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Best Practices in Facilitating Virtual Meetings: Some Notes from Initial Experiences

Daniel D. Mittleman, Robert O. Briggs and Jay F. Nunamaker, Jr.

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ABSTRACT

Facilitating virtual teams—teams separated by time or distance—is a practice only recently developed. With new collaboration technologies, it is now possible to lead projects where team members collaborate using only technology links for communication. As these technologies are new, little information exists to guide facilitators as to best practices for conducting virtual facilitation. This article describes virtual facilitation environments and reports on lessons learned from one set of academic studies that investigated the practice of same-time and different-time virtual facilitation. Best practices are derived from these lessons and presented here as well.

The art of facilitating teams—both large and small—in a single meeting facility is long practiced and well established. There are several well-known methodologies and many tools, tips, tricks, and conventions for maximizing this facilitation process. However, the art of facilitating virtual teams—teams separated by time or space—is not yet at all well established. The literature is minimal. Szerdy and McCall (1997) have provided several useful guidelines for leading Group Support Systems2 (GSS) sessions. Romano et al. (1999) provided some facilitation guidance for different time meetings and several suggestions for software developers to improve technology.

Beise, Neiderman, and Beranek (1999) interviewed 34 practicing facilitators to surface opinions about what they expect virtual facilitation to be like. Only 15 of the 34 had, at the time of the interviews, actually participated in virtual meetings. However, this is not surprising as, until very recently, technology—other than video conferencing—has not existed to support virtual facilitated meetings. Today, technology to support virtual meetings is exploding. David

Woolley (1999) lists 146 products3 for conferencing on the World Wide Web and his list is ever growing. This growth in tools demands maturation in the processes for using these tools to lead meetings.

We began facilitating virtual meetings, both same time and different time, about four years ago to support work we were doing with the US Navy Third Fleet in San Diego. To date, we have facilitated about 100 virtual meetings, both for the Navy and other related organizations. These meetings have included idea generation, planning, decision making, issues surfacing, status briefings, environmental scanning, collaborative writing, training, and expert briefings. From our experience, we have surfaced an ever growing set of lessons learned and honed a set of our own best practices for addressing these lessons.

This paper lays out nine lessons learned. For each lesson, we then present several best practices. The first eight lessons apply to same-time meetings, although many of these lessons also have different-time application as well. The ninth lesson applies directly to setting up and leading different-time and different-place meetings.

A Brief Introduction to Group Support Systems

A group support system (GSS) is a set of software tools designed to make teamwork more productive. With a GSS, everybody can "talk at once" by typing their ideas into a network of computer workstations. The system immediately makes all contributions available to other participants on their terminals. Because nobody has to wait for a turn to speak, team members do not forget what they are going to say while waiting for the floor (Diehl & Stroebe, 1987, Nunamaker, et al., 1991). Furthermore, GSS tools allow participants to contribute their ideas anonymously. Participants may therefore contribute partly-formed or unpopular ideas without fear of reprisals from peers or superiors (Nunamaker et al., 1991; Connolly, Jessup, & Valacich, 1990; Valacich, Jessup, Dennis, & Nunamaker, 1992).

Software in a group support system focuses and structures the team thinking in some unique way. An electronic brainstorming tool, for example, encourages a group to diverge from familiar patterns of thinking, to find as many unique ideas as they can in a short period of time. An idea organizing tool, on the other hand, encourages a group to converge quickly on key issues. Electronic polling tools allow a group to identify areas of consensus and disagreement. This often leads to productive and focused explorations of assumptions and unshared information. Other tools in a GSS might include a group outliner, which allows all participants to add to an outline simultaneously, group writing tools, and multi-criteria decision-making tools, to name but a few.

Our Research Setting

Our research team, based at The University of Arizona, was invited by the US Navy to undertake use of a GSS to support same-time and different-time virtual meetings. This invitation led to a still ongoing four-year engagement with the Navy towards transitioning GSS technologies into their routine operations.4

The research team piloted its virtual facilitation techniques with the US Navy with twenty 15-minute-long demonstration sessions over three days in late 1995. These sessions were limited to same-time collaborative work across several buildings at the Naval facilities in Point Loma, California. A scripted crisis management scenario was utilized to demonstrate the viability of using GSS for same-time distributed work. Three to four separate sites participated in these demonstration meetings. These demonstration sessions used GroupSystems GSS, PC Anywhere software for screen sharing, Intel ProShare for video conferencing, and plain ordinary telephone systems (POTS) for audio links.

