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5-2009

My Guild, My Team: Applying the Technology Capabilities of Massively Multiplayer Online Games to Virtual Project Teams

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ABSTRACT

Millions of people are playing Massively Multiplayer Online Games (MMOGs), a computer game genre where thousands of players interact daily in highly complex virtual world environments. These players self-organize, develop skills, and acquire various roles. MMOGs appear to mirror the complexity of the business context while offering unique technology capabilities that appear to encourage group participation and emergent leadership. Managing a remote workforce across different time zones, geography and culture requires effective virtual collaboration and management of communication, coordination challenges and control issues. Therefore, the purpose of this paper is to explore the unique technology capabilities of MMOGs and propose how these may be applicable to virtual project teams (VPTs) for ameliorating the challenges of managing a distributed workforce and provide insights into the nature of next generation collaboration technologies that could be used by VPTs.

Keywords

Massively Multiplayer Online Games, MMOGs, MMORPGs, virtual projects, virtual teams, virtual worlds

INTRODUCTION

Millions of people interact daily in highly complex virtual environments playing Massively Multiplayer Online Games (MMOGs) such as EverQuest and World of Warcraft. These games are intensely graphic three-dimensional virtual worlds played online that allow individuals to interact not only with the game software, but also with other players (Steinkuehler 2004). People have used various terms to describe online games such as MMOGs, MMORPGs, and virtual worlds (VWs). Massive multiplayer (MM) refers to the millions of different players who interact together in these VWs. MMORPG includes the concept of role-playing (RP) and suggests that avatars play different roles while playing the game (IBM 2007) and VWs are the context or setting for online games. The current global context for enterprises has resulted in an enormous reliance on global virtual project teams (VPTs) that bring together talent from wherever it is available in the world. However, managing distributed information technology (IT) projects continues to be vexing problem because of the complexity associated with managing geographic, temporal and cultural dispersion. Geographic and temporal dispersion, presents challenges with communication and coordination of tasks. When members of different cultures come together, two or more disparate socio-technical systems meet resulting in cultural dispersion. Differences may also exist in values, work processes, national cultures, languages and communication styles, reward systems, and relationships (Townsend, DeMarie, and Hendrickson, 1998).

Teams in MMOGs carry out complex quests relying heavily on technology capabilities to complete their goal. Teams in MMOGs encounter many of the same challenges of VPTs; however, MMOGs appear to offer technology capabilities that can be used to overcome some of these challenges, as evidenced by their ability to move through various levels of play. The purpose of this paper is to explore team interaction and team processes in MMOGs and identify the unique technology capabilities that organizational VPTs can utilize to support virtual work. Better understanding these capabilities can help improve the next generation collaboration technologies used by VPTs.

TECHNOLOGY CAPABILITIES AND VIRTUAL PROJECT TEAMS

Technology capabilities are the integrated, dynamic, and flexible set of tools or capabilities that provide potential features to support specific functions for VPTs (Khazanchi and Zigurs 2005; Davis, Murphy, Owens, Khazanchi, and Zigurs, 2009). Teams in MMOGs rely heavily on technology capabilities that support socialization, communication, and coordination to overcome the unique challenges of interacting with team members across different time zones, cultures, and with varying

skill sets. We have grouped MMOG capabilities into six fundamental categories – communication, team process, socialization, rendering, immersion, and awareness (Davis et al, 2009). Table 1 provides a brief definition of each capability along with an example.

