Decision-making in Organizations: Approaches to More Effective Analysis

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Abstract. The use of a collaborative decision-making model has been shown to produce more creative solutions and to increase the size of the stakeholder pool, as well as increase the commitment of stakeholders to final decisions. The role and importance of decision-making is often deemphasized or automated in the environment provided by BPMS solutions. Our proposal offers a roadmap for improving the quality of decision-making in the enterprise. It acknowledges the complexity of the decision-making process, and seeks to simplify and support the process, without usurping the decision-making role from stakeholders. By contrast, it elevates the importance and inclusion of stakeholders as a way to improve the resultant decision.

1 Introduction

The first step in business planning relies upon quality decision-making. It is in the decision process that enterprise long-term goals and objectives get implemented in the plans of the here and now. A danger that exists in enterprises that have a heavy reliance on BPMS, is that decision-making is deemphasized in favor of emphasis on the Business Process Model – its understanding and use. One need only think of the number of times your desktop software offered you “suggestions” that were blindly accepted without critically considering the consequences.

Smith and Fingar define Business Process Management (BPM) as “a synthesis of process representation and collaboration technologies that removes the obstacles blocking the execution of management intentions. Therefore, BPM is the convergence of management theory…with modern technologies” [18]. The portion of this definition that is often overlooked in the rush toward technology is the discernment of ‘management intentions,’ or decision-making.

Our proposal offers a roadmap for improving the quality of decision-making in the enterprise. It acknowledges the complexity of the decision-making process, and
seeks to simplify the process, without usurping the decision-making role from stakeholders. By contrast, it elevates the importance and inclusion of stakeholders as a way to improve the resultant decision.

An additional outcome of our discussion will be to suggest research strategies to enhance our understanding of groups that make decisions in their day-to-day work and to suggest better ways to enhance adoption, use, and, inherently, organizational outcomes with the use of technology such as BPMS.

2 Overview

The introduction of technology and the internet age in the 1990’s created new organizational forms [4]. E-mail increased the level of access of all workers to one another, and tended to democratize the workplace [1]. In this model, rich collaboration was possible, and formalism dissipated. Vastly improved productivity levels in the late 1990’s were associated with this increase in communication applied at every level. Thus, a collaborative decision making model has been increasingly embraced throughout the last decade as a way to bring more complete information to bear on decisions, and to increase ownership of decisions within the organization. It was in this climate that BPMS developed.

Most research studies of group decision-making have been done using zero-history student laboratory groups meeting for a single time period to solve an artificial problem assigned by the researcher [3]. The studies done using various groupware techniques (GDSS or GSS) have reported improvements of 16% in the quality of decision-making. There have been few studies conducted to date, however, on natural groups, termed bona fide groups, but studies that have been conducted demonstrate improvements in the 85% range [16], [17]. Although these few results are encouraging, there is a need to test these findings by conducting longitudinal studies of bona fide groups and systematically test the effects of a variety of promising group support tools. Studies of this kind have not been done because they are costly and require a long-term commitment, as well as long-term access to the studied environment.

The use of a collaborative decision-making model has been shown to produce more creative solutions and to increase the size of the stakeholder pool, as well as increase the commitment of stakeholders to final decisions. Managers need to remember this when adopting and evaluating BPMS.

3 Group Scholarship

Group scholars over the past 50 years have wrestled with the problem of what methods yield the best group decision-making results. Two lines of research are especially relevant to this suggested research: functional theory [5], [6], [7] and the bona fide group perspective [16], [17].
3.1 Functional Theory

According to the functional perspective, the quality of group decision-making performance is related to a group’s ability to meet five functions during interaction:

1. Developing a thorough and accurate understanding of the problem (problem analysis). Given the information available to it, a group needs to arrive at an accurate (i.e. reasonable) understanding of (a) the nature of the problem, (b) the extent and seriousness of the problem, (c) the likely causes of the problem, and (d) the possible consequences of not dealing effectively with the problem.

2. Achieving an appropriate understanding of the requirements for an acceptable choice (establishment of evaluation criteria). A group must recognize the specific standards that the choice must satisfy to be judged acceptable by evaluators of that decision.

3. Marshaling and, if necessary, developing a range of realistic and acceptable alternatives (generation of alternative solutions). A group must generate, or be aware of, a number of appropriate and feasible alternative choices among which an acceptable choice is assumed to exist.

4. Assessing thoroughly and accurately the positive consequences associated with alternative choices (evaluation of positive consequences of solutions). Given the information available to it, a group needs to be fully cognizant of the relative merits of all available alternatives.

5. Assessing thoroughly and accurately the negative consequences associated with alternative choices (evaluation of negative consequences of solutions). Given the information available to it, a group needs to be fully cognizant of the relative disadvantages associated with each alternative choice [11].

This theory is especially useful when examining real-world work groups, where decisions impact on actual lives and may be helpful for designers and adopters of BPMS.

Hollingshead, et al. state:
We need to find out whether our theories about effective group performance also apply to continuing groups….When and under what conditions will group experience lead to improved group performances? Studying groups in their natural settings at multiple points in time will enable researchers to begin to answer that question and to develop interventions for experienced groups that are performing poorly [8].

3.2 Bona Fide Group Perspective

The second theoretical approach undergirding this discussion—the bona fide group perspective—was first introduced by Putnam and Stohl [16]. The authors described the theoretical foundation of this perspective as follows:

Two characteristics that underlie a bona fide group are permeable and fluid boundaries and interdependence with context. The idea of “groupness” itself and the social processes that form and sustain a
group rest on a continual negotiation of borders, boundaries, and arenas [17].

