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ABSTRACT

On many groups, like those conducting IS/IT requirements negotiations or those conducting risk and control self-assessments, decisions cannot be made by decree because team members are co-responsible peers. In such situations, teams must build consensus to gain commitment from all involved. Although consensus has been widely studied, no causal model of the cognitive mechanisms that give rise to consensus has yet emerged. Such a model might be useful for evaluating, for developing effective and efficient strategies for building consensus in a group and for making sense of the models and results in the current consensus literature. In this paper we derive the logic of Consensus Building Theory (CBT). We then illustrate how the mechanisms of the causal theory could be incorporated into a process model of consensus building. We derive a set of diagnostics for discovering the causes of conflict in a group, and we propose strategies based on CBT for attempting resolution of conflicts.

Keywords

Consensus, consensus building, facilitation, collaboration, collaboration engineering, group support systems.

INTRODUCTION

Many organizations now face problems that are sufficiently complex that that no one person has all the expertise, inspiration, or resources to solve the problem alone. Collaboration is required when goals cannot be achieved through individual effort (Schrage, 1990). Therefore, group work is on the rise in many organizations. For example, a study of managers in England revealed that more than half of their employees now work in groups that are responsible to deliver a product or service (Cully, Woodland, O'reilly and Dix, 1999) However, collaboration is not an unmixed blessing. It introduces challenges of its own (Nunamaker, Briggs, Mittleman, Vogel and Balthazard, 1997).

In many situations, collaborators are co-responsible for results or choices. Such situations can be found in many domains. For example, in the IS/IT domain, requirements negotiations are often conducted by mix of stakeholders, including customers, programmers, managers, end-users, marketing and sales people and so on (Grünbacher and Briggs, 2001). Likewise, mixed teams conduct assessments of the probability and impact of operational risks (Vreede and Briggs, 2005). In such situations, decisions and choices cannot be made by fiat, because no single person has authority over the contents of the outcome. These teams face a key challenge: the need to build consensus, to gain commitment of all involved.

The choices made on a group level impact not only goal attainment on a group level, but also the degree to which individual group members can achieve their own goals. Many choices a group must make require discussion and argumentation, which take time and can distract the group members from more important task. Thus, consensus building is a success-critical part of collaboration.

Although consensus is an important objective in a variety of fields, the connotations of the label can vary widely, from a match of DNA sequences (Cui, Wang, Stormo and Calvo, 1995), to the result of an expert meeting (Linstone and Turoff, 1975), to Lockean consensus as an indicator of truth (Churchman, 1971). In group processes and collaboration, consensus and consensus building relate to agreement or commitment with respect to goals or outcomes. Although many authors

propose processes for consensus building (Innes, 2004; Moscovici and Doise, 1994; Scott and Flanigan's, 1996; Williams, 1993), they describe do not explain the cognitive mechanisms that give rise to consensus. Therefore, it will be difficult to explain why a given method works, and whether it is as effective as it could be.

In this paper, we present a causal model of the cognitive mechanisms that give rise to consensus. Such a model might be useful for evaluating and developing effective and efficient strategies for building consensus in a group. We start by proposing a definition of consensus. We then summarize previous theories of consensus, and examine their relative merits. We subsequently introduce the Consensus Building Theory (CBT), a causal model that describes the cognitive mechanisms that give rise to consensus. Next, we present a general process model for consensus building, and then propose diagnostics for discovering the causes of conflict and strategies for resolving conflicts in groups. Finally, we discuss the implications of the model for practitioners and researchers, and propose further research.

PREVIOUS RESEARCH ON CONSENSUS BUILDING IN GROUPS

Many researchers have described methods for consensus building and measurements to diagnose whether consensus is achieved. In this section, we summarize some of the key research.

Many authors propose prescriptive process models for consensus that specify some set of steps a team can execute under some set of conditions to achieve consensus. Such models also frequently include normative requirements, for example, that the process be fair, and open, that all perspectives be taken into account, or that all participants have the freedom to disagree (Butler and Rothstein, 2004, Sandelin, 2005). Process models often involve facilitation techniques such as brainstorming, concept evaluation and the consideration of multiple perspectives (Avery, Streibel and Weiss, 1999; Butler and Rothstein, 2004; Moscovici and Doise, 1994; Sandelin, 2005). The Delphi method is a well-known process model for achieving consensus of opinion among a collection of experts (Linstone and Turoff, 1975). Prescriptive process models of consensus are useful as recipes for achieving consensus under certain circumstances.

