

Groups Are not Always the Same

*An Analysis of Group Behaviors in Electronic Meeting Systems**

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Abstract. The idea of supporting group meetings at the same time and at the same place by computer raises the problem of how salient features of group behaviors are understood in meetings. In this paper we take a critical look at several beliefs about group behaviors in research dealing with electronic meeting systems (EMS). The paper argues based on an empirical study that the concept of a small, cohesive business team, so widely held, in all EMS research is not necessarily a valid starting point in thinking of meeting support. In particular, the paper critically evaluates a number of beliefs of user aspects, group features such as composition, structure and protocols, and task characteristics such as nature, importance and meeting goals. In consequence, if these prominent features can vary markedly all meeting support cannot be designed in ways envisaged in current research. In conclusion we outline some research questions – both of empirical and constructive nature – that need to be addressed if the EMS research wants to address issues in computer support in groups that are not similar with business teams.

Key words: Electronic Meeting Systems, group decision support, meetings, group behaviors, computer import, implementation, multilateral diplomacy

1. Introduction

A lion's share of research – both constructive and empirical – into Electronic Meeting Systems (EMS) has focused on investigating meetings at the same time and at the same place (Nunamaker et al., 1991ab; Gallupe et al., 1988; Jarvenpaa et al., 1988; Pinsonneault and Kraemer, 1990; Benbasat and Nault, 1990; Morrison and Sheng, 1992; DeSanctis and Gallupe, 1987). These systems are expected to process and communicate relevant information for meeting participants in a timely and efficient manner (Ruhleder and King, 1991). Usually the system is composed of networked computers, public viewing screens, support software, and procedures to aid group decision-making or some parts of the process. A number such systems

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are available both as university prototypes or commercial products (Morrison and Sheng, 1992; Gray, 1992). Their purpose is to improve group decision-making by removing communication barriers, providing techniques for structuring decisions, and imposing a structure to direct or schedule the process, or control the content of the discussion (DeSanctis and Gallupe, 1987). The main thrust in the research has been to improve groups' meeting effectiveness by reducing the amount of time spent in meetings and by improving the quality of meeting outcomes.

A closer look at the research reveals that much of the research in this area is technology focused and bound, and, in addition, it takes a relatively narrow vision of meetings that is largely dictated by the potentials of the existing technology (Ruhleder and King, 1991; Gray, 1992). In line with this meeting support has been constructed for business teams which are small, cohesive work groups with fixed participants and a clear task and agenda (Johansen, 1988; Ruhleder and King, 1991). In consequence, empirical studies in EMS have concentrated mainly on social units that are relatively small, homogenous, sharing a common goal, and face a relatively well-defined task. Typically teams decide on a marketing strategy or on a personnel promotion policy. Still more frequently they face an artificial problem such as a survival problem. A majority of studied group tasks can be defined as one-shot information sharing and problem solving tasks with well defined closure properties and performance criteria. Technological support in the studies is targeted at group level task execution. It offers communication support and mediation through pre-planned task structuring. Special attention is paid to idea sharing and minimizing power differences through anonymity and parallel input. In the context of such research designs researchers have selected a group's internal features such as group size, proximity, group relations and composition, cohesiveness etc. as other independent variables (Nunamaker et al., 1991a; Pinsonneault and Kraemer, 1990; Benbasat et al., 1991).

In this paper we argue that the conception of a small cohesive team with fixed participants, a clear task and shared goals is not necessarily appropriate in informing the design and examination of all EMS systems. Groups are not always small, their participants come and go, their goals are neither shared nor existing, and their tasks can be ambiguous, and under constant shift and drift. Accordingly, current EMS research leans on a too homogeneous and simple model of meetings. This bias is partly due to measurement problems (what you can't measure does not exist, see Weick, 1984), but also due to researchers' ignorance of the broader organizational context in which the meeting process unfolds. To put it simply: much of the conducted EMS research has been narrow and too "rational" in its conceptions of meetings.

In this paper we shall critically discuss current conceptions of group behaviors in meetings. We shall examine a number of beliefs which have fundamentally shaped EMS researchers' perceptions how meetings are currently run. Further, we point out that in real settings a multitude of social interactions in which groups engage themselves differ markedly from those found in cohesive teams. This

we demonstrate by analyzing salient features of group behaviors exhibited in diplomatic meetings. The examples are drawn from a field study which was targeted to derive meeting support requirements for multilateral diplomacy (Lyytinen et al., 1993; Maaranen et al., 1993). The field study covered over 30 interviews conducted before and after the convening of the Conference on Security and Cooperation in Europe (CSCE). The interviews were done with top and middle level officers in the Finnish Ministry for Foreign Affairs (MfA) who were instrumental in organizing and participating in the follow-up meeting in Helsinki, 1992. The quotations from interviews will be written in italics and they are denoted as Interviews 1991–1993. Though the examples may appear esoteric to some readers we argue that they can be generalized much beyond their specific context, and they apply to a wide range of meeting behaviors found also in other organizational settings characterized by high equivocality, dynamism and political drama.

The conceptions of meeting behaviors that we will reconsider in this paper will be categorized in this paper into three groups: personal factors, group related factors, and task related factors. We shall elaborate each group in the following sections into more distinct aspects and discuss some typical beliefs of each aspect in the pertinent EMS research. Section 2 will discuss personal aspects. Section 3 takes up group aspects and Section 4 task related aspects. In Section 5 we summarize our findings and discuss their implications for future research.

2. Beliefs of personal aspects

In EMS research few empirical studies have reported user resistance or examined factors which lead to the resistance. This is somewhat puzzling as Kraemer and King (1988) report that most of the early introductions of EMS have been outright failures. Researchers often share a vision that people want to take part in computer supported meetings, and that they have positive expectations of such episodes (Pinsonneault and Kraemer, 1990). Clearly, such studies make substantive assumptions about persons' skills, expectations of and motivations to apply group tools (Ruhleder and King, 1991). Many times this is unconscious and done through the sampling and selection of test sites (Pinsonneault and Kraemer, 1990). It is also obvious that these assumptions exercise significant influence on how the outcomes of computer support are interpreted and how research problems are formulated. This group consists of the following aspects: computer literacy and background, voluntary system use and user visibility.

