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WORKING IN VIRTUAL TEAMS:
USING GLOBALLY-DISTRIBUTED GROUPS IN MBA LEARNING

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WORKING IN VIRTUAL TEAMS: USING GLOBALLY-DISTRIBUTED GROUPS IN MBA LEARNING (1)

Abstract

In the spring of 1995, professors from two universities, in Spain and the United States, came together to brainstorm a new method of teaching for MBA students. They were concerned with addressing two topics in management studies: the functioning of globally-distributed teams, and the use of technology to help organizations communicate. They also had the additional motive of strengthening ties between the two business schools. A collaborative exercise between students in the two programs appeared to be the perfect way to accomplish all of this.

The following objectives were set:

- To teach managers the use and possibilities of technology in organizational communication.
- To learn about group dynamics in globally-distributed teams.
- To gain experience in the use of communication technologies as educational tools.

The means for accomplishing these objectives were unclear. The original team consisted of professors in marketing and organizational behavior. This was expanded to include technical expertise and also to bring in a third school, located in the United Kingdom. This newly expanded team set out to design a course that would meet the above objectives, and would provide an interesting and memorable experience for students and faculty alike.

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WORKING IN VIRTUAL TEAMS:
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1. What others have done

In order to understand what was the best approach to follow, we looked at similar endeavors by other educators. We found we were not the first to look at these issues—many universities have addressed the potential of communications technology for organizational communication. Educators have attempted to teach about, and to teach with, various communication technologies. The methods used have ranged from traditional lectures *about* the technology, to methods *using* the technology for student exercises.

Traditional lectures and case studies have addressed such topics as distributed work in global organizations, and the use of new communications technologies (including groupware and Internet technology). Some, such as Stanford University and the University of Western Ontario, have extended this with the use of video conferencing to lecture to distributed classrooms, or to hold case discussions with distributed sites. Still others have allowed student experimentation with groupware or group decision support systems (Alavi, Wheeler & Valacich, 1995; Niederman & DeSanctis, 1995).

The University of Texas has created a course module called "Global Virtual Collaborations" that consists of collaborative team projects that cross university (and country) boundaries (Knoll & Jarvenpaa, 1995). Each team consists of five members –each member from a university in a different country. Each of the teams is to use Internet technology to become acquainted, set group procedures, and brainstorm, plan and collaboratively write a business plan for an Internet start-up company. This business plan is then submitted to the instructors at each of the participating schools for individual evaluation, as well as to a central server for evaluation by an unbiased group. The evaluation by the independent group is for the conferral of an award, but does not affect the grade given by the student's instructor. In other words, the group report is evaluated separately for each student—no group grade is assigned.

The above endeavors ranged from traditional to innovative, with varying degrees of usefulness in demonstrating the challenges of distance work. We see several limitations in what has previously been done. Traditional lecture tends to focus directly on the technology, rather than the use of technology to achieve a business goal. Other methods, such as distributed lecture and case discussions, use technology to facilitate a teaching method, but fail to teach students how to use the technology for similar business purposes. Still others use controlled laboratory methods to demonstrate the use of technology, and are lacking in a compelling project for which to use it. The project developed by Knoll and Jarvenpaa

attempted to address these problems, but failed to assign joint accountability to team members for the final product.

2. Global rollout

To address the limitations that we perceived in prior undertakings, our aim was to develop a course that would meet our stated objectives, and also provide a compelling project that would actively engage students in the process of achieving these objectives.

In order to do this, we wanted knowledge to be passed on with a focus on the organization, not the technology. The students would gain knowledge of the technology, not formally, but through its use (students were supplied with a technical note outlining the use of some of the technology). We felt the learning should be centered on a project with deadlines and real accountability –this project would use IT to get the work done. Because of the location of the three universities involved, it would also have a global component by design.

It was decided to partner with a company that had a global information need that could be turned into a classroom project. This project would then be developed by the "global organization" –made up of student teams located in each of three "subsidiaries". Students would be given control of available technology to help facilitate their work, and the ability to choose among several technologies to accomplish different tasks.

The course was designed for second year MBA students, and as such the intent was to put into practice the concepts they had learned in the first year. We were not interested in students acquiring new skills, but rather in learning how to apply previously learned skills in a distributed team environment.