After the initial pilot, the research team was invited to work with the US Navy Third Fleet. The team conducted two collaborative exercises aboard the USS Coronado, the Third Fleet's Command Ship, over a three-month period, timed to coincide with two Navy professional conventions. Each exercise included participants live on the floor of the convention. Other sites participating in the exercises included Marines at Camp Pendleton, the hospital ship USNS Mercy, the USS McKee, and the staff of the US Navy Second Fleet.

During these two exercises, twelve 60-minute crisis management sessions were held. The crisis management scenario used was an extension of the demonstration scenario piloted a year earlier. In this case, the teams were actually engaged at producing candidate courses of action to recommend. The software used for these sessions was GroupSystems GSS over a Citrix Server and POTS audio. Limited experimentation with VTC was attempted due to the ship-to-shore bandwidth constraints. During these exercises, each participating site assumed the role of an independent military, government, or non-government agency that had to work together to respond to a simulated typhoon disaster in a mid-Pacific island nation. Each site was assigned a set of hypothetical resources.

The teams used a categorizing tool to gather and organize incoming information. Each team monitored several categories of information, such as Incoming Information, Infrastructure Damage, Medical, and Weather. The exercise leader drove the scenario by dropping new information into the Incoming Information category. All participants could view that information as soon as it appeared. The exercise leader then assessed the seriousness of each new event and assigned responsibilities to remote participants by dragging-and-dropping items from the Incoming Information into the categories monitored by remote teams. The leader would call a same-time meeting where participants at geographically separate sites would work together on-line to develop courses of action, to allocate resources, and to plan interventions.

Following the exercises at the two Naval Conventions, about a dozen different-place sessions were established to support work among the Navy War College, the Marine War College, COMTHIRDFLT, Space and Air Warfare Command (SPAWAR), and the Naval Warfighting Lab. These sessions included participants in different time zones and on both ship and shore. Each of these sessions consisted of differing

characteristics. All involved four to six different-place participants engaged in real work. Work tasks included: creation of a requirements document, reachback requirements analysis (a decision-making task), and collaborative writing of technical standards. The software used to support these sessions was GroupSystems GSS over a Citrix Server and POTS audio.

Concurrent to these exercises, GroupSystems was installed aboard the USS Coronado where additional same- place and different-place meetings occurred.

Our research employs an Action Research methodology (de Vreede, 1995). Research data has been collected using three principal methods. First, researchers engaged in observation (or participant observation) during ongoing different-place sessions. In many of the exercises, researchers were present at more than one physical site. Extensive field notes were compiled from these observations. Second, interviews were completed with participants after many of the exercises. Thirty-six interviews were conducted following the Navy Conference exercises; fifty interviews were conducted after Navy War College sessions. Third, the researchers engaged in extensive cross discussion, debriefing, and reflection among themselves. These behaviors contributed to surfacing several insights that might not have been otherwise noticed.

Lessons Learned

This section presents the lessons that were learned from undertaking the collection of distributed sessions described above. Nine lessons are presented below, along with best practices that emerged from the lessons learned. Many of the best practices have application with multiple lessons. For simplicity, we are stating each best practice only once.

Lesson One: It is harder to follow a meeting process from a distance.

Different-place meeting participants have greater difficulty than same-place participants at following the process of the meeting. Different-place participants are more prone to distractions and to trying to accomplish multiple unrelated tasks than same-place participants are. This may be because, simply, they can. In a virtual meeting it is possible for many participants to engage in outside tasks without others knowing they are doing so. It is tempting to try to read e-mail, catch up with unrelated work, or engage in social activity, while keeping one eye on the meeting.

As entering and leaving the meeting is less noticeable to other participants, some participants may arrive late, leave early, or take long breaks. Although this lack of focus seems to be common practice, there are several severe consequences that result from these behaviors. Participants who fail to follow meeting process may be unsure what meeting task is being addressed and where this task fits into the big picture. They may also lose track of who is virtually present at the meeting and who is not. Furthermore, they may feel less a part of the team, contributing to lower buy-in to meeting results.

Best Practices to address this lesson learned.