Table 1. Key Technology Capabilities: Definitions and Examples

Key Technology Capabilities	Definition	Examples from MMOGs
Communication	Tools that allow project members to communicate and collaborate with one another (Khazanchi and Zigurs, 2005).	• Pair wise communication • Online chat channels • Message boards • Voice communication
Team Process	Tools to support information processing, process structure and appropriation support (Davis et al., 2009)	• Clear incentive systems • Team skills and competency levels readily available to others • Decision Analysis • Brainstorming
Socialization	Capabilities to support social interaction and relationship building.	• Communities such as guilds[1] and clans; • Rules of conduct (Chen and Duh, 2007) •
Rendering	Capabilities that support the process of creating life-like images such as avatars and objects in a virtual world environment (Davis et al., 2009).	• Personalization • Vividness • Rendering of people through avatars • Rendering of objects
Immersion	Capability that allows people to perceive they are interacting with their virtual environment rather than their physical surroundings and offers a sense of presence in an environment (Guadagno, Blascovich, Bailenson, and McCall, 2007).	• Interactivity • Mobility • Immediacy of artifacts (Davis et al., 2009)
Awareness	Knowledge of the presence of other people, including their interactions and activities (Dourish and Bellotti 1992).	• Online status messages • Avatar interaction • Visual representation of avatars and objects

MMOG TECHNOLOGY CAPABILITIES AND VIRTUAL PROJECT TEAMS

MMOGs offer unique technology capabilities that are amenable to VPTs. Teams in MMOGs work together in a virtual environment, not because it is their job, but because they enjoy playing the game. As a result, dedicated team members come together in a VW and complete complex tasks and assignments together.

In the context of VPTs, three factors are important for managing projects – communication, coordination, and control (Khazanchi and Zigurs 2005). In VPTs, various technology capabilities provide support for these factors. Using technology to support communication can affect both team and project outcomes. Important team outcomes in VPTs include shared understanding, trust, member stability, and cultural dispersion. Figure 1 shows project factors and technology capabilities interact in a socio-technical system to influence outcomes.

For example, researchers have found that members of virtual communities find value in belonging to communities. Despite possible cultural diversity and the fact that they may never meet face-to-face, members develop relationships that motivate trust and knowledge sharing (Kollock and Smith, 1999; Strauss and McGrath, 1994). Therefore, socialization capabilities found in MMOGs may be used to provide socialization support in VPTs to establish trust through community building, an

[1] A guild is a long-term group of players who range in size and join together for a common goal or purpose (Papargyris and Poulymenakou 2004; Ducheneaut et al, 2006).

important performance outcome. In the following section, we discuss each MMOG technology capability described in Table 1 and explain its potential affect on VPTs in organizations.

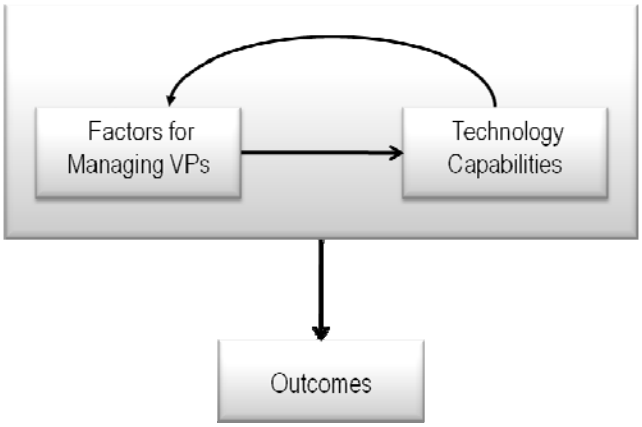

Figure 1. Interaction between VPM Factors, Capabilities, and Outcomes

Communication

MMOGs offer various communication mediums to support collaboration among hundreds of online payers interacting at the same time from around the world. These include online chat channels, internal and external guild message boards, and voice communication. The collaborative nature of teams coupled with the various communication tools available in MMOGs seems to have a positive effect on mutual trust, motivation, and shared understanding while at the same time minimizing the effects of temporal and cultural dispersion. These effects are evident through a team's ability to progress through various levels of play. Thus, for example, a VPT message board akin to the guild message board can be a useful tool to address communication issues that are often a challenge in larger virtual teams. Guild leaders use the message board to provide important updates on project tasks, schedule, and risks. The message board can reduce the requirement for synchronous communication and coordination. Message boards provide real time information anytime, anywhere. Team members affected by temporal dispersion may have a better understanding of the status of a project and recognize the tasks required to move the project forward while other team members half way around the globe are offline. Similarly, online chat channels support real time communication such as delegating tasks, answering questions, and addressing conflict. The availability of multiple communication channels provides members the freedom to solve problems at just the right moment using the channel that best that best suits their need. Finally, open communication using various mediums may influence trust, as communication that focuses on the project and the task while supporting social communication helps strengthen trust (Jarvenpaa and Leidner, 1999). Clearly, VPTs could use similar technology capabilities to support communication within dispersed team members

