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Using The Internet To Simulate Virtual Organizations In MBA Curricula

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1. Introduction

Communications technology is shifting the basic architecture of organizations from hierarchies to networks. Organizations are becoming flatter, increasing the need for peer communication. There are also emerging "virtual" organizations, "temporary network[s] of independent companies ... linked by information technology to share skills, costs, and access to one another's markets" (Byrne et al., 1993). Today, that linking technology is often the Internet, Compuserve or a similar network. For example, one of the authors is currently working with an organization of consultants which is seeking to replace its outdated "F-style" communication (fone, fax and fly) with a much cheaper and more effective Internet-based system. This organization has no headquarters and makes extensive use of ad hoc task forces to address specific issues.

This paper describes a project which attempts to offer MBA students realistic exposure to work in a such a virtual organization as a pedagogical exercise. Two MIS classes at widely separated universities were each divided into teams. Each team was assigned to study a local organization. Then, based on the type of organization being studied, teams were paired (one from each university) and asked to exchange results over the Internet and come to some joint conclusions.

This type of project also provides potential research opportunities. The length and format are more realistic than typical lab studies, while offering better control and subject availability than field research.

2. Project Goals

The pedagogical goals of an MBA program, and the MIS course in particular, will vary among universities. In both our programs, there is only one required MIS course and both courses emphasize the strategic importance of Information Technology. Neither program has a Computer Literacy component. Our pedagogical goals were, first, to simulate a virtual organization and give students a chance to experience working in this type of environment. Second, we wanted a project which would contribute to their understanding of IT as future managers. We believe this is best achieved through direct contact with IS operations in local organizations. Our students were asked to assume the role of management consultants, brought in to study a particular MIS issue. Third, we needed a project which captured the interests of the students in order to generate relevant data for research purposes.

In choosing the issue to study, we sought a topic which would:

a) generate interest among organizations and encourage their participation;

b) show some variance among organizations being studied;

c) require limited prior technical knowledge from students;

d) be relevant to most MBAs career plans;

e) be supported by some existing MIS literature; and,

f) benefit from an exchange of ideas among teams at different sites.

We chose to have students examine the systems project approval process in different organizations. Students were encouraged to put themselves in the place of a manager in their organization and find out how to take an idea for a new system and turn it into a funded project.

In terms of our criteria, this project proved interesting to organizations and benefited from requiring little access to sensitive information. McKeen et al. (1994) provides both a good survey of current approval processes and their implications, and shows a reasonable variation among organizations. We also hoped students could distinguish between carefully written procedures and the reality of many organizations where "those managers and users who 'scream the loudest' (or have the most money to spend) dictate which projects are begun, regardless of the overall impact on the business" (Whitten et al. 1994, p.102).

The final criterion is particularly important. We needed a project where exchanging ideas with a remote team would be inherently more valuable than with local colleagues. Certainly it is easier to sit down and work face-to-face with people you already know. By choosing a topic so that the Internet links provide more valuable information than local contacts, the benefits of the virtual organization become real.

3**. Project Structure**

To begin the project, we developed lists of local organizations with sufficient IS activity to be worthy of study. From the lists, we generated pairs of organizations for which comparison ought to be meaningful. The final list included city governments, universities, telephone companies, government-run liquor store operations, newspapers, aircraft manufacturers, etc.

Approximately one month prior to the beginning of classes, we sent a letter to each organization on the list requesting their participation. The corresponding remote organization was identified in the letter, in the hope this would encourage the local organization to participate. We followed up the letters with telephone calls. When contact was made, the reaction was usually very positive.

We divided the students at each university into teams (largely through self-selection) and then assigned each to one of the organizations. This was largely a random process, although a few assignments placed part-time students in organizations where they worked. The classes had similar sizes, 19 at the University of Manitoba and 20 at Memorial University of Newfoundland.

Most teams were able to talk to senior IS personnel and then to some users who had recently been through the approval process. Students submitted a preliminary report about eight weeks into the thirteen-week term. These reports were distributed within each class and then discussed during class time. This allowed each team to make reference to practices at other local organizations in their reports. More importantly, teams also exchanged ideas and draft papers with their counterparts at the other university through e-mail.

Two weeks after the preliminary report was due, a videoconference was held to link the classes, allowing the teams to meet their remote partners and exchange some information on their findings. While not essential to the process, it allowed students to see their counterparts and also experience another communication medium of growing importance.

4. Results

We evaluated this project from four perspectives, instructor, student, participating organization, and research potential. A summary of each is presented here.

