use of a service imposed by service provider, may differ per service. For example, governmental services will generally be free of charge, whereas services provided by commercial publishers such as Kluwer and Westlaw are likely to require payment. Depending on the type of service, there may be different laws and regulations, with which service providers must comply. These requirements may differ from country to country. For instance, publishers of legal journals may want to regulate intellectual property and limit use of their materials. Laws, on the other hand, are usually not protected by copyright, especially not when they are made available on governmental sites. But also publishers may choose to differentiate their services by offering specific information free of charge on a publicly accessible

site, while other information can only be accessed under certain conditions. One webservice may offer different services each with their own (possibly differing) access restrictions. To enable users (or their systems) to choose from different services, providers of legal information may wish to specify information concerning the service and the terms of use of the service, including explicit pricing. These conditions and requirements will need to be specified in a standard format for users and automated systems to be able to "understand" the implications of their choice, comparing these conditions and requirements with the ones of which they are aware.

## 3. WEB SERVICES AND STANDARDS

In the example in the previous sections the publisher is a service provider in a service oriented system (for a more extensive introduction on service oriented systems see e.g. [5, 7, 16]). Service providers place descriptions of their services in service registries. Service clients (software programs) access these registries, compare services and choose the service they wish to access.

A service provider, such as the publisher, hosts a network accessible software module that implements the functionality needed to access their database(s): for example to search the database and retrieve documents. The service provider provides a service description that describes the operations it supports.

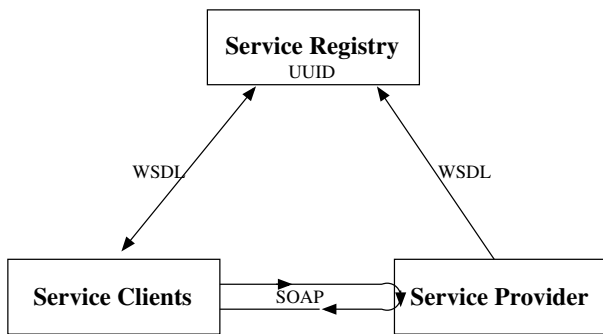
The current standard language for web service descriptions is the Web Service Description Language (WSDL). This description includes specification of the operations that can be performed by the service, the required input and the output it will provide. This description is registered in a service registry. The service registry maintains a directory service that makes service descriptions public and discoverable. A directory service is comparable to an electronic version of the phone book (White Pages) or topic-based listing of services by certain companies (Yellow Pages).

The service registry's directory service provides functionality that enables service descriptions to be retrieved on the basis of various properties, e.g. service provider, functionality, or quality of service. The Universal Description, Discovery and Integration (UDDI) standard is a widely-accepted standard for web service directory services. The registry can be approached by service clients to search the directory and obtain service descriptions.

In the above case, a service client is the application software, e.g. a browser or a software agent, of the human user that wants to access and use the legal document database. The application software can acquire a service description from a UDDI repository and can use this information to contact a web service. Once contacted, the service can perform the operations requested by messages structured according to the Simple Object Access Protocol (SOAP). These messages are sent over network connections using a standard transport protocol, e.g. HTTP or the email protocol MIME/SMTP.

Figure 1 summarizes the Web-services architecture and its use of standards: SOAP is used to communicate and specify messages, WSDL to describe services and UDDI is a repository of services from which services can be retrieved [5, 10].

## 4. CATEGORIES OF CONDITIONS



**Figure 1: Web-services architecture and standards.**

As stated in the Section 1, providing access to legal publications is not as straightforward as it may seem. Legal publishers face a number of serious challenges. Access to legal articles for paying customers as an information society service as defined in European Directive 2000/31/EC<sup>2</sup> as mentioned above is an example. This directive defines information society services as services normally provided for remuneration, at a distance and by electronic means, on individual request.<sup>3</sup> Directives 2000/31/EC and 1997/7/EC require information society service providers to comply with a number of information requirements<sup>4</sup>. Legal publishers who sell legal articles to the public via a web site in Europe, are thus considered information society service providers and as a result must fulfill information requirements as mentioned in directives 2000/31/EC and 1997/7/EC<sup>5</sup>.

In addition to fulfilling information requirements mentioned above, legal publishers may want to place other conditions on the use of their service. For instance, publishers may want to stress the fact that the materials are subject to copyright and to limit the use of forthcoming results and materials obtained through services. They may also wish to exclude liability for possible malfunctioning of the service and to specify the competent Court and applicable law in case of dispute.

Having analyzed terms and conditions of numerous websites on the Internet this paper identifies five categories of conditions for access and usage a service provider may want to regulate: a) conditions for service access, b) applicable law and jurisdiction, c) intellectual property, d) (disclaiming) liability and e) privacy. This list of categories is not

<sup>2</sup>Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on Electronic Commerce') and Directive 1997/7/EC of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts.

<sup>3</sup>Directive 2000/31/EC, Recitals 17 and 18.

<sup>4</sup>The authors emphasize that European directives are directed towards member states and are therefore to be implemented in national legislation.

