Supporting Virtual teamwork in class projects:
Peer-to-Peer Networking Tools for real-time interaction and offline collaboration

Summary Report for
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Virtual teams are used extensively in a wide variety of business contexts such as product design, software development, management consulting, and health care. Project managers rarely have the luxury of managing a single project in a single location or organizing a project with a co-located team, making virtual teamwork a necessity. Business school curricula are increasingly integrating virtual teamwork in their curricula to expose and train students in the ability to manage and work in geographically and temporally distributed workgroups. In addition, the nature of the student body in RCB makes virtual teamwork in group projects a necessity, since co-location, though desirable, is often very difficult. Courses in management, marketing and CIS are a few that typically involve group work that require constant communication between group members and the instructor. Much of the group work in typical group projects is accomplished in face-to-face meetings. With a geographically disbursed student body such as in RCB such physical meetings are difficulty to organize due to schedule constraints.

This innovation involved the use of peer-to-peer networking technology to support virtual teamwork. During Summer and Fall 2005, students in two sections of CIS 8150 and CIS 8030 were assigned to treatment and control groups. Students in the treatment group were asked to use Groove, a peer-to-peer networking tool to collaborate on their assignments. The tool supported a variety of tasks including co-authoring, co-browsing, or co-editing of documents created in group projects. Students in the control group used more traditional collaboration tools such as email and chat sessions. At the end of the course, an evaluation of the effectiveness of the tool was conducted. Also, qualitative data was gathered from students in the treatment group in order to assess their perceptions of the P2P tool.

The perceived effectiveness of group work supported by peer-to-peer technologies as well as the perceived impact of communication with instructor were significantly higher in the treatment group. Some of the typical comments on the tool were:

- P2P tool helped manage both synchronous and asynchronous collaboration.
- The tool helped work with several individuals without constantly engaging in email and file exchanges.
- The tool helped synchronize my documents with the latest version created by my team members. By automating mundane aspects of managing teamwork (like version control, synchronization and scheduling), the tool helped the team focus on critical tasks.

The students in the treatment group were asked whether they would recommend the p2p tool to other instructors. Some of the typical comments include:

- I have already recommended the tool to other professors
- After learning about our team’s experience with the tool, several teams in my other classes are already using it in their group projects
- I strongly recommend it to other professors.

Instructors in RCB who would like to try this innovation can easily do so. A very popular tool, Groove virtual office, is available for free for limited use. A comprehensive tutorial is also provided with the tool. Microsoft, which now owns Groove, also has announced plans to build the p2p capabilities of the tool in the MS Office 2007 version.