Make the pre-meeting plan very explicit. Plan the meeting in more detail than would typically be the case for same-place meetings. Include in the plan anticipated timings for each stage of meeting process to support participants who will multitask other work and include a listing of technology tools to be used so each participant is prepared for that technology. Include the purpose and objectives of each stage so that participants will understand why time is being spent on that portion of the agenda. We have begun to pilot the wording of our interventions during premeeting planning, as we have found in virtual meetings that we do not receive sufficient feedback that our instructions are understood. We have erred by being both too general and too specific in our instructions and have found piloting to be the best solution for making sure they are correct.

Engage vested interest. Correspond personally in advance with each participant directly to confirm their participation in the meeting and engage their vested interest. Find out what their personal goals are and determine to what extent their goals map to the team's goals. We found that when a potential participant was unable to articulate a vested interest in the outcome of a meeting, that participant never showed up for the virtual meeting. Over the almost 100 sessions we have completed, we had a zero attendance rate when vested interest was absent.

Create a scoreboard. Create a computer frame of the meeting's agenda and mark-up that frame with checkmarks and notes to focus participants exactly on the topic at hand. In this way, the frame would function as a meeting scoreboard, keeping all participants up to speed on status. If the software supports doing so, keep a current roster of who is at the meeting on the scoreboard.

Focus transitions. The action of moving from one process stage to another should be complete and explicit. If virtual participants do not follow a transition, then they are lost during subsequent activities. One method of accomplishing focused transitions is to reserve specific communication channels only for transitioning between process stages. For example, we have found that distributed teams engaged in GSS interactions tend to focus on available video windows only during meeting initiation, stage transitions, and meeting conclusion. Therefore, it might be beneficial for the leader or facilitator to engage the video channel only during stage transition and utilize only audio and

GSS data channels within process stages. While the meeting may not always be focused, the transition from stage to stage should be very tightly facilitated and focused.

Enunciate interim goals. Each distributed project stage might begin with a same-time activity that produces a prioritized set of action items for different-time participation and a firm schedule for the next same-time interaction. This provides participants with anchors to mark the progress of the meeting and deliverables to induce active participation. Interim goals should be smaller and chronologically shorter than they would be in a same-place meeting.

Lesson Two: People don't get feedback when working over a distance.

Even when different-place participants are trying to stay involved in the meeting process, they often have trouble engaging because communication through technology can be limiting and frustrating. Some audio connections are half duplex, meaning that voice can only go one way at a time. With such phone lines, it is impossible to interrupt a speaker to gain control of the floor. And the speaker hears no audio feedback from listeners asking for control of the floor.

Our different-place participants report that feedback seems to come slower than same-place feedback and that they feel alone on the system when they do not receive immediate feedback. In fact, different-place participants lack nonverbal cues and feedback mechanisms that same-place participants receive. They can become observers rather than participants, asking, "Am I the only one here?" They experience a low sense of presence, and little or no feedback from other members of the group to their comments and contributions. Many feedback cues commonly used in a physical meeting room such as body language—gestures, nods, and facial expressions, grunts, and other nonverbal communications—have not yet been integrated into most different-place groupware. The lack of feedback generates less interest in the meeting (see Lesson One) and inhibits negotiations and convergence to a decision.

Best Practices to address this lesson learned.

Explicit facilitated feedback. The leader or facilitator should pro-actively seek out and provide feedback for different-place participants. This might take the form of prompting for verbal response when comments are made or enabling groupware features (such as comment numbering) that encourage on-line conversational feedback.

Frequent process checks. The leader or facilitator should engage the team in process checks more frequently than would be appropriate in a co-present meeting. We proactively check in with our virtual participants every ten to fifteen minutes by asking, "Tom, are you with us? Do you agree with the items just discussed?" And so forth. These process checks provide opportunity for individuals to offer feedback and keep virtual participants more engaged in the overall process.

Encourage use of back channels for feedback. The leader or facilitator should make extensive use of available back channels such as on-line chat windows to encourage give-and-take among virtual participants. Establish a communication channel specifically for process discussion separate from the channels being used for task discussion. In addition, establish a private communication channel so that virtual participants can communicate directly with the facilitator about process issues.

Lesson Three: People forget who is at a distributed meeting.

Participants not only have trouble receiving feedback from other participants, they forget to provide feedback as well. In fact, we have witnessed several occurrences of participants —even facilitators—forgetting about different- place participants who were participating in the meeting.