<sup>5</sup>The requirements of Directive 2000/31/EC can be divided into general information requirements (Article 5), information requirements concerning commercial communications (Article 6) and specific information requirements for online contracting (Article 10). The requirements of Directive 1997/7/EC can be divided into requirements that must be met prior to any distance contract (Article 4) and after the conclusion of a distance contract (Article 5).

exhaustive, but can be used as a starting point for a more extensive categorization of conditions that should be included to specify terms of use for Web Services. The emphasis in this enumeration is on terms that are specific to the provision of information services<sup>6</sup>.

First of all, providers of web services may want to restrict access to a specific type of service client, for example to university employees or representatives thereof, to clients from a particular country, or to clients that specifically accept certain conditions, like the obligation to pay for viewing specific articles. Additionally, a service provider may want to specify technical criteria that must be matched by the service client. For example, access is only allowed for systems that do not need more than a given limit of processing power of the service provider. It is thus useful for both the provider of a service and future service clients to clearly specify access restrictions and requirements for access to the service in advance.

Secondly, clauses defining applicable law and jurisdiction are required to reduce the risk of issues concerning the competent forum and the applicable law in case of dispute as a different legal system or a different, i.e., foreign, court may strongly influence the outcome of a dispute. For a service that is accessible worldwide, it is virtually impossible to ascertain that the service complies with regulations in every legal system. From the point of view of the information/service provider, it is much more feasible to comply with laws and regulations of one legal system. Additionally, it is important for a service provider to ensure that disputes are settled in a local court, to limit cost implications (e.g. hiring foreign lawyers can be very expensive). Therefore service providers will want to specify the legal regime that governs conflicts that may raise from the access to and use of their webservices in their terms and conditions

Thirdly, service providers, such as publishers of legal articles, may want to stress that the materials provided are subject to intellectual property rights, particularly copyright. Publishers may want to impose limitations on use or related restrictions on copyrighted legal articles spelling out the conditions specifically.

Fourthly, providers of services may want to limit liability for malfunctioning of their services, particularly (but not exclusively), for circumstances beyond their control. To which point a service provider is able to successfully appeal to a disclaimer, however, will depend on the specific case and the law governing a dispute between parties.

Finally, if a service provider needs to process personal data<sup>7</sup> of a service client's user, European privacy regulations demand that service providers acquire permission from the service client's user for processing of personal data. Such data may only be processed in accordance with the purpose to which the owner has agreed. If the service provided to the legal professional includes passing on information to

<sup>6</sup>The authors understand that this list does not include all types of provisions that should be included in a contract. Provisions that depend on specific cases, such as the possibility to unilaterally modify contract terms, the duration of contracts and ways of termination of contracts, are not included, because they depend on specific circumstances and, as such, are beyond the scope of this paper.

<sup>7</sup>For example European privacy directive 1995/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.

and from other service providers, the service provider should make such practice clear in advance.

## 5. INTEGRATING LEGAL REQUIREMENTS IN WEB-SERVICES

The legal categories identified above in section 4, provide a starting point for formalization of a legal extension to web-service description languages. Such an extension can be seen as the web-service alternative for ‘*terms and conditions*’ that can be currently found on many web pages. Such an extension will facilitate the use of automated searches, for instance with the use of software agents.

Technically, extending web-services with legal requirements is relatively straightforward. There are at least two possibilities:

- Adding additional information to a service description to include (a reference to) terms and conditions, in a standardized format.
- In addition, the interaction protocol may be extended to include agreement with the terms and conditions specified in a service description language.

Extending service descriptions with legal conditions is technically a straightforward solution. One simply adds standard protocols that are commonly agreed upon and can either be accepted, granting access to the service, or rejected, which implies denial of access. An extension that includes agreement and/or negotiations [9] provides additional benefits including more flexibility. This could involve differentiation in terms and conditions with accessory (legal) rights and obligations.

Consider, for instance, a client service wanting to access a legal database web service. In an ideal situation there may be a range of standard legal templates covering numerous variations in the possible legal agreements parties may wish to establish. These templates specify the fields that need to be defined and the options thereto. Once templates have been standardized, users/clients of webservices can reason about the content specifying the options for legal conditions of access. Thus a ‘client based’ set of terms and conditions can be constructed for each individual client service.

It may be possible for a client service and a service provider to negotiate conditions of access fully automatically. Both the service provider and the client service ‘know’ which specifications in a template they can accept and which they cannot accept, which can be combined and which not. Thus they can negotiate an acceptable agreement, in which, for instance, the potential use of a legal paper, or part of it, is regulated and the copyright is protected. The client service can be given access to specific material containing information which may affect the privacy of others, only if they have the correct credentials for access to such information. For instance: an author may have access to all the statistics related to the use of his/her article.

To facilitate this process standard descriptions for the categories of conditions distinguished in Section 4, and conditions related to information requirements need to be defined. This requires dedicated ontologies to be developed for category descriptions and content. Domain experts need to be the authors of such ontologies. Such ontologies hold legal information (obligations and rights) but may also include technical specifications.

