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DEFINING COMMON GROUND: MANAGING DIVERSITY THROUGH ELECTRONIC MEETING SYSTEMS

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ABSTRACT

As diversity in the workforce becomes a critical issue for firms to deal with in the 1990s, they are exploring innovative solutions to managing differences. Electronic meeting systems appear to offer a way of valuing diversity as a competitive resource without attempting to assimilate differences among individuals into a single, homogeneous ideal. This study, grounded in the naturalistic paradigm, is an initial attempt to examine the effectiveness of such systems in managing diversity in the workplace. Specifically it examines, using a hybrid case study approach, the extent to which an EMS helps in defining common ground within diverse groups. The results of this study will help in enhancing an organization's ability to utilize the vast talents of a diverse group in decision making situations.

America is not a blanket, woven from one thread, one color, one cloth. When I was a child in South Carolina and momma couldn't afford a blanket...she took pieces of old cloth -- wool, silk, crocker sack -- only patches, barely good enough to shine your shoes with. But they didn't stay that way long. With sturdy hands and strong cord, she sewed them together into a quilt, a thing of power, beauty and culture. Now we must build a quilt together.¹

The Reverend Jesse Jackson
Democratic National Convention, 1988

1. INTRODUCTION

Three significant trends have made diversity a critical issue for corporate America in the 1990s. First, the global market has become an intensely competitive arena for American business. This has forced American managers to deal with an increasingly diverse array of customers, vendors and employees. Second, the U.S. workforce itself has become increasingly diverse. Demographic analysts (Jamieson and O'Mara 1991; Loden and Rosener 1991; Johnston and Packer 1987) predict that during this decade traditional minorities — people of color, women, and immigrants — will account for 85% of the growth in the American labor force. They also predict that during this same period, the nation's total workforce will continue to mature: older workers (35-54 years) will increase by about 25 million while younger workers (16-24 years) will simultaneously decline by about 2 million. Third, there has been a marked propensity for the nation's various ethnic

and cultural groups to “celebrate their differences” and be less agreeable to “fitting in” (Thomas 1991). These three trends — having converged together during this decade — are challenging organizations to find new ways of managing their workforce.

As businesses seek new ways of managing an increasingly diverse workforce, an important phenomenon, outlined in a recent *Business Week* cover story entitled “Virtual Corporation,” is also sweeping across corporate America: the emergence of a new organizational structure, “that uses technology to link people, assets and ideas in a temporary organization”² (*Business Week* 1993). The article illustrates how the diverse and far-flung stakeholders of a corporation will have no temporal or geographic boundaries, develop close-knit project teams, and remain in constant communication with each other from start to finish of a project. The emergence of electronic meeting systems is accelerating this transformation of hierarchical

organizational structures to team-oriented “virtual organizations.” There is growing evidence that businesses are turning to these systems as a way of simultaneously dealing with a diverse workforce and linking up project teams (*Meeting Management News* 1992).

Progressive organizations that are at the forefront of the diversity revolution are using these systems to focus their efforts on valuing diversity as a competitive resource, rather than attempting to assimilate the differences (Galen et al. 1993). Innovative methods for valuing diversity are being weighed across the United States and leading-edge organizations are exploiting information technology to define how diverse teams of the future will operate (Galen et al. 1993; Jamieson and O’Mara 1991). This research project looks at one potential initiative to further these efforts. While many of the current efforts are in-house programs that tend to be purely anecdotal, and thus not rigorously examined, there are real difficulties in examining this question in a laboratory situation as well.

The study described here is a preliminary attempt to use an original approach, grounded in the naturalistic paradigm, to examine the impact of an electronic meeting system (EMS³) on managing group diversity. Results of this study will help in enhancing an organization’s ability to utilize the vast talents of a diverse group in decision making situations. This exploratory investigation, employing multiple case studies, spearheads the start of a programmatic research series aimed at understanding and managing diversity among groups in the workplace.

2. WHAT IS DIVERSITY?

Traditionally, the term diversity when applied to the work environment has been interpreted to mean gender and race (Thomas 1991). Diversity really refers, however, to perceptual and actual differences among individuals, and is evident in a variety of ways including gender, ethnicity, age, physical abilities, cognitive styles, religion, national origin, socio-economic background, affectional orientation, education, learning styles, marital status, religious beliefs, and work experience (Jamieson and O’Mara 1991; Loden and Rosener 1991). Some of these elements are more visible (e.g., race) than others and thus play a more important role in how diversity is commonly defined. However, real diversity refers to the interaction of all the above elements — both the visible and the not-so-visible — and can be a powerful force in developing people’s values and perceptions (Johnston and Packer 1987).

