PROBLEM SOLVING AND THE IDEA MACHINE

by

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(ABSTRACT)

There are a variety of creative problem solving techniques. Selected techniques are compared and contrasted and an *ideal* type is developed. The Idea Machine (TIM) is introduced and the six major steps involved with the technique are described. Results of using TIM in conjunction with three projects are presented.

Improvements in TIM sessions are described and insights associated with sessions in the second project are highlighted. Evaluations by participants are introduced and discussed. TIM is compared with the *ideal* type technique. It is concluded that while TIM is not comparable to this *ideal* in every respect, evaluations suggest that it is an extremely effective creative problem solving technique.

Acknowledgements

When someone reaches the point of writing a Ph.D. dissertation, many people have certainly played a part in achieving such an significant goal. In my case, countless people have contributed to my intellectual growth. Acknowledging all of them probably would equal the length of Chapter 1. Instead, I would like to limit my remarks to several who have played an instrumental role in my reaching this point in my career.

Dr. John Dickey, has been more than just the Chairman of my Dissertation Committee. Through the years, he has become a good friend. His work in developing The Idea Machine (TIM) has particular significance for me. Most academics with an interest in the courts would likely feel very fortunate to be able to conduct research with just a few judges and/or court administrators in one or two jurisdictions during their entire career. The Idea Machine allowed me to work with key judicial decision makers in fourteen states. This simply would have been impossible, in my judgement, without this remarkable tool that has come to be known as TIM. I consider myself to have been extremely fortunate to have been in the right place at the right time vis a vis its development.

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areas of interest. But for me, the more important quality that they all share is a genuine interest and concern that each student retain his/her individuality while pursuing their respective intellectual interests. This is certainly true in my case. I will always be deeply appreciative for their help and motivation.

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No one played a more important role in achieving this milestone in my life than my mother. She always put the interests of others before her own, all too often, at great self-sacrifice. She never ceased to be a wonderful source of support and encouragement. She provided me with a sense of honor and duty for which I will be eternally grateful.

Dedication

In Loving Memory

Helen G. Snellenburg

October 6, 1904 - February 28, 1987

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Chapter 1 - Introduction

Problems of one kind or another are a daily occurrence in organizations. Some problems are never resolved because they are not perceived as serious enough to warrant attention or, in the alternative, are considered impossible to solve without additional funding and/or a changed political environment. Serious problems, those for which an answer *must* be found, are likely to become the focus of special committees. When problems are identified that *have to be solved*, it frequently is a crisis situation. Only the most serious problems seem to merit the time to reach a resolution. All too frequently such problems are viewed in isolation. What is needed is a new mindset, something akin to what Peter Drucker describes as the *practice of systematic innovation.*[1] James March and Herbert Simon pointed out over thirty years ago that organizations can be distinguished from one another based upon whether or not they have *institutionalized* the innovative process.[2] In both instances, the focus is on the need for the *routine* adoption and implementation of creative solutions in response to changes in an organization's environment.

The purpose of this dissertation is to help build this practice by:

1. Review and evaluate selected group problem solving techniques so as to provide a basis for setting out an evaluative framework for assessing such techniques;
2. Trace the development of decision support systems and place TIM within the context of this history (showing it to be a step forward in evolution of such techniques);
3. Describe the use of TIM in the context of three public sector projects--showing the dynamics or context of its use; and
4. Evaluate TIM relative to the evaluative criteria set out earlier, using participant survey data as a data base and backdrop for the analytic assessment.

The terms *problem solving*, *creativity* and *innovation* will be introduced and defined. Subsequently, a brief description of Chapter 2 through Chapter 6 of the dissertation will be presented.