In MMOGs as with VPTs, a key challenge is finding the right collaborators in a team. Apart from having colleagues with the right skills, issues of work style and personality play an important role in successful collaborations (Nardi and Harris, 2006). MMOGs give people an opportunity to engage in lightweight collaborations (Nardi and Harris, 2006) and then assess whether they wish to continue with the relationship. The notion of testing collaborative relationships is challenging to do in workplace settings; however, this may be an opportunity to assemble virtual project team members who have not previously worked together.

Team Process

In MMOGs, players organize around a mission and successful completion takes players to the next level of play. The ultimate goal of game play is to complete all quests successfully and win the game. Examples of quests include finding treasures, fighting a battle, or learning a new skill. In MMOGs, quests are typically story-driven, more than a set of instructions, and this story has meaning within the overall context of the game. Players understand how the completion of one quest has implications for other quests. In many virtual projects, VPTs lack the overall vision or dependency of a project

due to challenges with communication and distance. Individuals are usually assigned specific tasks and do not see how that task affects other tasks. A story-driven project may address this challenge. VPTs may complete work differently if they understand how the project aligns with overall organizational objectives as well as understanding the implication their project has on future work (Duarte and Snyder, 2001). Also, providing a sense of challenge like in MMOGs, where success breeds success in the form of moving to the next level, can provide a sense of achievement and commitment in team members.

As MMOG players begin to work together, they realize that players must have the right skills for the job. As a result, groups come to rely on a member's skills and abilities to complete tasks. Similarly, one of the reasons VPTs come together is to combine core competencies of specialists from different locations. In these cases, the main selection criteria for virtual team members are their knowledge, skills and abilities. MMOGs provide real time information regarding the skills and competency levels of each member of the guild, which eliminates much of the guesswork when assigning roles (IBM, 2007). Players use the collaboration tools to organize game play so players can come together as a group and complete their assigned quest using every one's strengths and abilities. In addition to skills and abilities, MMOGs provide critical information in advance of any action to facilitate decision-making, a luxury not always available in VPTs.

MMOGs also provide incentive systems to motivate players and reward them for performance. These incentive systems are posted so players understand the rewards for their performance. These characteristics facilitate trust, motivation, and shared understanding. The capabilities that support team process in online games could influence the effectiveness of VPTs through multiple real-time sources of information upon which to make decisions, transparent skills and abilities, clear reward systems, and real-time information for delegation and decision-making.

Socialization

MMOGs are unique because they provide a shared, collaborative workspace that offers social communities such as guilds (Jakobson and Taylor, 2003; Lazzaro, 2004). Several researchers have examined the reasons for game play and concluded that socialization is one of the primary reasons – it keeps players interested and dedicated to the game (Achterboswch, Pierce, and Simmons, 2008; Seay, Jerome, Lee, and Kraut, 2004). Guilds facilitate the formation of groups, encourage players to play more often, and act as an important present source of support and socializing (Ducheneaut, Yee, Nickell, and Moore, 2006; Chen and Duh, 2007).

