3 Legal Consequences of Agent Deployment

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Abstract. The following chapter discusses various legal aspects concerning the implementation and usage of (software) agents. The underlying question if and how agents can issue legally effective declarations of intention is paramount in order to enable any reasonable usage of agents and, therefore, evaluated in greater detail in Section 3.2. Furthermore, the issue of how to deal with potential errors in agents’ declarations (Section 3.3), the requirements of agents’ signatures (Section 3.4) as well as liability (Section 3.5) and consumer protection issues (Section 3.6) are discussed. Finally, data protection issues and their implications on the usage of agents (Section 3.7) are scrutinized.

3.1 Introduction

The objective of this chapter is the critical discussion and evaluation of the importance of legal aspects in connection with (the usage of) software agents. As Parts II and III illustrated, there is a wide scope of potential fields for the application of agents. In many of them, agents execute declarations for their principals, and those declarations are meant to be legally binding, otherwise the principal’s major benefit from using agents – mainly a reduction of transaction costs – could be neglected. This applies, e.g., for agents deployed in enterprise resource planning systems or on virtual market places as well as agents deployed in hospital scenarios as described by Paulussen et al. in Chapter III.1.

Apart from the legal bindingness and effectiveness of agents’ behavior, various other legal aspects are interesting in connection with agents. Concerning business transactions performed by agents, consumer protection and data protection issues as well as electronic signatures, amongst others, are of great relevance. And, what is more, one also has to consider the various legal consequences of agents’ misconduct: Contractual consequences on the one hand (i.e., the question whether a contract can be retracted) and liability issues on the other hand.

Legislation specifically concerning electronic agents is very rare so far. Moreover, existing legal instruments reach their limits when being applied
to agents. It is therefore yet not quite clear how to handle most of the above mentioned aspects. In the following chapter possible solutions for these problems in order to legally facilitate a more widespread usage of agents will be outlined.

This chapter mainly refers to the German legal system. References to the legal situation in other countries or to European legislation are made where appropriate.

3.2 Legally Effective Declarations by Agents

Many conceivable fields of application for electronic agents – such as enterprise resource planning, production control, electronic procurement, virtual market places – aim at a situation which is considered binding for both (or all) parties involved in a transaction. The legal instrument to reach such bindingness is the conclusion of a contract. Hence, the primarily interesting question concerning legal aspects of MAS is whether and how contracts can be concluded through agents. And, what is even more important: How can a contract be concluded in a way that is legally binding and enforceable? The question behind this is whether agents have to be regarded as independent persons in this connection, or whether they are things, i.e. mere tools for the conclusion of contracts.

3.2.1 Can Agents Execute Declarations of Intention on Their Own?

The notion of an agent as a person acting as an other person’s representative as well as the agent’s autonomy – both described by Lockemann in I.1 – suggest that an agent is some kind of personality. This, from a mere philosophical point of view, seems to be one of the most fascinating questions concerning artificial intelligence (see e.g. [Beie2003]). However, the question also has a juridical implication: As an independent personality, an agent could execute declarations and conclude contracts on its own and would have to be considered as its principal’s representative not only in a metaphoric sense, but also in a legal one.

The following scenario may help to identify and discuss the underlying legal problems:

A buyer charges his software agent with buying a certain good for him. The agent gathers information from various sellers’ websites, picks the most promising, negotiates with the seller (or his agent) about the price and further conditions in accordance to its principal’s preferences (which