Giving Voice to Diversity: An Interactive Approach to Conflict Management and Decision-Making in Culturally Diverse Work Environments

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While there is much evidence to show that diversity of viewpoints and perspectives allows for more creative problem solving and decision-making, there is also a great deal of research to indicate that cultural diversity presents one of the foremost challenges to organizations. This paper describes a process called "Interactive Management" (IM) and its application with employees of a large multinational technology company. IM was used in a set of workshops to help groups identify and structure barriers to effective communication in culturally diverse work environments. Methodologies were employed that gave voice to the wide variety of perspectives among the participants while simultaneously helping them structure the complexity of the issues they were discussing. Based on results from these workshops, there is evidence that IM can play a valuable role in managing issues associated with diversity in the workplace setting.

INTRODUCTION

Culturally diverse work environments have become the norm in today's organizations. Communication technologies and reductions in trade barriers have encouraged the rise of global organizations, and factors such as immigration and changing gender roles have led to greater diversity in domestic organizations in terms of sex and gender, ethnicity, nationality, and other social factors. The increase in diversity of the workforce is supported by recent figures from the Bureau of Labor Statistics (U.S. Department of Labor, 2001), which showed that in 2000 white males comprised only 44% of the U.S. workforce, compared to 51% in 1980. The number of Hispanic workers alone has more than doubled, and there are increasing numbers of non-white employees in nearly all job sectors. According to the Workforce 2020 report (Judy & D'Amico, 1997), whereas in the 1980s new immigrants accounted for approximately one-fourth of the increase in the U.S. workforce, in the 1990s they accounted for over one-half of the increase. Currently, an estimated 500,000 legal immigrants are added to the U.S. work force each year, many of them in jobs that demand technical skills and high levels of education.

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While there is much evidence to show that diversity of viewpoints and perspectives allows for more creative problem solving and decision-making (see Caudron, 1990; Copeland, 1988; Gilbert & Ivancevich, 2000; Janis, 1982; Palmer, 1989; Solomon, 1989; and Watson, Kumar, & Michaelsen, 1993), there is also a great deal of research to indicate that cultural diversity presents one of the foremost challenges to organizations. Differences in perspectives, frames of reference, values, norms, and communication styles are often aggravated by stereotypes, prejudices, and misunderstandings, so that decision-making, problem solving and conflict management become extremely complex (see Cox & Blake, 1991; Harris & Moran, 1995; Seelye & Seelye-James, 1997; Sonnenschein, 1997).

Although diversity in the workplace is not a new topic either for academic researchers or for managers, dealing with it effectively remains an elusive goal for many organizations. In spite of the rapid increase in diversity training programs and many outward symbols of tolerance and recognition of diversity, most managers would acknowledge that there is still a "long way to go" before work groups function at their best when they are composed of individuals from a variety of cultures. We believe that one of the keys to future progress lies in recognizing that diversity is part of the complexity that pervades today's organizational environments, and that it must be approached with sophisticated knowledge and advanced tools. In some ways, it may require new ways of organizing and relating in the organizational setting. In order to increase the chances that cultural diversity will result in more creative decision-making rather than more intense conflict, it is essential to develop tools and strategies that can give voice to the wide variety of perspectives that exist within a culturally diverse organization while simultaneously dealing effectively with the complexity of such work environments.

In this essay, we will introduce a process called "Interactive Management" (IM), an approach to complexity that we believe has promise for helping us understand and manage diverse work groups. We will describe how IM was used with employees of a large multinational technology company to help them analyze issues associated with diversity in the workplace setting. After reviewing literature on diversity and its relation to conflict and decision-making, the remainder of this essay will describe the IM process, explain how it was applied to diversity issues, present the results of the application, and discuss implications for conflict management and decision-making in organizations.

DIVERSITY, CONFLICT, AND DECISION-MAKING

In the field of organizational communication, researchers have examined specific behaviors and strategies that are employed by individuals in conflict situations. Some studies have focused on individual predispositions (Weider-Hatfield, 1988) or "inventories" of conflict management behaviors (Kassing, 2001; Wilson & Waltman, 1988) in organizational conflict situations. Others have studied the relationship between individual conflict styles, strategies, and personality traits (King & Miles, 1990). Unfortunately, it is not always easy to transfer findings from such research to a diverse work environment, where individuals enter with different and sometimes incompatible conflict resolution styles and strategies.

A number of scholars have studied cultural differences in perceptions and styles of conflict. For example, Shuter and Turner (1997), examined perceptions of conflict communication

among African American and European American women in the workplace. They found that others see European American women as more conflict avoidant than African American women. Although professional women of both races see themselves and others of their own race as working to reduce conflict in the workplace, those of the other race do not share this perception. The authors suggest that African American professional women see directness as a means of conflict reduction, whereas European American professional women believe less direct approaches reduce workplace conflict.

Citing data from a study of an American subsidiary of a Japanese multinational organization, Kim and Paulk (1994) identified communication difficulties based on cultural differences in language/communication behavior, work style/orientation, management style/orientation, and decision-making. In terms of communication behavior, for example, Japanese respondents bemoaned Americans' focus on speaking and lack of intuitive understanding, whereas Americans had difficulty with the Japanese lack of verbal clarity and specificity. Japanese struggled with American tendencies toward individualism, informality, and hasty decision-making. Goldman (1994), similarly, found that Western protocol tended toward public argumentativeness; majority (vs. consensus) decision-making; formalized, downward communication patterns; reliance on print and electronic communication more than face-to-face interaction; and the prioritization of task goals over relational goals, whereas Japanese protocol tended toward the opposites. These differences, of course, often lead to conflict as well as unequal distribution of influence in decision-making.

North American and Mexican communication styles differ in terms of quantity of talk. For example, the linguistic style of Americans in business is considered to be exacting: no unnecessary communication should be included in one's verbal interaction (Heydenfeldt, 2000). Furthermore, Americans are very task oriented and find ambiguity, excessive verbosity, and obscure expressions unnecessary, and they believe this should be avoided (Gudykunst & Ting-Toomey, 1988). However, Mexican linguistic styles are considered elaborate (by Americans), because speakers use very expressive and rich language, with a high interpersonal concern. Furthermore, for Mexicans it is important to establish a positive relationship with their business partner in order to make good business decisions. In contrast, Americans are more focused on the business issue itself, and they try to work out details at the time of negotiation with primary focus on the issue rather than on the relationship. Finally, Leung (1987) and Triandis (1995) state that Americans emphasize harmony less than Mexicans do and believe that a good argument, using adversarial conflict resolution style, clears the air. Mexicans, however, usually avoid confrontation in conflict and social situations, and they believe that saving face is necessary in order to preserve honor.

Often it is difficult to know what effective conflict management or problem-solving processes should look like in diverse workgroup settings, since each player might have different expectations and preferences for problem-solving approaches, as well as assumptions and realities surrounding the conflict itself. Most studies have found that the context within which conflict takes place plays a significant role in one's selection and perception of conflict management behaviors (King & Miles, 1990). Drake (2001) argues that styles of managing conflict, though influenced by cultural backgrounds of individuals, are better described as emerging from the conditions of the particular interactional context. (The style of one's

negotiation partner, for example, had a stronger influence on personal conflict style than individualism-collectivism.)