In one session of ours, teams at several sites went to lunch forgetting that participants were still working on-line at another site. In other meetings, we subsequently found out that participants had been absent for 20 minutes before their absence was noticed.

A related problem to forgetting people at a meeting is not knowing who might be there. We found that participants who are unsure of whether a VIP was present chose to

participate—or more accurately, clam up and not participate—as though the VIP was present. This lack of knowledge of who was at the meeting led to least-common-denominator participation.

Best Practices to address this lesson learned.

Reflect users names when facilitating. At every opportunity when verbally interacting with virtual participants, use their name to address them. This not only pulls that participant more into the meeting, but identifies that participant to others and serves as a direct reminder to all that the named participant is actively engaged.

Remind participants who is at the meeting. Verbally check in with all participants every 15 minutes or so (depending on the size of the group). Again, reflecting names not only brings that particular participant back into the meeting, but reminds the other participants—and the facilitator!—that the participant is still there.

Distribute photos and short biographies. Some GSSs provide facilities to paste up pictures and biographies of meeting participants so that others can see their faces and learn about them. Even if the GSS in use does not support this, it is helpful to distribute web or paper versions of this information. The pictures might include shots of the meeting space itself so that others can picture what people look like assembled in the meeting room. The biographies should be more than just work resumes. They should include hobbies and interests so that distributed team members can build rapport over the life of a project.

Lesson Four: It is harder to build a team over a distance.

Different-place participants have less opportunity for team building than same-place participants do. The process of team building is a core stage of team work. It establishes team member roles, enables trust, and helps to create a team language for more effective communication. It is at this stage where team goals are established and individual team members determine whether their personal agendas align with the team's. Achieving successful team building is vital to effective performance.

The group behavior literature includes many structured and semi-structured activities to support team building, but most all of these activities assume the team members to be physically at the same place. When a long-term project will be accomplished using virtual collaboration, there needs to be a mechanism for building trust, cooperation, and shared goals among team members.

While it is possible for a facilitator to lead a different- place team through traditional team-building activities using a GSS, such activities are awkward due to the minimal nonverbal communication channels available. As much team building results from informal interactions—even break-time discussions—as from structured interactions during formal activities.

Best Practices to address this lesson learned.

Achieve very clear, unambiguous goals for the team. While well-constructed goals are important for any team project, they take on additional importance for a virtual project. When team members buy into clear, concise, and unambiguous goals, the chance of personal agendas disrupting the meeting process substantially decrease.

Have kick-off meeting face to face. As it is very difficult to establish trust and a sense of team among strangers attached only through electronic technologies, when a team project will consist of several meetings or a long duration, bring the team physically together for a kick-off meeting, if at all possible. This same-place kick-off serves the added benefit of providing an opportunity for training in the GSS technologies that will be used to support subsequent interactions.

Engage in distributed breaks. This may be difficult to accomplish, but is well worth the effort. We used this technique during a meeting between Hong Kong and Arizona. The first half of the meeting was formal and rigid. The audio and video links were kept up during the break during which time informal discussion took place. The participants joked about the room lighting, the weather, and about faxing donuts back and forth. Following the break, the tone of the meeting was less formal with more of a sense of one large team rather than two separate small teams.

Lesson Five: Network connections are unpredictable.

Distributed computer and communication technology is inherently unreliable. Different-place meetings often use technologies owned or managed by several different vendors. Systems administrators legitimately concerned about their systems security are often uncooperative in setting up the software needed for virtual meetings. Finding incompatibilities, instabilities, or administrative stone walls is a common occurrence.

While we often facilitate using our own GSS environment via web browsers, on several occasions with the Navy, we have had to establish hardware and software presence on other people's computers. Our first experience with this sort of virtual connectivity experiment was impacted by several challenging technical barriers as different sites had implemented different data communication protocols. We began the technology planning for this meeting a full 30 days ahead of time; and we needed it. Among the problems we encountered were communication protocol incompatibilities, modems set to work only in one direction, bandwidth insufficient to support our video links, lack of administrative rights to install our GSS, and firewall security protections on individual network systems. It took us the entire 30 days to work through this full set of issues.