Finally, to lend credibility to the organizational simulation, we felt students should be held jointly accountable for the output of the project. This would involve joint evaluation across sites –requiring collaboration among facilitators as well. The final project would be presented formally to the partnering company.

2.1 Course Design

Because of the marketing expertise present in the planning team, it was decided that a marketing plan for the rollout of a global product would be a suitable medium for the course. The students would develop the plan over the course of the term, with parts of the project taking place within their local teams, and other parts requiring collaboration with the "offices" in the other countries.

The students would be the leaders of the project, with the facilitators taking a passive role (with the exception of "lecturettes"). They would provide guidance upon request and facilitate group discussions, but their main role would be as observers of the group interaction (both local and distributed). Little task structure would be imposed, allowing students to develop the structure on their own as they worked.

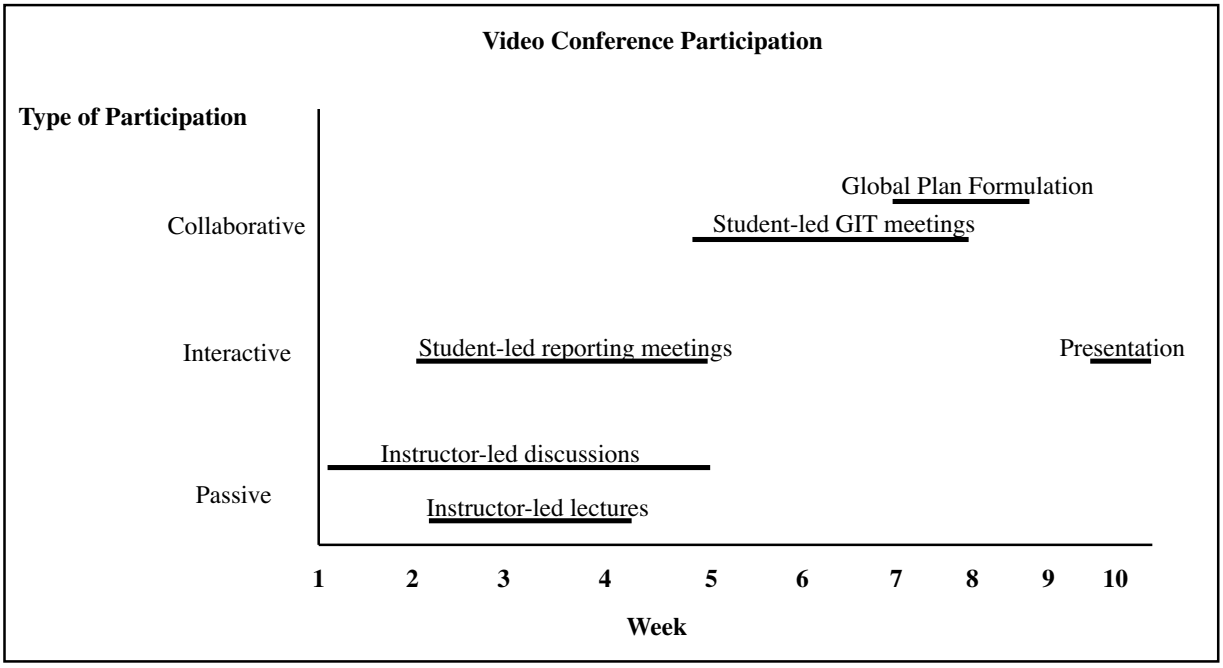
The project was scheduled to be completed in a ten-week trimester, with the first week scheduled as a project orientation. A 3-way video-conferenced meeting was set for the kick-off on day 1, with a presentation by an executive from the partnering company. The

objective of this session was to provide students with the opportunity to obtain information about the company and the project, and to clarify group goals; in addition, this was to be the initial meeting of all group members. A facilitator-led discussion and exercise on team building was planned. This first exercise with the video conferencing technology had the instructors leading the session, with the students playing a somewhat "passive" role (see Figure 1).