Empirical findings regarding diversity in work groups suggest that it has simultaneous positive and negative effects on conflict and decision-making (Jehn, Northcraft, & Neale, 1999). Presenting an integrative model of diversity, conflict, and performance, Pelled, Eisenhardt, and Xin (1999) found that functional background diversity increased task conflict, which in turn promoted cognitive task performance through problem solving, decision-making, and idea generation. Social diversity, on the other hand, was more likely to introduce emotional conflict but less likely to enhance team performance. In general, differences in social group membership tend to increase conflict (especially when combined with value differences), but they also tend to convey productive differences in perspective and knowledge that individuals bring to the group.

In order to benefit from diversity, workgroups must be able to move beyond a single style of conflict management, and they must find effective ways to integrate multiple viewpoints. This means that groups must embrace disagreement (Gruenfeld, Mannix, Williams, & Neale, 1996), but must also be able to manage it effectively (Mischel & Northcraft, 1997). Productive management of complex tasks requires extensive discussion, clarification, and problem solving (Amason & Schweiger, 1994; Fiol, 1994; Jehn, 1995; Putnam, 1994). The process must promote the development of "relational empathy" (Broome, 1993), in which a "third-culture" perspective emerges that integrates conflicting viewpoints and provides a shared set of norms for operating successfully. The following section presents a process that we believe accomplishes these goals particularly well in diverse work settings.

THE INTERACTIVE MANAGEMENT PROCESS

In spite of its potential for enhancing organizational effectiveness, diversity is often treated as a "problem" to be solved in organizations. Indeed, cultural differences in work groups often create conflicts and can lead to disruptive actions. However, in dealing with such difficulties, a starting point is to recognize the important distinction between normal and complex situations. Today, managers and decision-makers face a multitude of organizational and managerial challenges that are complex in nature. These challenges include (a) the diminishing capacity of a given individual (top manager or otherwise) to comprehend the overall management system, (b) increasing levels of unexpected and counterintuitive consequences of policy action, (c) increasing challenges to basic value premises, and (d) increasing organizational rigidity and inflexibility. Complex issues, which usually involve multiple areas of expertise and significant differences in viewpoints, often demand re-evaluation of the basic variables and assumptions underlying the situation. Traditional methods of dealing with problems can be ineffective and often counterproductive when dealing with complex situations. Methodological mismatches through improper classification of the normal problems and complex situations can only serve to increase the difficulties that characterize these situations.

Interactive Management (IM) is a problem solving and design process that was developed to help assist groups in dealing with complex issues (see Broome & Chen, 1992; Broome & Fulbright, 1995; Broome & Keever, 1989; Warfield 1994). The IM system helps parties

facing a complex problem situation to design group products that integrate contributions from individuals with diverse views, backgrounds, and perspectives. In a typical IM session, a group of participants who are knowledgeable of the situation under study are engaged in (a) developing an understanding of the current state of affairs, (b) establishing a collective basis for thinking about the future, and (c) producing a framework for effective action. In the process of moving through these phases of group work, it is often possible for individuals to develop a sense of teamwork and gain new communication and information processing skills. This allows conflict to be managed productively and decision-making to become more creative.

IM is grounded in John Warfield's Science of Generic Design (see Warfield 1976, 1994). The theoretical constructs integrated with IM have grown out of more than two decades of practice, and IM draws from both behavioral and cognitive sciences, with a strong basis in general systems thinking. IM grew out of concerns about how to help groups composed of diverse participants work together in dealing with complex problem situations. Group facilitation in IM is based on: (a) responding to the demands of complexity (Cleveland, 1973; Deal & Kennedy, 1982); (b) employing a functional problem-solving sequence (Simon, 1969); (c) honoring design laws concerning variety, parsimony and saliency (Ashby, 1958; Boulding, 1966; Miller, 1956); (d) drawing role distinctions among context, content, and process (Warfield, 1986); (e) balancing behavioral and technical demands of group work (Broome & Chen, 1992); (f) employing criterion-selected consensus methodologies (Warfield, 1982); and (g) implementing a designed problem-solving environment (Broome & Keever, 1989).

Methodologies were created within the IM system to address many of the serious communication obstacles to consensus building in diverse groups (e.g., unfocused discussion, poor listening, premature evaluation, emotionally laden issues, hidden agendas, domination by high status or vocal members, etc.), and to provide safeguards against dangerous information processing deficiencies that often plague groups (information overload, improper attention to minor issues, inadequate organization and display of information, etc.). IM was established as a formal system of planning and design in 1980 after a developmental phase that started in 1974.[1]

The IM approach assigns to participants all responsibility for contributing ideas, while a facilitation team manages group process. Methodologies for generating, clarifying, structuring, interpreting and amending ideas are selected to match the phase of group interaction and the requirements of the situation. These methodologies include the Nominal Group Technique

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[1] The practice of IM exists in several locations around the world, including: Instituto Tecnologico y de Estudios Superiores de Monterrey, Mexico; Center for Interactive Management, New Delhi, India; City University, London, England; University of São Paulo, Brazil; Southwest Fisheries Science Center, La Jolla, California; Christakis, Whitehouse and Associates, Berwyn, Pennsylvania; Defense Systems Management College, Fort Belvoir, Virginia; Ford Motor Company, Michigan; Arizona State University, Tempe, Arizona; and Americans for Indian Opportunity, Albuquerque, New Mexico.

(NGT) (Delbeq, Van De Ven, & Gustafson, 1975), Ideawriting, Interpretive Structural Modeling (ISM), and field and profile representations (Warfield, 1994).

CASE STUDY: USING IM TO EXAMINE DIVERSITY ISSUES

During December 1999, employees of a large multinational technology company in the Phoenix area of the United States participated in workshops in which the IM process was used to facilitate discussion about cultural diversity. The workshops were held during two all-day sessions and two evening sessions. Forty-four individuals, all of whom were working adults representing a variety of ages, races, ethnic identities, and levels of international experience, participated in the workshops. The sessions were part of a course in culture and communication offered by the company in cooperation with Arizona State University (ASU). The workshops were facilitated by twelve graduate students at ASU, working under supervision of the course instructor. The graduate students were simultaneously enrolled in a course on group facilitation at ASU, and their involvement fulfilled part of the course requirements. The role of the graduate students was primarily to implement pre-selected methodologies for generating, clarifying, selecting, and structuring ideas. They did not contribute to the content discussions, generate ideas, or offer their own judgments during the structuring process. Some of them were involved in the post-workshop analysis and interpretation of results. In the workshops, four groups of eleven participants were each facilitated by a team of three graduate students, and several plenary sessions were facilitated by the course instructor.

The primary purpose of the workshop was to examine diversity issues in the workplace. All of the participants were part of work teams that were composed of individuals from a variety of cultural backgrounds, and most of the participants had attended numerous cultural diversity trainings in their organization. Most of these trainings were 1-2 hours in length, and the majority consisted of lectures about topics such as steering clear of politically incorrect terms or how to avoid offending certain cultural groups. Although most participants thought the company's trainings have been well presented, they felt that their usefulness was limited because there was not sufficient time for engaging discussion about cultural diversity issues. Thus, participation in the IM workshops was the first opportunity for most of the participants to examine in depth issues of culture and communication.