The second time we set up the configuration it took us only seven days. At this point, after many iterations, unless we encounter firewall problems or uncooperative systems administrators, we can set up a configuration in 15 minutes.

Even once the technology is set up and tested, it is prone to occasional failure during the meeting proper. A virtual meeting dependent upon computer and communication technology will undoubtedly fail at some point. Sometimes some participants will be dropped completely for a period of time. Sometimes

some or all participants will simply lose one communication channel, but will remain in contact through other channels.

As stopping the meeting each time there is a glitch in communication technology will interfere with the flow of the process and could in some meetings grind process to a halt, but moving forward without some individuals—or without individuals having expected channels—could disenfranchise team members, each team needs to establish a protocol appropriate to its culture for handling technological interruptions.

Best Practices to address this lesson learned.

Assume a technology learning curve. The first time you set up the technology for a virtual meeting, assume it to take ten times longer than you think it should take. Start that far in advance. If you are using other people's computers or software, it will take even longer. In time, you may bring your preparation time down to a short period, but don't anticipate this happening right away.

Have a fallback plan. Discuss a technology fallback plan with the team early in the process and establish ground rules and protocols for determining whether and how the meeting will go forward without some individuals or some communication channels. If protocols are well established, it should be possible to continue with the loss of one channel with minimal process disruption. Caveat: Distribute the fallback plan on paper before the meeting as you won't know ahead of time which channel is going down. You just may lose the channel you counted on to convey your fallback plan.

Have on-call technical support. Know who is going to provide technical support at each site and know how to reach those people on a moment's notice. Don't rely on the primary meeting channels for contact with technical support as you will most likely need to contact them when you are having problems with those primary channels.

Establish a re-bootstrap mechanism. Establish with the team a mechanism for ramping up again following a disruption of the communication technology so that the team knows what to expect. This might be anything from a telephone tree or a known URL location so that all team members are informed of current meeting status, to standard individual work assignments if the link is lost, to a fallback to simpler technologies (maybe ftp-ing or faxing of documents) for continued collaborative work.

Download a process map to each participant. If each participant has a process map or agenda on their local computer then even if a communication channel is lost, the team will know what activity is coming next. We facilitated a meeting where the audio channel was lost, but the team knew what GSS task was planned next and was able to engage in it without audio channel support. Once the facilitator started the next task, the team members followed along without a hitch, even without audio support.

Lesson Six: It is tough to sort out multiple communication channels.

Different-place participants will have more trouble managing communication channels than same-place participants. Most all of us know how to manage and filter communication information in a face-to-face meeting as we have been engaging in face-to-face group activities all our lives. There may be several people talking simultaneously, everyone present will be emitting nonverbal cues, there may be several visual images on blackboards or overheads, and there may be handouts. But most people know, intuitively by the time they are adults, where to focus their attention and how to block out unimportant data.

However, most of us have had too little experience interacting via computer and communication technologies in virtual meeting environments to know how to manage the communication channels before us. Further, many virtual meeting technologies are still in their infancy and produce inefficient or non-intuitive messages with noise and distortion. Our human filtering mechanisms are not very effective at making sense of all this.

Consequently, distributed-meeting participants may experience problems of either too little or too much communication information to effectively follow the meeting. While virtual meeting technologies will improve over time, the facilitator can take several steps now to help distributed participants mediate bandwidth issues.

Best Practices to address this lesson learned.

Introduce new technology only on an as-needed basis. While most of us are comfortable communicating by telephone, the process of collaborating by audio, video, and data channels is foreign to most of us. It is helpful to begin collaboration with only the tools and channels required for the task at hand and then gradually add more features as needed. There is a tendency for computer proficient facilitators to show off their skill and enthusiasm by unleashing all the available technology right off the bat. This is a very bad idea.

Separate task and process channels. Provide team members with separate task and process channels to allow for back-channel process communication while task communication is taking place. With separate channels, individual participants can ask questions of the facilitator, side conversations for coalition

building can occur, follow-up facilitator instructions can be issued, and social chatting can occur, all without disrupting task-oriented team process.

Use video only during process stages where it is beneficial. As mentioned above, it may be beneficial to save the video channel only for transitions between process stages. During many structured GSS activities, the video channel has been shown to be superfluous to the needs of distributed individuals. In every meeting where we have used desktop video that the participants can control, we have seen them bring up their video window on their computer screens during process transitions. But once task work restarts, participants minimize their video window to eliminate it from the screen. They do this on their own without any prompting. They do this despite the fact that the video window takes up less than one twelfth of the screen.

