Chapter II
An Identity Perspective for Predicting Software Development Project Temporal Success

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ABSTRACT

This theoretical work draws on group development literature to propose a model for increasing the likelihood of achieving temporal success within a software development (SD) environment. The study addresses a group's temporal performance through a punctuated equilibrium (PE) lens. As a means of extending the PE model of group development for a SD project context, this research will consider social and temporal aspects of identity within each group in order to address the varying nature of temporal success. First, anthropological research on rituals in society will be applied to present a project-as-ritual perspective, where social and temporal identity are suggested to flow from the rites of passage that exist during the initial meeting and temporal midpoint of a group. Second, social identity theory will be applied to posit that both types of identity are positively associated with a group's ability to meet temporal deadlines. This theoretical piece is expected to make two primary contributions to literature. First, group development literature is enhanced by providing an extension of the PE model to address environments where social and temporal identities are variable. This contribution is significant since it will allow researchers to apply a PE perspective in real world project team environments. Second, the research contributes to SD literature by offering a clear perspective regarding key factors that can serve to impact a SD project team's ability to meet temporal deadline.

INTRODUCTION

Software development (SD) projects have been the subject of a tremendous amount of attention in the academic world. Within this research stream, the most frequent goal has been to evaluate, elucidate and ultimately predict factors which enhance the likelihood of achieving SD project success. Issues such as project structure and SD methodology usage have been suggested as important factors that influence project success (Hardgrave, Davis, & Riemenschneider, 2003; Khalifa & Verner, 2000; Kirsch, Sambamurthy, Ko, & Purvis, 2002). However, little research has considered the role of group dynamics in shaping SD project success. Since SD projects are often the result of team efforts, a key source of SD project success must lie in how the group develops and approaches their tasks over time.

As a first step in addressing the role of group dynamics in a SD context, this paper will present a theoretical model which attempts to explain the role of group development in promoting SD project success. Because project success is a broad and complex construct, the theory detailed here will focus only on one aspect of success, that of meeting temporal deadlines. A punctuated equilibrium (PE) model of group development (Gersick, 1988) will serve as the theoretical foundation for addressing the temporal pacing of work activities within a SD project. While a PE model provides a general framework to evaluate SD project temporal success, its interpretive power is limited with regards to several of the idiosyncrasies inherent in SD project work. For example, SD environments are often characterized by fluid project specifications, shifting task and project deadlines, workplace demands which compete with project expectations, and a need to interweave independent development activities within interdependent project goals. To accommodate these issues, this research will extend the PE model by considering both the social and temporal identity possessed by each SD project

team. The resulting view of SD group development is expected to explain the variance that often exists in project team temporal success.

This paper will proceed as follows. First, the PE model of group development will be discussed in terms of its strengths and limitations for predicting SD project success. Next, the PE model will be extended by considering the role of social and temporal identity in a SD context, specifically focusing on the impact of identity on the group's ability to navigate its temporal midpoint. Following this, the theoretical model will be presented and propositions discussed. Finally, the paper will conclude with an overview of expected contributions and future directions of this research stream.

THEORETICAL PERSPECTIVES ON GROUP DEVELOPMENT

Group development literature has a long, rich and somewhat divided history[1]. Early researchers of group development suggested that productive groups progress sequentially through a series of well defined stages during their life (Tuckman & Jensen, 1977). While a sequential view of group development doesn't preclude the existence of behaviors in any given stage (i.e., work activities in the forming stage), it does suggest that each phase is characterized by a dominant set of behaviors specific to that phase (Wheelan, 1994). A sequential perspective suggests that groups *must* navigate in a linear fashion through each developmental stage before they can have a chance of attaining task success. In the late 1980s, the idea of gradual sequential development was challenged by the research of Connie Gersick (1988, 1989), who used a widely accepted theory of biological evolution (PE) to frame the task-related behavior of small groups. The PE perspective illustrated that groups are likely to complete tasks on-time provided they share a consistent sensitivity to temporal deadlines and demonstrate that sensi-

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