

Digital Documents in Socio-Technical Networks

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Socio-technical research draws from the rich theoretical and applied literature that addresses the influence of technology on society and the social shaping of technology. Network-centric approaches are particularly well suited for examining the social and technical dimensions of IT-enabled communication, such as those that occur via email, the Internet, intranets, electronic journals, and other collaborative communication technologies. A *social network* is a set of people, including organizations, connected by a set of social relationships. Information and communication technologies (ICTs) are increasingly integral to these networks. A *socio-technical network* includes the technologies that sustain human interaction, and the technologies that people construct and use in collaboration. In socio-technical networks, the social and the technical are essentially inseparable and co-constitutive.

The dynamics of these socio-technical networks are known to play a critical role in a number of diverse transformations, such as those that diffuse knowledge, invention and innovation from university scientists to industry entrepreneurs (and vice-versa.) Informational environments also constrain and enable collaborative interactions in such settings, and may attenuate or amplify the influence of ICTs.

Researching the use of digital documents is an interesting way to engage the issues that surround the technical, geographic, social and economic dynamics that influence communications and collaborations within and among geographically and organizationally dispersed communities-of-practice. A focus on the use of these potentially malleable technologies may reveal more clearly how networked communities and informational environments differentially shape ICTs.

This mini-track focuses attention on the use of networked information and communication technologies such as multimedia communication systems, remote sensing instruments, intranets and email, within and among communities-of-practice, such as research scientists, industrial researchers, consultants, and policy-setting groups. Our goal is to bring together researchers who are interested in the technical, geographic, social and economic dynamics that influence communications and collaborations among colleagues both within a community and across communities. We expect this research to raise

awareness and stimulate further interest in the ways in which informational environments constrain and enable collaborative interactions, and the ways in which ICTs may help to weaken or reinforce some barriers to collaboration among members of geographically dispersed communities-of-practice.

In our second year at HICSS, the papers included in this mini-track provide both theoretical and applied perspectives on such issues. In his paper, "The Multidimensional Systemic Representation of Actor Networks: Modeling Breast Cancer Treatment Decision-Making," Atkinson explores how the Soft Information Systems and Technologies Methodology, an applied modeling technique, and Actor Network Theory may be combined to address real world problems. A key contribution of this paper is its use of a modeling language to systematically describe multi-dimensional actor networks. Eschenfelder and Chase, in their paper, "Socio-Technical Networks of Large, Post-Implementation Web Information Systems: Tracing Effects and Influences," describe the results of a multi-site case study of ongoing web management. They argue that post implementation web information systems are complex, highly malleable, socially embedded phenomena, and that web management is similarly challenging, fluid and socially dependent. The authors' characterization of links between actors in the network in terms of resource and account taking dependencies is particularly interesting. In the paper, "Social Scientists: Managing Identity in Socio-Technical Networks," Lamb and Davidson investigate how scientists enact professional identity in socio-technical networks and consider the role that web-based forums play in self-presentation. In a study of oceanographers' use of ICTs in scientific research, they found that identity in socio-technical networks is most effectively enacted with technologies that allow for interaction and reciprocity among collaborators and peers, and that web-enabled self-presentations to general audiences are less valued among these scientists. Together, these three papers contribute depth and breadth to our understanding of socio-technical networks.