In order to establish a common basis for their work, the following context statement was presented to the participants during the first plenary session:

> In today's world, it is increasingly necessary to understand how to communicate effectively in culturally diverse work environments. Many organizations and institutions have recognized the need for training that helps individuals appreciate cultural diversity, but many of these programs do not allow sufficient time for participants to adequately explore many of the critical issues, and participants are not often able to fully share their experiences and views. This workshop is designed to allow participants an opportunity to examine a wide range of factors that are important in dealing effectively with cultural diversity in the workplace, and it will help participants explore how these factors influence one another.

The following objectives were established for the problem-solving sessions:

1. To identify the major barriers to effective communication in culturally diverse work environments;
2. To organize the barriers into categories that reflect the major themes of the idea set;
3. To develop an "influence map" representing the interrelationships among the set of major barriers; and
4. To engage in mutual learning that leads to increased awareness, understanding, and appreciation of cultural diversity.

The workshop progressed through three related stages of group activities: (1) generation and clarification of ideas, (2) categorization of ideas into a problem field, and (3) structuring of selected ideas to show the perceived influence among the obstacles.

Stage 1: Generation and Clarification of Ideas

Participants were engaged in idea generation and clarification through the Nominal Group Technique, or NGT (Delbeq, Van De Ven, & Gustafson, 1975). NGT allows individual ideas to be pooled effectively, and it is used in situations in which uncertainty and disagreements exist about the nature of possible ideas. NGT involves five steps: (1) presentation of a stimulus question to the participants; (2) silent generation of ideas in writing by each participant working alone; (3) recording of ideas by the facilitator on butcher-block paper in front of the group, with posting of the filled butcher-block paper on walls surrounding the group; (4) serial discussion of the listed ideas by the participants for clarification of their meaning; and (5) selection by the participants of the more important items through a voting process. The following stimulus question was used with each group: "What are barriers to effective communication in culturally diverse work environments?"

When responding to this stimulus question, participants were asked to (1) focus on undesirable aspects of the current situation (avoid solution statements), (2) include only one idea in a single statement (break complicated ideas into additional statements), and (3) seek to capture only the essence of the idea (save details and elaboration until a later time). Moreover, participants were also asked to use the following phrases as guides for writing their statements:

Lack of...	Conflict between...
Difficulty in...	Inadequate...
Failure to...	Shortage of...
Resistance to...	Refusal to...
Hesitancy to...	Unawareness of...
	Others...

Following serial discussion and clarification of the listed ideas, participants were asked to individually select five barriers they considered to be of greater importance, relative to the other barriers, and rank them in order of importance. These selections were then collected from the participants and the results of the voting process were compiled and displayed for the group.

The four workshop groups generated a total of 299 ideas, ranging from 63 barriers in the group with the smallest set to 93 barriers in the group with the largest set, with an average idea set of 75. The top items from each of these sets is included in the field representation discussed in the following section.

Stage 2: Field Representation of Ideas

In order to explore the themes that ran through the set of ideas, the top set of barriers from each group (those selected by each group as more important) were categorized using "field representation" methodology. A field representation shows a set of categories and the members of each of those sets. It is an emergent product, created by considering pairs of ideas, asking the relational question: "Does idea A belong in the same category with idea B?" The number of categories is not determined beforehand, and names for categories are assigned after the categorization process is finished. As the category set develops, each idea is paired one by one with a member of each existing category, using the relational question, until every idea is placed in the category where it fits best. When a particular item does not fit into an existing category, a new category is established, and usually there are other items that fit with it later in the categorization process. The categorization can be accomplished with the assistance of software designed to support this task (see description in following section), or it can be completed manually, working with individual ideas printed on separate sheets of paper. As the field emerges, it is constantly reviewed and modified as appropriate until all ideas have a place in one of the categories. Names are given to each category to reflect the theme running through the items within that category. The resulting field representation allows a large set of ideas to be displayed in graphical form,[2] and it allows for additions to the set at any time as the workshop progresses and learning occurs.

A total of 47 items from the four groups were categorized using the field representation methodology. The results are displayed in the field representation shown in Table 1. This problem field consists of seven categories: (A) Perceptual Biases, (B) Miscommunication, (C) Uncertainty, (D) Negative Attitudes, (E) Organizational and System Constraints, (F) Cultural Conflicts, and (G) Inadequate Intercultural Skills. Following discussion of this field in a plenary session, each of the groups met separately and categorized the full set of barriers

[2] In the group facilitation setting, a "field representation" is displayed in columns on the walls surrounding the group work space. In this way, it functions as a "graphic" that allows participants to see the full set of ideas organized according to categories. Participants immediately see both the number of categories and the relative size of each category. Highlighting items in each column allows participants to see which items have been selected and how many have been selected from each category. Due to the stylistic contraints of this journal, the field representations are displayed in a table format.

TABLE 1
Problem Field of Barriers to Communication in Culturally Diverse Work Environments

Top Items from Each Set
A. Perceptual Biases
• Biases and prejudices/past experiences/ stereotypes (GRP1-5)
• Pre-judge based on initial contact (physical appearance) (GRP1-27)
• Silent rules (GRP1-10)
• Existence of prejudice (GRP2-21)
• In-group/out-group barriers (GRP2-20)
• Jumping to conclusions instead of communicating (GRP2-52)
• Stereotypical ideas about how a culture functions (GRP3-3)
• Perceived or learned biases between people (GRP3-26)
• Perception of race (GRP3-7)
• Presence of cultural or ethnic bias (GRP4-18)
• Existence of racial prejudice (GRP4-71)
B. Miscommunication
• Miscommunication due to verbal language barriers (GRP1-1)
• Lack of understanding of accents, speech patterns (GRP1-58)
• Inappropriate comments (intentional) (GRP1-30)
• Misunderstanding nonverbals (GRP2-53)
• Language barriers (not speaking the same language) (GRP3-2)
• Difficulty in understanding what is being said by non-native speakers (GRP3-5)
• Misunderstanding what was said and what was meant (GRP3-16)
• Target's/Receiver's interpretation (GRP4-3)
C. Uncertainty
• Cultural perceptions (discomfort dealing with other cultures) (GRP1-6)
• Fear of failure/embarrassment (GRP1-36)
• Being in a minority (GRP1-42)
• Fear of offending others through physical expression (GRP3-4)
D. Negative Attitudes
• Unwillingness to shift paradigms (GRP1-19)
• Unwillingness to upgrade perceptions (GRP1-15)
• Apathy (GRP1-62)
• Resistance to change (GRP3-29)
• Intolerance for other cultures (GRP4-6)
• Unwillingness to accept and show respect toward other cultures (GRP4-35)
• Unwillingness to attempt communication (GRP4-4)
• Tolerance for intolerance (GRP4-49)
• Not willing to study/research a culture (GRP4-21)

TABLE 1
Problem Field of Barriers to Communication in Culturally Diverse Work Environments (continued)

Top Items from Each Set
E. Organizational and System Constraints
▪ Ineffective leadership (GRP1-44)
▪ Lack of integrating activities (GRP2-38)
▪ Demand for productivity takes precedence over time allowed for relationship building (GRP2-30)
▪ Mechanical barriers (lack of technology, time zones) (GRP3-17)
F. Cultural Conflicts
▪ Conflicts between concepts of time (GRP2-28)
▪ Interference of our own values and beliefs (GRP2-31)
▪ Use of business practices unacceptable in some cultures (GRP3-66)
▪ Conflicts of values and beliefs (GRP4-8)
G. Inadequate Intercultural Skills
▪ Lack of cultural understanding (GRP2-11)
▪ Lack of personal respect (GRP2-83)
▪ Lack of knowledge about that culture (GRP3-14)
▪ Lack of understanding the role religion plays (GRP3-22)
▪ Ignorance toward other cultures (GRP4-54)
▪ Lack of cultural awareness (GRP4-46)
▪ Lack of empathy towards other culture (GRP4-29)

they had produced in Phase 1, resulting in four additional field representations. These individual field representations were used during the next phase of the group work and in the interpretation and analysis that were conducted after the workshop was completed. Because of space constraints, the individual field representations for each group are not shown here.

