

## **Abstract**

This work is concerned with electronically supported negotiations as an increasingly important part of the electronic support of business transactions in computer networks like the internet. Negotiations are – at least implicit – part of each such trade transactions. Nevertheless appropriate negotiation support systems are currently insufficient considered in the area of the electronic business. But there is manifold demand, like an exemplary investigation of the area of electronic procurement shows. Especially for process oriented negotiation support systems, the negotiation communication as well as its standardization in open distributed environments is in the focus of the analysis. Seen from the domain of electronic business the negotiation communication is closely connected to established and innovative communication standards in this area. These should be integrated with innovative speech act based negotiation communication. Speech act based negotiation communication can be formalised while still being highly flexible. In order to be applicable in the distributed open environment of the electronic business, the negotiation systems must be both autonomous and interoperable in heterogeneous environments. This can be reached by a combination of speech act based communication and the use of ontologies. A negotiation ontology is created, based on a formal model with relational algebra. Business ontologies are used for mediation between the different B2B standards and for integration with the negotiation ontology. To test the developed concepts and their realizability a prototype framework of a negotiation support system focused on communication was exemplary developed. Thereby agent technology and interoperability technologies like web services proved very beneficial.