The first month of the course was then to be dedicated to research in the local market, with periodic video-conferenced meetings between the three sites to report on local findings. Topics for local market investigation were: competitive analysis, distribution channels, customer/market analysis, and the partner company's presence in the local market. The video meetings to share findings would be led by the students, with the purpose of exchanging information. We labeled this use of the technology "interactive" (see Figure 1).

In addition to the meetings, supplementary data was to be sent between locations by electronic mail or fax as needed. Each of the sites would also coordinate with local company representatives to obtain additional information. During this time, weekly video-conferenced sessions would be conducted by professors covering marketing and organizational topics (discussion-based "lecturettes"). The output of this module would be a local marketing plan from each site.

Figure 1

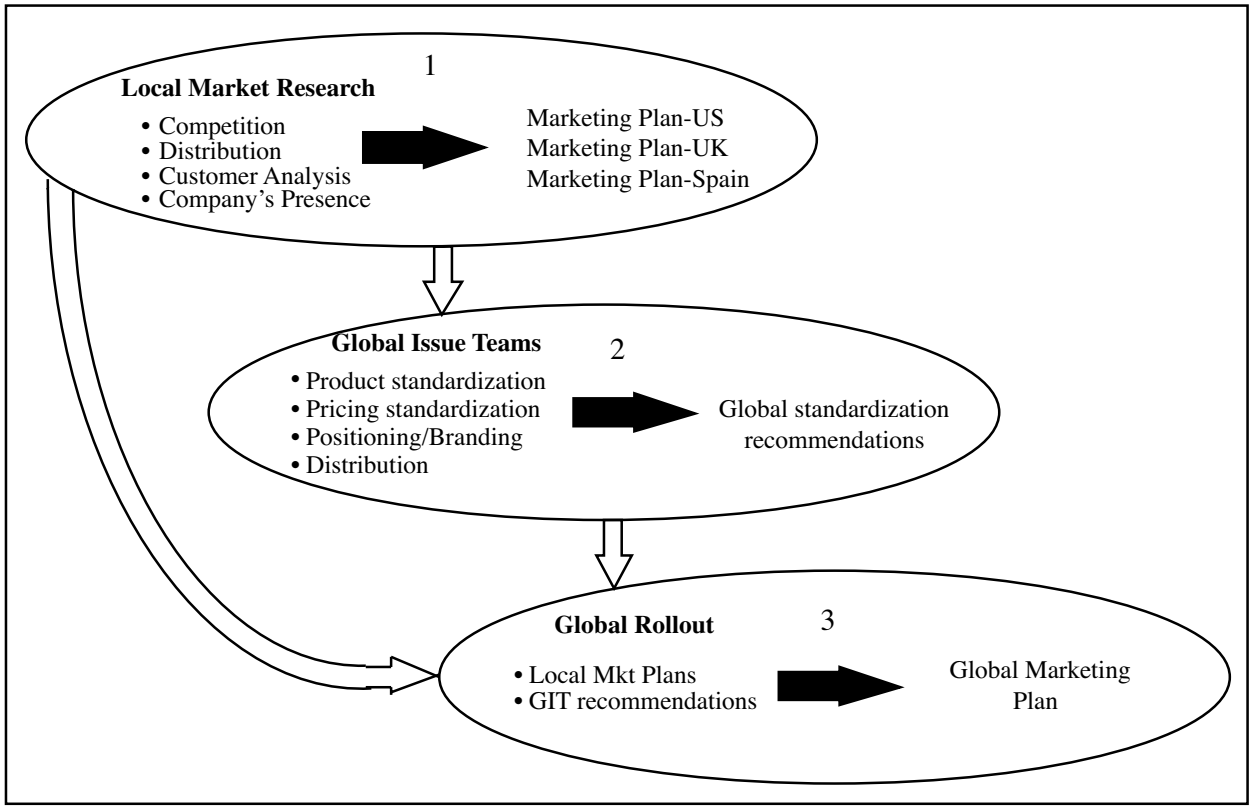


Beginning in week 5, the local teams were to split themselves into subgroups and combine with subgroups from the other two sites to create four global teams. Each of the newly created global teams would bring their local expertise to bear on the question of standardization of one of the following global marketing issues: product, pricing, positioning/branding, or distribution. Each global issue team (GIT), by working across geographic boundaries, would come up with a recommendation on the amount of global standardization desirable for their issue.