Stage 3: Influence Structuring

In order to help groups explore the perceived relationships among the ideas they had generated earlier, a methodology called Interpretive Structural Modeling (ISM) was employed. ISM is a computer-assisted methodology that helps a group identify the relationships among ideas and impose structure on the complexity of the issue. The ISM software utilizes mathematical algorithms that minimize the number of queries necessary for exploring relationships among a set of ideas (see Warfield, 1976). ISM can be used to develop several types of structures, including influence structures (e.g., "supports," or "aggravates"), priority structures (e.g., "is more important than," or "should be learned before"), and categorizations of ideas (e.g., "belongs in the same category with").

The five steps of ISM include: (1) identification and clarification of a list of ideas (using a method such as NGT); (2) identification and clarification of a "relational question" for exploring relationships among ideas (e.g., "Does idea A support idea B," "Is idea A of higher priority than B," or "Does idea A belong in the same category with idea B"); (3) development of a structural map by using the relational question to explore connections between pairs of ideas (see below); (4) display and discussion of the map by the group; and (5) amendment to the map by the group, if needed.

In step 3, group participants in each group viewed questions generated by the ISM software, using the following relational question (where "A" and "B" are pairs of ideas from the list developed by the participants in Stage 1):

"Does: Obstacle A Significantly Aggravate:
"make worse"
"increase the severity of"
"exacerbate"
"make it more difficult to resolve"
"magnify the effects of"
Obstacle B?"

For each pair of ideas considered, the group engaged in discussion, managed by the facilitator, about the relational question. After participants indicated their judgment about the relationship between the displayed pair of ideas and offered rationales for their view, a vote was taken to determine the group's overall judgment about the relationship. A "yes" vote was entered in the ISM software when a majority of the participants saw a significant relation between the pairs of ideas; otherwise a "no" vote was entered. Another pair of ideas was then projected on the display screen, and another discussion was held and a vote taken. This process was continued until the relationships between all necessary pairs of ideas had been explored. The ISM software then provided information from which a structural map was created, showing the result of the group's judgments.

The length of time required to complete discussion of all necessary pairs of ideas depends on the total number of ideas in the set, but the four groups each devoted approximately six hours of group deliberation to the ISM structuring process. The number of queries necessary to complete a structure depends on the total number of ideas in the set, but the ISM software is able to infer, on the average, approximately 75-80% of the judgments involved in relating the complete set of ideas.

In each group, participants first structured the obstacles they had selected in their top set, and after reviewing this intermediate result they selected additional items from the problem field and completed the structuring process. The resulting influence map, or "problematique," represents the system of barriers to effective communication in culturally diverse work environments, as viewed by the group completing the map. The four groups' problematiques are presented in Figures 1-4.

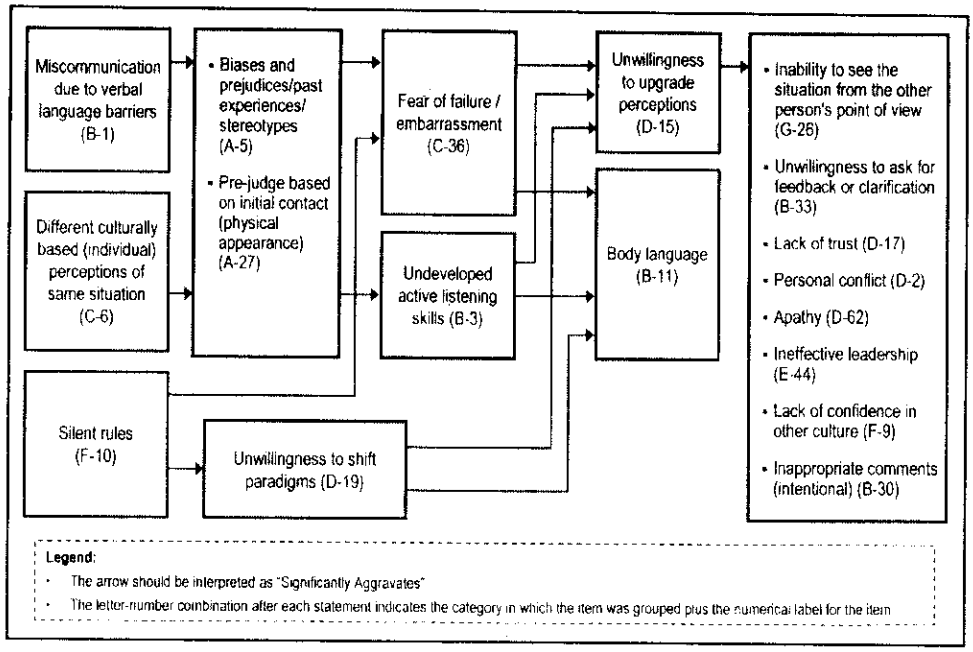

Figure 1. Problematique for Group 1.

Interpretation and Analysis of Results

The structures shown in Figures 1-4 are read from left to right, with the barriers having the most influence shown on the left side of the map. Note that the letter-number combination enclosed in parenthesis after the text of each item is simply an item identifier, designating the category in which the item was placed in Table 1 and the original order in which the item was generated in the group. These designations do not indicate any kind of weight or priority. Those items marked with a bullet and grouped within a single box are part of a "cycle," meaning that they are mutually aggravating. Several "walks" can be taken by following various "paths" that exist in the map. To walk a path, one can start on the left side of the map and follow the arrows that represent the line of influence. The negative influence exerted by those barriers on the left are propagating in nature, that is, their aggravation propagates along the path from item to item, making the impact of the items on the left greater than it might otherwise appear. By starting with an item on the left side of the map and following its path of influence, one can understand the difficulties brought about by that item. Similarly, by starting with an item on the right side of the map and walking back to the left, one can understand the pressures that may make it difficult to resolve a particular barrier.