Putnam and Stohl argued for the need to study bona fide groups because zero-history laboratory student groups limit the generalizability of the research findings [16]. They posited that bona fide group studies would increase the ecological validity of groups studied by avoiding making observations independent of their context. They also suggested that: “research on bona fide groups can lead to reframing traditional group concepts such as roles, norms, brainstorming, phases and cohesiveness” [16].

Stohl and Holmes added the following to their critique of the weaknesses of functional group theory [19]. They found that functional theorists misguidedly believe that:
1. Decision quality is an objective characteristic or attribute that is apparent at the time of the production of a decision.
2. Relevant task communication takes place within meetings and not outside of the small group context.
3. Group action is non-simultaneous and meaningfully sequenced [19].

These three assumptions illustrate the need to expand studies of groups by conducting longitudinal studies of bona fide groups. Stohl and Holmes argued that functional theorists’ first assumption does not account for those decisions that appear to be high quality but that turn out to be poor ones. In the case of planning decisions, often the real determination of the quality of the decision comes much later after the actual decisions are made [19]. Their added second assumption obscures the fact that much decision-making goes on in other locations than the actual meeting. They concluded their essay with a recommendation to embed bona fide group perspective concepts into functional theory research.

Stohl and Holmes argued that we must include both short-term and long-term evaluations of group decision outcome quality [19]. Longitudinal studies are the best way to achieve this long-term evaluation. As they stated, “In the long run, functions addressing political or historical constraints may play a larger role than purely rational functions in the quality of decision outcomes” [19]. They proposed two additional classes of functions: one that embeds the decision in “ongoing group life (historical functions), and one that accomplishes the embedding of a decision in a permeable context (institutional functions)” [19].

3.3 Bridge between Functional and Bona Fide Perspectives

Stohl and Holmes suggested supplementing group communication coding schemes with items that address the historical and institutional statements. In addition, they recommended participants be interviewed to acquire rich clarifying information on the historical and institutional issues that affect their interactions. Finally, they also suggested context-based models for requisite functions [19]. For example, have some functions been accomplished already in bona fide groups? Do some groups have additional functions due to institutional constraints? Finally, incorporating the temporality of the functional assessment will be necessary. As they explained:
Hence simple measures of presence or absence of particular functions, without consideration of the sequence of those functions, may contribute to inconsistent results. In other words, the artificial separation of functional and developmental approaches should end. Functional research should attend to sequence typologies in order to determine if families of functional sequences are more or less associated with effective outcomes [19]. To better accomplish this, Gouran and Hirokawa suggested that the use of new technologies may be promising to further the application of functional theory [5]. As they explained:

One of the difficulties faced by decision-making and problem-solving groups is that of efficient processing of information that large numbers of alternatives pose. With the advent of increasingly available computer technology and emergence of group decision support system (GDSS) applications, the assessment of alternatives in relation to particular criteria and related information can be expedited [5].

4 Group Decision Support Systems

Group Decision Support Systems (GDSS) are not new to the research literature. Several research traditions, in the United States, have developed at the University of Minnesota using Software Aided Meeting Management (SAMM) [13], [14], at the University of Arizona using GroupSystems™ [9], [10], and at New Jersey Institute of Technology [20]. Over the past 22 years, there have been several comprehensive and meta-analytical reviews of GDSS, Group Support Systems (GSS) Decision Support Systems (DSS), or Electronic Meeting Systems (EMS). The fact that there are so many terms for the products, including the generic term “groupware,” creates challenges for scholars doing this form of research.

DeSanctis and Gallupe wrote the seminal work on the subject and developed a framework for studies that followed [2]. They identified three environmental contingencies that are critical to the GDSS design: “group size, member proximity, and the task confronting the group” [2]. They also reported on a contingency theory for the use of GDSS. They found that three factors that should be considered were: whether the structuring and technology were suitable for the group size, type of task, and communication mode (face-to-face or dispersed). They also introduced, based on Anthony Gidden’s work on structuration, Adaptive Structuration Theory, which became one of the most used theories for understanding GDSS and other forms of computer-mediated communication (CMC).

Poole and DeSanctis introduced five types of appropriations of GDSS use based on qualitative observations of field and laboratory groups [12].

- **Autonomous** groups achieve independent mastery of the GDSS and feel free to improvise with it.
- **Dependent** groups are comfortable with the GDSS and use it properly without excessive reliance on a facilitator or outside technician.
Overdependent groups attempt to use the GDSS and value it, but require a facilitator or outside technician and must be helped at all stages of use.

Counterdependent groups do not like the GDSS, but use it (perhaps at the insistence of a leader or facilitator)—they tend to apply in ways inconsistent with its spirit and may use the system as a scapegoat for problems.

Rejector groups refuse to use the technology [14].

These appropriations become important when trying to secure adoption and acceptance of technology and can equally be applied to BPMS. We argue that using GDSS to assist in the adoption and planning process will accomplish much in the process of employee buy-in.

5 Conclusion

In summary, the use of GDSS to assist in decision-making in organizations, though somewhat time consuming, will generate the depth of analysis that is so necessary in the complex decision-making that occurs in business today. It is in the academic setting or in studies by scholars, where research on these processes will most likely take place. With this in mind, vendors and developers need to provide academics with lower cost programs and hardware to allow them to infuse their products into their classes and their research projects. In addition, scholars are urged to create longitudinal studies of bona fide groups to apply GDSS to real life decision-making, both in the university and other organizational settings. Further, we suggest considering the bona fide group perspective when considering issues that affect group members and are brought to the decisions. In this way, we will be able to test the acceptance, applicability, and usefulness of BPMS and other forms of technology over time.

References