The GITs would communicate via electronic mail, FirstClass chat (interactive chat software allowing multiple simultaneous users), file sharing, and 30-minute weekly video conferences. These teams could choose how often they communicated and what medium they used (1). The video-conferenced meetings for the GITs went beyond the "passive" or "interactive" intentions of earlier conferences, and focused on "collaboration" (see Figure 1).

The last two weeks of the course were to be spent formulating one global plan, using input from the local plans and the GIT standardization recommendations. The last week would include a formal presentation of the plan to the partnering company's executives by elected group members –other members would be present via video conferencing. Debriefing at the last class session would involve an analysis of the virtual process and the use of the technology to enhance communication, as well as a reflection on the project itself.

Figure 2



2.2 It Can't Be That Easy...

Changes to the course came about while still in the planning stage, due to administrative constraints at the schools. The US school had a long-running student project that was similar to Global Rollout in context. This annual marketing project partnered student teams with global companies to create regional marketing plans. Instead of running a separate

(1) Due to scheduling restrictions and cost, video conferences were limited to one 30-minute session per group per week.

course, the school felt it better to tie Global Rollout into the existing course –adding the teams in the UK and Spain to the data gathering dimension, and including the additional learning experience involved with the distributed teams and technology. This also meant that the partnering company should be one already selected for this project, preferably one with a focus on Europe.

In theory, this was not a bad idea. A company was selected (Firm C) that was happy to have the additional resources from the European schools, and pleased to take part in the experiment. Firm C wanted an analysis done of the market for their product in Europe –they had a strong presence in North America, and wanted to expand the market in Europe. What they were looking for was a pan-European plan, not a global plan.

The most evident problems with this proposal were a difference in calendar time, and a difference in goals. The US project had already committed to begin in November and complete in April, while the course duration at the other two schools ran from early January to mid-March. This implied not only that the US school would be well into the project by the time the others began, but that they also would be alone in delivering the final project to the company. In addition, the US students would be fulfilling the goals of the international marketing project, which were slightly different from the goals of Global Rollout. This could undermine one of the original goals of uniform grading of the final report, although collaboration could still take place between the faculty at the European schools.

This arrangement also presented a difficulty when Firm C revealed that they did not hold the European schools accountable for the final product. While this was seen as an opportunity to concentrate on the process rather than the product, it also indicated that the American students would be under different pressures. This, coupled with the fact that the data collection would only be for Europe, put the groups in awkward positions. The European schools would be subordinate subsidiaries of the US headquarters, with the data collection done in Europe and directed out of the US. This traditional hierarchy was not what we had in mind when we designed a course focusing on a distributed organization. After a great deal of discussion, it was decided to move ahead with this arrangement, recognizing that in many ways it was a better simulation of reality. It would give us the opportunity to see how to make empowered teams work in a hierarchical structure.

Another difficulty arose in disparity of class sizes. The Spanish and American teams had twenty and sixteen students respectively. Due to scheduling conflicts with ongoing projects, and limited video facilities, the UK school was limited to six. We felt this imbalance in global team symmetry meant a strong possibility of the UK team being overwhelmed by the others in the global decision-making. This problem was discussed ahead of time within the UK team, and the students decided they were up for the challenge. They agreed that they would each participate on all of the global teams in order to achieve some equity in global group size between sites. This meant they committed to a broader range of knowledge than the students at the other schools, who would be specialized in a single global topic.

A final conflict came with the assignment of class session times. Each administration had set aside days and times for the courses. The US school had a specified time free every day of the week, but the European schools were restricted to certain days early in the week. This, coupled with three different time zones, had the result of each site having to make some sacrifices in order to come up with a workable timetable for meetings.

Given the difficulties encountered in the planning stage (see Figure 3), we decided to plunge forward, believing we still had the opportunity for an interesting learning

experience. We realized that our plan had been based on different assumptions, and were willing to improvise if it no longer proved viable. The students concerned were in agreement. They understood that the course was of an experimental nature, and were willing to go wherever it might take us.