Measurement models of consensus typically suggest criteria for judging whether consensus exists. A variety of indicators and metrics have been proposed for consensus. A frequently used indicator is the standard deviation of voting results (Fjermestad and Hiltz, 1999; Linstone and Turoff, 1975; Shepherd and Martz, 2004) or Kendall's coefficient of voting results (Grünbacher, Egyed and Medvidovic, 2001; Martz and Shepherd, 2004). Other indicators include compromise, consensus change, post- and pre-meeting consensus, residual disagreement and polarization (Fjermestad and Hiltz, 1999). Measurement models of consensus are useful for determining the degree to which consensus exists, and for discovering the existence of conflict.

Separately or in combination, process and measurement models of consensus provide valuable means for researchers and practitioners to investigate or achieve consensus building in groups. However, both process and measurement models have one critical shortcoming: they do not provide insights about the causes of conflict. They do not explain what mechanisms give rise to consensus or prevent consensus from being achieved. Without such understanding, it is difficult to judge whether a prescriptive consensus building technique is optimal, nor to develop other, perhaps better techniques.

In this paper we propose a causal model of consensus that could provide a basis for judging the construct validity of consensus metrics, for explaining why certain techniques lead to consensus, while others do not, for choosing among techniques, for improving existing techniques, and for designing new techniques for circumstances not covered by existing methods. The next section of the paper derives a definition for consensus. The following section then presents the Consensus Building Theory (CBT).

A DEFINITION OF CONSENSUS

The consensus phenomenon has been studied from a variety of perspectives. The label has been used to identify a variety of constructs in a variety of disciplines. Even within the scope of collaboration and decision making, no single rigorous definition of consensus yet prevails. A rigorous definition of a phenomenon-of-interest provides a basis for assessing the merits of a theory and for evaluating the construct validity of outcome measures we first need to define consensus as our phenomenon of interest. This section presents the range of meanings applied to the label in the existing literature, and clarifies the specific meaning of the label in this paper.

The Latin word, consensus, has several meanings: a) agreement or accord; b) harmonization; c) unanimity / united / to determine in common; and d) conspiracy (Lewis and Short, 2005; Whitaker, 2005). Neither unanimity, harmony, nor conspiracy are relevant to the context of this paper, but agreement, accord, and determining-in-common are related to the concepts in this paper. However, these terms also have multiple meanings. For example, the word, agreement, could mean, "identical mental models" or it could mean, "mutually acceptable commitments," two very different concepts. Likewise, the

word, accord, has many meanings, among them, "harmonious co-existence" and "to cause to conform". Thus, these terms are helpful, but not sufficient for a rigorous definition of consensus.

In jurisprudence, consensus is defined as an agreement resulting in concessions subscribed unanimously by all parties, with the assumption that all parties understand the commitments they made (Hutchinson, 2005). In this context, some authors argue for a definition of consensus that also prescribe that the commitment be achieved through a fair process, with trust and freedom (Habermas, 1981; Moscovici and Doise, 1994). In the context of collaboration, however, and for the purposes of explanation (as opposed to prescription) we find it useful to differentiate between consensus, decision, and agreement as three related, yet distinct constructs.

We define *Consensus* as the degree to which stakeholders are willing to commit to a proposal. A proposal is a course of action for attaining the group's declared goal. However, agreement on a group goal does not connote consensus with respect to attaining that goal. We define *Decision* as the act or the point in time when stakeholders commit to a proposal. The term, *Agreement*, is the state following a decision in which mutually acceptable commitments exist, (e.g. "we agree that payment will be made in full upon timely delivery of products of acceptable quality).

We define *Proposal* as a possible future choice or course of action suggested as a means to advance toward the group goal. The concept, *Commitment* connotes more than just verbal assent; it connotes assuming an obligation to expend time, effort, and resources to fulfilling the terms of the proposal.

