

# Survival of the Legally Fittest

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**Abstract.** Technical, commercial and legal issues strongly influence system administrators. Management of (distributed) systems with connections to outside users, e.g. via webservices or (mobile) software agents, may involve contracts. The challenge is to find simple, elegant and effective solutions to (automated) contract management systems, preferably as part of overall (distributed) management systems.

## Introduction

The growth of the Internet, web-services and mobile software agents increases the demands on system administration - often implying more users from within and outside their own organisation. With the advent of the Internet, outside users usually do not have concluded specific agreements dealing the rights and obligations in their relation with the organisations with which they are connected: neither directly nor via a system administrator. However, contracts are very important for the operation and maintenance of (distributed) systems in a world of interconnected services and roaming agents. To relieve system administrators, automated contract management systems may be needed, which are most likely to be an integrated part of their overall management system. The creation of contract management systems is challenging both from a technical and a legal perspective.

From a technical perspective, some form of standardisation is necessary with respect to the following issues:

- contract content,
- protocols for contract closure, including negotiation, and
- protocols for contract verification.

In addition, preferably open-source software is needed for automation of:

- contract assessment,
- contract closing, including negotiation,
- contract verification,

- contract management (by an agent or user application, and by a system administrator),
- logging in a form suitable for legal purposes.

From a legal perspective the question whether an automated contract is binding is of key relevance. Additional issues for careful consideration include:

- provisions on guaranteed resources (e.g., bandwidth, memory, temporary-disk-space, number-of-messages-sent, etc.),
- provisions on guaranteed service (e.g., fault-tolerance, security, etc.),
- penalties regarding misbehaviour,
- notification when being expelled,
- provisions on lawfulness of data processing
- duration of the agreement,
- financial obligations, and
- liability disclaimers.

Whether contracts are negotiable, custom-made, or standard, is open to the organisations involved. To facilitate wide-spread adoption of contracts, commercial interests should be addressed, such as agents paying (in some form) for more facilities and quality of service.

The technical, legal, and commercial issues are strongly interrelated. Weaknesses in one field may easily propagate to other fields. Ambiguous standards lead to miscommunication and consequently to legal problems. Unclear contractual terms and provisions may hamper adequate rebuttal of misbehaving agents. The challenge is to find simple, elegant and effective solutions that take account of all relevant aspects.

In sum, contracts may become very important for the operation and maintenance of (distributed) systems. Contracts can be used to legally support an organisation's or a system administrators' possible actions and provide guarantees and legal security for users. Without properly addressing the legal implications, organisations and system administrators may become involved in lengthy and costly litigation.

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