The increasing diversity among the nation’s workforce highlights several managerial issues which, if not carefully

addressed in a corporate environment, can lower employee morale and will ultimately reduce productivity (e.g., Galen et al. 1993; Thomas 1991). Loden and Rosener identify some key issues that organizations need to understand in managing diversity: the impossible-to-achieve homogeneous ideal, the oft-misguided strategy of assimilation, the easy-to-categorize solution of stereotyping, the exchange of inconsiderate/insensitive communication, the exclusionary practice of collusion, and the escalation of conflict due to constant culture clashes. The discussion below is based primarily on these dimensions of diversity.

2.1 Homogeneous Ideal

Few people are exposed to the broad range of human differences that exist in the society-at-large until they enter the workforce, where homogeneous *weltanschauung* is challenged (Loden and Rosener 1991). Despite some exceptions, managers often meet this challenge by defining employee behavior very narrowly; i.e., there is one (and only one) blueprint for how individuals can succeed, how they should communicate, and what image they must project (Galen et al. 1993).

Implicit in such a restrictive regime is the self-laudatory concept of “*equality as sameness*”; i.e., since everyone is being treated alike, the situation is considered fair and equitable (Loden and Rosener 1991). However, such a policy does not recognize differences among individuals; rather, it seeks to reinforce the restrictive and often impossible-to-achieve homogeneous ideal. This policy also punishes individuals who deviate from the norm and occasionally forces them to adopt behaviors and attitudes that are alien to their cultures (Thomas 1991).

2.2 Stereotyping

Stereotyping, like the promotion of a homogeneous ideal, ignores individual differences. It is based on the simplistic notion that members of a subculture or group are all alike, and hence can be expected to think the same way, talk the same way, and behave the same way. Stereotypes represent median behaviors of groups and may not accurately describe a specific *individual’s* behavior (Adler 1991).

Whether stereotypes are positive (as in “the French are good cooks”) or negative (as in “women are too emotional”), they still attempt to explain complex human behavior using simple and often conveniently defined categories. Pointing out the fallacy of such a premise, Thomas (1991, p. 105) notes, “there [is] a great range of differences both *among* and *within* the various groups.”

Empirical evidence suggests that executives who rely on stereotyping are generally rated ineffective managers by their peers (Ratiu 1983). Such managers also tend to ignore any contradictory evidence, however urgent or real, about individuals that might shatter their own narrow pre-conceptions.

2.3 Distorted Communication

A direct consequence of diversity is how communication gets distorted among heterogeneous groups. Cross-cultural communication rests on implicit and often contradictory assumptions made by individuals from different socio-cultural backgrounds (Asante and Gudykunst 1989). In diverse groups, various verbal signals (such as use of nicknames or slang) and non-verbal signals (such as hugging or back-patting) can be misinterpreted, leading to reinforcement of stereotypes and perceptions of insensitivity (Hecht, Anderson and Ribeau 1989; Kanungo 1980). Effective communication among members of diverse groups requires acknowledging and understanding a wide range of communication styles and subtle contextual cues.

2.4 Collusion

Several researchers have recognized the role of informal networking in achieving corporate success (e.g., Kirchmeyer 1993). Such networking, however, often occurs among individuals from homogeneous backgrounds. For instance, Loden and Rosener (1991, p. 47) state, "In mixed work groups...it is not uncommon for people to informally group themselves by age, occupational level, gender, and race during coffee breaks and over lunch, thereby avoiding informal contact with others." As these informal networks become deep-rooted, they tend to isolate non-conformers (Adler 1991). The consequences of such isolation for traditionally disenfranchised individuals can be especially serious.

2.5 Conflict Management

While collusion is a passive and often covert activity, cross cultural conflict involves open exchange of hostilities. Unwillingness or inability to understand differing points of view, perceptions of low status, disagreement over the extent of contribution to corporate goals and exclusion of select subgroups from decision making have all been linked to the presence of high conflict in diverse groups (Kirchmeyer 1993; Chua and Gudykunst 1987). While the presence of conflict in itself is not harmful to a group, its type and nature are critical to group well-being (Putnam

1986). Negative, inter-personal conflict and culture clashes are extremely detrimental to the group while constructive criticisms and honest differences of opinion can improve group performance (Miranda 1991).