There are several key implications of this definition of consensus. First, consensus only has meaning with respect to a specific group of people. Second, consensus only exists with respect to a particular proposal. Consensus does not exist and cannot be measured without reference to specific proposal. Finally, this definition of consensus does not require unanimity of purpose, desire, meaning, or satisfaction among stakeholders. It does not require that stakeholders be free of objections to a proposal. It only requires that the stakeholders be willing to commit to a proposal. Note that "willingness to commit" is not the same as agreement, which is a state brought into existence when all parties commit to a proposal. Note also that "commitment" is a Boolean, while "willingness to commit" is a dimension, people can be more or less "willing to commit."

THE LOGIC OF CONSENSUS BUILDING THEORY (CBT)

This section presents the logic of Consensus Building Theory (CBT), a causal model of the mechanisms that give rise to an individual stakeholder's willingness to commit to a proposal under consideration by a group. For the sake of brevity and clarity, we present the model as a set of assumptions, labeled as axioms, and a set of propositions (functional statements of cause-and-effect that can be logically derived from the axioms.) This style of presentation may make the model easier to understand and to critique.

CBT starts with the assumption that:

> **Axiom 1:** Individuals hold multiple, sometimes mutually exclusive goals (Locke and Latham, 1990; Pinker, 1997).

A *goal* is an outcome or state that an individual desires to achieve (Locke and Latham, 1990). Individuals hold a wide variety of goals, ranging from drawing breath to career success. Some goals are fundamental, like attaining sufficient food or shelter. Other goals, like meeting a sales quota, are only instrumental to the attainment of more fundamental goals. Thus, individuals hold multiple chains of instrumental goals leading to the attainment of fundamental goals.

Because human attention resources are limited, individuals may not be able to attend to all their goals simultaneously. Goals that are currently part of an individual's thinking process are said to be *salient.*

CBT further assumes that:

> **Axiom 2:** All human actions are purposeful toward individual goal attainment.

Thus, individuals who become part of a group by agreeing to make effort toward an agreed goal, do so because they believe that, in some way, the attainment of the group goal will be instrumental to the attainment of certain salient individual goals. CBT also assumes that:

> **Axiom 3:** There is a subconscious mechanism of the mind that automatically expects a certain degree of utility from attaining a goal (Locke, 1976; Locke and Latham, 1990; Mobley and Locke, 1970).
>
> **Axiom 4:** There is a subconscious mechanism of the mind that automatically assesses the likelihood that a goal will be attained (Briggs, Qureshi and Reinig, 2004).

> **Axiom 5:** There is a mechanism of the mind that synthesizes an expected yield for a goal that is a multiplicative function of its expected utility and assessed likelihood (Briggs et al., 2004).

Thus, if Axioms 3, 4, and 5 hold, then an individual will have a hierarchy of goals ordered by yield. Some goals may have higher utility and likelihood than others and so have higher yield. Some goals may have low likelihood, but high utility, or vice versa. These might have modest yield. Some goals may have lower utility and lower likelihood than others. These would have low yield.

Term	Definition
Agreement	The state following a decision in which mutually acceptable commitments exist
Commitment	To assume an obligation to expend time, effort, and resources to fulfilling the terms of a proposal
Conflict	A state where one or more stakeholder are unwilling to commit to a proposal to which other stakeholders are willing to commit.
Consensus	The extent to which stakeholders are willing to commit to a proposal
Decision	The point in time at which stakeholders commit to a proposal (Boolean)
Goal	Desired state or outcome
Perceived Instrumentality	The degree to which a stakeholder judges that the outcomes of implementing a proposal would increase the likelihood that salient individual goals will be attained, or will increase the utility the individual would obtain when salient individual goals are achieved
Proposal	A possible future choice or course-of-action suggested as a means to advance toward the group goal
Salient Goal	A goal that is currently in or readily accessible to working memory
Perceived Utility	The value or benefit a stakeholder expects to derive from attaining an individual goal (dimension)
Perceived Likelihood	The chance of individual goal advancement a stakeholder expects (dimension)
Willingness to commit	The degree to which a stakeholder is inclined or disposed to be obligated to expend time, effort, and/or resources to fulfill the terms of a proposal. (dimension)
Yield	A multiplicative function of the utility a stakeholder expects from attaining a goal, and the likelihood a stakeholder assesses that the goal may be attained (dimension)

