Communities in Electronic Commerce
Concepts, Models and Formal Aspects

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Communities are perceived to be a critical success factor of Electronic Commerce. Communities are characterized in terms of their common language, semantics, ontologies as well as their organization, the communication protocols, or processes. Examples of communities are:
- Topic-centered communities or communities of interest in electronic marketing, e.g., readers communities at Amazon.com, The Well, Dreamworks.
- Communities of value chains as found in virtual enterprises; e.g., single product manufacturing consortia, flexible consumer-driven organization of global supply chains, Open-EDI trading communities.
- Communities for setting standards, e.g., Linux, Corba, WWW consortium, Open Trading on the Internet (OTP), EDI/XML.

In fact, a community in electronic commerce demand for adequate concepts as well as adequate models. Those concepts and models have to be explored and then formalized for building platforms as well as for building artificial agents. This minitrack covers a variety of novel concepts, models and formalizations for communities. This minitrack deals with:
- Models to describe communities and their aspects relevant for Electronic Commerce: conceptual frameworks, organizational models, cognitive models, Belief, Desire and Intention (BDI) models, multi-agent systems, formalizations, as, e.g., logical models.
- Modeling concepts or notions for virtual communities as constituted by communication platforms, e.g., coordination, trust and fraud management, normative values.
- Modeling how new communities are brought about and maintained on the Internet and how different communication languages, protocols or platforms create different types of communities.
- Modeling the new communities in computational models; i.e., formal methods and formal models, implementations or general computer architectures.

The first session of this minitrack comprises three papers on strategic issues in communities in electronic commerce and the implementation of platforms. Quentin Jones gives an analysis of communities, the communication within communities, growth and limit of growth of those communities. D.J. Wu presents a general model that shows how complex tasks such as scheduling can be performed by a multi-agent community of artificial agents. Van-Tuan Do, Martin Halatchev and Detlef Neumann give a formalization of communities and a generic architecture for platforms of communities.

The second session is dedicated to trust in virtual communities. Communities in Electronic Commerce lack social relations grown over time and various means to signal trustworthiness. Hence, trust enabling is a very important issue in community building. Yao-Hua Tan and Walter Thoen present a formal model for analyzing different types of trust in electronic commerce, and they show how these trust types can be enabled. Alfarez Abdul-Rahman and Stephen Hailes present an analysis of trust based on reputation and they provide support for an implementation of this type of trust. Cristiano Castelfranchi and Rino Falcone present a cognitive model of trust which shows that trust is much more than just subjective probability.

The third session presents two papers with a formal analysis of communities and their platforms. Hans Weigand, Aldo de Moor and Willem-Jan van den Heuvel developed a formal model to analyze communication processes and workflows in communities. Ulrike Lechner and Beat Schmid present a general framework for the description of communities, and they show how notions of communities are to be reconstructed using the new media.

The paper of Van-Tuan Do, Martin Halatchev and Detlef Neumann “A Contextbased Approach to Support Virtual Enterprises” was nominated for the best paper award.