

## Chapter 19

# Participant–Driven Approach to Autonomously Cluster Brainstorming Ideas

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### ABSTRACT

*This chapter presents an exploratory examination of the impact of synchronicity and quantity of brainstorming ideas on the ability of a group to autonomously cluster brainstorming ideas. Groups were tasked with clustering brainstorming ideas through the use of a Group Support Systems (GSS) tool. The tool allowed each participant to create and modify categories to which individual brainstorming ideas could be aligned. No explicit means of coordination were available; each participant worked autonomously to cluster the brainstorming ideas. The results indicated that the groups working synchronously displayed improved performance and satisfaction ratings. Likewise, groups categorizing the smallest quantity of brainstorming ideas performed better than the larger quantities.*

The information economy has altered the business dynamic by creating a need for individuals to collaborate. Organizations seek to leverage the

skills, abilities, and experience of a variety of people to address a given problem, opportunity, or decision-making scenario (Galegher & Kraut, 1990). This pooling of intellectual assets provides many advantages as the individuals are able to

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share and consume increased information, generate potential solutions, and review the effects of those decisions (Phillips & Phillips, 1993). The goal of such group work is to harness the skills and abilities of the group to arrive at a “better” decision than would have been possible without group work (Martz, Vogel, & Nunamaker, 1992).

Significant research has been conducted into the use and efficacy of Group Support Systems (GSS) in various group contexts. These GSS provide groups with the process structure and information technology necessary to execute collaborate group tasks (Sprague & Carlson, 1982). These collaborative tasks include such things as identifying creative solutions and examining process modeling alternatives.

Workflows in a GSS environment typically follow one or more established collaboration patterns (Briggs, Kolfshoten, & de Vreede, 2006). For example, a group working to develop solutions to a business problem would first use the *Generate* pattern to brainstorm solutions. The goal of this stage is to move the group from a state of having fewer solutions or ideas to having a more filled-out solution space. The next step of the workflow typically entails patterns of collaboration that refine, consolidate, and synthesize the various ideas into topics or threads. Significant research has been conducted on how to improve the productivity of brainstorming groups. However, not much research to date has addressed the issue of converging from many ideas down to several key ideas (Briggs, de Vreede, & Nunamaker, 2003). This convergence process presents difficulties that oftentimes require the guidance of an expert facilitator. However, these difficulties are exacerbated when an expert facilitator is not available or the group moves from a synchronous, proximal setting to one that is distributed and potentially asynchronous. Distributed and asynchronous environments may limit the communication channels that are available to the group to resolve issues and conduct the collaborative work.

Two key constraints exist with current GSS implementations. First, expensive or scarce expert facilitators are often required to develop collaborative workflows and guide groups through their respective processes. Furthermore, the tools are often not accommodating of groups that are not guided by a facilitator. Second, GSS is typically associated with synchronous work that is often proximal, and current GSS tools and workflows are often not well equipped to handle asynchronous or distributed work.

A new GSS framework, Participant-driven GSS (PD-GSS), has been proposed to address these two constraints (Helquist, Kruse, & Adkins, 2006; Helquist, Santanen, & Kruse, 2007). The goal of this new framework is to empower the participants of the group to work in a distributed, autonomous manner to further the work of the group as a whole. The PD-GSS participants execute the various collaborative tasks and the system consolidates the tasks and the efforts to move the group through the overall workflow, effectively distributing some of the facilitator tasks.

One of the key assumptions of this framework is that the group members can function without a facilitator to consolidate brainstorming ideas into clusters or buckets. This research seeks to examine the ability of group members to work in an uncoordinated, autonomous manner to consolidate brainstorming ideas into categories. The overarching aim of this research is to start researching the abilities of group members to work autonomously toward a collaborative group effort. Specifically, this paper investigates the impact of synchronicity and quantity of brainstorming ideas on groups working to cluster brainstorming ideas, without explicit coordination measures in places. In traditional collaborative work, the facilitator may coordinate these efforts. Absent a facilitator, the group may use available communication channels to execute these actions. The current research examines the impact of groups working without a facilitator and without available communication channels to coordinate actions.

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