Table 1. Definitions of Key Terms

It is often the case that a group goal could be attained by following any number of proposals. However, it is also often the case that proposals which could attain the group goal would, nonetheless, preclude group members from attaining individual goals, reducing the net yield of their salient set of goals. Other proposals might both attain the group goal and advance the salient individual goals of the group members, increasing the net yield of their salient set of goals.

If, as Axiom 2 posits, all human action is purposeful toward individual goal attainment, then it must be that:

> **Proposition 1:** An individual's willingness to commit to a proposal is a positive function of perceived instrumentality of the proposal.

We define *willingness-to-commit* as the degree to which a stakeholder is inclined or disposed to be obligated to expend time, effort, and/or resources to fulfill the terms of a proposal. We define the *Perceived Instrumentality* of a proposal as the degree to which individual judges that the outcomes of implementing the proposal would increase the likelihood that salient individual goals will be attained, or will increase the utility the individual will obtain when salient individual goals are achieved. Note that the yield, utility and likelihood are properties of the goal, while the instrumentality is a property of the proposal. Table 1 summarizes the definitions of these and other key terms used in this paper.

When judging the potential outcomes of a proposal, an individual might weigh many factors. For example, the level of time, effort, and resources that must be committed to realize the proposal and the degree to which the individual trusts that other stakeholders intend to and will be capable of expending the time, effort, and resources to which the proposal would obligate

them. However, CBT does not assume that stakeholders go through a rational, conscious analysis of all relevant factors. Rather, it assumes that the judgment emerges from subconscious mechanisms, which may or may not be influenced by rational analysis.

If the logic of Proposition 1 holds, then the more-instrumental a stakeholder perceives a proposal to be, the more willing the stakeholder will be to commit to the proposal. Conversely, the less instrumental a stakeholder perceives a proposal to be, the less willing the stakeholder will be to commit to the proposal. Perceived instrumentality can assume either a positive or a negative valence, depending on whether an individual judges that the outcomes of a proposal will advance or thwart salient individual goals. Likewise, willingness-to-commit can assume either a positive or negative valence – a user may embrace a proposal or may actively fight to defeat it.

Formula 1 summarizes Proposition 1 as an algebraic expression.

Formula 1: $W_P = f(I_P)$

Where:

P = a specific proposal

W = an individual's willingness to commit to proposal P

I = an individual's judgment that proposal P is instrumental to salient individual goals

CBT posits that an individual processes available information using current mental models to judge the degree to which the outcomes of following a proposed course of action will change the yield for salient goals. Thus, a person may be less willing to commit to a course of action that reduces the likelihood and/or utility of attaining salient goals. A person may be somewhat willing to commit to courses of action that do not change the likelihood or utility of salient goals. A person may be more willing to commit to a course of action that increases the likelihood and/or utility of a set of salient goals.

Thus far, CBT does not constitute a theory of consensus, which is a group level construct. Rather, it is a theory of willingness-to-commit, an individual level construct that is fundamental to consensus. Additional reasoning is therefore required to link the individual construct to the group construct, and so complete a theory of consensus.

CBT posits that perceptions of instrumentality arise from two judgments: a) a judgment of the likely outcomes of implementing a proposal, hereafter called the *proposal-outcome judgment;* and b) a judgment of the degree to which the outcomes will be instrumental to attaining salient individual goals, hereafter called the *outcome-instrumentality judgment.* Differences among group members in either of these judgments could give rise to differences in willingness-to-commit. Differences in willingness to commit constitute a lack of consensus in the group. Thus,

> **Proposition 2:** Consensus is an inverse function of the magnitude of differences among stakeholders in their willingness to commit to a proposal.