2.1. COMPUTER LITERACY

This belief can be expressed in the form:

UB1. System users have similar backgrounds and skills, and their literacy does not form an interfering factor.

In most EMS studies it is expected that the users have sufficient computer literacy such as willingness and ability to type, understanding of general properties of computers and so forth. This is well reflected in the available empirical research basis. For example, only few of the available studies have controlled the impact of the level of computer literacy on observed changes in meeting behaviors and meeting outcomes. One exception is a field study at IBM (Nunamaker et al., 1989) where positive reactions and results were observed to be independent of typing and micro-computer skills.

This belief is also reflected in the research procedures followed. For example, in many studies research subjects consist of senior level undergraduate business students (Nunamaker et al., 1991b). Moreover, many times the subjects have volunteered to participate in the test or this is not reported. This can be expected to influence their attitudes towards the computers and computer supported work. This can also bias the research results (Pinsonneault and Kraemer, 1990). In less computer literate groups some participants may not necessarily want to use computers, nor be able to work with them. This can be expected to affect considerably the research outcomes. Moreover, known differences among participants in computer literacy may become a major hurdle in accepting the systems as some participants may see that others can take advantage of using the system.

In a large portion of conducted EMS studies group members share similar cultural and educational background, as echoed in Johansen's usage of the term "cohesive".¹ This becomes also evident if we examine the populations of empirical studies. These mostly consist of business students, or members of uniform intra-organizational groups such as strategy planners or system developers. Between them they have sufficiently equal skills to use the system. Only recently some field studies have been conducted with more varying groups (Dennis et al., 1990; Post, 1991; DeSanctis et al., 1991). In many meetings, however, the participants come from different social worlds to which they are bound by personal and professional commitments (King and Star, 1990; Jones, 1992). In this case the milieu of the group process is an intersection or a meeting ground of different social worlds rather than a community in its own right that is adapting and using technology for its own good. It can be expected that the introduction of meeting technology for groups having a similar background will have a different impact from those groups which consist of members from a wide range of organizational worlds.

Most of the above points get a vivid characterization in a diplomatic context. Though all diplomats share the experience of being in the world of diplomacy they represent their "home states" and its culture, expectations and habits. Accordingly, their expectations and skills related to computers vary considerably. As one interviewee pointed out for some delegates in the CSCE the only automatic device they are acquainted with is an AK47 rifle. Therefore, any meeting support system that requires some computer skills for using the system computer will meet with resistance. This is strengthened by the technical inertia and conservatism of these policy making bodies, cultural prejudices such as the need to type in English, and the fear

that other countries will take advantage of lacking computer skills. These concerns were expressed by one high level officer from the MfA as follows (Interviews, 1991–1993):

Are the representatives willing to accept the use of such a system...and learning it, when the follow-up of the negotiations and understanding their political dynamics is far more important than goofing around with some machines?

2.2. VOLUNTARY SYSTEM USE

This belief can be expressed in a form:

UB2. Users are willing to accept the use of the system, or this, at least, is a neutral decision.

Most EMS studies assume that members of the group will voluntarily use the system or that this is a neutral decision. Moreover, many times it is also expected that all meetings and all meeting phases need to be supported by technology. Clearly, none of these beliefs is not necessarily true. Though all these assumptions can be valid in laboratory experiments, and also in field studies conducted in selected business organizations (see Nunamaker et al., 1989; Grohowski et al., 1990), they can not be expected to be a generally valid presupposition. For example, DeSanctis et al. (1992) report of a diverse and dynamic reaction to system and how use levels changed over time. Moreover, the use of the system was not mandatory in all meetings and in all meeting phases. This is clarified more by their notion of appropriation, which implies that use is neither necessarily a neutral, nor a stable situation. It is also obvious that the level and mode of system use is likely to affect the research outcomes in the same way as the implementation affects IS acceptance (Mohrman and Lawler, 1985).

Several reasons account for the wide popularity of the belief that system use is non-problematic. With laboratory experiments the assumption holds nearly always, because the research subjects volunteer and get paid their usual fee. Moreover, most studies so far have been laboratory experiments. In the field studies the acceptance is assumed to be automatic or easily obtainable through the site selection, or by a careful pre-meeting planning. None of the field studies report of any measures by which possible resistance was overcome, or if any resistance prevailed. For example, if the research subjects who are mostly managers or strategy planners are willing to come to a university site to use an electronic meeting system, and even to pay a considerable amount for doing this, we can assume that they are all inclined to accept the system use.

An opposite situation was found in the study for meeting support for diplomatic groups (Lyytinen et al., 1993). First, only truly voluntary use is possible, because all measures to make the system use mandatory, or to “buy” the delegates to use it can be regarded as a violation against the national sovereignty. Moreover, using the system is not a neutral decision from the viewpoint of the delegates. For example, the use of a technical facilitators to help to run these fairly complex systems will be

regarded as a political gesture, as no “neutral” parties are recognized in the meetings (Lyytinen et al., 1993). In addition, the high-level officers in most delegations adopt a negative and conservative standpoint which is then reflected in the attitudes of the whole delegation. As one top level officer from the MfA expressed it:

I would never go to that kind of game room....It might be useful for younger colleagues in their drafting exercises (Interviews 1991–1993)

This will easily lead to a situation where all important issues will be handled outside the meeting arena, since they normally require the intervention of delegates that have reached the rank of ambassadors. Under these circumstances the system will gradually become a toy for the lower level delegates to play with.

2.3. USER VISIBILITY

This belief can be expressed in the form:

UB3. Technological features of the system, such as parallel input and anonymity, increase user influence and provide opportunities for each participant to voice her concerns.

In most studies an EMS is expected to improve group effectiveness by changing interaction protocols. Typically these changes affect in one way or another user visibility. Technology is expected to change mechanisms and protocols that enable or constrain each participant to voice his or her concerns. Such changes and their potential impacts have been a focus of a large number of empirical studies (Benbasat et al., 1991, Nunamaker et al., 1991a, Pinsonneault and Kraemer, 1990). Two mechanisms have been distinguished in a large number of EMS interventions: parallel communication and anonymity (Nunamaker et al., 1991a) and both are expected to produce positive impacts. There is, however, an abundance of meeting arenas where such a change can be detrimental to the unfolding of the meeting process.

