Designing High Performance Virtual Teams

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INTRODUCTION

In the past several decades, we have seen tremendous advancements in the development of communication technology. Since the invention of the Internet in 1969, there has been rapid development of Internet-based communication tools and technologies. This technology has revolutionized business practices by offering another important and effective channel for communication (Foo & Lim, 1997), and has allowed people to work on projects irrespective of their physical location. One resulting business practice that has been adopted in recent years is virtual teamwork. Virtual teams are groups of individuals who work at interdependent tasks, who share responsibility for outcomes, and who work together from different locations. Recently, the use of teams as fundamental building blocks in organizations is increasing, as is the use of virtual teamwork (Furst, Blackburn & Rosen, 1999). This article identifies the characteristics of high performing virtual teams.

BACKGROUND

In addition to the basic definition of a virtual team, all virtual teams have important characteristics that contribute to their overall success. To analyze the characteristics of a team's situation, Cohen's (1994) model of team effectiveness can be used as an organizing framework. The model identifies strengths and weaknesses that readers can use to inform their own design and operations of effective virtual teams. According to Cohen, there are several broad characteristics that all potentially affect how successful the team will be at meeting its task, and are therefore worthy of examination. These characteristics are listed in Table 1 and will be examined in detail in the following paragraphs. Although Cohen's team effectiveness model is based on traditional teams (i.e., collocated), these characteristics have been found to be very important in empirical research on virtual teams (Staples & Cameron, 2004; Wong & Staples, 2004).

TASK DESIGN

Appropriate task design can be a powerful motivator (Cohen, 1994). Both job characteristics theory (e.g., Hackman & Oldman, 1976, 1980) and sociotechnical theory (e.g., Cummings, 1978) suggest that group task design is critical for employee motivation, satisfaction, and performance. Both theories suggest that to positively impact performance and attitudes, the task should be designed according to the criteria specified in Table 2.

Job characteristics theory, which has fairly strong empirical support, suggests that task attributes influence effectiveness through their impact on critical psychological states such as motivation and satisfaction with the work. For example, in a case study of one particular business development virtual team, team members commented that high satisfaction and motivation levels reflected the high perceived significance of the project (Wong & Staples, 2004). Positive motivation and satisfaction levels have a positive effect on the quality of the work and overall productivity of the team (i.e., an indirect effect exists between task design and productivity and quality) (Cohen, 1994). Also, the team must have autonomy in determining how their work will be done, because autonomy enhances worker attitudes, behaviors, and performance (Cohen & Bailey, 1997). Finally, when a remote worker receives managerial feedback in the form of advice and help, the worker's effectiveness increases (Staples, 2001). This would result in an increase in virtual team performance.

Table 1. Characteristics of virtual teams affecting team effectiveness

- Design of the team's task
- The characteristics of the members of the team
- The processes used by the team
- The organizational context of the team

CHARACTERISTICS OF THE TEAM AND ITS MEMBERS

Team member characteristics that influence the success of a virtual team are listed in Table 3 and are described in more detail below (Cohen, 1994).

The size of the team can affect the ability of the team to do its task (Cohen, 1994). If the team is too big, higher coordination costs result. If the team size is too small, it will not have the resources needed to complete its work, and team members will be less likely to be committed to the team. The size of the team should also correspond to the stage of the project. For example, a virtual team developing a new product may need more human resources as the product moves from the design stage into the manufacturing stage.

Stability of team membership is necessary for team effectiveness. If turnover is high, time and effort will be spent orienting new members, performance norms will not develop, and performance will suffer. However, some turnover can be beneficial, in that it could revitalize a stagnant team and enhance creativity (Cohen, 1994).

The collective knowledge and skills of a team will greatly impact the team's ability to carry out its task. Such skills include technical skills, information systems (IS) skills, and interpersonal skills. Information systems skills are needed to use the information technology tools and systems that are available to communicate virtually and share information virtually, which is the norm given the lack of face-to-face interaction in virtual teams. Effective communication skills among team members are also vital to the effectiveness of a virtual team (Grenier & Metes, 1995).

The degree of virtuality (degree of team geographic distribution) could contribute to team effectiveness. There has been limited empirical evidence to suggest that greater geographic distribution (high degree of virtuality) of a team leads to lower performance (Cramton, 2002). This is presumably due to reduced face-to-face contact, reduced opportunities to build social relationships, and the difficulties of communicating and coordinating virtually using communication technology rather than communicating face-to-face. This implies that higher virtuality could be negatively related to team performance and satisfaction with the work and the team.

Team performance beliefs have been found to be a strong predictor of group effectiveness in previous research (Cohen, 1994). For example, team beliefs, assessed via a concept called group potency, were found to be positively related to the commitment to the team, satisfaction with being part of the team, and motivation with the team's tasks (Staples & Cameron, 2004). Group potency captures efficacy beliefs at the group level. Group potency (sometimes referred to as group efficacy) is "a collective belief in the capability of the group to meet a task objective" (Gibson, Randel & Earley, 2000, p. 71).

TEAM PROCESSES

There are several behavioral characteristics pertaining to team process that positively affect team effectiveness.

Table 2. Task design criteria necessary to positively impact performance and attitudes

The task should be designed such that:
• A variety of skills are required (leadership, communication, different technical skills, etc.) such that a team of people are needed to work together to complete the overall task.
• A whole and identifiable piece of work exists so that members can see the outcome of their efforts.
• It is perceived to have significant impact on the lives of other people so that team members feel their work is important and are motivated to complete the task.
• The team has considerable autonomy and independence in determining how the work will be done so that team members feel empowered and responsible for their actions.
• The team is provided with regular and accurate feedback such that the team can understand how it is performing and make adjustments as needed.

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