



Chapter XVI

A Tool for Assisting Group Decision-Making for Consensus Outcomes in Organizations

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Abstract

This chapter introduces an approach, ConSULT (Consensus based on a Shared Understanding of a Leading Topic), to enhance group decision-making processes within organizations. ConSULT provides a computer-mediated framework to allow argumentation, collection and evaluation of discussion and group decision-making. This approach allows for the articulation of all reasoning for and against propositions in a deliberative process that leads to cooperative decision-making. The chapter argues that this approach can enhance group decision-making and can be used in conjunction with any computational intelligence assistance to further enhance its outcome. The approach is particularly applicable in an asynchronous and anonymous environment.

Introduction

Current computer-mediated communication (CMC) systems allow for informal interaction of two or more people with limited computational intelligence (CI) support. Alternatively, computational intelligence systems facilitate only elementary collaboration. The objective of this chapter is to describe the development of a CMC system that integrates computational techniques into normal social interactions so that participants are an integral part of the problem-solving process and automation of an outcome is not merely the result of inferences by an automated system.

There is no suggestion that the use of automated reasoning in decision-making is not appropriate, but rather the choice of what to automate should take into account human capabilities as well as limitations. We agree with Woods (1986) that desired systems are those where humans have clear authority, can intervene flexibly, and are engaged actively in informal decision-making. This is particularly the case with decisions that involve consensus among people within an organisational context.

Consensus decision-making in organisations is regularly conducted through discussion and debate, yet underlying assumptions and reasoning invested, is often lost, implicit, or not expressed clearly. Often problem definition, implicit assumptions, and varying approaches as to the determination of a resolution, are some of the causes of conflict in decision-making. This could strongly influence both the decision-making process and its outcome.

This chapter describes a framework called ConSULT. The framework derives from argumentation theories and is used to assist groups within organizations to reach consensus decisions. Further, the framework provides a natural structure for the meaningful inclusion of computational intelligence techniques that support participants in formulating their views and enables observers such as managers to track the discussion to discover reasoning trends.

Reaching a *consensus* decision based on *shared understanding* in ConSULT occurs through the articulation of all reasoning for and against all propositions in a deliberative argumentation process that allows free participation and contribution in a *cooperative decision-making environment*. ConSULT allows the level of consensus to be specified and uses a Borda count calculation of votes to determine a consensus outcome.

Group meetings are an important aspect of decision-making in any organization. Among the many reasons for this are those listed by Drucker (1989) as the sharing of information by participants, and learning from the knowledge, experience and expertise of others in the group. Turoff and Hiltz (1996) also found that decision-making is enhanced if the views of more than one individual are considered. Ocker, Hiltz, Turoff, and Fjermestad (1995) found that the contribution of knowledge of the various group members can have a positive impact on outcome decisions.

Siegel, Dubrovsky, Kiesler, and McGuire (1986) suggest that increased participation in discussion and arguments present different viewpoints, which lead to greater modification in the opinions of the individuals. In an environment in which free participation is encouraged and all contributions are valued, the interaction of open and creative ideas could trigger new thoughts and lead to better decisions. The term “*consensus*” has been

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