Key Terms

Charles N. Kepner and Benjamin Tregoe argue that the term *problem solving* is not very useful because "it does not involve a single mental process which is adaptable for all situations."[3] They draw a strong distinction between problem solving and decision making. For them, problem solving focuses entirely on the causes and effects of problems. Decision making, on the other hand, utilizes a "systematic procedure" normally associated with making choices from among available alternatives.[4] They define a problem as any situation where an

organization fails to reach an anticipated level of performance and the cause of the inadequate performance is unknown.[5] Their distinction between problem solving and decision making is summarized as being: "A decision requires answers to the questions 'How?' 'Which?' and 'To what purpose?' A problem always requires an answer to the question 'Why?'"[6] The term *creative problem solving* (CPS) will be used exclusively as a reference to *any problem that is nonroutine i.e., where the solution is uncertain.* It is worth noting that decision making is required in each step of the CPS process. Richard Daft places the role of uncertainty into perspective by defining it as a lack of information on the part of decision makers about "environmental factors." The most likely difficulty is the inability to predict changes in the organization's external environment accurately.[7]

P. K. Welsch points out that "the definitions of creativity are numerous not only in concept but in the meaning of subconcepts and of terminology referring to similar ideas."[8] One of the difficulties, as Arthur VanGundy, Jr. points out, is that the terms *organizational innovation* and *organizational creativity* are used interchangeably.[9] From his perspective, it doesn't make any difference if an organization generates its own "idea proposals" or adopts ideas that have been generated by other organizations.[10] But for VanGundy, *creativity* "as a process, cuts across all aspects of the innovation process," which he defines as having the following stages: (1) problem awareness and identification, (2) idea proposal, (3) idea adoption and (4) idea implementation.[11] One will note a remarkable similarity between this definition of VanGundy's and the five stages

of his problem solving model described subsequently in Chapter 2. We will use the term *creative* in conjunction with the term *creative problem solving,* which is defined to mean *the generation of ideas that may or may not already exist but are new to the organization involved.* The terms *creative solutions* and *creative problem solving* will be used interchangeably, since, in this dissertation, their meanings are specifically defined to be synonymous.

Unlike Kepner and Tregoe, who emphasized the difference between problem solving and decision making, we will emphasize the distinction between *creative problem solving* and *innovation.* While *creative problem solving* involves all of the stages identified by VanGundy's model, *innovation* can only take place when a creative solution to a problem is adopted and implemented. One can generate an extremely creative idea as a solution to a problem; but if it is not implemented, it essentially reflects a futile exercise. Damanpour and Evan place the use of this term in perspective. They define *organizational innovation* "as the implementation of an internally generated or borrowed idea--whether pertaining to a product, device, system, process, policy, program, or service--that was new to the organization at the time of adoption.[12] The term *innovation* will be used to mean *the adoption and implementation of ideas generated to solve nonroutine problems through creative problem solving techniques.*

Chapter 2 - The Creative Problem Solving Process

In this Chapter, relevant literature will be reviewed to establish an understanding of the creative problem solving process. We argue that creative techniques are required when there is uncertainty associated with a problem

being addressed. We also review relevant literature on small group dynamics, including group creativity and innovation. A framework of criteria will be developed to evaluate five selected approaches to group problem solving. Three of these, the Traditional Informal (*ad hoc*) group, the Formal Committee, and the Nominal Group Technique will be evaluated using this set of criteria.

Chapter 3 - Computer-Assisted Group Problem Solving

In this Chapter, we will present an overview of the development of computer-assisted group problem solving. We will show the relevance of a positive effect of a computer culture to this approach to creative problem solving. The Idea Machine (TIM) will be presented from the point of view of TIM as a CPS technique. TIM and Network Conferencing will be evaluated using the criteria developed in Chapter 2. Finally, a comparison will be made of all five selected approaches to creative problem solving.

Chapter 4 - Field Trials, Insights, and Evaluations

In this Chapter, we will show the ongoing development of TIM. We will review our experience using TIM in three field trials. Recognizing that these field trials were experimental in nature, we identify the problems encountered and the improvements which were made as a result of our experience. Further, we will

reflect on the results of each of the field trials in terms of (1) implementation of ideas and evaluations by participants. Finally, we will describe TIM from the perspective of group interaction.

Chapter 5 - Conclusion

In this Chapter, we conclude that TIM can be distinguished from other CPS techniques by a number of unique characteristics. We conclude that TIM occupies a preeminent position among CPS techniques based upon (1) our comparing TIM with selected group problem solving approaches; (2) recognizing the applicability of TIM as a useful technique; (3) finding TIM to be efficacious in three field trials; and (4) identifying special benefits of TIM group interaction. Finally, we identify the need for further research.

