Introduction to Negotiation Support Systems Minitrack

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Negotiation Support Systems (NSS) are designed to assist negotiators in reaching mutually satisfactory decisions by providing a means of communication and through analysis of available information. The purpose of this minitrack is to provide a forum for interchange of ideas, research results, development activities, and applications among academicians and practitioners in the NSS field. With HICSS-41, we celebrate the 20-th year of the NSS minitrack. Since 1991, this minitrack has gathered a respectable collection of papers in this young but promising area of research. Collectively, the selected papers in this minitrack continue to offer innovative and thought-provoking research in computer-supported mediation.

We continue to explore the role of negotiation support in the knowledge-based and technology-driven economy. As information technology continues to forcefully affect all aspects of human activities, its impacts on the decision making process is such that the cognitive process has been profoundly affected by the quality and quantity of information made available, the speed of computation and information exchange, and perhaps most innovatively, the increasing use of Web 2.0.

Eight papers were selected for this year. In his paper, Gaspoz suggests the use of ontologies and a problem structuring method in order to support the building of a shared understanding of the negotiation issue by all parties. He demonstrates that CATWOE as a Soft System Methodology can be used to assist negotiators in the domain of understanding, problem formulation, specification of issues and options, and information identification in the planning phase of the negotiation. Based on the assumption that different support approaches, manifested in the functionalities of systems, lead to different communication and concession patterns in negotiations, Mitterhofer et al. conducted an experimental study to indicate that outcomes differ in objective dimensions (number of agreements, joint utility and contract balance) as well as in subjective dimensions (negotiator satisfaction with process and outcome as well as negotiator perception of relationship-building).

Sanchez-Anguix et al. attempt to model power distance and individualism/collectivism in negotiation teams. Investigating the team dynamics – before and during the negotiation, their research suggests that teams from collectivistic and high power distance cultures appears to perform better than teams from individualistic and low power distance cultures. This is due to the paternalistic leadership and the importance of group’s goals in collectivistic cultures. Ziebart et al. seek to improve negotiation outcomes through designing automated systems capable of identifying the cultures of negotiators based on negotiation patterns. They apply statistical estimation and machine learning techniques to infer latent information about negotiators with the hope to propose solutions that are more culturally acceptable to negotiating parties.

Kersten, Pontrandolfo and Wu design a multi-attribute reverse auction with the ability to convert bidders’ utilities into alternatives. This is a sensible approach, as it does not require bidders to disclose their preferences. Cao and Kiang offer a negotiation agent architecture using a reasoning algorithm that controls and coordinates the reasoning between the negotiation belief, desire, and intention. The novelty of the model is its synthesized work in both agent architecture and automated negotiation theory.

Turoff, Subba and Bui tackle the complex issues of coordination, self-governance, and to some extent, institution akin to the design and use of large-scale information systems related to crises and crisis management. Turoff uses the literature as a basis for analyzing the systemic problems in the 2011 BP oil crisis. He documents the many problems of organizational behavior and communications. The severity of these problems seems to make it so difficult for large organizations, such as BP, to design and implement effective emergency management information systems (EMIS). Subba and Bui seek to conceptualize the evolution of ad-hoc and improvised self-coordination to institutionalized self-governance of non-binding virtual groups. Observing online discussion between cyberhate and anti-cyberhate movements, they discover that netizens are random subscribers of social networking groups who join forces to promulgate or fight against cyberhate. As adversarial external forces intensify, self-coordination needs to become more effective and the necessity of self-governance gradually leads to institutionalization. All together, the eight papers selected for this year, highlight the increasing needs for negotiation support in the information-intensive economy.