Thus, the greater the differences among group members' willingness to commit to a proposal, the lower will be the group's consensus. The smaller the differences among group members' willingness to commit, the greater will be consensus. In this way, the individual-level construct is logically linked to the group level construct.

If consensus is an inverse function of differences-of-willingness-to-commit, then consensus building must be a process of discovering and diagnosing these differences, and of adopting strategies for overcoming them, as presented in the next section.

A PROCESS MODEL OF CONSENSUS BUILDING

Although there are many means by which a group could build consensus with respect to a proposal, there are two essential phases of any such effort. First, a proposal must be established, and second, a willingness on the part of individual group members to commit to the proposal must be established. Figure 1 shows a process model that illustrates how a group might proceed through these two phases. This model illustrates how the theory can be applied to consensus building during a group collaboration session. The process model is something of a simplification in that it suggests an orderly step-by-step approach to consensus building. In reality, group members may do many of these things in parallel, or in a chaotic order. Nonetheless, the model helps clarify at a high level the activities that are necessary and sufficient to building consensus.

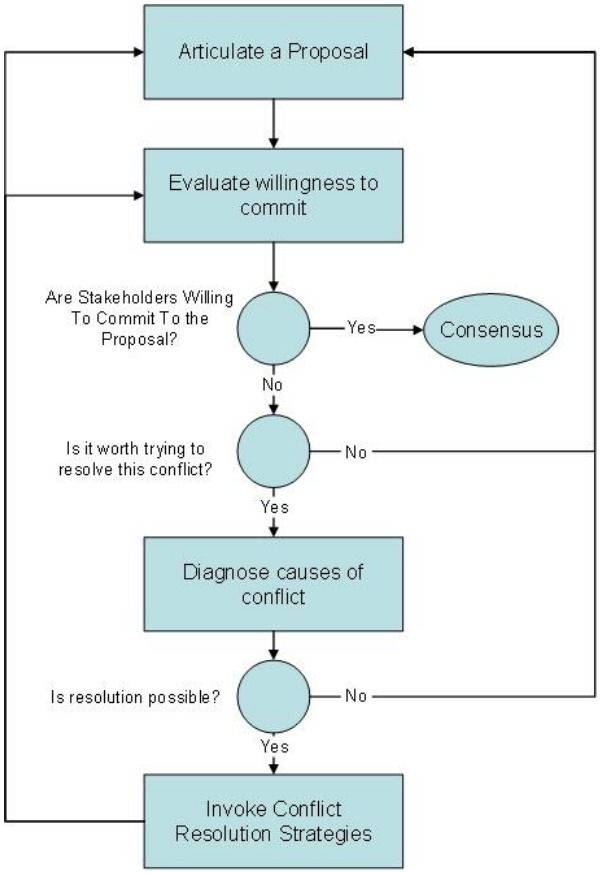

Figure 1. A process model of consensus building. A rectangle indicates an activity, a circle a decision.

The general process model of consensus proceeds as follows: A group member or the group's facilitator makes a proposal. By formal or informal means, the group evaluates to what extent all members of the group are willing to commit to the proposal. If so, consensus has been achieved. If some members of the group are not willing to commit to the proposal, then group members may decide – tacitly or explicitly – whether it is worth trying to resolve the conflict over the proposal under consideration. If not, then group members may move on to other proposals.

If group members decide to try to resolve the conflict, they must first diagnose its causes. Having discovered the causes, they decide – tacitly or explicitly, whether resolution is possible under the constraints of their time, resources, and goals. If not, they may move on to other proposals. If they decide that a resolution may be possible, they invoke conflict resolution strategies, which may include, among other things, offering new proposals. Note that changing the proposal is similar to offering a new proposal. The iterations in the process therefore can be very frequent. Periodically, they evaluate willingness to commit again, and so enter a cycle that will lead either to consensus or impasse. At any point in the process, if the group decides to stop pursuing consensus, they exit the process.

The causal mechanisms posited by CBT not only explain willingness-to-commit to a proposal, they also suggest inferences that could be drawn for diagnosing the causes of conflict, and suggest strategies for resolving conflict. The next section of the paper proposes a diagnostic for conflict identification and analysis, and the following section proposes strategies based on CBT for resolving conflicts, and so building consensus.