Reading an influence structure can be illustrated by considering the problematique of Group 1, shown in Figure 1. Starting with the left side of the structure, item B-1 ("Verbal language barriers") significantly aggravates the cycle containing items A-5 ("Biases and prejudices") and A-27 ("Physical appearance"), which aggravates C-36 ("Fear of failure") and B-3 ("Undeveloped active listening skills"). Following the path of C-36, its influence extends to D-15 ("Unwillingness to upgrade perceptions") and then finally to the large cycle of items

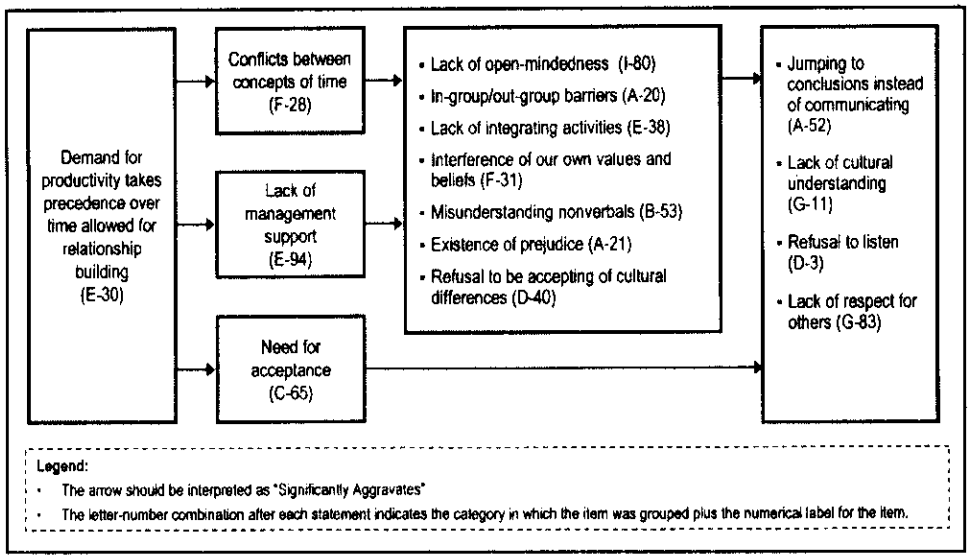

Figure 2. Problematique for Group 2.

on the right side, containing G-26 ("Inability to see the situation from the other's point of view") and seven other items. Altogether, item B-1 influences 14 other items in the structure. From this reading, one can conclude that Group 1 views "verbal language barriers" as one of the driving forces in the system of problems characterizing the culturally diverse work environment.

Following the path in reverse from right to left, one can understand a group's perception of the factors that impact negatively on a particular item or set of items. Using the problematique of Group 4, shown in Figure 4, we find that item F-16 ("Failure to be flexible") is aggravated by all the other items in the structure. Thus, it is easy to see why "inflexibility" is so difficult to "fix" in the culturally diverse work environment, at least according to the thinking of this particular group. To deal with the problem of "inflexibility" effectively, we would have to better prepare individuals to interact with different cultures (G-5), create a greater desire to study other cultures (D-21), promote empathy toward other cultures (A-29), and many other tasks, starting with the item that lies to far left side of the structure—cultivation of a willingness to accept and respect other cultures (D-35).

In addition to the visual inspection or manual "walk" through a structure, it is possible to assign specific scores to the degree of influence held by each item in the structure. Using the information provided by the influence structure, the following scores can be computed:

1. ***Position Score.*** Each influence map places barriers in stages. A barrier lying in the first (leftmost) stage has the potential to significantly aggravate all of the barriers lying to the right to which it connects. It is strategically positioned to provide negative influence. On the other hand, a barrier lying in the last (rightmost) stage has no such power. Its resolution depends to a significant degree on removing those barriers to its left. For these reasons, position is a factor in assessing relative significance of particular barriers, and in deciding

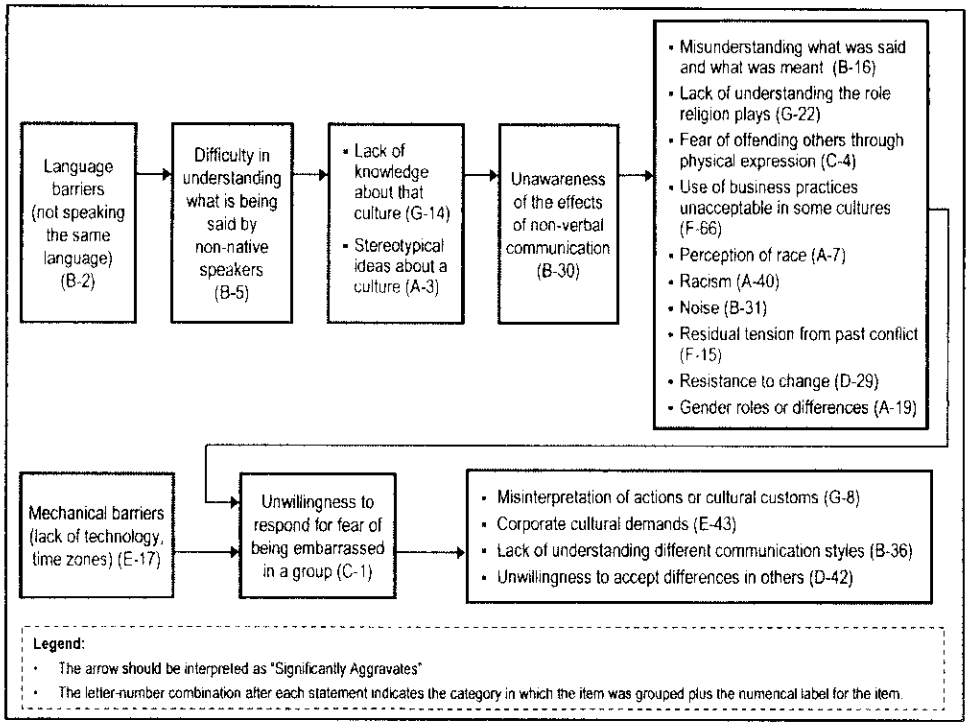

Figure 3. Problematique for Group 3.

with what priorities to approach the total barrier set. Each barrier can be assigned a "position score." Barriers in the leftmost stage are assigned the highest score, and those in the rightmost stage are assigned the lowest score.

2. ***Antecedent and Succedent Scores.*** More detailed measures can be found by assigning "antecedent scores" and "succedent scores" to barriers. For a given barrier, the antecedent score is simply the number of barriers lying to the left of that barrier that (according to the structure of the map) aggravates that barrier. Likewise, the succedent score is the number of barriers lying to the right of a given barrier which it aggravates.

3. ***Activity Score.*** The activity score for a given item or category is simply the sum of the antecedent score and the succedent score. Taken alone, the activity score does not indicate the direction of the negative influence, since an item on the right side of the map can have an activity score that is identical with an item on the far left side of the map. However, the activity score can provide a measure of how "active" an item or category is in receiving and dispensing aggravation, since it is often the case that items with the highest activity scores are located in the middle of the map. Such items can be viewed as the "conduits" through which aggravation passes.