Figure 3

School	Goal	Course Duration	Course schedule*	Time Zone	Local MKT Phase	Class Size
US	Mktg project requirements	Nov-Apr	M-F 1800-1930	-5	Coordination/ Compilation	16
UK	Global Rollout requirements	Jan-Mar	M 800-1930	0	Data Collection	6
SPAIN	Global Rollout requirements	Jan-Mar	M,T 1800-1930	+1	Data Collection	20

* Greenwich Mean Time.

3. How it Went

3.1 Kick-off

The first class session was to be a kick-off meeting designed to introduce the teams to the project, to the company, and to one another. The head of European operations for Firm C was to give a short presentation from the US site, followed by a question and answer session. After this, a professor in Spain was to lead a short discussion and exercise on team building. The entire meeting would be a 3-way video conference, with faculty at each end acting as moderators.

When the day arrived, the US school was closed due to a snowstorm –one of the worst in the history of the northeastern United States. The local faculty and Firm C executive were stranded in other cities, attempting to get flights into the university town. Before it was over, the school was closed for over a week.

In the absence of the Americans, the Spanish and British schools met as scheduled via video conference. The team-building lecture took place, but discussion was flat. Given that it was the first video session, it is possible that the students were not yet accustomed to the medium. The professor had some experience with case discussions over video, but with a familiar audience. The discussion went more smoothly when it was turned over to the students to talk about the specific project. The two groups were able to discuss a preliminary strategy for tackling the local markets. Due to the short duration of the course for the European schools, both sites were anxious to begin local data collection.

After this introductory session, the two European schools split themselves into local task groups and set about defining group structures and norms. They decided on methods for task completion, and proposed budgets. They then began collecting data in the local markets. All of this took place in the first week.

3.2 America Digs Out

As the USA shoveled out from under the snow, the Global Rollout schedule was already being changed. The video conference to begin the second week was originally set to be a lecture/discussion on a marketing topic. The lecture was canceled to give the teams an opportunity to meet 3-way for the first time. Technical problems arose while connecting the sites ahead of time, and it became evident that the 3-way connection was not going to work. (The reason at the time was unknown, but it was later discovered that it was due to a change in equipment at the Spanish site.)

When the meeting finally took place, it was the end of the second week. The students in Europe were excited to report on the work that they had begun, and were wanting to propose a plan of action. Having not heard from the US team, they had charged ahead on their own, assuming (wrongly) that the Americans were not interested in leading the project. The Americans, meanwhile, were just coming back from their holiday break –having had it prolonged by eight snow days and another holiday.

Had they been present at the first meetings, it is probable that they would have established a leadership role by virtue of their prior knowledge of the project. However, due to their absence and the subsequent group formation without them, they were established as the outsiders from the beginning. When they arrived at the end of week 2, they were unaware of the progress made by the subsidiary groups and were ready to establish their leadership role. The other groups, having already established a group structure of their own, resented the perceived “mandates” from headquarters. These power struggles set a tone for the remainder of the course.

The presence of a technical interface may have inhibited a smoothing over of the process. Face-to-face interaction would have allowed for the existence of social interaction to alleviate tension. On the other hand, it could have allowed for displays of anger, demonstrated in body language and facial expressions, that were not discernible across video. In the absence of the face-to-face meeting, we made do with the technology, and relations did not improve.

3.3 Onward Ho

The course limped along as designed for a couple more weeks, but the three groups never really developed a rapport. The lecturettes were canceled to free up video time, in the hope that the groups could build their teams more easily through meetings. The first of the GIT meetings was characterized by the groups defining turf and posturing for leadership positions. After these first meetings, the US team decided it would be more productive if they worked independently, and opted out of the remainder of the GIT meetings. The pressure they were feeling for delivering an acceptable product to Firm C far outmatched their need for learning how to make the distributed groups work. The project was more important to them than was the process.

By contrast, the European student teams were concerned primarily with learning about distributed teams, and secondarily with the project. The exit of the American team was a blow to their virtual organization, but they felt they still had a great deal to learn about distributed teamwork and the technology. They remained in the teams they had formed (minus the Americans) and began the collaboration process of recommending standardization in Europe for each of the global issues.

The small GIT groups had much more success than the large classes in using the video for effective meetings, and the learning curve for them was steep. After the first few sessions, the groups seemed to forget the barrier and automatically adapted to the technical glitches. They quickly developed a familiar rapport using the medium.