Parallel communication enables people to have more time in the meetings to generate and analyze ideas by typing and communicating electronically in parallel. It increases participants’ possibilities to voice their concerns because there is less fight over the air time. Consequently, EMS researchers assume that group members are willing to spend less time in oral communications. Yet, replacing oral communications by written texts can be dysfunctional for some meeting processes. This is due to at least two factors: incomparable media shifts and the negative side-effects of using EMS as a “group memory”.

Incomparable media shifts can exercise remarkable effects on group behaviors because written text and spoken text may have drastically different “readings”. This can lead to markedly different reactions to texts though they in appearance convey exactly the same literal meaning. It is also likely that media shifts affect the flow of the meeting process as the mode of production and interpretation is very different in spoken and written language. Spoken language is interpreted in an interactionistic “co-productive” mode where the speakers and hearers together

produce co-operatively the utterance whereas in the written mode production is one-directional from the speaker to the reader (Tatar et al., 1991). Hence changes in the media can lead to differences in interactions and meaning enactments which may be inconsistent with the prevailing meeting practices. This issue, however, has not been examined in any of the reported empirical studies.

Parallel communication can constrain the possibility of seeing what is going on thus allowing to share the process instead of just the outcomes. This may some times hinder the co-productive involvement in group tasks as a social ritual. In many situations EMS act as group memories, though such aspect has not been studied explicitly in the available research literature. One reason for this is the major focus on one-shot meetings where such a need does not arise. Yet, for example DeSanctis et al. (1992) observed that such uses were quite common and one reason for using the EMS. In many occasions the availability and extension of group memory by a EMS can also be a negative factor. Often it is important to delete group history (especially in highly political settings), because only this permits a group process to unfold effectively. Otherwise some group members may take advantage of what has been said to polarize the situation and makes the group process to deteriorate.

It is also obvious that all members in all groups will not be happy with reductions in oral communications. It is more likely that people will adapt to such changes in business organizations, where high status members can influence the conduct of the meetings. It is also likely in groups, where such norms and protocols are already established such as in planning groups. It is also easier in situations, where the goal of the meeting is information gathering and sharing which can be done more easily by parallel communication and anonymity. For example, most of the successful uses of EMS in real organizational settings have been of this type (cf. Dennis et al., 1990). It is, however, unlikely that such changes are painless and even effective in groups where strong protocols for oral communications prevail, or where the change in interaction patterns requires consensus among all group members because many times this can lead to disturbances in the power balance. These kinds of changes can make resistance understandable and rational as reported by Winslow (1992): "... apart from cost, some managers simply don't like the idea (of EMS). After all, most top managers have gotten where they are by being good in traditional meetings."

Anonymity is expected to increase participant's contribution through masking out the user's identity. Researchers and producers of EMS tools alike assume that this provides ample opportunities to voice concerns on any issue, because low status members are reticent in expressing their ideas, and their fear of social disapproval inhibits full-blown participation (Huber, 1982; Applegate et al., 1986; Nunamaker et al., 1991b). We largely agree with this, but warn that this may hold only for brain-storming meetings that take place within the business context. In particular, this seems to be useful when there are considerable status differences between participants, and the recognition of these differences is not necessary in carrying

out the group task, and when the focus is on listening and gathering the concerns of lower-level participants.

Reduced user identity can, however, be dysfunctional. This is due to several facts. First, several organizational processes and decisions are representative rather than inclusive of opinions (King and Star, 1990). This puts meeting participants often in the unique role of representing both their respective group as a whole and for creating conflict between members of the group. Second, there are groups where everybody is expected to have the same status. In addition, he or she must be individually recognized as a contributor to the group outcomes such as in committees and legislative bodies. Third, many times each member of such groups has a right also to veto the decision reached, but this requires their individual identification: everybody in the group must know who is vetoing in order to provide sufficiently information for further negotiation and horse-trading. In this sense the anonymity must be viewed as a continuous variable which can be adopted to different meeting contexts in a different manner as suggested by Nunamaker et al. (1991b).

Also with this belief diplomatic groups exhibit nearly the other extreme. In diplomatic interactions real user visibility is of utmost importance and any change in mechanisms and protocols that violates this arrangement will in fact endanger the principles of the diplomatic conduct. It is a well-known truism that only rumors are anonymous (and even they extremely seldom) in diplomatic encounters. This is also recognized in all diplomatic protocols and behavioral rules no matter what type of meeting (see e.g. Lyytinen et al., 1993; Kaufmann, 1988). As one of the interviewees expressed it:

Personal touch and self-representation are of utmost importance in all meetings, as well as in other arenas of interaction including chats in the corridors and other engagements..in contrast to sitting behind a table and typing something (Interviews 1991–1993)

The principle has been adopted so widely that though diplomatic meetings apply some mechanisms which endorse “anonymity”, these mechanisms are not used to achieve a true anonymity, but to provide an elaborate social mechanism in which names are not made “officially” known, but which anyway must be made known. Such mechanisms are used to promote ideas and proposals for “testing” without officially creating frontiers. Many times such mechanisms are implemented by using anonymous go-betweens, third party representatives, which tell what they have heard from the other side from “reliable sources”. One delicate example of this type of mechanism is the use of “non-papers” in the CSCE process. These are papers which are not made openly public and signed by any delegates and therefore not recognized as official statements of governments. In this sense they do not carry with them the name of the originator. Yet, their proper interpretation and use is only possible when they are linked with their originators (Lyytinen et al., 1993).