4.1 Instructors' Perspective

As might be expected, joint projects have their strengths and weaknesses. First, finding matching organizations proved more difficult than we had expected. T he two cities involved have quite different economies, and many organizations which have supported our MBA programs in the past could not be included because no match existed in the other city. We were able to create five "good" matches and one of lower quality.

During the matching process, we encountered several cases in which organizations expressed a strong interest but had to be excluded later when it became clear that no suitable match could be found in the remote city. This possibility must be made clear when soliciting support from organizations.

Second, determining how many organizations are needed may be difficult. Unequal class sizes can be accommodated to some extent by using teams of different sizes at the two universities. But the students must be distributed over the same number of organizations. If several students from one team decide to drop the course, as happened at the University of Manitoba, something has to be done to keep the team viable. Amalgamating smaller teams is not an option because of the implications for the other university.

Third, communication standards need to be established and tested early. Limiting messages to pure text is not very effective for a project of this type. Students need to be

able to send encoded binary files and find a mutually effective standard (e.g., uuencoded WordPerfect 5.1 files). We had problems with some experienced Internet users, who had already adopted a standard and were reluctant to change. Also, some part-time students had no off-campus access to the Internet and had difficulty practicing and learning the standards.

While the instructors in this project were both familiar with the Internet and had corresponded successfully with each other by e-mail for some time, neither used the same network connection and software as the students. Moreover, Manitoba installed the Spry Air series just prior to the start of the class and it was not thoroughly tested. The students also lacked experience. While only a third of the students had no email experience of any kind prior to the class, 81% had never sent or received email as part of their MBA program. Incorporating computer literacy courses into the curricula would address these problems.

4.2 Students' Perspective

Student reaction to the project was quite different at the two universities. Some students at Manitoba expressed their reservations about both the nature of the project and use of the Internet in the opening classes. This initial reaction was reinforced by a timing problem. The Manitoba class met four times before the Memorial class met. They wanted to get started but were frustrated waiting for the other class. The Manitoba students resented constraints, such as the number of teams and the organizations to be studied, which they saw as imposed on them by another university.

Part-time students present both opportunities and problems. In one case, a student was able to get cooperation from his organization when the instructor had been unable to do so. But all part-time students could not work in their own organizations. While we can argue that learning about other organizations is valuable, part-time students may have conflicts that preclude their working in certain other organizations and work schedules that make on-site visits difficult.

Despite the unavoidable hype in the media and discussions in class, not all students believe they should be using the Internet. A post-class survey found 17% of our MBA students believe that they should not be required to use e-mail at all and another 17% believe its use should be restricted to the class in which it is taught. These figures rise to 22% and 31% for the WWW and 25% and 42% for news groups. One explanation for this unexpected finding is that MBA students may feel they do not need to know how to use the Internet. Alternatively, students may simply feel that, although necessary, such topics are not academic and should not be part of an MBA curriculum. Since these alternatives have implications for curriculum design, further research is needed to identify the reasons for this result. Support for the project itself was stronger. Only 20% disagreed or strongly disagreed with the statement that, "Joint projects of the type used in this course should be continued."

We suspect that the culture of the MBA program could be an important factor. Programs which encourage state-of-the-art experimentation, and where students expect some efforts to fail, can probably use this type of project effectively. Students who expect a very controlled environment will be less satisfied. Grading is also an issue. Students who are very concerned about grades, and who perceive (incorrectly) that random technological events are determining project outcomes and grades, will also be frustrated.

4.3 Organizational Perspective

Because of the small number of organizations involved, no formal survey was conducted. Our general impression is that organizations were pleased to be involved and would do so again, but that the student reports did not offer substantial value. This is not surprising for a paper in an introductory course, given the students' time constraints. Moving this exercise to a more advanced class might be helpful.

4.4 Research Perspective

Technical problems create even greater problems for researchers. Most comparative studies would require good control over the communications medium. But the Internet is still difficult for some to use, particularly with text-based interfaces. Internet connections are not always reliable; many e-mail messages were lost at Manitoba and the entire system was down for a weekend. Timing is also a problem. Messages between our universities typically take a few minutes, but sometimes take hours and once took several days.

One advantage is that most systems allow automatic logging of both incoming and outgoing messages. Doing so without the knowledge of the subjects would not be ethically acceptable to most researchers. But students could be asked to review these files and provide some summary information. Programs could be written to gather some data, again with permission of the students.

We believe we were successful in our initial objective, to simulate a virtual organization. Perhaps we were even too successful, forcing students to cope with many of the problems which organizations face doing similar work. Nevertheless, considerable potential exists to enrich MBA programs in smaller cities through this type of program.

References

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