3. DEFINING COMMON GROUND

The above discussion leads us to the critical issue for all organizations dealing with diversity, and that is *defining common ground*. Common ground is essential for the survival and effective functioning of diverse groups. Defining common ground refers to the process of sharing differing points of view, establishing common goals, developing mutual respect and above all, valuing diversity (Loden and Rosener 1991). This process is based on (a) limiting the assimilation of individuals into a single, unified prototype, (b) recognizing the fact that individuals with various ideological, ethnic and cultural stripes can co-exist in a corporate environment, and (c) leveraging the differences among individuals into a source of strength (Thomas 1991; Jamieson and O'Mara 1991).

3.1 Need for Common Ground

As organizations acknowledge the growing diversity of their workforce, they are beginning to recognize the benefits of defining common ground. Several firms such as Aetna, AT&T, Continental and Johnson & Johnson are developing flexible policies that value employee diversity (Galen et al. 1993). The Galen et al. report also indicates that many firms providing supportive environments for their diverse workforce are enjoying higher productivity, lower turnover and increased employee morale. In many instances, providing a supportive environment involves using value added measures to evaluate performance, providing flexible schedules and respecting individual differences. Galen et al. (p. 82) state that, "At some companies, CEOs...[are] convinced that workplace flexibility is not an accommodation to employees but a competitive weapon: It frees workers to use their full potential on the job instead of, say, fretting about taking a child to the doctor." As non-traditional employees flood the workforce, such accommodation will be critical for continued corporate success.

3.2 Defining Common Ground Through an EMS

The recent focus on technology to link teams and the emergence of the networked organizational structure provides managers a new and innovative tool for defining common ground. Electronic meeting systems (EMS) have been used in a wide variety of contexts: from product

design to performance evaluation, and from brainstorming to negotiation (Nunamaker et al. 1991). However, despite the success of different EMSs in dealing with various problems related to team work, the efficacy of this technology in dealing with diversity has yet to be tested. Conceptually, however, an EMS offers a variety of structures such as anonymity and simultaneity that can be used to effectively manage diversity among groups.

An EMS is a collection of electronic tools for organizing group/individual thought processes and actions. An EMS tool, in most situations, automates a particular manual procedure to carry out a specific group activity and thereby establishes a pre-defined structure (e.g., an anonymous round-robin data entry procedure for brainstorming) to which additional structure may be added (e.g., no verbal evaluation of ideas during electronic brainstorming). Moreover, certain global structures are "embedded" in the technology itself, providing further structuring capabilities to groups using EMS tools. For instance, anonymous data input, simultaneous idea exchange, electronic recording and display, and enhanced information processing capabilities are some examples of these global structures found in EMS implementations. *It is this combined collection of structures that could potentially help groups handle diversity effectively.* This study is an initial attempt to examine whether EMS structures can help in defining common ground among diverse groups.

4. RESEARCH METHODOLOGY

The issue of diversity is a complex one and has not been studied extensively. As many scholars have suggested, when little is known about a phenomenon, the use of a naturalistic paradigm of inquiry may be the most appropriate approach. Consequently, we used a variant of the "classic" case study approach — commonly referred to as the hybrid case study approach — to examine the issue of diversity in electronically supported groups.⁴ As outlined by Dyer and Wilkins (1991), the primary objective of this methodology is to develop theory by defining research questions and validating constructs in a setting without artificial experimental controls. The hybrid approach uses multiple case studies to develop theory and requires data to be collected by multiple means. Here, as with "classic" case studies, the theory development process may require changes in variables and/or data collection methods in mid-stream. The hybrid case study methodology attempts to reveal the *deep structure of social behavior* (Light 1979) and is grounded in the naturalistic paradigm. The aim here is not to make generalizations per se, but to understand behavior as defined within a specific context.

4.1 Research Methods

In this study, four groups, each with its own set of unique circumstances, were studied in order to understand the role of electronic meeting support in managing diversity. Participants were selected from a pool of students from two sections of an undergraduate information systems policy class. A majority of the participants were seniors majoring in MIS and had at least a few months of part-time work experience. In order to provide an incentive to perform well, at the end of the study, the group with the best performance (judged using a variety of measures) was given a small monetary prize.

The hybrid case study methodology lends itself well to a limited amount of experimental manipulation. In this study, while no experimental controls were imposed, participants were assigned to groups based on a variety of diversity indices (described later) and trained in structured group interactions. Participation in the study was partially credited toward class participation. All students chose to participate and were either assigned to this study or completed an equivalent exercise. Participants, being drawn from an IS policy course, were familiar with the case method of teaching. Since regular case analyses were part of their curriculum, they were appropriate targets for this study, which also involved the analysis of a business case.