The relationship was further strengthened by the use of FirstClass™ chat sessions. Two of the GITs scheduled on-line "chats" to hold follow-up meetings in the days between video conferences. Interestingly, not much work was accomplished in these chats, but the students enjoyed them immensely. They were characterized by such comments as:

"So John, are you here to play around, or are you here to work?"
"I'm here to play around, why did you come?"

or

"Hey, who has a good joke?"
"I do, have you heard the one..."

While email was also used for communication among these groups, it tended to be very professional in nature. The chats, by contrast, satisfied a social need in the group that wasn't met through other forms of communication.

3.4 Finale

The European teams continued to work together, and delivered a written recommendation to the US team on European standardization of the product. In addition, each country provided a document on pertinent issues relevant only to their country. The Americans presented a preliminary plan to Firm C in a meeting in Paris in March. Representatives from the UK and Spain also attended the meeting, but the presentation itself was handled by the US team.

The week before the meeting in Paris, the European students decided that the experience they had gained from working as a distributed global team could be of some value to Firm C. They took it upon themselves to draft a short document detailing some of the difficulties they had run into. The focus of the document was a comparison of face-to-face versus technology-mediated group interaction. As this report was not part of the objectives set out by Firm C, it was included in the package of documents for the company, but was not presented in Paris. This was to be the end of the project, and of the course, for the European teams. The US team took the recommendations made by Firm C during the Paris meeting, and incorporated them into the final document. They made the final presentation to Firm C in April.

4. What We Learned

4.1 Team Building/Organizational Issues

The first opportunity for team building came with the first meeting, which was missed by the Americans due to the storm. The team-building exercise was performed by the other two teams, followed by a discussion of the project, but the session in general appeared to be "flat". Perhaps it was an initial discomfort with the technology that made the session seem unsuccessful, for despite the apparent lack of enthusiasm, these two groups did benefit from the initial meeting, and formed a bond that was never established with the US team. The tone that was set up-front was of a serious nature, with attention being paid to task details rather than personal exchange. The teams were polite in their interaction with one another, and even friendly, but in a very professional manner. We would see the relationship continue in this way throughout most of the course. The behavioral norm was established at the first meeting and continued through the life of the group (Feldman, 1984; Gersick, 1988).

By the time the American students were introduced to their European teammates, the direction of the group had already been set. By missing the crucial first meeting, they were established as outsiders. It might have been possible to overcome this with time, but the many differences the teams faced, such as project goals, activities, deadlines and size (see Figure 3), made this improbable.

Researchers in group theory state that the most important factor for building a team is to have an important and interesting task to offer—one that identifies a significant mission for the group and has immediate performance goals (Lawler & Cammann, 1972; Hackman, 1977; Kidder, 1981; Katzenbach & Smith, 1993; Leavitt & Lipman-Blumen, 1995). For *intergroup* activity, the existence of a superordinate goal is critical for merging groups into one, as team identity is more difficult to forge (Sherif, 1958). Given the lack of face-to-face interaction in the distributed teams, the need for such a task/goal combination became all the more apparent. While the Global Rollout task was believed to be important and engaging to the students, the mission was different as outlined for the different groups. While the final goal of the US team centered on delivering the project to the company, the focus for the Europeans was more on the process. Evaluation (or performance goals) was also not aligned, as the sites were serving different masters and deadlines.

The technology and distance also created conditions, real or perceived, that inhibited team building. Eye contact and body language, which could be used to build trust, were not discernible over the video links, and the distance made it easier to drop out of the process (a co-located group member would find this difficult when confronted by group members on a daily basis). With groups that are connected only through technology, extra care should be taken in team-building exercises and providing opportunity for social fulfillment –an important factor in face-to-face teams (Halachmi, 1991). Local groups will set norms, learn to interact, and build their team identity not only in formal meetings, but also in hallways, lunchrooms, and after hours. A virtual team is challenged to perform these same functions across distance.

Contrary to what we originally expected, we did not find apparent differences between the groups due to cultural factors. All of the schools had at least 50% of their class coming from regions outside the school's home country. In the case of the Spanish school, only 25% of the Global Rollout students were Spanish. The international emphasis of each of the business schools ensured a heterogeneous mix at each site.

