Chapter XXVIII
Semantic Technologies and Web Services:
A Primer on Legal Issues

Claudia Cevenini
CIRSFID University of Bologna, Italy

Gianluigi Fioriglio
CIRSFID University of Bologna, Italy

Migle Laukyte
CIRSFID University of Bologna, Italy

Alessandro Rocchi
CIRSFID University of Bologna, Italy

Giuseppe Contissa
CIRSFID University of Bologna, Italy

ABSTRACT

This chapter adds a further dimension to interdisciplinary research on Semantic Web and Web Services: ICT is undergoing a strong and constant regulatory phenomenon at national, European and international level and needs to be constantly monitored. This makes it possible to develop and use technologies in a law-abiding manner and to be aware of the legal position (rights and duties) of oneself and third parties. This chapter aims at offering an overview of the legal framework that supports people’s access to Web Services, according to the Semantic Web innovations. The basic aspects examined include: delegation, liability, privacy and e-identity. Finally, a specific section dedicated to e-business will give a dynamic approach to the analysis, so as to consent further developments on the other issues that Semantic Web implies.
INTRODUCTION

The Semantic Web is opening new opportunities for users to access the Web and enhancing the objectives that may be pursued in the Internet environment. The basic reason for this extension is a radical change of the Web’s nature. If we consider that until today the world wide Web, based on visual mark-up languages (HTML) has been designed for humans, then we should admit that the Semantic Web, based on machine-processable languages (RDF(S), DAML+OIL, and OWL), is going to see a relevant role of software agents. The Semantic Web for agents, however, is not meant as a replacement of our current Web but only as an extension of it. Along with this extension comes an enlargement in the spectrum of “people” populating the Web, in that agents and humans share a common space through semantic-dynamic data elaboration.

According to these considerations, the first step of a legal analysis of the Semantic Web should start from the relationship between human users and electronic agents to which goals and tasks are delegated and should be followed by the related liability aspects.

Afterwards, other crucial themes are privacy, data protection and e-identity, which analyse the consequences of a Web enabled to collect and process personal data with high usage opportunities and high risks at the same time.

A final survey on improved e-business’ services will confirm the opportunity of such investigation, highlighting further ideas for future studies.

SECTION 1. DELEGATION

1.1 Semantic Web: A New Concept of the Web Leads to a New Concept of Delegation

One of the most relevant innovations of the Semantic Web is represented by the possibility to achieve goals through an improved approach to software agents, instead of using mere tools unable of autonomous action.

Since ever, autonomy and pro-activity are basic qualities recognized upon software agents (Wooldridge, 1999): they summarize the capability of agents to inter-act in their environment and meet designed tasks, performing non-deterministic repertoires of actions.

Despite this potential, the implementation of such agents in the reality is still to come, owing to the necessity to preserve users from failures and mismatches resulting from the actions entrusted to the agent-delegate.

An additional concern is about the loss of autonomy for human users that may follow from the increasing autonomy of agents (Friedman, Nissenbaum, 1997): if agents had power to gain knowledge and self-organize it, according to the task delegated, users may lose control over the acts performed by agents.

However this is exactly the matter of fact which the Semantic Web is entitled to cope with: as authoritatively stated (Berners-Lee, Hendler & Lassila, 2001), the Semantic Web may enhance agents to be not merely tools designed for limited tasks, but tools able “to assist the evolution of human knowledge as a whole”; this is, in turn, due to the fact that Semantic Technologies may “enable machines to comprehend semantic documents and data, - even if - not human speech and writings”.

The knowledge improvement of software agents increases the goals those agents may accomplish and also the possible way to achieve them.