Multiple data collection methods were used including questionnaires, video/audio recording, participant observation, subject debriefing, note logs and system files. A variety of perceptual and performance measures related to the management of diversity were studied. Some of the objective measures included time taken to make decisions, number of alternatives explored and number of choice shifts made during decision making, while subjective measures included quality of the decision process and quality of the final decision. Perceptual measures included the effects of the environment on group cohesion, conflict management, collusion, and quality of communication. In keeping with the philosophy of a hybrid case study approach, occasionally other relevant variables, based on the context, were also studied.

4.2 Research Framework

The objective was to examine four groups: two groups high in diversity (i.e., heterogeneous) and two groups low in diversity (i.e., homogeneous). One group in each condition used an electronic meeting support system and the other used a comparable "non-electronic" approach. Figure 1 provides an overview of the research framework used in this study. This framework provided us with a comparable basis to study each group in its own context and identify potential sources of variation in behavior.

		Degree of Diversity	
		Low	High
Electronic Meeting Support	No	Group A	Group B
	Yes	Group C	Group D

Figure 1: Research Framework

The task used in this study has been used in several other studies (Miranda 1991; Chidambaram, Bostrom and Wynne 1990) and can best be classified as a Type 4 task — a decision making task that has no *a priori* right or wrong answers — in McGrath’s task circumplex. The task simulates a board of directors of a multinational company meeting to make strategic decisions about image problems facing their firm. Task structures, i.e, the actual sequence of events in the decision making process, were the same for electronically- and manually-supported groups.

4.3 Experimental Procedures

All groups were given the same case and generally followed the same sequence of events illustrated below:

Read case → Identify problems → Discuss issues →
Generate ideas → Evaluate options → Make Decision

EMS groups used the Electronic Meeting Room, similar to the “decision room” described by Dennis et al. (1988), for their decision making. The room had several individual terminals connected by a local area network to a facilitator’s workstation. This workstation was in turn connected to a public screen which displayed relevant information based on the input of members. Each member of a group had access to a terminal and could view information on the public screen. *GROUPSYSTEMS* software developed at the University of Arizona was used in the study.

“Manual” groups made decisions in a similar room. However, in place of the public screen, a flip chart was provided for recording alternatives, evaluating them, and making a choice. Each individual member was provided a pencil and paper to facilitate his/her decision making. Manual groups were required to follow a structure similar

to the structure imposed by the EMS on computer-supported groups: generation of ideas, evaluation of alternatives, and choice of solution.

5. MEASURING DIVERSITY

Diversity is so broadly defined that no specific measure exists, and yet if we wish to seriously consider effective management of diversity in the workplace we need to provide evidence of the effectiveness of management tools in handling diverse populations. One of the critical factors in conducting any study of diversity, then, is how does one measure diversity in populations with sufficient objectivity to draw definitive conclusions. Therefore, an appropriate quantification of diversity has a crucial bearing on the outcome of any study such as this. Many candidates for diversity measures are available, each evaluating a distinct aspect of how people differ. No single comprehensive measure is currently available. For the purposes of this study, four different views of diversity were examined: *ethnic, cultural, learning and cognitive measures*.

Ethnic diversity was measured based on the ethnic background of the participant’s parents and citizenship of the participant. *Cultural diversity* was measured by administering the Rokeach Survey of Values (1973). This survey has been validated across a broad international spectrum (Schwartz and Bilsky 1990). It consists of two lists of human values: the first, called *terminal values*, consisting of items such as wisdom, pleasure, self-respect, and family security; and the second, called *instrumental values*, consisting of such things as being ambitious, logical, loving, helpful, honest, etc. The values are ranked from one to eighteen by how important they are to the participant in the first list and by how the value describes the participant in the second list. For the purposes of this study only the item ranked first was used from each list.

Group (Size)	Group/Treatment	Sex	Ethnicity	Keirsey-Bates Type Indicator	Kolb Learning Style Inventory	Rokeach Values Survey*
A (6)	Low Diversity/ No EMS	3 Male 3 Female	5 Japanese 1 Caucasian	4 ISTJs 2 ESTJs	5 Convergers 1 Diverger	At least 3 had same values
B (4)	High Diversity/ No EMS	4 Male	3 Chinese 1 Hawaiian	1 ESTJ 1 INTJ 1 ENTJ 1 ISTP	2 Assimilators 1 Converger 1 Diverger	All had different values
C (4)	Low Diversity/ With EMS	3 Male 1 Female	2 Chinese 1 Caucasian 1 Filipino	4 ESTJs	2 Assimilators 2 Convergers	At least 2 had same values
D (3)	High Diversity/ With EMS	2 Male 1 Female	1 Japanese 1 Caucasian 1 Chinese	1 ENFJ 1 EBFJ 1 ESFJ	1 Assimilator 1 Converger 1 Diverger	All had different values

*Refers to top rated values only; the entire instrument has two sets of eighteen values.