Focus video on artifacts rather than talking heads when appropriate. For many structured GSS activities, distributed participants would rather view shared information than see faces of team members. We have seen participants turn the camera away from faces to show information or objects over the video. In many cases, participants find that shared focus on an object being discussed provides more important information than the video image of a talking head.

Use process support tools to focus group attention on specific information. When the GSS in use contains tools such as shared cursors and matched views, facilitators should make heavy use of these features to help ensure that distributed team members are focusing on the same data. Shared cursors allow a team member at one sight to point on their display and have that pointing object show up on other participants' displays. This helps the virtual team achieve shared focus. Matched-view software supports the participant at one sight to bring the display views of team mates at other sights into alignment with what is showing on his or her screen.

Lesson Seven: There is an art to using audio and video channels in a distributed meeting.

Using a speakerphone or video-conferencing to support team communication is very different from talking one-to-one on the telephone. We have encountered unexpected problems due to limitations with the technology. When a meeting presenter is located at a different place than his or her audience and is connected with a half duplex audio link, it is impossible for this speaker to receive real-time feedback from the audience. We have seen presenters carry on for several minutes after losing the audience's focus without allowing a break in the audio link to receive any feedback.

One early virtual meeting we experienced was plagued by the leader addressing her own local audience to the exclusion of the different-place audience. We found that the different-place audience quickly lost focus on the meeting and engaged on-line in unrelated work. In that same project, the co-facilitator at the second location, in trying to compensate for the behaviors he saw occurring during his partner's facilitation, over-compensated and focused only on the remote site (the original local site). In doing so, he lost the attention of his own local participants who once again engaged on-line in unrelated work.

We have tried to compensate for this experience by alternating focus among the sites. However, we have found a technological barrier in doing so. In many video- conferencing facilities, the camera is fixed (or at least there is no real-time camera operator to direct it). Consequently, the facilitator is tied to a particular mark in order to be seen by the remote site. This tethering limits the facilitator's ability to alternate group focus by moving about the room.

Best Practices to address this lesson learned.

Engage in a dialogue rather than give a briefing. We have found that as an alternative to giving a presentation, having the briefer engage in a dialogue with an individual discussant located at a different-place site provides the briefer with much more feedback and makes the information more interesting to the different-place participants. We have supported this by having the briefer show their PowerPoint show, but instead of simply stepping through it, had the discussant ask about and comment on each slide. The meeting participants reported that the briefer's personality shone through much better and that they remained more engaged in the subject matter.

Engage in a dialogue with someone you know. We found it to be helpful if the discussant was someone the briefer knew fairly well. Briefers report they pick up more nonverbal feedback from familiar discussants than they do from unfamiliar ones. One briefer reported that he was able to visualize the discussants facial cues from his voice as that discussant was very familiar to him.

Stay close to the microphone. We have noticed that when a speaker moves away from a speakerphone, even if his or her voice can still be heard, subtle information from inflection and tone is lost. The listener at the far end loses valuable nonverbal information. Audience members asking questions of a presenter or speaker are often located distant from the microphone; therefore, nonverbal information from these questions is not conveyed.

Shift focus among the different sites. To the extent the technology allows, we try to alternate our focus among the different physical sites, engaged in the meeting. If there are multiple remote sites, we alternately engage them by directing our comments to each site by name, "San Diego, what do you think of that idea?" "Chicago, what do you think?" We have also noticed that in some physical rooms, participants are dispersed in a manner that creates multiple logical local sites. When this is the case we treat each logical local site as though it was a physically separate site, "Left side of the room, what do you think?" "Now, how about the right side of the room?"

Lesson Eight: It is harder to converge over a distance.

Different-place participants have more difficulty converging to a decision than do same-place participants. Leaders of same-place meetings have long found that idea evaluation and convergence is more difficult to facilitate than idea generation as idea evaluation usually presumes a forced choice among several generated ideas where favorite options will be eliminated and scarce resources will be allocated. The difference in difficulty level between divergence and convergence appears to be even greater in distributed meetings. This may be a corollary to other issues listed above. The increased difficulty might be due in part to limitations in bandwidth, making give-and-take negotiations more structured and rigid. Or it might be due to a decreased focus on group and an increased focus on self, making compromise more difficult.

