

## Chapter 4.2

# Supporting the JAD Facilitator with the Nominal Group Technique

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### ABSTRACT

Joint application development (JAD) was introduced in the late 1970s to solve many of the problems system users experienced with the conventional methods used in systems requirements determination (SRD) and has produced noteworthy improvements over these methods. However, a JAD session is conducted with freely interacting groups, which makes it susceptible to the problems that have curtailed the effectiveness of groups. JAD outcomes are also critically dependent on excellent facilitation for minimizing dysfunctional group behaviors. Many JAD efforts are not contemplated (and some fail) because such a person is often unavailable. The nominal group technique (NGT) was designed to reduce the impact of negative group dynamics. An in-

tegration of JAD and NGT is proposed here as a crutch to reduce the burden of the JAD facilitator in controlling group sessions during SRD. This approach, which was tested empirically in a laboratory experiment, appeared to outperform JAD alone in the areas tested and seemed to contribute to excellent group outcomes even without excellent facilitation.

### INTRODUCTION

There is widespread support for the belief that systems requirements determination (SRD)—discovering and documenting the features that an information system should deliver—is an extremely important but very difficult aspect of software development (Borovits et al., 1990; Byrd et al., 1992; Cheng, 1996; Holtzblatt &

Beyer, 1995; Raghaven et al., 1994). This difficulty often leads to systems failures due to both development shortcomings—failure to establish the required features in the required time, and usage factors—and abandonment by its intended beneficiaries (Lyytinen, 1988). Several factors account for this difficulty, but the nature of the interaction among system developers, users, and stakeholders is the prime contributor (Antunes, 1999; Holtzblatt & Beyer, 1995).

User-developer communication and stakeholder negotiations assume greatest importance at the requirements determination phase of the systems development life cycle (SDLC). Here, the specific details of the problem to be solved and the needs to be satisfied are clarified. It is here, however, that poor communication is most pervasive (Dieckmann, 1996; Holtzblatt & Beyer, 1995). Joint application development (JAD) is a team-oriented approach that has been widely used to (1) confront the communication barriers to effective information elicitation and (2) increase users' contribution to this key systems development activity (Byrd et al., 1992). JAD assembles a diverse group of users, analysts, and managers from various sectors of an organization to jointly specify requirements in a face-to-face workshop.

Despite its success in comparison to conventional SRD methods, JAD has failed somewhat to deliver on its initial promise to forge the team rapport necessary to alleviate known communication impediments to effective SRD, and has introduced other group-related problems (Dean et al., 1997; Kettelhut, 1993). A major reason for this failure is that JAD workshops are conducted under the freely interacting meeting structure where spontaneous communication occurs among group members with minimal control imposed by the communication structure (Van de Ven & Delbecq, 1974). Groups that deliberate in this manner typically experience many of the problems in which social and emotional dynamics obstruct the accomplishment of the objectives of the meeting

(Kettelhut, 1993). The success of a JAD session is often dependent on the extent to which these problems are alleviated. This places a very high premium on excellent facilitation (Carmel et al., 1995; Davidson, 1999; Wood & Silver, 1995).

Facilitators have been offered several prescriptions for minimizing these problems (Andrews, 1991; Carmel et al., 1995; Davidson, 1999; Kettelhut, 1993; Wood & Silver, 1995). Many of these are contained within the nominal group technique (NGT)—a facilitated technique that focuses on alleviating negative group dynamics in meetings where participants interact in a highly structured manner. This technique could be applied in the decision-making stages of a JAD workshop to provide a comprehensive set of procedures for increasing the group's effectiveness. NGT reputedly increases the effectiveness of creative problem-solving groups (Delbecq et al., 1986). Its easy-to-apply protocol supports facilitators in producing results that fairly accurately reflect the combined judgement of groups engaged in problem-solving meetings (Zuech, 1992).

Our thesis is that the application of NGT in the JAD workshop will help to reduce the criticality of excellent facilitation for high-quality JAD results and that this integrated communication structure will induce more acceptable results from less than excellent facilitation. This presumption is very important because excellent JAD facilitation is a scarce commodity (Carmel et al., 1995) despite several years of fairly extensive JAD practice (Davidson, 1999) and increasingly common usage (Dennis et al., 1999; Kettelhut, 1997). In this study, we examine the effects of the integration of NGT and JAD structures on the communication problems that typically beset user-developer interactions in SRD when JAD alone is used. The major objective is to determine whether NGT, in combination with JAD, reduces the facilitator's burden in curbing dysfunctional group behaviors and thereby contributes to improved performance.

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