Chapter 1
The Elements of Collective Decision Making

ABSTRACT

In this chapter, the concept of a reasoning community is introduced. The overarching motivation is to understand reasoning within groups in real-world settings so that technologies can be designed to better support the process. Four phases of the process of reasoning by a community are discerned: engagement of participants, individual reasoning, group coalescing, and, ultimately, group decision making. A reasoning community is contrasted with communities of practice and juxtaposed against concepts in related endeavours including computer supported collaborative work, decision science, and artificial intelligence.

INTRODUCTION

In practice, the reasoning that underpins all problem solving and decision-making is rarely performed by an individual in isolation from others. Reasoning inherently involves a communicative exchange of facts, beliefs, and assertions within participants in a community. The community can range in size from two to many thousands. However, despite the prevalence of reasoning communities, most philosophical schemes for representing reasoning and technological tools that support reasoning focus on processes within an individual. This makes the case for a formulation of communal reasoning strong. Impetus for this derives fundamentally from the revolution of information and communication technologies in recent decades that bring forth increasingly intelligent support systems and enable an unprecedented frenzy of dialogue amongst individuals. Impetus for a new approach also comes from the social and political arena where public expectations for just
and transparent reasoning at all levels of public and private life continue to increase.

The central notion of the new approach is a community we identify and label a reasoning community. A reasoning community is a group of individuals connected by their desire to apply reasoning to solve a problem or reach a decision. Members of a reasoning community may or may not belong to the same organization, hold the same values, aim for the same outcomes or share much else in common except the need to reason toward the resolution of a problem. Examples of reasoning communities include a workplace committee examining overtime policies, a court interpreting law, academic researchers investigating a phenomenon and a convention drafting a national constitution.

In times when we have almost every conceivable community and group, if not existing as a physically located group then as a virtual community, it is surprising not to find the term reasoning community. We have Communities of Commitment (Lave & Wenger, 1991), which are formed to achieve specific external objectives and are accountable to the larger organization and that organization’s stake holders. The staff, clients, and suppliers of a firm comprise a community bound together by the firm’s objectives. Members of these communities share a commitment to the organization’s objectives. Communities of Practice are formed around individuals’ needs to improve competencies or families of competencies and are accountable to the individuals that comprise the community of practice (Lave & Wenger, 1991). They tend to transcend normal organizational boundaries. Associations of industry bodies that aim to self-regulate an industry exemplify Communities of Practice. Members of these communities share standards of practice. Teams are smaller communities of people who share a common purpose. Team members have complementary skills and performance goals for which they hold themselves mutually accountable.

The term reasoning community is broader and more encompassing than communities of commitment, practice, or purpose. A reasoning community is a group of participants that reason individually, communicate with each other, and attempt to coalesce their reasoning in order to reason collectively to perform an action or solve a problem.

The four key processes inherent in a reasoning community as formulated here include (see Figure 1):

- **Engagement:** This phase involves the engagement of participants, defining a protocol for communication and another protocol for decision-making. Participants in a reasoning community are the people that agree on the issue and directly engage in reasoning to solve the problem or perform an action. A protocol for communication is the set of rules that govern exchanges between participants. A decision protocol specifies how the community will ultimately reach a decision; by voting, consensus or other mechanisms.

- **Individual reasoning:** Each participant ascertains facts, makes inferences from facts to draw conclusions, and, by so doing, contributes reasons to a pool of reasons for the community. A key part of individual reasoning involves an individual’s coalescing of reasoning. This is the process of juxtaposing background knowledge with reasons advanced by other participants in order to understand the issue and position his or her claims amidst the others. A participant’s coalescing of reasoning involves making sense of reasons in order to assert their own claims or to understand the claims of others.

- **Group coalescing of reasoning:** The coalescing of reasoning for the entire community involves organizing the terms, concepts and reasoning advanced by par-