We find that terminology is more opaque in virtual meetings than in traditional meetings. By this we mean that in traditional meetings—even short ones—words accrete meaning or context through the duration of the meeting. We find this much slower to occur in virtual meetings. When shared vocabulary does not evolve, it is unclear to team members what they are converging on, making the process much more difficult.

Best Practices to address this lesson learned.

Tightly structure the convergence process. GSS process-structuring tools support a tightly controlled rational convergence process. If the team establishes and buys into decision-making protocols up front, the GSS technology will be effective at enforcing those protocols.

Hold frequent process checks. The facilitator should hold more frequent process checks than would be necessary in a same-place meeting to address secondary and tertiary issues of individuals on the team and ensure there is buy-in to each decision being made.

Use ad-hoc teams to negotiate compromise solutions. The facilitator can assign representatives of differing camps to ad-hoc teams to negotiate out differences either off-line or using side process channels and report a shared resolution back to the full team. We have used this process successfully for conflict resolution in collaborative writing tasks.

Develop a team dictionary and place it on-line. If the team is engaged in an ongoing virtual project, consider establishing a team dictionary on-line where shared terms and definitions can be placed. Whenever an issue arises over the definition or meaning of a concept, the resolution of the issue should be placed in the dictionary.

Lesson Nine: Different-time virtual meetings are different than same-time virtual meetings.

Several of our early different-time GSS projects were failures: people did not get involved in the process, if they attended the meetings at all. Interviews and observation suggested that people were easily disoriented from the meeting process when working at different times. Lacking the cues available in same-time interactions, they struggled to understand the meaning of facilitator instructions, shared information, and the contributions of others. Lack of feedback made them feel alone and caused them to question whether there was really any value in making an effort. They were not sure who would see their work, nor how it might be interpreted. They therefore chose not to participate.

In order to overcome the problems encountered in these sessions, we developed a different-time and different-place facilitation process consisting of seven rules-of-thumb to serve as a set of steps the facilitator can follow to engage participants and keep them involved in the process. Each rule-of-thumb is described below. These seven rules-of-thumb sprang mainly from failures and were tested and validated through successes. These techniques may help facilitators initiate and sustain successful asynchronous interactions.

Best Practices to address this lesson learned.

Make sure participants perceive direct vested interest in the task. The participants were mostly middle and senior-level managers who had multiple responsibilities competing for their attention. Different-time meetings are harder work than same-time. Consequently, if the participants didn't have a high vested interest in the goal of the different-time meeting, other demands would win their attention. Without a specified time and place for attendance, the meeting itself could not compete for attention. However, if participants had a high stake in the outcome, that overcame the other difficulties. In short, they have to care about the meeting or they won't participate.

Make sure there is no easier way to accomplish the task. Participants who thought there might be an easier way to accomplish the task typically never participated in the different-time sessions. We learned to ask each participant well before the meeting, "Can you think of an easier way we can do this?" It seemed important for the participants to explicitly notice for themselves that the different-time meeting was, in fact, the easiest way to accomplish their goals.

Make sure users know that management values the output of the task. This is one way to create a vested interest in participation. It may not be quite as powerful as a vested interest in the deliverables, but it appeared to help. As one highly-placed leader said, "The rule here is, if my boss is interested, I'm excited." Thus, it is useful if "someone at the top" thinks the meeting is important and an absence will be noticed. So, if it is at all possible, get someone with clout to call the meeting and express interest in the outcome.

Correspond in advance with each participant directly to confirm their participation. Because different-time meetings were harder to execute and easier to ignore than same-time meetings, facilitators learned to pick up the phone and speak directly to each participant to get a commitment to participate. Further, the facilitators learned to walk each attendee into the prepared virtual meeting space before work began. They would explain the task and the collaborative objects and answer questions for the participant.

Begin each different-time project with a same-time different-place GSS meeting. Yes, we suggested a same-time same-place meeting earlier. However, that may not always be possible. Even if the project is a different-time different-place project, it will be well served by a same-time different-place kick-off meeting. This kick-off event let the participants become familiar with the space, and with the process it was to support. It eliminated excuses about technical failures preventing participation. How is the collaborative space organized? What is the purpose/meaning of each activity? Where should comments and contributions be submitted? At what level of detail? How do you move around the space and use the tools to participate? The synchronous kick-off event appeared to reduce ambiguity and uncertainty, and appeared to improve later participation.