In diplomatic encounters the strive for parallel communications has less importance. This is due to the fact that traditional oral culture favors sequential processing of meeting items. In fact, the idea of giving up the sequential scheduling of air time to delegates is at odds with principles of conference diplomacy as a place to represent a state's opinions to an audience of other states. Parallel communication implies also written statements as noticed above. This, however, builds up the problem of "organizational memory". In oral, free floating discussions much of the talks are carried out in the "off the minutes" mode. This is officially recognized in the protocols how the meeting arena is organized (e.g. shields of the country names are turned down), and in some rules which deal with taping and taking notes. Any technological intervention, such as using computer based tools to input in parallel countries' proposals in a brain-storming mode, would meet large scale opposition as it would endanger the integrity of the meeting process by leaving written documents, and raise the political problem of managing and coordinating access to the recorded meeting conversations – another level of political complexity which would be difficult to resolve.² The only situation in the CSCE process where the interviewees' found use for the parallel use and anonymity was in having meetings inside one delegation or inside some quite homogeneous country block (such as NATO). This would be beneficial in searching out innovative negotiation strategies.

3. Group related beliefs

Group level beliefs concern questions of which norms and protocols are shared by group members; ways of reaching decisions within meeting, group development phase, group structure and composition; and adapted role models.

3.1. GROUP PROTOCOLS

This belief can be phrased in the form:

GB1. Groups follow few and well-defined meeting protocols, and these protocols can be easily formalized and supported by a computerized tool.

Studies in EMS have not widely discussed the types of norms and protocols followed in the meetings. Overall the researchers seem to assume that groups work with few norms and protocols which lend easily themselves for formalization. Many times the only protocols that have been followed in the studies are written guidelines in which researchers explain how to conduct the meeting. In such cases tools enforcing some of these protocols will produce with all likelihood quite good results. In those organizations where facilities have been used longer, it is not reported whether groups worked longer periods with the tool and what effects this have had on meeting success (Grohowski et al., 1990). An important exception is the study by DeSanctis et al. (1991) which clarified protocols related to different uses of the EMS during the quality management team meetings.

One reason for this is that most EMS studies have focused on single meetings, and in consequence the interest has been in short term group interactions and associated protocols. Typically, studied group processes range from one to four meetings per group. This means that studied groups are usually in the early stages of the group development (Pinsonneault and Kraemer, 1990). The group has not matured into a more functional stage where the norms are established and the need for socializing has disappeared. Accordingly it is argued that groups which have achieved the functional stage do not receive so much advantage of technological support as do the groups at earlier stages (Pinsonneault and Kraemer, 1990). The same applies also for group interactions where the behavioral protocols are so pervasive that groups usually within a short period can achieve a functional stage in group interactions.

Yet, in many real life situations, rich and pervasive social protocols can be an inhibiting factor for the system acceptance. This applies in particular for groups with an extensive cultural history. Research in social psychology has shown that rich norms are important when group cohesiveness increases (Festinger, 1968; Shaw, 1976). Another area where this applies is domains of social activity which have rigid and pervasive behavioral norms governing group interactions. Such areas include for example law, group behaviors in some areas of public administration (e.g. university), and especially diplomacy where the group norms have been elaborated over several hundred years. In many cases such protocols are necessary because they let members coming from different social worlds work together with less friction and without fear of losing their rights and sovereignty. Primarily these protocols define oral interactions such as turn-taking, prioritization and ways of addressing issues and making points. Accordingly, if some participants fear that any intervention by a EMS contradicts some of the institutionalized behaviors it is likely that the system will fail.

Diplomatic meetings have traditionally relied on highly developed protocols. At the same time the protocols have elaborated over time and their variation is high depending on the context and nature of the meeting. In this sense, diplomatic groups do not exhibit the properties of groups in "early formation stages". Yet, the richness and variability of diplomatic protocols implies there are several areas of meeting conduct that contradict with the protocols imposed by the available meeting tools (some of them were mentioned already above). One typical example is the use of voting and ranking protocols in meeting systems. These tools carry with them an assumption that voting is preferable and neutral, and that a majority can decide in group meetings. Hence, consensus is regarded at most to be desirable but not obligatory for the meeting success. This may not be possible, however, in many diplomatic meetings where a consensus is not only desirable, but obligatory.³ Therefore any attempt to introduce voting and ranking protocols may be inappropriate. Another difference is the malleable nature of the diplomatic protocols which makes it difficult to "software" them into the system. For example, in the CSCE process protocols are less formal, though several unwritten and some

written protocols are enforced. The meetings exhibit a peculiar interplay between formal, traditional diplomatic rituals, and more informal, task-oriented activities. Moreover, the protocols change over time due to task variation, participant differences, and political conjectures. At the end all protocols are negotiable. Due to this everything floats in these meetings including the norms until a final acceptance is achieved and confirmed by the participating states. This was expressed in the interviews in a very blunt way (by referring to the incident in the Madrid meeting 1980 where the conference clock was stopped for three days so that conference deadline was never reached!) as follows:

Anything is allowed as long as consensus exists. Even the clocks can be stopped (Interviews 1991–1993)

3.2. GROUP STRUCTURE

This belief can be expressed in the form:

GB2. Groups are small, cohesive and static in structure.

Researchers in EMS emphasize that business groups are small and well-defined. Moreover, their structure and composition is static. Thus patterned relationships between group members can be analyzed by investigating solely the internal features of the group. Such relations include internal power relationships, status relationships, cohesiveness and density (Pinsonneault and Kraemer, 1990). These assumptions match quite well with many of the characteristics of the intra-organizational business teams. With inter-organizational and other types of groups the group structure may differ considerably, and so will the relations (see also Ruhleder and King, 1991). Very often explicit power relationships are not applicable, recognizing status is an important aspect of the group structure and process, and cohesiveness cannot be assured. In addition, the group structure can dynamically change and group boundaries drift. Finally, many times intense and multifaceted relations with the larger environment play a decisive role in achieving a meeting success. In these situations the role of EMS may be to help to manage meeting boundaries rather than to improve its internal efficiency.