Figure 2. A Profile of the Groups

Learning diversity was assessed using the Kolb Learning Style Inventory (Kolb and Fry 1975). This widely used instrument classifies individuals into one of four categories based on their learning style: accommodator, converger, assimilator and diverger. These styles are based on a composite score that measures whether a person is an active or reflective learner and whether a person learns from concrete experiences or abstract concepts.

Cognitive diversity was assessed with the Keirsey-Bates version of the Myers-Briggs Type Indicator, MBTI (Keirsey and Bates 1984). The MBTI has been validated across a broad spectrum of groups and is widely used to describe and differentiate people according to the way they prefer to "use their minds" (Murray 1990). It does not measure personality traits per se, but merely registers preferences. The score consists of four attributes, each of which can have two possible values. Participants were considered to be similar if at least three of the four dimensions were the same.

All four diversity measures were used to select participants for the study. From a pool of about forty-five students, twenty were selected based on their scores. (Three dropped out during the course of the study.) Two groups high in diversity and two groups low in diversity were formed for the study. The Myers-Briggs Type Indicator, measuring cognitive diversity, was used as the primary measure of diversity. The Kolb Learning Style Inventory scores

paralleled the Myers-Briggs scores very closely, substantiating the diversity groupings that were made. The Rokeach Values Scores used, based on the highest ranked value in each category, were also similar in dimension for the groups that were diverse. So, although the primary classification was based on MBTI, the other scores validated this choice of categorizing. Figure 2 provides a profile of the groups.

6. RESULTS

A brief summary of the processes, perceptions and performance of each group is given below. The data were obtained from a variety of sources described earlier: questionnaires, video/audio recordings, participant observation, subject debriefing, note logs, system files and expert opinions.

6.1 Group A: Manually Supported Group Low in Diversity

A strong group leader emerged early in the process and dominated discussion throughout. Conflict flared up occasionally but was always resolved by verifying facts in the case. A lot of discussion revolved around redefining the problem; consequently there was little energy (or time) left to develop solutions. The group eschewed structure at

every stage, opting to be guided by the leader's will. The lack of time adversely affected the decision process and ultimately the quality of the final decision. Perceptions of cohesiveness and conflict management were higher than Group B's, but lower than that of the other groups.

6.2 Group B: Manually Supported Group High in Diversity

This group took the longest time to decide; members were constantly challenging remarks and assumptions (and occasionally even the process). This group, by its own admission and verified by observers, had a high level of personal conflict and stress. The contradictions and challenges ultimately caused one member to completely clamp down. The case analysis was fraught with missed communication signals and misinterpreted cues. This group examined the least number of options and, based on two independent accounts, also had the least effective decision process and lowest quality decision.

6.3 Group C: Electronically Supported Group Low in Diversity

A strong group leader emerged early in the process. The rest of the group basically played follow-the-leader. There was a limited amount of collusion but the leader's dominance kept the communication process active and task-oriented. Also, there were very few differences of opinion. Performance almost rivaled that of Group D with decision process, but not with the final decision. Though the group used tools innovatively, there was some indecision about the technology.

6.4 Group D: Electronically Supported Group High in Diversity

This was the most task-focused of all the groups. Discussions were minimal; most of the communication was related to the case. Despite the terse, task-focused interactions (or perhaps because of it), the group's self-rated cohesiveness and conflict management measures were the highest of all groups. Performance, in terms of the decision process and quality of the final decision, was also superior to the other groups.

7. DISCUSSION

This discussion, based on the variety of evidence gathered, explores the extent to which different EMS structures (or

the lack thereof) influenced the results presented above. Figure 3 summarizes this discussion. As with any study using small sample sizes, caution must be exercised in interpreting the results. These results are not meant to be a definitive assessment of how an EMS can help in defining common ground. Rather, they signify the start of a journey in progress and simply point the way ahead.

Four key EMS structures appear to provide interesting clues to understanding the results: anonymity of input, simultaneity of communication, electronic recording and display and process structuring. The role that the presence (or absence) of each of these features played in helping groups define common ground is discussed below.

