

e-mediation in e-negotiation: Support philosophies and tools¹

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ABSTRACT

The intentions and philosophies of the developers are embodied in the functionality of the support systems they design. The roots of negotiation support systems (NSS), that support the social decision making process of negotiation, are above all decisions support and negotiation analysis. NSS therefore provide a variety of decision support functionalities to facilitate decision making and allow a more informed and rational choice among possible alternatives. Passive NSS provide functionalities like the elicitation of the user's preferences, the automatical calculation and presentation of utility values for received and proposed offers or the graphical representation of the development of the exchanged offers' utility. More active NSS intervene in the negotiation process for example by suggesting a post settlement phase to improve the efficiency of tentative agreements reached or they make use of software agent technologies for offer generation and to monitor the user's strategy.

Following the developers' philosophies, the objective of these functionalities of NSS is to help their users in making better decisions in negotiations so that negotiated outcomes become more efficient. However, efficiency of outcomes is just one dimension for evaluating negotiations. Other dimensions are agreement rate, outcome fairness or the relationship among the negotiators to mention only a few. Moreover, often these evaluation dimensions are conflicting as for example found in the fundamental negotiation dilemma: Aspects that improve the quality of agreements simultaneously reduce the propensity to reach agreements. Too much claiming of value may lead to impasse and therefore no value creation at all. The aim of the *e-Nego*-motion research project is to systematically study the influence of different NSS functionalities (from different background philosophies like decision, communication or document support and mediation) on different evaluation dimensions of negotiations. In a first step we analyze the effect of behavioral support in negotiations in the form of mediation.

Based on the system Negotiator Assistant, which was developed as an e-mediation expert tool for face-to-face negotiations, we developed *VienNA* as e-mediation systems for e-negotiation. The system provides functions usually performed by a mediator i.e. (i) the diagnosis of the progress of the negotiation towards or away from an agreement by posing the negotiators a set of questions to retrieve the necessary information as well as graphical representation of the thereby derived flexibility of parties, (ii) analysis of the

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causes of potential impasse situations and (iii) advice in form of recommendations to overcome impasses based on diagnosis and analysis. This advice makes an extensive knowledge base derived by a negotiation meta-analysis of existent literature, experiments and case studies available and easily applicable in e-negotiations. This behavioral support in form of e-mediation should increase flexibility and thereby the prospects of reaching an agreement and positive relationships between the negotiators.

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