A DIAGNOSTIC FOR CONFLICT

This section proposes a diagnostic for conflict comprised of the following five key differences among stakeholders that, in some combinations, can give rise to differences in the proposal-outcome judgment or the outcome-instrumentality judgment:

1. **Differences of meaning**. We define *meaning* as the concepts that people associate with words or symbols. Conflict may arise because people associate different concepts with the same words or symbols, or because people are using

different words or symbols for the same concepts in the proposal. Thus, the same proposal may take on different meanings for different stakeholders. The consequence of this could be differences in proposal-outcome judgments, which could give rise to conflict.

2. **Differences of mental models**. Individuals who share an understanding of the meaning of a proposal may nonetheless work with different mental models, which could give rise to differences in either proposal-outcome judgments or outcome-instrumentality judgments, or both, which could give rise to conflict. For example, government leaders might agree on a goal of enhancing economic prosperity. However, some might hold models that lead them to think prosperity could be achieved by raising taxes, while others might hold models that lead them to think prosperity could be achieved by lowering taxes.
3. **Conflicting information.** Individuals who share an understanding of a proposal, and who have similar mental models, may, nonetheless, have asymmetries in the information they hold. This could lead to differences in either proposal-outcome judgments or outcome-instrumentality judgments, which could give rise to conflicts. It is interesting to note that asymmetries of information could lead to agreement if people had different mental models, and if the processing of different information through different models led to common proposal-outcome judgments. This suggests that difference-of-model may moderate the relationship between difference-of-information and conflict.
4. **Mutually exclusive individual goals**. People who share an understanding of a proposal, and who have similar mental models, and who have similar information, and so consequently have similar proposal-outcome judgments may, nonetheless, hold incompatible individual goals. This could give rise to differences in their outcome-instrumentality judgments, which could cause conflict. It is important to note that it is not a difference of goals that causes the conflict, but the mutual exclusivity of goals. For example, an automobile designer who desires recognition and acclaim may agree readily with a machinist who desires financial security on a proposal to build a car, even though they have very different individual goals.
5. **Differences of taste**. People who have similar proposal-outcome judgments may, nonetheless, have differences of taste that lead to differences in outcome-instrumentality judgments. Some people may simply prefer one outcome over another. For example, one person may simply like bright, bold colors for product packaging, while another likes muted earth tones.

Table 2 illustrates which of the five diagnostic differences could give rise to which of the judgments that drive perceptions of instrumentality.

Diagnostic	Proposal-Outcome Judgment	Outcome-Instrumentality Judgment
Differences of Meaning	X	
Difference of Mental Model	X	X
Conflicting Information	X	X
Mutually Exclusive Individual Goals		X
Differences of Taste		X

Table 2. The Relationship among Diagnostic Differences and Judgments. An X in a cell indicates that a diagnostic difference could give rise to a judgment difference

When group members encounter conflict, they can use this diagnostic to explore the root causes of their differences. This, in turn, can provide input for a set of strategies for reducing conflict and building consensus. The next section of the paper draws on the logic of CBT to derive and discuss these strategies.

CONSENSUS-BUILDING STRATEGIES

The same mechanisms posited by CBT that give rise to consensus can be invoked to overcome diagnosed conflicts and so bring about consensus. In this section we discuss strategies to each of the conflicts types that were introduced above.

Resolving Differences of Meaning

The logic of CBT suggests strategies that may be useful for overcoming diagnosed conflicts to bring about consensus. First, and perhaps simplest, when it is discovered that stakeholders do not share an understanding of the meaning of a proposal, they can discuss and define which terms will signify which concepts in the context of their discussion.