A guild, sometimes referred to as a clan, is a long-term group of players who range in size from a small handful to a couple hundred and join together for a common goal or purpose (Papargyris and Poulymenakou 2004; Ducheneaut et al., 2006). Guilds may be highly organized and goal driven with a specific purpose, or they may come together for no other reason than to have a group to identify with (Nardi and Harris, 2006). Guilds often develop their own rules and conventions differentiating themselves from other guilds and players. Having clear norms in the form of a defined set of rules and practices can minimize cultural diversity by forcing members to put aside their cultural norms and rely on the predefined conventions of the game (Peters and Manz, 2007). Becoming a full member of a guild can be a long process and requires commitment to the community's goals, trust of other members, and adaption to the new socio cultural reality that each guild practices (Papargyris and Poulymenakou, 2004).

The formation of guilds offers an environment where players can easily form relationships and frame a social experience in the game. Some have boldly stated that the relationship skills of the best gaming leaders would put many Fortune 500 managers to shame (IBM 2007). The formation of relationships is an important outcome of VPTs because this can facilitate trust, group functioning, member stability and encourage feedback and support. Players consider the ability to establish a reputation within a community a motivation for playing the game. When players are committed to a team, there is a motivation to succeed because they do not want to let their teammates down.

This notion is clearly important for VPTs because often times, virtual team members lack a team identity or do not feel part of the organization. Guilds or clans may increase socialization and coordination through institution-based trust (Scott, 1987) which helps individuals gain confidence in another's behavior based on the norms and rules in the institution (i.e. organization, guild, or clan). Technology capabilities and organizational norms that encourage the formation of guild like structures within traditional firms is an interested possibility of addressing the challenge of geographic and cultural dispersion

Rendering and Immersion

MMOGs offer the ability for people to become immersed in their environment. Rendering capabilities support the process of creating life-like images such as avatars and objects in this virtual world environment (Davis, et al., 2009). These capabilities offer the ability for avatars to touch and interact with objects or avatars. The ability to view an idea in a three-dimensional

space creates a new way to develop understanding of an idea or task. Davis, Murphy, Owens, Khazanchi, and Zigurs (2009) refer this notion as "immediacy of artifacts." MMOGs offer people the ability to interact with their environment that creates for them a sense of presence and immersion (Papargyris and Poulymenakou, 2005). These features are important for developing shared understanding, developing relationships and motivating individuals to interact with others. VPTs can perform better if such capabilities are available thus allowing for richer synchronous interactions between VPT members.

Awareness

MMOGs are fundamentally visual and players are visible to each other through their avatars MMOG technology capabilities provide visual cues that can be used to let others know if a player is communicating with another player or working on a task such as fighting with a dragon. This creates awareness, which is described formally as the "knowledge of the presence of other people, including their interactions and activities" (Dourish and Bellotti, 1992). In order for synchronous collaboration to occur, people need to know if others are present in the online world and available to interact with them. The visual aspect of the environment makes synchronous collaboration more effective. In addition, it eliminates the ability for people to disengage or disappear in a virtual team interaction. VPTs that can use similar features in collaboration technologies may be able to improve awareness of members and thus increase engagement and mutual trust.

IMPLICATIONS AND CONCLUSION

MMOGs utilize virtual teams much in the same way they are used in the organizational context; however, they have several unique differences in the way its technology capabilities are used to support team interactions. As researchers and practitioners continue to explore technology capabilities for enhancing the effectiveness of VPTs, MMOGs may offer unique features and lessons that can be used to develop more successful virtual project teams. As we continue to study opportunities of MMOGs there are several important future research questions that arise. MMOGs comprise players from around the globe of different ages, gender, nationality, and personality type. In addition, players come together at will and are not required to remain part of a guild or team. As we learn more about players, we might ask how the demographic differences between players affect team interaction. Exploratory studies that apply MMOG technology capabilities to virtual project teams may yield interesting results about how such environments can facilitate virtual team interaction. Many of the technology capabilities available in MMOGs do not exist in extant collaboration technologies and provide a vision of future tools for VPTs.

VPTs are quickly becoming the norm in organizational team practices. Although MMOGs are primarily used for recreation and play, they provide interesting lessons for VPTs and the technologies used for collaboration.

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