

# The Impact of Training on Virtual Project Teams: A TIP Investigation

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## ABSTRACT

*As organizations adapt to competitive pressure and simultaneously leverage scarce resources, workers are increasingly operating in virtual project teams where members may never meet face to face. One of the factors that can affect how well virtual project teams communicate is relational links. This study explores the effects of relational link development training on group interactions by administering training to selected groups and tracking measurements of their cohesiveness, perceptions of the process, satisfaction with outcomes over time, and tracking group communications using McGrath's TIP theory as a framework. This project compared virtual project teams trained in the concept of relational links with teams that received no training. All electronic communications between team members were recorded and analyzed using McGrath's time, interaction, and performance (TIP) framework and all teams completed pre and post surveys measuring their levels of cohesion, perceptions of the process and satisfaction with outcomes. It was found that teams that received training spent more time in the member support function, more time in the inception mode, and less time in the conflict resolution mode. In addition, teams receiving training had higher ending levels of cohesion, perception of the process and satisfaction with outcomes.*

**Keywords:** *Computer-Mediated Communication, Relational Links, Time Interaction and Performance, TIP Analysis, Virtual Teams*

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## INTRODUCTION

Most of our knowledge of teams and teamwork comes from the study and analysis of traditional teams in which all team members work face-to-face in the same geographic location. However, the use of virtual teams, which communicate without the limits imposed by geography, time and organizational boundaries, is growing within organizations and globally. As virtual

project teams become common place in and between organizations, concern about preparing members to work more effectively in a virtual environment increases.

Many factors can affect how well team members manage virtual work and communication. A few factors have been shown to impact the success of virtual project teams: trust (Larsen & McInerney, 2002; Piccoli & Ives, 2003; Jarvenpaa, Shaw, & Staples, 2004; Araujo & Chidambaram, 2008), team member relationships (Lurey & Raisinghani, 2001), relational

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links (Chidambaram, 1996; Carlson & Zmud, 1999; Beranek & Martz, 2005) and conflict-management (Souren, Seetharaman, Samarah, & Mykityn, 2004; Hinds & Mortenson, 2005). Past research on virtual team communication has indicated that relational links (Chidambaram, 1996) may have an impact on the effectiveness of team member communication and that the development of relational links among team members has been found to be a significant contributor to the effectiveness of information exchange (Chidambaram, 1996; Warkentin, 1997). In addition, stronger relational links in groups has been associated with higher performance (Warkentin, 1997).

This study examined 23 teams working on a task and interacting as virtual project teams utilizing a Computer Mediated Communication (CMC) system. Twelve of the teams received training on the development of relational links (RL), and the remaining 11 teams received no training. All electronic communications for all teams were recorded and content-analyzed according to McGrath's time, interaction, and performance (TIP) theory (McGrath, 1991) to discern if the communication modes and functions differed between the teams that received training and those that did not. Pre and post surveys measuring relational link levels were given to all team members.

## BACKGROUND

### Virtual Project Teams and the Development of Relational Links

Past research on inter-member communications within virtual project teams has had varied results. Several seminal theories question the ability of virtual project teams to develop communication cues needed to develop trust, warmth, and other interpersonal affections (Short, Williams, & Christie, 1976; Daft, Lengel, & Trevino, 1987). Social presence theory (Short et al., 1976) suggests that the fewer communication channels available within a medium, the less attention is given by users to other participants' presence and interactions.

Social presence declines as messages become more impersonal. It is believed that this is caused in part by fewer nonverbal and social context cues innate to virtual communications, which, in turn, negatively affect interpersonal impressions (Rice, 1984; Hiltz & Johnson, 1986).

Other studies, however, have found that virtual teams, if given enough time, do share relational information which can lead to higher levels of cohesiveness, perceptions of the process and satisfaction (Carlson & Zmud, 1999; Adler, 1995; Chidambaram, 1996; Warkentin & Beranek, 1999) and that sharing this information might improve performance (Weisband, 2002). While it has been found that virtual interaction initially lower relational intimacy, the members of such teams will develop ways of exchanging socio-emotional information, and, over a period of time, groups using computer communications will gradually develop close relational ties (Chidambaram, 1996; Burke & Chidambaram, 1995) and develop methods of conflict management (Miranda, 1991).

Research on virtual-team communication indicates that the idea of relational intimacy, referred to as relational links (Chidambaram, 1996), might have an impact on the effectiveness of team member communication. The development of relational links among team members has been found to significantly contribute to the effectiveness of information exchange (Chidambaram, 1996; Warkentin, Sayeed, & Hightower, 1997). Past research on relational links suggests that computer-supported cooperative work groups, given adequate time, will exchange enough social information to develop strong relational links (Chidambaram, 1996). Measurement of relational links is comprised of three sub-areas: cohesiveness, perceptions of the process and satisfaction with outcomes.

Cohesiveness measures the extent to which members are attracted to the group and to each other. Groups that are more cohesive also tend to communicate more openly, exert more influences on members to conform to group norms, and display higher task satisfaction (Burke & Chidambaram, 1995; Miranda, 1991; Seashore, 1954). Perceptions of process

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