# Governing Sociotechnical Systems

Munindar P. Singh[1]

[1] North Carolina State University
`http://www.csc.ncsu.edu/faculty/mpsingh/`

**Abstract.** From social networks to business processes to collaborative science, a hallmark of modern applications of information technology is that they involve interactions between largely autonomous and heterogeneous participants. I define sociotechnical systems as those that involve both real-world "social" relationships between the participants and technological elements. Traditional computer science concentrates on the technological elements and has little to offer in the way of abstractions and techniques for sociotechnical systems, leaving practitioners with no option but to resort to ad hoc approaches.

I motivate governance as the proper notion of administration in such settings. Governance recognizes the inherent peer-to-peer nature of sociotechnical systems and their need to support flexible interactions among the participants. In this manner, it contrasts with the Twentieth Century notion of management of subordinates by superiors.

Governance offers a great opportunity for multiagent systems practice and research. I show how longstanding multiagent themes of organizations, institutions, and norms come together in governance, and also how we need to go beyond existing multiagent approaches in modeling and applying these themes.

I draw my examples from the Ocean Observatories Initiative, where this notion of governance is being applied.