These descriptions need to be integrated in web service open standards, web service agreement specifications and web service negotiation protocols, including:

- WSDL which can be extended by adding the information requirements and the other categories of legal conditions.
- UDDI model which can be extended to include information requirements and other categories of conditions. This is analogous for the extension of UDDI proposed in [11].

WSOL [15], WSLA[8], BPEL4WS [6] and other web service description languages need to be considered, especially with respect to web service configuration. Automated composition of web services: services of different services can be chained together to provide more complex functionality, is still subject of research. Determining how legal requirements and conditions can be combined is an open question.

## 6. DISCUSSION AND CONCLUSIONS

This paper addresses a real challenge for the legal domain. The need to identify categories of requirements and conditions that hold for individual web services, ontologies and guidelines for combining sets of conditions.

This challenge is not technical, as argued. *Legal templates* can be used to extend WSDL, as proposed. The content of these legal templates, however, needs to be acquired in interaction with domain experts. This may mean formulating various templates that address the same topic which makes differentiation and choice possible. These templates should be published and accessible for automated services as well as for human beings. Owners of webservices may thus choose how to build their terms and conditions using the various templates. In such a way differentiation in terms and conditions can be obtained. Additional research can focus on combining templates and in this way set out terms and conditions for a variety of webservices. Present existing webservices [13, 14, 18] can be included in the research. Legal templates for automated web-service composition [12], is part of the research in the ALIAS project.

The advantage of using standardized templates, be they legal or non-legal, is that parties can decide in advance to accept or reject the conditions specified.

The open Internet mandates the standards and templates for legal and non-legal conditions of use. The only question that remains is who will be the first to set the standards.

## Acknowledgments

This research is financially supported by VU University Amsterdam in an inter-disciplinary project between the Computer and Law Institute (Faculty of Law) and the Intelligent Interactive Distributed Systems Group (Department of Computer Science). This project is also supported by the NLnet Foundation <http://www.nlnet.nl>, and has strong ties with the ACCESS project, <http://www.iids.org/access>, part of the NWO TOKEN program.

## 7. REFERENCES

- [1] <http://www.loc.gov/index.html>.
- [2] <http://www.westlaw.com>.

- [3] <http://www.lexisnexis.com>.
- [4] <http://www.kluwerlaw.com>.
- [5] G. Alonso, F. Casati, H. Kuno, and V. Machiraju. *Web Services - Concepts, Architectures and Applications*. Data-Centric Systems and Applications. Springer Verlag, 2004.
- [6] T. Andrews, F. Curbera, H. Dholakia, Y. Goland, J. Klein, F. Leymann, K. Liu, D. Roller, D. Smith, S. Thatte, et al. Business Process Execution Language for Web Services, Version 1.1. *Specification*, BEA Systems, IBM Corp., Microsoft Corp., SAP AG, Siebel Systems, 2003.
- [7] F. Curbera, M. Duftler, R. Khalaf, W. Nagy, N. Mukhi, and S. Weerawarana. Unraveling the Web Services Web: An Introduction to SOAP, WSDL, and UDDI. *IEEE Internet Computing*, 6(2):86–93, 2002.
- [8] A. Keller and H. Ludwig. The WSLA Framework: Specifying and Monitoring Service Level Agreements for Web Services. *Journal of Network and Systems Management*, V11(1):57–81, Mar. 2003.
- [9] D. Mobach, B. Overeinder, and F. Brazier. A WS-Agreement Based Resource Negotiation Framework for Mobile Agents. *Scalable Computing: Practice and Experience*, 7(1):23–36, 2006.
- [10] M. P. Papazoglou and D. Georgakopoulos. Service-Oriented Computing: Introduction. *Commun. ACM*, 46(10):24–28, 2003.
- [11] S. Ran. A model for web services discovery with QoS. *SIGecom Exch.*, 4(1):1–10, 2003.
- [12] D. Richards, S. v. Splunter, F. Brazier, and M. Sabou. *Composing Web Services using an Agent Factory*, volume 13 of *Multiagent Systems, Artificial Societies, and Simulated Organizations*, pages 229–252. 2005.
- [13] B. Srivastava and J. Koehler. Web Service Composition-Current Solutions and Open Problems. In *ICAPS 2003 Workshop on Planning for Web Services*, pages 28–35, 2003.
- [14] M. A. Talib, Z. Yang, and Q. M. Ilyas. A framework towards Web services composition modeling and execution. In *BSN '05: Proceedings of the IEEE EEE05 international workshop on Business services networks*, pages 4–4. IEEE Press, 2005.
- [15] V. Tomic, B. Pagurek, K. Patel, B. Esfandiari, and W. Ma. Management applications of the web service offerings language (WSOL). *Inf. Syst.*, 30(7):564–586, 2005.
- [16] A. Tsalgatidou and T. Pilioura. An Overview of Standards and Related Technology in Web Services. *Distrib. Parallel Databases*, 12(2-3):135–162, 2002.
- [17] M. Wooldridge and N. Jennings. Intelligent Agents: Theory and Practice. *The Knowledge Engineering Review*, 10(2):115–152, 1995.
- [18] J. Yang. Web service componentization. *Commun. ACM*, 46(10):35–40, 2003.