7.1 Anonymity

One of the most important EMS structures that contributed to the effective management of diversity in groups appears to be the anonymity offered by the system. Previous research indicates that this structure allows group members to focus on an issue or idea, independent of who generated it (Fellers 1989). In the case of Group D (and to some extent even with Group C), the anonymity offered by the system enabled diverse participants to express their views and opinions without fear of retribution or reprisal.

As discussed earlier, collusion and coalition formation are well entrenched negative behaviors for handling diversity (Jamieson and O'Mara 1991). Homogeneous sub-groups are formed as a protective mechanism to isolate "non-conformers" and suppress diversity of beliefs and opinions. As groups meet more frequently, coalitions are strengthened, diverse opinions are held at bay, and conflict increases. Collusion and coalition formation tend to wrench groups apart, making it difficult to develop productive, cohesive teams. The anonymity offered by the EMS appeared to retard coalition formation in Group D because it was difficult for members to seek out sources of behavior perceived as either conformist or deviant. The impact of this will obviously be more significant on larger groups interacting in task or project oriented environments. Moreover, the separation of ideas from authors tended to limit the role of personalities in team interactions.

The anonymous structure, besides minimizing negative behaviors, also promoted positive responses, such as inclusion, in handling diversity. For instance, members of both EMS groups were more likely to think of an idea as "their" idea rather than as "his/her" idea. On the other hand, in Group B, the constant (and often covert) evaluation of one member's ideas by other members reduced creativity and limited communication.

Diversity Factors Affected by EMS Structures	EMS Structures			
	Anonymity	Simultaneity	Electronic Recording & Display	Process Structuring
Negative Factors:				
Homogeneous Ideal	--		-	
Stereotyping	--			
Distorted Communication		-	--	
Collusion	--	-	-	-
Positive Factors:				
Conflict Management				++
Cohesiveness			+	
Inclusion	++		++	
Common Ground	+	+	+	+
Performance:				
Quality of Decision		+	+	
Quality of Process	+	+	+	++
Number of Alternatives		++		

Key:

--	Strongly reduces impact
-	Reduces impact
	Neutral
+	Increases impact
++	Strongly increases impact

Figure 3. Impact of EMS Structures on Diversity

In non-EMS settings (i.e., Groups A and B), group members frequently used verbal and non-verbal cues — looks, frowns, smiles, or head shakes — to signify their acceptance or disapproval of a certain idea. Such ongoing non-verbal evaluation was present in EMS groups too: a slight snicker when a “bad” idea appeared on the public screen, or a smile when members read something amusing. However, an important distinction between manual and EMS groups was that, in EMS groups, it was not possible to easily identify the target of the covert evaluation. Hence, negative forces reducing creativity were kept to a minimum in EMS groups through its embedded structure of anonymity.

The EMS implementation used in this study, in addition to providing an anonymous data entry module, also offered an anonymous voting procedure. This structure especially permitted participants with diverse viewpoints to evaluate alternatives without intimidation by other group members and reduced the subtle pressures, ubiquitous in manual settings, to “toe the party line.” Thus, the results indicate that the global structure of anonymity, if utilized properly, can help groups effectively manage diversity by reducing inappropriate negative behavior such as collusion while simultaneously promoting positive behavior such as inclusion.

7.2 Simultaneity

Whether groups are low or high in diversity, the results of this and other studies indicate that simultaneity helps groups improve an important aspect of their performance: creativity. Limiting the creativity of all groups in general, production blocking is particularly serious among diverse groups. This was evident from the results of group B. Production blocking refers to the inability or unwillingness of team members to literally "speak their mind" due to the difficulty of simultaneous communication in a verbal setting. Group meeting protocols dictate that members should hold their thoughts (and tongues) when someone has the floor. Such waiting ultimately results in curbing creativity.

In some diverse groups, like Group B, dominant members or sub-groups may never yield the floor to less dominant members. This, coupled with the inevitable problem of production blocking had a disastrous effect on the creativity of Group B. As seen from Group D, an EMS can help groups break this pattern by providing all members a level playing field and enabling them to generate ideas simultaneously. Hence, an EMS can assist diverse groups with improving their creativity, examining a wider range of alternatives and processing issues in parallel.

7.3 Electronic Recording and Display

The object of effective diversity management is to provide group members freedom of expression while forging a common bond linking the group. As discussed earlier, the anonymous and simultaneous ability to communicate provided members of EMS groups freedom of expression. The electronic recording and display features of an EMS helped forge the common bond linking all members, even those with divergent views. In EMS groups, all issues under examination and all ideas generated appeared on a public screen dominating the focus of the entire group. The public screen was the place where the "group's" ideas were displayed, manipulated and discussed. Previous research has shown that participants tend to be more objective when viewing or discussing ideas in this environment because the public screen allows them to disassociate themselves from their ideas (Chidambaram, Bostrom and Wynne 1990). This role of the public screen in providing procedural support and creating a group identity can be important in managing diverse groups.