4. ***Net Succedent-Antecedent Score.*** The Net Succedent-Antecedent Score (Net SA) is found by subtracting the antecedent score from the succedent score for a given item or category. If the Net SA score is positive, it means that the item or category is a net source of

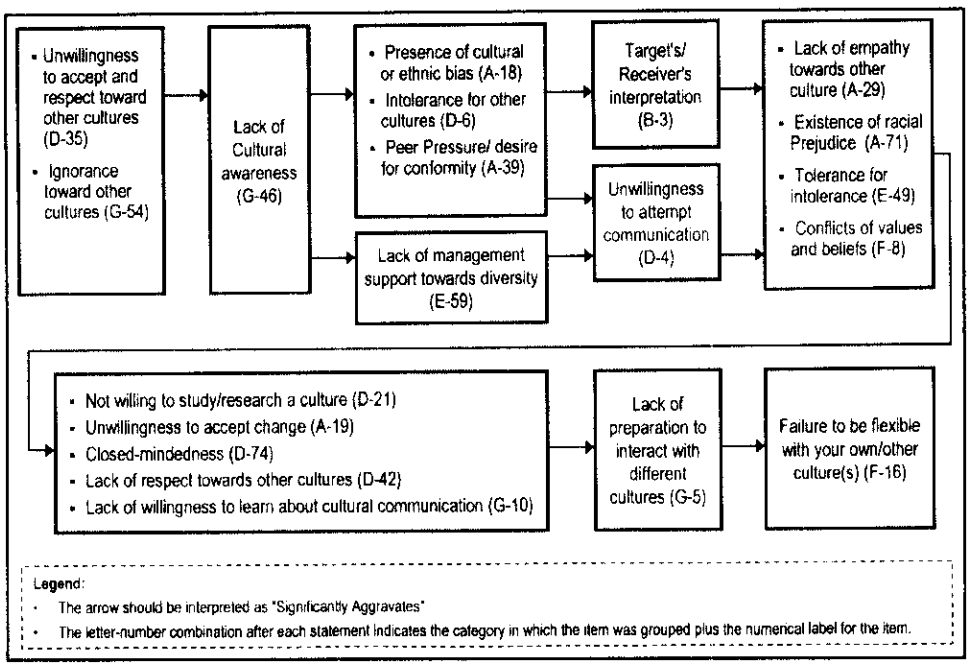

Figure 4. Problematique for Group 4.

aggravation. If the Net SA score is negative, it means that the item or category is a net receiver of aggravation.

*5. **Influence Score.*** The overall Influence Score for an item or category is found by adding the position score to the Net SA score. This addition gives some weight only to position and some weight to the specifics of antecedents and succedents. While the Net SA score reflects the actual influence of items included in the map, the Influence score reflects both actual and potential influence. The potential influence (represented by the position score) is important since other items could be added to the map at a later time without changing significantly the position score of a particular item relative to the other items on the map.

Interpreting the scores can take different forms depending on the purpose of the analysis. If one is looking for potential aggravation, then position score is an important indicator. However, if one is interested in actual aggravation, then the succedent and accedent scores are more important. The net influence score provides an overall picture of the aggravation. Generally, it is important to use more than one score in interpreting the results. For example, an item might have a low net score but a high activity score. The low net score means that it received more aggravation than it exerted on the other obstacles. However, the high activity score means that it is quite active in receiving and dispensing aggravation. This illustrates that both measures can be helpful in order to get a balanced picture. In all cases, what counts as "high" or "low" scores is a comparative judgment based on the scores in that particular set.

In addition to interpreting how groups view individual items, it is also possible to conduct an analysis at the category level. As described in Phase 2, a field representation was created for

the top items from each group's idea generation session (see Table 1), and then each group used the categories from this field to organize all the items from their particular set of ideas. Thus, the items in each group's problematique have a category designation based on Table 1. Using this information, it is possible to determine which categories carry the most influence within a particular structure. A category analysis is accomplished by summing the individual scores for all items in each category. These scores take into account both the number of items from each category appearing in the structure and the location of each item within the structure. The category analysis of the structures for all four groups is displayed in Table 2.

An examination of Table 2 reveals both divergence and convergence among the groups in terms of how they viewed the items within various categories. Within each of the categories, at least one of the groups' influence scores is "out of line" with the other groups. For example, in category A, "Perceptual Biases," the influence score is 28 for groups 1, 3, and 4, indicating that these groups saw the items in this category as providing a high degree of influence within the structure. However, the influence score for group 2 is minus 1, indicating that this group saw the items in Category A as net receivers of aggravation. A similar pattern, where there is agreement among three of the groups, occurs within all the categories except E, "Organizational and System Constraints," where two of the groups view items in this category as exerting moderate aggravation and two of the groups view such items as net receivers of aggravation.

Recognizing that variation exists in views of the different groups, it can be useful, nevertheless, to look at the overall pattern of perceptions across the four groups. Using the mean scores for each of the categories (see Table 2), it is possible to construct a "composite structure." This structure, which is displayed in Figure 5, suggests there are two categories of barriers that are perceived as exerting the most overall influence on the system of barriers. Category A, "Perceptual Biases," and Category B, "Miscommunication," are viewed by the groups as primary "drivers" in diverse work environments. In other words, they exert a high degree of negative influence, making it very difficult to manage diversity effectively. Category E, "Organizational and System Constraints," Category C, "Uncertainty," and Category F, "Cultural Conflicts," also provide negative influence but at more moderate levels, and they are aggravated by barriers in categories A and B. Category G, "Inadequate Intercultural Skills," and Category D, "Negative Attitudes," are not viewed by the groups as having a great deal of negative influence within the overall system – rather, they are "driven" by the other categories of barriers.

Promises and Limitations of the IM Workshop

Participant Response to Workshop. For many participants in this diversity workshop, it was an exercise in self-awareness, learning about their own approach to diversity issues and other-awareness, and learning about how others communicate and how they feel about diversity issues. Participants in each group were given an opportunity to offer comments about their experiences with the process. Generally, they expressed a high degree of satisfaction and made positive comments about the dynamic nature of the process, the chance each person had to contribute her or his ideas and experiences, the systematic nature of the analysis process, the opportunity to take an in-depth look at diversity issues, the inclusive nature of the discussion, and the helpfulness of the facilitation process. They were particularly

impressed by the influence structuring process, and they commented about the unique opportunity they had to consider relationships among ideas in such a careful, systematic, and thoughtful manner. Finally, participants also talked about the value of having a concrete product that they could utilize in their own work.

Unfortunately, there was no formal written evaluation by the participants of the IM workshop. When comments are offered in a group setting at the request of the facilitator, it is possible that participants are offering comments they believe the facilitator wants to hear. It is not known how they might have evaluated the workshop if they had been given the opportunity to offer anonymous written feedback. Thus, the positive comments of the participants must be viewed cautiously.

Implications of Group Products. It is interesting to note that the overall view of these groups (represented by the composite structure) is not completely in agreement with the emphasis often given in diversity training programs to issues such as attitude change. While more positive attitudes toward diversity are appropriate end goals of training, the participants in this exercise saw the items in the category "Negative Attitudes" as driven by other variables, such as uncertainty and organizational/system constraints. The same interpretation can be given of the category "Inadequate Intercultural Skills." Taken at face value, the results of this workshop suggest that without addressing the barriers in these more influential categories, it is unlikely that attempts to alleviate barriers related to attitudes and inadequate skills will be very successful. This outcome enables us to think more carefully about some of ways we currently try to create a proper climate for culturally diverse work groups.

Although the findings from the composite structure are quite interesting, and they were very useful to the participants (and potentially helpful to the organization), we must be cautious in generalizing the content results, since the sample size is relatively small, (four groups composed of 44 individuals). If the opportunity arises to take several other groups through a similar process, the content findings could be used to help researchers understand better how workers view the system of barriers to effective communication in diverse work environments. Such results would be much stronger than those from the typical survey, which generally only taps the surface of true beliefs and attitudes on the part of respondents. Such results would also go beyond the findings that are possible from focus groups, since IM sessions engage participants in more systematic and thorough analysis of the issues.

