Chapter 35
Virtual Team Process and Pathologies:
A Theory of Adaptive Intervention

Alanah Mitchell
Appalachian State University, USA

Ilze Zigurs
University of Nebraska at Omaha, USA

ABSTRACT

The dynamic nature of group process is a long-standing challenge for research and practice, and particularly so in virtual teams, which are increasingly a regular part of organizational life today. Virtual teams act in fluid environments, as they strive to make sense of how best to incorporate appropriate technology choices during on-going interaction. Interventions in group process have potential to help teams make those choices. However, one set of critical factors that has received very little attention is the timing of interventions and their presentation style and content. These factors are particularly important in virtual teams, whose members rely on information and communication technologies and where technology interplay with group processes needs particular attention. Based on empirical findings, the authors present a new perspective on the longstanding topic of team process and the use of interventions, specifically in a virtual environment. The authors use the analyses of seven teams of students from three universities working together in a virtual workspace to complete a global offshore development project as case studies for building a process theory of adaptive intervention for virtual teams. The theory integrates team process with technology, to show how interventions can be used to proactively trigger and reactively respond to transitions. Ultimately, the theory shows how adaptive interventions can be used in a dynamic way to enhance virtual team process and thereby address key challenges that virtual teams face in their on-going work.

INTRODUCTION

The dynamic nature of group process is a long-standing challenge for research and practice. The challenge is particularly critical in virtual teams, whose members strive to work together in dispersed environments supported by a variety of information and communication technologies (Powell, Piccoli, & Ives, 2004; Robey, Khoo, & Powers, 2000; Staples & Webster, 2007). Virtual work has become as common as face-to-face work (Staples & Webster, 2007) and is recognized as a key to organizational survival in the 21ˢᵗ century (Jarvenpaa & Ives, 1994; Lipnack & Stamps, 1997). Given that virtual teams are dependent on technology, it is essential to understand the process by which such teams achieve success through appropriate technology choices and use. The current work is motivated by two key challenges that virtual teams continue to face.

The first challenge for virtual teams arises from their very essence, namely that members exist in a dispersed environment created and supported by technology. Virtual team process in such an environment is complex and dynamic. As virtual team members work over time, their understanding and use of technology capabilities changes (Becker, Carte, & Chidambaram, 2006; Carlson & Zmud, 1999), which creates an on-going challenge for matching technology capabilities to different task needs (Becker et al., 2006; Germonprez, Hovorka, & Collopy, 2007). The second challenge is how to handle the moving target of technology use and choices in an adaptive and manageable way. A virtual team could take any number of different paths to complete a specific task via a particular technology capability, but team members should not have to start from a blank slate each time they need to make a choice. Ideally, team members would be prompted at an appropriate time with integrated process and technology guidance. Such "interventions" into team process have potential to address these challenges (Thomas & Bostrom, 2010b). But first, we need a clear understanding of virtual team process and second, we need to identify effective timing and design of appropriate interventions.

These arguments lead to the conclusion that new process theory is needed in this area. *Process* is "a narrative describing how things develop and change" (Van de Ven & Poole, 2005). A process theory explains how outcomes can develop over a period of time, with the sequence of events preceding an outcome used to explain its occurrence (Shaw & Jarvenpaa, 1997). Our primary goal is to generate a process theory of adaptive intervention for virtual teams. We use the term "adaptive" in its general sense, as referring to the capability for adjustment, accommodation, or fit. The theory is intended to show how process and technology transitions occur and how interventions can be used to proactively trigger and reactively respond to those transitions. We build the theory via a case study analysis of seven teams of students from three universities working together in a virtual workspace to complete a global offshore development project.

The paper is organized as follows. We begin by defining interventions and presenting the conceptual background for the research. The research method is then described, including the setting, the technology used by the teams, the nature of the interventions, and the data collected. The subsequent section presents the multiple case studies that were used in theory development, including identification of process patterns that show the assessment of team conditions and effects of interventions. We then present the resulting theory, showing how proactive and reactive interventions affect team members' perceptions and utilization of task, technology, and the virtual team environment. The paper concludes with implications of the theory and areas for future research.

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