Nearly all dynamic features of the group structure are present in the diplomatic arenas. First of all the groups are not cohesive as they involve work through the “representatives” who may share very different and even conflicting view points. Second the groups are not small. In the CSCE the size of the groups can vary considerably due to variation in the number of countries participating and the change in the political climate⁴. In addition, after the collapse of the Warsaw pact the process has started to bind delegates together with more varying backgrounds and different interests, and therefore the group formation resembles inter organizational negotiation and establishment of power bases. Therefore the group size, formation and agenda can vary drastically and many of the groups are not long lived. This was expressed in the interviews as follows:

Group sizes vary from groups...between two delegates..to negotiations in the meeting..of all participating states with over 200 delegates. In the drafting phase the maximum groups size is from 20 to 25 persons and maybe only 7–10 delegates know continuously what is going on. EC and NATO countries can coordinate things in their internal meetings and present their standpoints through trusted delegate(s) (Interviews 1991–1993)

Finally, the patterning of relationships within the groups cannot be understood without understanding the whole meeting history (the balance of gives-and-takes that has been created) and the prevailing political relations between different delegations.

3.3. GROUP COMPOSITION

This belief can be expressed in the form:

GB3. Group members have equal rights and all members of the group are actively involved in all phases of the group process.

Most EMS studies focus on groups where the decision makers in the group context include most or all members of the group and the concern for good and effective decision-making is calibrated by the welfare of the group (King and Star, 1990; Ruhleder and King, 1991). Again, this may be a valid assumption in some business contexts but may be untenable for other types of groups. In several group processes the decision-makers are located outside the meeting arena both physically and organizationally. Instead, the meeting arena is populated by representatives or “tokens” of the decision makers, and even different tokens carry different weights. One reason for this is that many times real decision-makers want to act behind the curtains and remain unknown, or at least, be not easily identifiable. Therefore, the tokens are often changeable and different participants can attend the meetings at different times. One standard example of groups where group composition through representatives is a norm is multilateral diplomacy (Lyytinen et al., 1993). Other such groups include bargaining groups, and inter organizational task groups involved in a number of tasks such as standardization, regulation, labor-relations or policy-making. In the CSCE process the use of tokens with varying weights was dramatically exemplified in the drafting phase of the original CSCE Final Act. When these negotiations were at their peak the usual meeting hours were not sufficient. In this situation the local conference center was able to offer only one meeting place for the (late) morning hours – their strip tease bar. In these premises the high-level diplomats literally took the chair, being professional negotiators, from the tea drinking ambassadors and put together the puzzle between the strip-tease performances.

In such a situation the concern for computer support is different and deals often more with generating ideas in some order and then distributing them for all parties involved – some of which are located outside the meeting arena. The group composition has also implications for the meeting protocols and interactions

between different meetings in a way not envisaged in the current EMS studies. For example, the meeting support should cover also linkages with intra-meeting processes, and the studies should ask how such a support will affect the whole enterprise. For example, one of the interviewees was horrified when we asked about the possibility to converse directly between the capitals through electronic means and asked:

Where do you need conference diplomacy and delegates any more in the future if the means of multimedia conferencing are developing like visioned?
(Interviews 1991–1993)

3.4. GROUP PROCESS FOCUS

This belief can be expressed in the form:

GB4. In the study of group behaviors the locus of attention must be placed on observable intra-meeting behaviors.

Current EMS studies focus dominantly on the intra-meeting characteristics such as changes in process structuring and support (see e.g. Pinsonneault and Kramer, 1990; Benbasat and Nault, 1990). Some recent studies have extended the research domain into events that immediately precede or succeed such events (such as pre-meeting planning, and post-meeting distribution of results) (Grohowski et al., 1990; Nunamaker et al., 1989). The process focus on immediate meeting events can be natural in group processes that focus on well-defined problem-solving tasks, but may be wholly inappropriate in understanding political processes where the tasks are ambiguous and inter-meeting behaviors play a decisive role. In such situations the study must analyze in more detail the delicate interactions between intra-meeting and inter-meeting processes.

In line with these assumptions, research in EMS widely presumes that important decisions are made in the meeting room. Inspired by this idea researchers want to examine specific processes and conditions that lead to such decisions. Meetings are, however, tightly coupled with the social and organizational environment into which they are embedded (Ellis, 1991). Accordingly, it can be very difficult to separate decisions that are made within the meeting and those which are made outside it. There are often meetings, which only legalize decisions made prior to the meeting.

In the diplomatic arenas the intra-meeting behaviors are so tightly coupled with the inter-meeting interactions that the former cannot be understood without access to political campaigning before and after the meeting arena. During the CSCE events is a custom that only two groups have a meeting simultaneously. Yet, results from several groups are linked together for political and tactical reasons. In fact, management of these issue-to-issue linkages are the real challenges for heads of delegations and also for the coordinators who chair the working groups. To meet this challenge they must track down and integrate diverse demands and requirements arising from groups. The following quote presents this vividly:

The coordinator must win the confidence of the key delegates in order to obtain information about all their dealings so that s(he) can synchronize these with the common exercise...Coordinators ..keep close contacts with one another to check timetables, to adjust terminology used etc. before putting drafts together from their groups. (Interviews 1991–1993)

Moreover, all substantially and procedurally important proposals are sent to “capitals” for further deliberation and analysis. Therefore managing idle breaks in the group work forms an essential part of the process. These breaks are not just arranged for rest or for reasons of limited space (it is acquired if it is really needed from somewhere including striptease bars) but to provide time and leeway to articulate points and negotiation tactics. One interviewee expressed this as follows:

If technology permits on-line monitoring of negotiations and drafting within the conference this will make impossible to achieve the goals of the conference diplomacy. (Interviews 1991–1993).

It is interesting that this sentence suggests two different implications. For one thing, conference diplomats will not give up their relative autonomy and negotiation power and their freedom and relative sovereignty should not be threatened by any technological intervention. For second thing, it points out the complexity and malleability of the negotiation situation which cannot be monitored or managed in real time through any technological monitoring systems.

3.5. ROLE MODELS

This belief can be expressed as follows:

GB5. Groups adopt limited and simple role models.