Resolving Mutually Exclusive Individual Goals

When stakeholders discover that their salient goals are mutually exclusive, CBT suggests several possible strategies for resolution:

- Change a stakeholder's assessments of the likelihood of attaining one or more of salient goals.
- Change a stakeholder's expectations of utility for attaining one or more salient goals
- Change a stakeholder's assessment of the timeframe in which goals may be attained.
- Explore a stakeholder's chains of instrumentality to see whether a different path can be found to the more-fundamental goals that drive the current set of salient goals.
- Change a stakeholder's set of salient goals, perhaps by changing the salience of various goals within the set, or perhaps by persuading a stakeholder to attend to a different, perhaps higher-yield set of goals that could be attained via the proposal in question

Resolving Differences of Mental Models

Efforts toward goal attainment imply some principles of cause-and-effect, and models of cause-and-effect are founded on assumptions. When stakeholders discover that they have differing models of how to bring about a desired state or outcome, they can:

- Examine, compare, and challenge the assumptions that underlie each stakeholder's models. Sometimes this may be sufficient to resolve the conflict.
- Examine the mechanisms in each stakeholder's model.
- Seek a different proposal that would yield mutually acceptable outcomes regardless of starting assumptions.
- Persuade stakeholders to change their focus to goals that depend on different mechanism than those currently under consideration

Resolving Conflicts of Information

When stakeholders discover that they hold different information about topics relevant to judgments of instrumentality, they can exchange and compare their individual information and weigh the credibility of this information. It is especially important to take the credibility of information into account as individual group members may (un)willingly contribute incomplete, incorrect or even deceitful (Buller and Burgoon, 1996) information to the group.

Resolving Differences of Taste

When stakeholders discover differences of taste, they may compromise. One stakeholder may give way to the preferences of others, or the group may seek alternative proposals that accommodate the tastes of all stakeholders.

Each of the strategies suggests approaches a group could take to resolving conflicts, but none is a guarantee for success. In the end, after exploring the roots of their conflict and attempting to resolve them, they may end without resolution.

DISCUSSION AND CONCLUSIONS

This paper proposes a causal model of consensus. It intends to provide insight into the meaning of consensus in the context of collaboration, and into the causal mechanisms influencing willingness to commit in individuals and consensus formation in group. Consensus Building Theory (CBT) suggests avenues for creating new strategies for consensus building and conflict resolution. The diagnostic derived from CBT gives facilitators a potentially useful tool to identify the underlying causes of a conflict in a group and to differentiate between conflicts in the assessment of the relation between proposal and outcomes, a focus on content, and between the outcomes and their instrumentality towards group and individual goals. Separating these discussions may provide a useful starting point to chose a strategy that helps the group to address their conflict effectively.

The logic of CBT is consistent with statistical measures of consensus like variance, standard deviation, and coefficients of concordance, especially when the willingness to commit to a proposal is assessed through a ballot. However, standard deviations and coefficients of concordance alone may not be sufficient measures of consensus. The range of willingness to

commit would also have to be taken into account. If a group had a high standard deviation, but the range of the responses was from slightly positive to very positive, then the group would have consensus, but varying levels of commitment. Conversely, if responses ranges from slightly negative to very negative, the group would have consensus that the proposal should not go forward. A group with a small standard deviation could, nonetheless, be in conflict if their responses ranged from slightly negative to slightly positive. Thus, it would be useful for consensus researchers to devise a numerical measure that would reveal both the presence-or-absence of conflict, and that would also show the magnitude of differences among stakeholders

The conflict diagnostics described in this paper could be useful to groups for discovering the causes of conflict. Likewise the strategies for resolving conflict might be useful for resolving conflict. Facilitators and collaboration engineers might find the diagnostics and strategies useful for devising consensus-building techniques, and for selecting among consensus-building techniques to suit a given situation.

CBT proposes the cognitive mechanisms that give rise to an individual's willingness to commit to a proposal, and links willingness-to-commit at the individual level to the emergence of consensus at the group level. One of CBT's limitations is that does not yet specifically address issues of mandate, perception of consensus and the consensus gap (Martz and Shepherd, 2004), conflict avoiding behavior, and other means by which a group might arrive at a decision. Nor does it explicitly address issues of unfairness, deception, or coercion which may also influence group decisions. This is one area for future research. Other areas for future research include testing CBT's logic through experimental and field studies, and developing and evaluating consensus building methods and techniques. In order to do this, measurements for the constructs of the theory should be determined. Finally, CBT could be used as a theoretical lens through which to compare and analyze and explain existing approaches to consensus building.

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