Implementation of Results. The three stages of group activities implemented in this workshop constitute the first phase of the IM problem-solving sequence. In most situations, the IM process continues with a focus on action. The second phase normally consists of identifying options for overcoming the barriers, and the third phase consists of selection options from the proposed alternatives, building an outline for dealing effectively with the barriers identified in Phase 1. The problem analysis thus becomes a foundation from which to move toward a specific agenda, strategic plan, action framework, or other form of implementation. A systematic plan of action, based on a thorough analysis of the situation, and developed by involving in a meaningful way the people affected by potential changes, has a much better chance of success than does the typical strategic plan developed by outside consultants or proposed by a unit head.

The purpose of this particular workshop was directed primarily toward increased awareness and understanding, rather than taking action. Therefore, participants did not engage in systematic work that examines how to overcome the barriers they had identified. Although action should not be taken until an adequate understanding of the problem is reached, ultimately, change in organizations is dependent on action, not analysis alone. Although participants utilized the product in their own coursework, applying the problematique produced by their group as a tool to analyze particular cases, managers could easily question the overall value of the workshops unless the groups conduct additional work that leads to change.

IMPLICATIONS FOR MAKING DECISIONS AND MANAGING CONFLICT IN DIVERSE WORK ENVIRONMENTS

Interactive Management is an approach to group problem solving that can be utilized to address a wide range of issues in the organizational setting. It has been applied extensively in countries around the world, including North America (United States, Mexico, and Canada), Europe (England, Sweden, Belgium, France, and other countries), the eastern Mediterranean (Greece, Cyprus, Israel), Africa (Kenya, Liberia), Asia (Japan, China), and South America (Brazil, Ecuador). It has been employed in a wide range of organizations, including U.S. and European government agencies, large corporations, nonprofit organizations, citizen groups, academic institutions, and professional associations. Interactive Management has been utilized for organizational redesign, product development, process engineering, program evaluation, evaluation of large-scale systems, agenda setting, curriculum design, and peace building and conflict resolution (see Warfield, 1994; Broome, 1995,1997).

In this paper we have described how IM was employed to help participants explore barriers to communication in diverse work environments. As cultural diversity increases in organizations, managing conflict and improving decision-making become both more important and more difficult. We found that IM possesses several characteristics that are vital in promoting effective decision-making in culturally diverse work groups. In particular, we believe that IM (1) helps give voice to diversity of perspectives, (2) helps structure group dynamics for effective interaction, and (3) helps manage information complexity. The following section will describe these characteristics in more detail.

Giving Voice to Diversity of Perspectives

As Lindsay (1998) articulates, it is important to recognize the intricacies of individual identities and experiences and to promote "inclusiveness in developing an organizational climate that values diversity" (p. 306). Differences in worldviews (Kraft, 1978), national differences in value orientations (Hofstede 1980, 1991), and domestic ethnic differences (Kluckhohn & Strodtbeck, 1961) all create potential for misunderstandings and conflict. Unfortunately, organizations are not always successful in accommodating cultural differences, as many communication scholars have indicated. Acker (1990) argues that organizational participation by women is problematic because organizational structures, norms, and values reflect gendered notions such as rationality, abstraction, and hierarchy, and organizations' conceptions of what it means to be a worker are tied up in traditionally male roles. Tannen (1994) offers specific examples of how in decision-making meetings, ideas expressed through feminine

TABLE 2
Category Analysis

Scores for Category A: Perceptual Biases

GROUP	POS	ANT	SUC	ACT	NET	INF
Group 1	8	6	26	32	20	28
Group 2	5	29	23	52	-6	-1
Group 3	14	45	59	104	14	28
Group 4	23	51	56	107	5	28
Mean Category Score	12.50	32.75	41.00	73.75	8.25	20.75

Scores for Category B: Miscommunication

GROUP	POS	ANT	SUC	ACT	NET	INF
Group 1	12	44	38	82	-6	6
Group 2	2	8	10	18	2	4
Group 3	24	53	83	136	30	54
Group 4	5	6	11	17	5	10
Mean Category Score	10.75	27.75	35.50	63.25	7.75	18.50

Scores for Category C: Uncertainty

GROUP	POS	ANT	SUC	ACT	NET	INF
Group 1	8	5	24	29	19	27
Group 2	3	1	4	5	3	6
Group 3	5	30	18	48	-12	-7
Group 4	--	--	--	--	--	--
Mean Category Score	5.33	12.00	15.33	27.33	3.33	8.67

Scores for Category D: Negative Attitudes

GROUP	POS	ANT	SUC	ACT	NET	INF
Group 1	9	57	39	96	-18	-9
Group 2	5	29	23	52	-6	-1
Group 3	4	34	17	51	-17	-13
Group 4	28	64	63	127	-1	27
Mean Category Score	11.50	46.00	35.50	81.50	-10.50	1.00

TABLE 2
Category Analysis(continued)

Scores for Category E: Organizational & System Constraints						
GROUP	POS	ANT	SUC	ACT	NET	INF
Group 1	1	16	7	23	-9	-8
Group 2	9	10	35	45	35	34
Group 3	8	20	8	28	-12	-4
Group 4	10	15	22	37	7	17
Mean Category Score	7.00	15.25	18.00	33.25	5.25	9.75
Scores for Category F: Cultural Conflicts						
GROUP	POS	ANT	SUC	ACT	NET	INF
Group 1	6	16	19	35	3	9
Group 2	5	9	21	30	12	17
Group 3	6	28	28	56	0	6
Group 4	5	31	10	41	-21	-16
Mean Category Score	5.50	21.00	19.50	40.50	-1.50	4.00
Scores for Category G: Inadequate Intercultural Skills						
GROUP	POS	ANT	SUC	ACT	NET	INF
Group 1	1	16	7	23	-9	-8
Group 2	2	26	6	32	-20	-18
Group 3	9	37	34	71	-3	6
Group 4	20	38	43	81	5	25
Mean Category Score	8	29.25	22.5	51.75	-6.75	1.25

Legend:

Category	Theme from Problem Field (see Table 1and Figure 1)
Group	Working groups
POS	Position Score
ANT	Antecedent Score
SUC	Succedent Score
ACT	Activity Score
NET	Difference between Succedent Score & Antecedent Score
INF	Net Influence Score

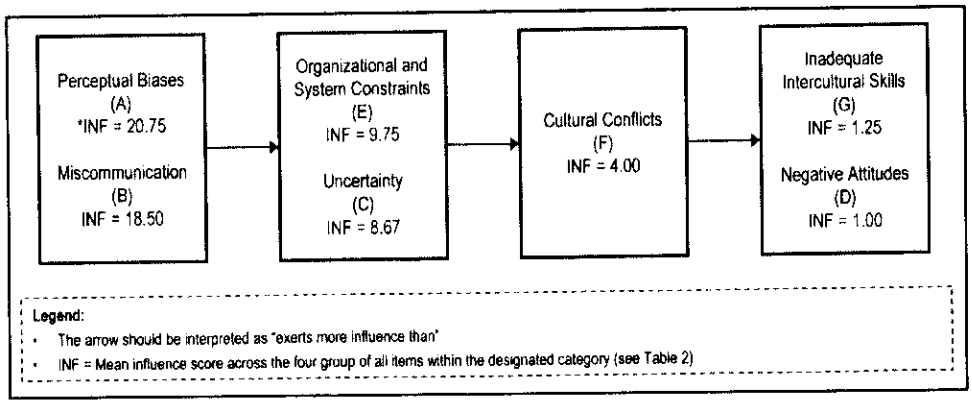

Figure 5. Composite influence flow of problem categories.

speaking styles meant to convey politeness (such as verbal hesitancy, disclaimers, and interrogative sentence structures) tend to be discounted, whereas those expressed forcefully (a more masculine style) are more readily accepted. Allen (1995) shows how formal and informal organizational communication processes are affected by differences in employees' racial-ethnic backgrounds; stereotypes, prejudices, and other biases affect both the quality of interaction and the willingness of many to fully engage or contribute in communication settings.