In every tool you use, create an extra place for team members to engage in back-channel communication to the facilitator. In same-time GSS meetings, participants can simply speak to the facilitator and ask questions. Different-time virtual meetings preclude oral communication. Therefore, it is valuable to provide a back channel to different-time participants for discussing the meeting process. Persistent chat windows proved effective for this purpose. In some cases, email was an adequate channel. Make sure this channel is always open. Take care to respond to it in a timely manner.

Participant instructions must be vastly more explicit than would be necessary for synchronous meetings. In our experience, if there were any way for participants to misunderstand their written instructions, they would do so. Because the meeting was different-time, the team might drift a long way into an unproductive process before the facilitator could identify and address the problem. Once identified, it was difficult to signal the team that a shift of direction was needed. In same-time meetings, such changes of direction may be implemented with a few words from the facilitator and a few questions from the group. In a different-time session, such interactions might string out over a day or more, depending on how often the facilitator and participants check into the session. Therefore, different-time distributed meetings require a very, very explicit set of participant instructions which have been pilot tested with several people to eliminate ambiguity. The instructions must be complete, unambiguous, specific, detailed, and easily understandable by all participants. No small order.

CONCLUSION

As academic researchers, we have tried to validate our experiences by seeking repeatability (did we see a one-time phenomenon or is it repeatable?) and generalizability (will what we saw also occur in similar but different circumstances?) It is our hope that our findings are useful to practicing facilitators who are experimenting with virtual meetings. It is also our hope that our findings will spur additional academic research into the underpinning and processes that lead to effective virtual teamwork.

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NOTES

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2 In this paper we are using the term Group Support Systems synonymously with Electronic Meeting Systems (EMS). Detailed description of what a GSS is can be found in Nunamaker, et al. (1996-97).

3 As we write this on September 1, 1999, his website is regularly updated.

4 More detailed information about this overall project can be found in [3].

5 We have worked to ground findings in theory, but will not present that theory in this practitioner article. Those interested in the theory should see Mittleman, Briggs, Nunamaker, and Romano (1999).

AUTHORS

Dr. Daniel Mittleman has facilitated more than 600 groups who used collaborative technology for a vast array of tasks ranging from strategic planning to systems analysis to architectural design. He is an internationally renowned designer of high-tech collaboration space, from command centers on warships to executive conference facilities. He created group software tools, including a shared document editor and an architectural programming environment. He is a pioneer in facilitating geographically distributed teams. Dr. Mittleman is a professor at DePaul University where he teaches Group Decision Making, Systems Analysis, and Virtual Teaming. Contact at: DePaul University, 243 South Wabash, Chicago, IL 60604, Phone: 312-362-6103, Email: danny@cti.depaul.edu

As a facilitator, **Dr. Robert O. Briggs** uses collaborative technology with groups ranging from the highest levels of industry and government to the inner city classroom. As Research Coordinator at the Center for the Management of Information, he investigates the theoretical foundations of group interaction, and develops software and techniques that he takes into the field to improve group performance. As Director of Product Management at Ventana Corporation, he guides future developments in software. He has published more than 50 scholarly works on collaborative technology, productivity, creativity, and technology transition. Contact at: Ventana Corporation, 1430 E. Fort Lowell Rd, Suite 301, Tucson, Arizona, USA 85719, Phone: 800-368-6338, Email: bbriggs@ventana.com

Dr. Jay F. Nunamaker, Jr. has been referred to as the father of group support systems. His work, at The University of Arizona, forged the way towards much of what we know today about using collaborative technology to support team process. Dr. Nunamaker has published eight books and over 200 papers on topics in this area. He received the 1996 DPMA EDSIG Distinguished IS Educator Award, the GroupWare 93 Lifetime Achievement Award, and a 1992 Arthur Andersen Consulting Professor of the Year award. Dr. Nunamaker is currently Regents and Soldwedel Professor of MIS at The University of Arizona and Chairman of the Board of Ventana Corporation. Contact at: The University of Arizona, McClelland Hall 430, Tucson, AZ 85721, Phone: 520-621-4105, Email: nunamaker@cmi.Arizona.edu