Most EMS studies hold simple beliefs about social relations and participants' expectations of appropriate behaviors and responsibilities in the meetings. In other words, very few studies have explicitly explored how roles are enacted and sustained in meetings. This is an obvious assumption, if all group members face the same problem, understand its significance, and benefit as a group from its solution. In this situation a simple role model can be appropriate. Consequently, few if any role models have been defined – the only exception being discussions of the role of a technical facilitator and his or her impact on meeting outcomes (Pinsonneault and Kraemer, 1990; Benbasat and Nault, 1990). Moreover, some studies have differentiated between role models adopted in a peer community and those prevailing in a hierarchical regime (Nunamaker et al., 1991a). Consequently, conducted EMS research has not expected that group members will adopt complex and multiple role models and which also frame participant's understanding of their own behavioral code and identity, or that instantiations of such models can make a significant impact on group processes. Yet, all this can be a different story in some other meetings.

In diplomatic meetings over ten alternative roles for conference diplomats has been identified (Lyytinen et al., 1993), and in the CSCE meetings nearly all of

them were identified with some major variants. In addition, the importance of maintaining these role models through any technological intervention was several times emphasized by experienced conference diplomats.

4. Beliefs of group tasks

The nature and content of tasks as faced by groups, and the overall task structure originating from meetings' goals and mission affect also tool appropriation. We can distinguish between the nature of tasks, task importance, nature of meeting goals and behavioral tactics followed in executing the task.

4.1. NATURE OF TASKS

This belief can be expressed in a form:

TB1. Tasks have well-defined and clear boundaries and groups know what they should do.

Most tasks examined in EMS research have been relatively simple. Among 27 studies summarized by Pinsonneault and Kraemer (1990) 7 were artificial problems, 12 were single-shot well-defined decision problems, 4 were strategic planning tasks, 2 dealt with design problems, and only 2 dealt with more complex tasks. Moreover, in many of the field studies the group task has focused on information sharing (Dennis et al., 1990). More complex task structures have been recognized but they form a minority (DeSanctis et al., 1991). DeSanctis et al. (1991) also observed out that many times the group task is not known beforehand and it is not limited. Rather, formulating the task itself may form an essential aspect and outcome as it emerges from the group process over an extended period of time.

A case in point, again, is here multilateral diplomacy. In international meetings groups often start working with a totally open agenda. Moreover, the tasks are in a constant flux. New issues are raised and they become objects of give-and-take exercises. In a sense the meeting process resembles the "art of muddling through" which involves a piecemeal formulation of the meeting tasks. This was expressed in one interview as follows:

In the Vienna meeting the drafting phase started...with a paper containing a title and three dots...Therefore coordinators brought small pieces of texts into working groups just to force delegates to start drafting proposals.. In this sense these small texts had a political.. value. (Interviews 1991–1993).

Because of the nature of tasks it is very difficult to apply accepted criteria of meeting effectiveness to all kinds of meetings (Nunamaker et al., 1991a). These criteria presuppose a well defined task with respect to which the "process losses and gains" can be measured.

4.2. TASK IMPORTANCE

This belief can be expressed in a form:

TB2. Executing the task badly does not necessarily pose a threat to the group members.

In most conducted EMS studies there are no threats, if the meeting has no outcome or a poor outcome. This applies especially to artificial problems, but also to many of real "decision" problems. It is likely that in such situations the introduction of electronic meeting systems has a different impact, because none of the participants will loose even if the meeting outcome is bad. In many real life processes this is not so and this will substantially affect the reactions to and uses of meeting technologies. For example, in diplomatic contexts, negotiations handle highly political controversial issues that can affect lives of millions of people (or, at least, the future career of the participants). Possible negative side effects of the EMS, like flaming, poor security or taking advantage of others' poor skills in using such technologies, can have remarkable impacts and they will also affect the expectations of and reactions to such technologies. Several times the interviewees pointed out that nobody would be willing to risk anything because of malfunctioning, insecure or unreliable technology, or because the technology would give some groups political or social advantage.

4.3. NATURE OF GOALS

This belief can be expressed in a form:

TB3. Goals of the meeting are unambiguous and achieving them benefits the welfare of the whole group.

Meetings have always an informal dimension which substantially affects meeting outcomes. This is likely to be more common when members of the group do not necessarily benefit from the welfare of the whole group, the goals are highly ambiguous and political. In these meetings political maneuvering ranging from hidden agendas, power struggles, changes in power bases to status establishment are an important and necessary element of the meeting process (Schwartzman, 1986). Technological solutions to meetings problems should not be based on the assumption that people will act "rationally" in terms of economic or utilitarian rationality. As an example the meeting system should not dictate any procedures that require participants to agree about definitions of the words and phrases that define the political and social significance of the meeting and its goals. Rational thinking which presumes that people communicate with definite words, and therefore it is easier to reach a mutual understanding of the decision will not simply work.

All this is vividly present in multilateral diplomatic meetings which often have vague goals and thereby serve significant and pervasive symbolic goals in addition

of embedding several hidden agendas. The CSCE is here no exception, as expressed in the following passage from interviews:

There are awful many levels in the multilateral conference diplomacy. On the general level everybody usually knows what is being cooked, but there are still many questions, which are insignificant for a great deal of delegations and which may only be weakly linked to more significant issues. Delegates may simultaneously deal with matters which have nothing to do with the conference. In the end, all matters which are relevant to the key delegations can be wrapped together. The ..coordinators keep close contacts..to adjust terminology used etc. before putting the drafts together from their groups.. Those terminological problems ..are as a matter of fact substantial questions subject to negotiations,...(therefore) ..it is easier to achieve meeting goals when the definitions are vague and different participants use different meanings about the same word. (Interviews 1991–1993)

4.4. BEHAVIORAL TACTICS

This belief is expressed as follows:

TB4. Group members apply rationalistic behavioral maxims and there is no variation in the behavioral tactics followed.

Typically the EMS research has not differentiated in any way alternative behavioral tactics that participants might pursue during the meeting process. Instead researchers have assumed that group members follow rationalistic and relatively simple behavioral maxims such as: all participants are willing to participate, they are willing to expose their opinions, and they expect all others to behave in the same manner, and the all are willing to work towards the meeting goal in effective manner. In many practical situations involving mixed-conflict situations and ambiguous task setting these assumptions are not tenable and in such situations several alternative behavioral tactics are usually pursued. These include simple tactics like “keep low” or “act with high clout” to more complicated campaigns with camouflage, white lies and the like. Moreover, most participants adjust their behavioral modus operandi with those of others in order to safely orienteer in the minefield of differing interests and varying behavioral tactics. Many times such behavioral tactics are fixed beforehand and they are followed consistently throughout the meeting until some change in the positions on relevant issues is achieved. It is clear that technologies that are obtrusive in following behavioral tactics will not be accepted.