The Interactive Management system is designed to fully utilize multiple voices in helping the group identify the relevant dimensions of the problem situation. Complex problems are inherently multidimensional, and IM creates potential for a match between the dimensionality of the problem-situation and the dimensionality of the solution-space. IM recognizes that a wide variety of perspectives are necessary in complex situations to guard against under-conceptualization. In IM the only "stopping rule" for the generation of ideas is the facilitator's judgment that further effort is not likely to produce new substance. Additionally, the computer-assisted structuring process implemented with ISM helps the group convert the variety of perspectives they have identified into a comprehensive portrayal of the problem situation. Overall, IM promotes participant learning that is rooted in their own concrete experience, which greatly facilitates participants' understanding. By recognizing their expertise (Knowles, 1973), IM helps ground discussion in participants' lived experiences. Understanding and treating participants as experts leads to empowering everyone's voice and validating differing perspectives that may exist.

Structuring Group Dynamics For Effective Interaction

It is not easy in any group, no matter the composition, to manage group dynamics effectively. Constant interruptions, domination by a few vocal members, constant shifts in focus, and other problems plague attempts of most groups to work together successfully. As discussed in an earlier section of this essay, these problems of group dynamics are compounded in culturally diverse groups because of differences in communication style.

IM is able to accommodate different learning styles by employing methodologies that utilize multiple technologies and forms of communication (visual and auditory). In general, the methodologies that were selected or developed for use in IM are required to meet the following requirements (see Broome & Keever, 1989; Warfield, 1994):

1. The methodologies must not place demands on groups that they cannot reasonably be expected to accomplish, based on their backgrounds, experience, and education.
2. The methodologies must be participative, that is, they must be specifically amenable to contributions from all who are involved in their use.
3. The methodologies must involve specific activities that help to assure good communication, especially clarification of the individual component topics that are dealt with when working with an issue.
4. There must be provision for open dialogue, and for equal decision-making powers for all participants, in order to stimulate consensus.
5. The methodologies must be very efficient in the use of the time of the participants.

The two methodologies used in the workshops described in the current case study were Nominal Group Technique (NGT) and Interpretive Structural Modeling (ISM). NGT allows for silent reflection, inter-subjective idea creation, and dialogue to generate and elaborate on themes. ISM allows different perspectives about every issue to emerge, and it engages the group in relational thinking, moving them out of the typical Western mode of linear logic. Both methodologies accommodate diverse cultures, communication styles, cognitive styles, and learning styles, and encourage equality of voice.

Managing Information Complexity

A voluminous amount of data is often generated in group work, especially if voice is given to a diversity of perspectives and group dynamics are managed in a positive manner. Even with careful and sensitive facilitation, groups can become mired in the confusion of too much information, and they often deal with the overload by ignoring large portions of the data. Such an outcome is not conducive to good decision-making. To be effective, groups must avoid two of the major pitfalls of information management—information overload and random choice making.

A frequently cited result from research in cognitive psychology is that every individual's short-term mental activity lends itself to dealing simultaneously with approximately seven items. Attempts to go beyond this scope usually preclude sound reasoning. This law stems from the experimental work of George Miller (1956) and H. A. Simon (1974). Both the span of absolute judgment and the span of immediate recall of humans are bound by these limits. This limit has significant implications for exploring relationships among the ideas generated by group participants. In IM, special attention is given during the group facilitation activity to not overburden the cognitive capacity of the participants, while simultaneously allowing them to deal with large amounts of information. Methodologies insure that the information processing demands imposed on participants do not exceed the short-term memory limits with which the mind can cope. Ideas are organized in accordance with a specified relationship

using a series of simple yet systematic steps, rather than asking participants to comprehend and organize a large number of ideas simultaneously.

The factors that impact on complex situations are seldom of equal weight, and wide variability exists among group members in their assessment of relative saliency of factors pertaining to the situation. Kenneth Boulding (1966) found that the tendency to exhibit "spurious saliency" is one of the three primary factors responsible for low human intellectual productivity. This diversity, if not managed appropriately, will result in unfocused dialogue, unjustified decisions, and arbitrary solutions that are unlikely to be understood and are seldom implemented. Unless specifically guided in doing so, people will seldom sort out the relative significance of the many variables affecting the problem solving effort. Through systematic structuring and selection processes, IM facilitation provides a means for groups to uncover the relative saliency of the factors characterizing the problem situation. Such efforts can prevent the misuse of resources and the waste of human potential.

CONCLUSION

Interactive Management has been used productively in a wide variety of situations and to address a plethora of issues. While IM is a very time-intensive process, we have found that organizations that dedicate the resources to it can end up preventing problems that would ultimately be much more costly. Devoting time to bring together informed individuals with interest in an issue, and to carefully examine its source, can prevent the waste of time, effort, and other resources that would otherwise be devoted to pursuing ineffective solutions or fighting unnecessary battles.

Today's decision-makers and problem-solvers need to be well-prepared to grasp clearly the complex nature of diversity issues. Through the use of IM, they can increase their awareness of multiple perspectives and voices that shape the situation, better equiping them to carefully examine biases, assumptions and one-sided views that exist within organizations. IM's value as a culturally-sensitive conflict management and problem-solving tool lies partly in the way in which it facilitates consensus and learning. By helping groups examine the roots of conflicts and problems, the process promotes both mutual understanding and creative synergy. An organization using these technologies can generate systematically a new corpus of knowledge about issues such as diversity, while at the same time enhancing the organizational climate through improved communication.

We hope that the case study presented in this article will be helpful to organizations as they struggle to deal with the demands brought about by today's increasingly diverse work environment. While our findings regarding organizational diversity are context-specific and should be generalized only with caution, we believe that they reveal certain dynamics that apply to any context. As shown in this case study, intercultural problems do not occur in isolation, and it is important to understand the dynamics of how they exacerbate each other. Attempts to solve any single barrier without addressing the others are usually unproductive. "Diversity management" techniques often place too much emphasis on superficial manifestations of systemic problems, without sufficient attention to the forces that drive them. Participants' use of IM served to reveal these more influential factors, which can lead to more effective and efficient solutions than might otherwise be identified.

Effective decision-making processes are dependent on harnessing the human potential that is inherent in the diversity of voices that make up an organization's workforce. By emphasizing structured discursive processes, in which participants build a collective framework for viewing a situation and taking appropriate action, organizations can build a climate where diversity is valued and utilized as a means to greater creativity.

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