7.4 Process Structuring

Diversity can generate conflict; if not handled effectively, conflict can cause stress, reduce productivity and destroy

group cohesiveness (Putnam 1986). Three prerequisites of effective conflict management have been identified. The first deals with the group's ability to handle procedural details such as prioritizing ideas, determining what issues to discuss first and following an agenda. The second deals with members' ability to separate issues from personalities. The third deals with the ability and willingness of members to find common ground.

An EMS, through its enhanced procedural support, offered groups the ability to fulfill these three prerequisites. The difficulty of enforcing an agenda in Groups A and B led to their being dominated by the restricted agenda of a few vocal members and sub-groups. In diverse groups without computer support, issues are frequently "lost in the shuffle" as dominant coalitions push their agendas through causing resentment and promoting collusion. This was evident in the case of Group B and caused at least one member to completely shut down. As discussed earlier, the ability to separate personalities from issues was made possible in EMS groups by the anonymity of input and the electronic recording and display of ideas. Finally, the ability of diverse members to find common ground was facilitated by quick access to anonymous straw polling, easy sharing of information and immediate access to all ideas.

Thus, the results of this initial investigation indicate that an EMS offers the potential for valuing diversity in the workforce. If used appropriately, EMS structures can help individuals be different, express contradictory views freely and yet help define common ground and foster an inclusive bond linking all members.

8. CONCLUSION

Although these results are only suggestive given the small sample size, the potential of EMS technology for helping firms to value diversity is very exciting. Methods for gaining advantages from the synergy that can be achieved by merging technology and diversity effectively are critical to the future productivity of this nation. The results presented here, while only preliminary, hint at the promise of a potent tool in managing the growing diversity of this nation's workforce. Clearly, further research is needed. Some of the arenas for further exploration will be a replication of the results obtained here in a much larger sample, examination of various measures of diversity and identification of which are most amenable to this type of intervention, and whether a dispersed EMS adds even more to the gains observed here.

The important lesson for managers is this: To curb differences among people is to limit their potential. As this

nation's population becomes increasingly diverse, only those organizations that value and utilize this diversity will be successful in meeting the challenges of the global markets. Organizations that maintain the status quo and are unwilling to define common ground among their diverse workforce will struggle to compete effectively. A variety of ideologies, backgrounds, ethnicities and cultures form the basis for a creative pool of skill and talent. An EMS can help organizations tap into this pool. The ability to leverage the differences inherent in this pool will be the key to fully utilizing this nation's richest resource: its people.