In the diplomatic contexts the possibility to follow a rich variety of behavioral tactics is a necessity – it is a part of the diplomatic maneuvering that makes possible to achieve the goals of the diplomatic endeavors. It is customary that delegates make new proposals for tactical purposes to avoid discussion of some other issues. These disputes can be arranged just to guarantee that there are enough stakes to be traded away when the final act is put together and compromises negotiated. The effort

orchestrating appropriate tactics is beautifully illustrated in the following passage from an interview of a very experienced CSCE diplomat:

The copy of the final document for a group must not be accessible to everybody instantaneously after meeting. Sometimes the coordinators prefer to check the paper properly before it is distributed and will face the risk of being premature. If the matter is clear the document can, of course, be printed immediately. The system should however never be mixed with conducting the negotiations themselves. Rather it should be seen as a technical service which is available when needed...The situations can vary so enormously (especially during the drafting phase), and always some parts and issues are less controversial, and these are purposefully left open when we reach the final stages, despite the fact that they carry no political weight. It is just for the sake of the form and camouflage. Yet, the coordinator must be able to assess the situation so that the final game should become as easy as possible for each party so as to not corner any party. This is an essential success factor in the final game.

4.5. TIME FACTOR

Most measurements of meeting effectiveness relate it with the time spent in reaching the meeting goal. Therefore the overall goal in EMS research has been to reduce the time spent in meetings given that the meeting outputs remain the same. This can be expressed in a form:

TB5. The meeting is more effective the less time is spent in the meeting to carry out the task.

This belief expresses the main concern in current EMS studies related to the output (dependent) measures. The studies assume that the time spent in carrying out the task can be reduced (at least to a certain limit), and such a reduction is always beneficial for the host organization. This assumption also reflects the idea, that meetings are quite independent of the things and issues that take outside the meeting rooms, and that reductions here will lead overall to higher productivity. Though this can be true for several groups it is not true in general. First several meeting processes may be highly dependent on other episodes and meeting processes taking place simultaneously so that their effective accomplishments requires continuous synchronization. Second, several times meeting deadlines (targets) are not defined to improve meeting effectiveness but to create negotiation pressure to affect the behavior of some party. Third, sometimes achieving a good solution within the meeting process may require to slow down as to help relax the atmosphere, acquaint the participants to others' view points, and to refine the solutions. Hence, many times the technology may be needed to lengthen the meeting, in reality or virtually (see the clock example above), and some times it may be needed to create a pressure to get the things done. All this was expressed in the interviews as follows:

The physiological constraints dictate that three to four hours is enough for one meeting. At this stage the coordinator can decide whether to have a pause for

coffee, refreshment, clarification and making outside contacts. All these have significance in his assessment. But if you want to create pressure – should you organize a meeting in the morning, you may ask how much time is needed now, should we reconvene in the evening, should we organize a short meeting – all these can be used to create a continuous pressure on the meeting process. There are many tactics and scenarios which the coordinator may follow to affect this. (Interviews 1991–1993)

5. Conclusions

We have discussed three groups of beliefs of meeting behaviors. The beliefs are summarized in Table 1 in the second column. They play currently a prominent role in designing, introducing and assessing the impacts of EMS. The third column in the table summarizes an alternative set of beliefs which we have elaborated during our analysis of diplomatic groups. These beliefs characterize non-orthodox EMS groups, as they differ so markedly from the widely held orthodox conception of how groups operate and use electronic meeting systems. The term “non-orthodox” deployed here connotes the fact, that the beliefs have a wider application than just for multilateral diplomatic groups. Similar observations could be cultivated from many domains rife with group activity. It is sufficient to mention here litigation in law, parliamentary action, or decision making in public administration. Also many “normal” business meetings fake the rational, well-structured, task-oriented problem-solving paradigm and instead exhibit a multitude of group interactions with fuzzy goals, ambiguous participant criteria, drifting boundaries, emergent tasks and conflicting interests. We do not claim in our analysis, however, that all EMS studies so far are necessarily wrong or misleading. Instead, we question seriously whether it is justified to generalize achieved results beyond the limited context of idealized business teams as the coarsely painted view of business teams in these studies is far too simple and one-sided. Therefore EMS researchers must critically discuss the boundaries of their research domain as to make computer support a viable alternative for many existing meeting processes.

Our analysis points out the importance in an EMS intervention to understand the wider social and organizational environment in which the technology operates. This is not a new observation as several researchers have made a similar point (King and Star, 1990; King and Ruhleder, 1992; Robinson, 1988; Jones, 1992). Consequently the factors included into the EMS studies must be cast more widely than recently. In addition, the often confounding research results obtained should not be generalized too boldly beyond the specific task settings of the studied “business” teams. Overall, researchers should be careful in delineating all factors in meeting processes which may have affected the obtained outcomes (Pinsonneault and Kraemer, 1990).

Our analysis suggests also that all thirteen beliefs should be taken seriously when designing meeting support. Designers should be careful in analyzing the key characteristics of the meetings and groups in a user centered manner. Design

requirements for EMS should not be derived solely by concentrating on information processing tasks of the meeting (Huber, 1982; DeSanctis and Gallupe, 1987), or internal structures of groups to provide a reason to apply anonymity. We propose that designers should conduct a broader socio-technical analysis to generate more successful EMS designs that can honor specific social, political and cultural traits of the target groups – instead of imposing a simplistic task oriented technological imperative that assumes that an EMS with rationalistic image of meeting will lead to improvements in the organizational life. In this respect, we concur with Suchman's critical observations of the underlying technological imperative in current CSCW research (Suchman, 1993) when she states:

if this promise of speech act theory is consistent with the intellectual antecedents and aspirations of computer and management science, however, it is also increasingly difficult to maintain in the face of growing challenge from culturally and historically-based studies of talk as it is specifically located in space and time.