We did observe that a distinct business school culture existed for each of the schools, and presumed that students in their second year of an MBA program have learned the preferred methods and norms of their school—they have learned the culture. We saw differences in the way the three groups handled such issues as delegation and consensus building. They also relied differently on the faculty, with one team looking to the instructors for guidance and acknowledgment, and another team preferring autonomy in performing their work.

4.2 Technological Issues

Our limited experience with the video technology revealed that few service providers were prepared at that time to offer multi-point video service between Europe and North America, given our variety of equipment and line types. The lack of international protocols for service and equipment made this a market that was still experiencing growing pains. We tried three common carriers (in the US and Europe) before we finally found one that was both willing and able to link us successfully on 3-way connections.

The video sessions seemed to be marked by "flat" interaction, particularly in the "talking head" scenario of lectures. The technology did not seem particularly well suited for passive participation. Technical problems such as blurring, delayed response, and problems with voice-activated site switching caused awkwardness and lack of spontaneity in the groups, even when participation was interactive. During the collaborative sessions, students became more involved in the process and seemed less disturbed by the technical hiccups.

We found the sharing of documents to be a problem during video meetings. Often documents were sent via electronic mail (over the Internet) an hour or more prior to the meeting, but would not arrive in time for the meeting. The use of the FirstClass™ server as a document repository helped, but there were still problems when students did not have time to go to the computer lab between classes to retrieve documents. Document viewers were tried, but the resolution for text documents was poor –they were better used for overheads and graphs. The availability of on-line computer terminals or fax machines in the video conference rooms would have been ideal.

We learned with the video technology to test the connection 30 minutes prior to every call. Meetings will fail if there are problems with technology, and at the time, reliability did not seem to exist. For 3-way meetings, we learned to mute our voice-activated system when we were not speaking. The voice activation is really noise activation, which can cause the video screen to jump back and forth between sites every time a pencil is dropped close to a microphone. This is not only distracting, but also confusing, as uncertainty arises as to which of the other sites is speaking.

Some problems were experienced when sending documents between Macintosh and Windows-based systems. Mostly these problems pointed out the importance of setting standards for document transfer ahead of time, and making sure everyone is aware of what those standards are and how to use them.

The students that experimented with chat reported a lack of control in those sessions. As the sessions were used to vent a need for "social expression", this was not seen as a particularly acute problem. However, for the technology to be utilized in an orderly manner, some guidelines would need to be established about such things as designating a moderator, signaling when someone is finished speaking, etc. Such established procedures would provide some process structure and eliminate the chaos that appeared in the playful sessions.

We believe that students were influenced by the presence of the technology. The students seemed to look forward to distributed group meetings for Global Rollout, and to enjoy the chat sessions as well, despite the scheduling conflicts that were created with other classes. Although the positive reaction to such meetings could have been due to a general propensity toward the course, the project, or the other group members, we suspect the lure of the technology played a part.

5. Conclusion

In the end, it was determined by both students and faculty that the real learning in the project came not in developing a marketing plan, but in the process of learning about distributed teamwork. In addition to fulfilling the project requirement, the Europeans had composed the document for Firm C on the trials of working as a global team via technology. Perhaps because they had successfully partnered with each other, they did not feel the project had been a failure. They were quite contemplative about the experience, and felt they had learned a great deal about managing across distance.

In the team document, they wrote that the technology, while making communication over distance possible, was not as effective as face-to-face meetings in team-building:

> "*There is some magic to personal meetings that can simply not be achieved by indirect ones, especially in terms of creating personal relationships between team members"* (1).

Much as they felt face-to-face meetings were more effective, they did learn how to manage the technology quite well for their purposes. The groups from the two schools looked forward to their weekly conferences, and made good use of their meeting time. They gained confidence in the use of the file server and email capabilities. It was not so apparent that they learned to use the chat feature effectively for business purposes, but it did serve a group purpose in that it provided an outlet for socialization that they had not given themselves with their use of the other technologies. The Europeans utilized technology to help fulfill the needs of their extended group, and were thus able to maintain a cohesion that the larger group could not.