9. ACKNOWLEDGMENTS

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10. REFERENCES

- Adler, N. J. *International Dimensions of Organizational Behavior*, Second Edition. Boston: PWS-Kent Publishing Company, 1991.
- Asante, M. K., and Gudykunst, W. B. (Eds.). *Handbook of International and Intercultural Communication*. Newbury Park, California: Sage Publications, 1989.
- Business Week*. "The Virtual Corporation." Number 3304, February 8, 1993, pp. 98-102.
- Chidambaram, L.; Bostrom, R. P.; and Wynne, B. E. "A Longitudinal Study of the Impact of Group Decision Support Systems on Group Development." *Journal of Management Information Systems*, Volume 7, Winter 1990-1991, pp. 7-25.
- Chua, E., and Gudykunst, W. "Conflict Resolution in Low- and High-Context Cultures." *Communication Research Reports*, Volume 4, 1987, pp. 32-37.
- Dennis, A. R.; George, J. F.; Jessup, L. M.; Nunamaker, J. F., Jr.; and Vogel, D. R. "Information Technology to Support Electronic Meetings." *MIS Quarterly*, Volume 12, 1988, pp. 591-624.
- Dyer, G. W., and Wilkins, A. L. "Better Stories, Not Better Constructs, to Generate Better Theory: A Rejoinder to Eisenhardt." *Academy of Management Review*, Volume 16, Number 3, 1991, pp. 613-619.
- Eisenhardt, K. M. "Better Stories and Better Constructs: The Case for Rigor and Comparative Logic." *Academy of Management Review*, Volume 16, Number 3, 1991, pp. 620-627.
- Eisenhardt, K. M. "Building Theories from Case Study Research." *Academy of Management Review*, Volume 14, Number 4, 1989, pp. 532-550.
- Fellers, J. *The Effect of Group Size and Computer Support on Group Idea Generation for Creativity Tasks: An Experimental Evaluation Using a Repeated Measures Design*. Unpublished Doctoral Dissertation, Indiana University, Bloomington, Indiana, 1989.
- Galen, M.; Palmer, A.T.; Cuneo, A.; and Maremont, M. "Work and Family." *Business Week*, Number 3325, June 28, 1993, pp. 80-88.
- Hecht, M. L.; Andersen, P. A.; and Ribeau, S. A. "The Cultural Dimensions of Non-Verbal Communication." In M. K. Asante, and W. B. Gudykunst (Eds.), *Handbook of International and Intercultural Communication*, Newbury Park, California: Sage Publications, 1989, pp. 163-185.
- Jamieson, D., and O'Mara, J. *Managing Workforce 2000: Gaining the Diversity Advantage*. San Francisco, California: Jossey-Bass, 1991.
- Johnston, W. B., and Packer, A. H. *Workforce 2000*. Indianapolis, Indiana: Hudson Institute, 1987.
- Kanungo, R. N. *Biculturalism and Management*. Ontario, Canada: Butterworth, 1980.
- Keirse, D., and Bates, M. *Please Understand Me*. Del Mar, California: Gnosology Books, 1984.
- Kirchmeyer, C. "Multi-cultural Task Groups: An Account of the Low Contribution Level of Minorities." *Small Group Research*, Volume 24, Number 1, February 1993, pp. 127-148.
- Kolb, D. A., and Fry, R. "Toward an Applied Theory of Experiential Learning." In G. L. Cooper (Ed.), *Theories of Group Processes*. New York: John Wiley and Sons, 1975, pp.33-54.
- Light, D., Jr. "Surface Data and Deep Structure: Observing the Organization of Professional Training." *Administrative Science Quarterly*, Volume 24, Number 4, 1979, pp. 551-559.
- Loden, M., and Rosener, J. B. *Workforce America! Managing Employee Diversity as a Vital Resource*. Homewood, Illinois: Business One Irwin, 1991.

Los Angeles Times. "Jackson: Our Challenge...is to Find Common Ground." July 20, 1988, p. 6.

Meeting Management News. "Workforce Diversity: An Equal Right to be Different." Volume 4, Number 3, 1992, pp. 5-8.

Miranda, S. *Cohesion and Conflict Management in Group Decision Support Systems*. Unpublished Doctoral Dissertation, University of Georgia, Athens, Georgia, 1991.

Murray, J. B. "Review of Research on the Myers-Briggs Type Indicator." *Perceptual and Motor Skills*, Number 70, 1990, pp.1187-1202.

Nunamaker, J. F.; Dennis, A. R.; Valacich, J. S.; Vogel, D. R.; and George, J. F. "Electronic Meetings Systems to Support Group Work." *Communications of the ACM*, Volume 34, July 1991, pp. 40-61.

Putnam, L. L. "Conflict in Group Decision Making." In R. Y. Hirokawa and M. S. Poole (Eds.), *Communication and Group Decision Making*, Beverly Hills, California: Sage Publications, 1986, pp. 175-196.

Ratiu, I. "Thinking Internationally: A Comparison of How International Executives Learn." *International Studies of Management and Organization*, Volume 23, Number 1-2, Spring-Summer 1983, pp. 139-150.

Rokeach, M. *The Nature of Human Values*. New York: Free Press, 1973.

Schwartz, S. H., and Bilsky, W. "Toward a Theory of the Universal Content and Structure of Values: Extensions and Cross-Cultural Replications." *Journal of Personality and Social Psychology*, Volume 58, Number 5, 1990, pp. 878-891.

Thomas, R. R., Jr. *Beyond Race and Gender: Unleashing the Power of Your Total Work Force by Managing Diversity*. New York: American Management Association, 1991.

11. ENDNOTES

1. As quoted in the *Los Angeles Times*, July 20, 1988, p. 6.
2. Such organizations are considered temporary because they are formed expressly for the execution of a specific project and are typically disbanded upon completion of the project.
3. The term EMS, as defined by Dennis et al. (1988, p. 593) is any "information technology-based environment that supports group meetings." Thus, the term refers to a wide variety of systems (and acronyms) used to designate such technologies as GSS, GDSS, and CSCW. In this study, it refers to *GROUP-SYSTEMS*, a specific group support system developed at the University of Arizona.
4. A complete discussion of the pros and cons of the "hybrid" case methodology can be seen in Eisenhardt (1989, 1991) and Dyer and Wilkins (1991).