By replacing the term “speech act theory” with “EMS” and “talk” with “meetings” we achieve exactly the situation we have faced in our studies thinking computer support for diplomatic groups.

The above analysis suggests one possible approach to examine the wider socio-political context in EMS implementation. The designers should analyse to what extent their target groups exhibit features that can be found in the right column instead of the left column in table 1. The more the target group shares features that are placed on the right column, the more cautious the designer should be in developing and imposing the system which assumes a linear problem-solving oriented view of the meeting process. Accordingly, the type of support he or she should establish to empower group processes should be critically evaluated and analyzed in the face of growing challenge from the political and cultural environment to adopt any type of “rationalistic” meeting technology. In fact, design requirements for technologies to support non-orthodox meetings are quite distinct and diversified (Lyytinen et al., 1993; Ruhleder and King, 1991; Maaranen et al., 1993). Here are some differences we have found: on the level of personal aspects designers should try out chauffeur-driven configurations, target only for extremely simple tasks (text writing and display), allow for optional use, and provide mechanisms to enhance user visibility and tool transparency.

Also technical designs should be developed to allow active forgetting⁵. One important aspect is to emphasize the design of the physical environment and the meeting space, an issue which was found to be extremely important in the design support for multilateral diplomatic groups (Lyytinen et al., 1993; Maaranen et al., 1993). On the group level the key issue is to provide for tool and environmental flexibility to cater for variations in size, protocols, composition and role models. On task level the focus must be in supporting inter-meeting linkages and in designing simpler ways to use the environment.

TABLE I. A Comparison of underlying beliefs in EMS research

Beliefs	Orthodox EMS groups	Non-orthodox groups
<i>Personal</i>		
UB1. Computer Literacy	UB1. Users have required skills.	TB1'. Users do not have required skills.
UB2. System Acceptance	UB2. Users are willing to accept the system and it is a neutral decision.	TB2'. Users do not always accept the system and its acceptance is a non-neutral decision.
UB3. User Visibility	UB3. Technical features such as parallel input and anonymity improve user influence.	TB3'. Parallel input and anonymity do not increase user influence on the meeting.
<i>Group</i>		
GB1. Nature of protocols	GB1. Groups follow few well defined protocols which can be easily formalized and endorsed.	GB1'. Group protocols are varied, elusive and pervasive and are not easily formalized.
GB2. Group structure	GB2. Groups are small, cohesive and static.	GB2'. Groups are varying, non-cohesive and exhibit dynamism and historical influence.
GB3. Group composition	GB3. Group members have equal rights.	GB3'. Group members are not equal, and their position can be subject to continuous negotiation.
GB4. Group process focus	GB4. In studying group behaviors attention must be paid to intra-meeting behaviors.	GB4'. Both intra-meeting and inter-meeting behaviors must be understood.
GB5. Role Models	GB5. Groups adopt limited and simple role models.	GB5'. Groups adopt complex and varying role models.
<i>Task</i>		
TB1. Nature of tasks	TB1. Tasks are well-defined and have clear boundaries.	TB1'. Tasks are not well-defined and are emergent.
TB2. Task importance	TB2. Poor performance does not pose a threat.	TB2'. Poor performance poses high personal or organizational threat.
TB3. Nature of goals.	TB3. Goals are unambiguous and shared.	TB3'. Goals are ambiguous and not shared.
TB4. Behavioral tactics	TB4. Group members follow rationalistic behavioral maxims and the behaviors are fixed.	TB4'. Group members follow a wide array of behavioral tactics.
TB5. Time factors	TB5. Meeting time can be used to measure effectiveness.	TB5'. Time spent in meeting is not always a good outcome measure.

One interesting point here is the needed level of technological sophistication and simplification to make an EMS a viable alternative for fuzzy meeting environments. It seems that one barrier to more wide-spread use of “fuzzy” EMS’s in volatile and fuzzy environments is their inflexibility, complexity and physical prominence. The more transparent and seamless part of the everyday practices computer tools can become, the easier it will be to introduce them into “true” meeting arenas. Currently, the sheer size and difficult configuration problems of computers necessitate

building specific rooms with fixed technological configurations and functionalities that can neither be seamlessly integrated to users' other activities nor made transparent for the users during the meetings. We believe, however, that the continued miniaturization of computer components, the use of lap-tops and spread of wireless local area networks will gradually lead to a situation, where the EMS design does not so much signal of the expediency of the technical design and compromises made with the existing technology, but where it is a derivation from the nature of meeting and its key characteristics.

Our study invites future research in two major areas. First, it points out the necessity to extend the scope of empirical studies beyond episodes within the meetings and to investigate roles the meeting plays in a larger social fabric. Here longitudinal and "thick" field studies and ethnographic research methods must play a prominent role (Lyytinen and Ngwenyama, 1992; DeSanctis et al., 1992). Second, we believe that the role of meeting technologies should be explored more intensively in contexts that are different from usual business team environments. In this way empirical evidence could be garnered of group behaviors in a variety of settings. By doing so some of the critical remarks made above could be more extensively investigated. Finally, the aspired functionality of EMS should analyzed more widely for contexts where rational problem-solving paradigm does not hold. As noticed, required changes can be drastic, and the technology will probably play a more modest role in orchestrating the meeting than hoped by many EMS enthusiasts. Finding a viable balance between the socially constructed structures and needs of a whole cavalcade of meetings and the technological options available remains, we believe, one of the greatest challenges for future EMS research.

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Notes

1. Some studies have focused on the impacts of cultural background in using a similar kind of GDSS tool in a similar type of decision-making task (Ho et al. 1989).
2. The readers need just to be reminded of the enormous problems associated with achieving a consensus in the Vietnam peace talks about the shape of the tables where the delegates sat.
3. Though sometimes these could be used to understand different positions on the tabled issue. This is not, however, usually done, as it would clarify too early the positions and require different parties to adopt standpoints on issues which they are not prepared to do.
4. Currently there are 54 member states in the CSCE process while in 1989 there were 35!
5. Though this can be a simple technological fix, it may not achieve sufficient acceptance due to users' suspicions that some body can use anyway the technology for their advantage.

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