Questionnaires returned by the American students showed that they did not share the same satisfaction with the course. Although not apparent at the beginning, the American team was placed at a disadvantage from the start. They were set apart from the other groups by the very design of the undertaking. Their head-start on the project and their relationship with the company made it impossible for the teams to look at each other as equals. Their position as leaders was never accepted by the other schools, and resentment built from the outset. The intervention by mother nature in the initial team meeting, a critical one for setting group direction, helped to solidify this separation.

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(1) Extracted from the group document on working in distributed global teams, created by the IESE student team in March of 1995.

Figure 4

Global Team	European Team
• No Superordinate Goal • Problems at Initial Meeting • No Mutual Accountability/Evaluation • Technology-Imposed Barrier	• Superordinate Goal • Successful First Meeting • Mutual Accountability/Evaluation • Technology-Enabled Communication

The want of a superordinate goal was a critical factor in the global group's failure to stay together. Added to that was the lack of mutual accountability and evaluation, decreasing even more the chances of building an effective team. The introduction of technology as a means of communication imposed a barrier that would not have existed in face-to-face interaction, and may have helped to erode the shaky relationship.

While technologies such as video conferencing and groupware are intended to enhance communication over distance, they may not always be suitable substitutes for being in the same place at the same time. Both the successful European team and the unsuccessful global team agreed that relationships were better built using face-to-face communication. That said, what we observed was that organizational issues played a far greater role in the successful functioning of the distributed teams. When attention was paid to team-building factors –common goals, accountability and evaluation– the technology became an enabler, not a barrier.

5.1 Suggestions for Practitioners

5.1.1 Take Care of Organizational Factors

Organizations wanting to utilize globally distributed teams would do well to consider organizational factors before creating such teams. Extra care should be taken in the planning stages to ensure goals are clearly defined, and that mechanisms are in place for evaluation and assignment of accountability. Once the team is designated, these goals, accountability and evaluation procedures should be clearly articulated to all team members, even to the point of redundancy. Misunderstandings and miscommunication can usually be overcome in face-to-face encounters, but are much more difficult to reconcile over distance.

5.1.2 Take Care of Technological Concerns

If technology is being used as the means of communication, reliability must be established from the start. In addition, for initial uses of different technologies, training might be required to familiarize participants with the features and limitations of each technology. Groups may adapt their use of the technology to meet their own group needs (both task and social); the amount of adaptation will depend on the culture of the organization, and the needs of the group. If goals, accountability and evaluation are aligned, and the technological tools are available and understood, distributed groups can be expected to use the tools effectively to accomplish their objectives.

5.2 Suggestions for Further Research

- The study of *multi-cultural distributed groups* was a goal of the course that was not realized. A look at how homogeneous groups representing different cultures react in a distributed environment would be an area for future study.

- An analysis of the genres in use for each of the technologies was briefly touched on in this paper. In the context of organizational communication, a genre is "a distinctive type of communicative action" that has a purpose and form that is recognized and understood within the community that uses it (Orlikowski & Yates, 1994, p. 543). Examples of business genres include the memo, the business meeting, the business letter, etc. All communities have a set of communicative genres –a genre repertoire– that members use to achieve different purposes, and a set of available technologies through which various genres may be realized. The study merits a deeper analysis of how the distributed groups adapted each of their available technologies to the fulfillment of their group and task needs, and how those technologies were used to complement one another in the *groups' genre repertoire.*

- More practice is needed in *facilitating team-building over distance.* One problem lies in creating team identity for intergroup project teams that are geographically dispersed. This is an issue well-suited for MBA classroom experiments, and will be looked at for future offerings of Global Rollout.

- The *physical setting* of the video meeting rooms was not an area we studied. Two of our sites had fixed video facilities with limited camera movement, while the other site had mobile equipment for use in a variety of rooms. It was unclear whether the physical confinement hindered the communication process. The restraints imposed by the physical setting might offer possibilities for future research.

Finally, despite the technical and social problems associated with the technology, we found it to be a key factor in drawing students to the course. The *technology was seductive,* and this probably influenced students' behavior. We assume this will wear off as students become more familiar with the use of these different technologies for communication. We suspect that future studies in this area may provide different results.□

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