Chapter 3.15
Using Virtual Worlds to Assist Distributed Teams

Clint Bowers
University of Central Florida, USA

Peter A. Smith
University of Central Florida, USA

Jan Cannon-Bowers
University of Central Florida, USA

Denise Nicholson
University of Central Florida, USA

ABSTRACT

Virtual worlds and massively multiplayer online games are becoming a useful tool for distributed teams. From providing a common working place, to allowing members of the team to interact in a physical albeit virtual form, virtual worlds are setting a new standard for tools to facilitate inter-actions between members of distributed teams. This chapter explores the ways in which virtual worlds could support interactive teams at a greater fidelity then that of the previous generation of groupware tools using a popular virtual world, Second Life as an example. While providing specific examples of how Second Life's current and planned feature sets could already support distributed teams, that is, teams whose members are geographically disbursed. New features that would provide additional support for these types of teams are also discussed.

INTRODUCTION

Due to advances in communications technology over the past 30 years, the use of distributed or virtual teams is becoming more common in the modern workplace. We use the terms "distributed" and "virtual" teams interchangeably to refer to groups of employees who must accomplish their tasks by working with teammates who are physically dispersed. Such teams must rely on a

variety of communication technologies to mediate their interactions and enable coordinated effort to occur. Despite the growing importance of virtual teams in the workplace, the mediating technologies that typically support them have been little more than simple modifications of "off-the-shelf" software developed to support individual tasks, such as e-mail and calendar programs. These technologies are not optimized to support true team performance, and often do not respond to the many challenges confronted by distributed teams. However, the emerging field of Virtual Worlds is providing new tools that may support many of the requirements of distributed teams that other technologies do not. To aid this discussion, we will use a Virtual World program called Second Life, developed by Linden Lab, as an example of how virtual world technology can support distributed team performance.

BACKGROUND: A BRIEF BREAKDOWN OF CORE TEAM MECHANICS

Before describing how Virtual Worlds might better support distributed teams, it is important to first discuss the nature of distributed team performance, and the factors that may facilitate or hinder it. Team researchers have identified a number of crucial team processes at the behavioral, attitudinal, and cognitive levels that are believed to be important determinants of effective team performance (see Salas & Cannon-Bowers, 1999). In distributed teams, which must rely on computer-mediated communication channels, these processes must necessarily be modified since the set of cues available to team members is different than in face-to-face teams. In fact, given the nature of distributed teams and the additional coordination demands placed upon team members in such situations, it is not surprising that they are believed to be at even higher risk for coordination

breakdowns (Fiore, Salas, & Bowers, 2001). In large part, these coordination decrements can be attributed to the necessary reliance on technology that is incumbent in distributed team performance. Fiore, Salas, Cuevas, and Bowers (2003) have used the phrase "team opacity" to describe the manner in which technology-mediated coordination obscures important team processes such as team mental model development.

The following sections provide an overview of the processes that team researchers have identified as crucial to team effectiveness and the manner in which physical dispersion affects them. We organize these into behavioral, attitudinal, and cognitive processes in keeping with prevailing theories of team performance. Following this, we describe how Virtual World technologies can be used to overcome some of the challenges typically associated with distributed team performance.

BEHAVIORAL DIFFERENCES BETWEEN DISTRIBUTED AND COLLOCATED TEAMS

As noted, the literature in team performance delineates several important behavioral processes that underlie effective team performance, and the potential impact of team opacity is evident in several of them. Powell, Piccoli, and Ives (2004) summarized a number of these effects; we have selected the most salient for this discussion. These include: communication, coordination, adaptability, and leadership. They are summarized in the following paragraphs.

Communication

The most obvious team process affected by physical dispersion is communication. Differences between computer-mediated communication and face-to-face communication have been widely reported. See Bannan-Ritlan (2002) for a review.

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/using-virtual-worlds-assist-distributed/8809

Related Content

Instrumental and Social Influences on Adoption of Collaborative Technologies in Global Virtual Teams

Andre L. Araujo (2009). *Handbook of Research on Electronic Collaboration and Organizational Synergy (pp. 400-408).*

www.irma-international.org/chapter/instrumental-social-influences-adoption-collaborative/20188

A Study of the Relationship Between Workplace Violence and Online Dating

Youngkeun Choi (2022). *International Journal of e-Collaboration (pp. 1-14).*

www.irma-international.org/article/a-study-of-the-relationship-between-workplace-violence-and-online-dating/299008

E-Collaboration Enhanced Host Security

Zoltán Czirkos, Gábor Hosszúand Ferenc Kovács (2008). *Encyclopedia of E-Collaboration (pp. 172-177).*

www.irma-international.org/chapter/collaboration-enhanced-host-security/12422

Applications of a Social Software Model

Tanguy Coenenand Wouter Van den Bosch (2011). *Collaborative Search and Communities of Interest: Trends in Knowledge Sharing and Assessment (pp. 239-253).*

www.irma-international.org/chapter/applications-social-software-model/46767

Using WarpPLS in E-Collaboration Studies: What if I Have Only One Group and One Condition?

Ned Kock (2013). *International Journal of e-Collaboration (pp. 1-12).*

www.irma-international.org/article/using-warppls-in-e-collaboration-studies/82065