Chapter 2 - The Creative Problem Solving Process

The purpose of this Chapter is to review the relevant literature to establish an understanding of the problem solving process, generally, and creative problem solving, in particular. Problem solving is part of both policy analysis and operational activities. While the potential magnitude of problems differs greatly between the two, creative techniques are required when there is associated uncertainty. Policy analysis is broader in nature and can encompass operational activities. The focus here will be on literature about the former. For problem solving as a process to be explored, one also must review the literature on small group dynamics, which also will include group creativity and innovation. A framework of criteria for evaluating selected problem solving approaches will be introduced. Finally, three selected noncomputer-assisted problem solving techniques will be discussed and evaluated.

Problem Solving From A Policy Perspective

The term *policy* is used in different contexts. As an example, one this in terms of *public* policy or *organizational* policy. Public policy reflects the role of government vis a vis a particular problem at a specific point in time. Implicitly, policies change in response to changes in the environment or do to a different understanding of a problem. Organizations, both public and private, have policies as well. At this level, policies reflect how an organization deals with either or both its internal and external environments. In either instance, changes in policies reflect a response to a problem(s). Governments, at all levels, and organizations have to confront problems of one kind or another on a daily basis. This suggests, of course, that there are different kinds of problems. They vary in their intensity, impact, and importance. Some are easy to solve. Others may never be completely resolved. While some problems require few decisions, others require numerous, difficult decisions to simply reach a tentative solution to a problem.

The study of public policy involves *policy analysis* which is defined as a search for understanding of "why particular policies are proposed, adopted, and implemented" and *policy advocacy* which involves the identification and "recommendation of the best course of action."[1] However, before a public policy can be developed, a problem must be recognized and defined. This approach to policy is directed toward the role of government in solving problems associated with reducing crime or lifting the poor out of poverty. Policy analysis would

study existing policies and policy advocacy would identify alternative approaches to *solving* these problems through the development of new (or changed) governmental policies.

Another way to distinguish between policy problems would be to classify them as being "well-structured," "moderately-structured," or "ill-structured."[2] *Well-structured* problems can be characterized as being "relatively low-level operational problems in public agencies.:[3] On the other hand, *moderately-structured problems* are those that do not have certain outcomes associated with available alternatives. Both reflect a shared consensus on clearly ranked goals within an agency.[4] The former could be viewed as *simple* problems, the latter as *complex*. In contrast, *ill-structured* problems share no commonalities with their well or moderately-structured counterparts. On the contrary, this type of problem reflects a conflict between competing goals--where risk and uncertainty are impossible to estimate.[5] *Ill-structured problems* then are what we normally associate with the development of a new or changed policy.

It is important to recognize that there is a direct relationship between decision making and policy analysis *and* problem solving. Quade makes the argument that "policy analysis can be used either in decision making or in making policy." He identifies six areas where policy analysis is applicable: "to improve operational efficiency, resource allocation, environmental management, program evaluation, planning and budgeting, and strategic choice."[6] Of these, operational efficiency clearly relates to the day-to-day activities of an agency or organization. Resource allocation, environmental management, program

evaluation, and planning and budgeting could relate either to the operational or policy level of an organization, depending on the focus of the decision makers involved. In either instance, one can reasonably conclude that problem solving in an organization can be linked either directly or indirectly to policy analysis, i.e., it is a subset of policy analysis. Decision making plays a significant role in both.

At the organizational level, the distinction between a policy problem and an operational problem can be viewed from a different perspective. Solutions to operational problems are likely to result in expected consequences which can be relatively reasonably determined. A change in policy can result in both intended and unintended consequences with far-reaching implications. Stated differently, any change in policy is fraught with uncertainty. Environmental factors, e.g., political, legal, economic, demographic, or technological, can negatively impact a new or changed policy. In fact, one can distinguish an operational problem from a policy problem, simply on the basis that these environmental factors do not impact on the vast majority of day-to-day activities of an organization. When they do, the problem associated with a day-to-day activity *becomes* a policy problem.

Problems associated with the day-to-day activities are of significantly less magnitude than macro or policy problems. While decisions that increase (or decrease) efficiency and effectiveness can contribute to the success (or failure) in achieving the mission and goals of an organization, they do not, in themselves, represent changes in its mission(s) or goals. A systematic analysis of an organization's problems would require an exorbitant use of available resources

that could not be justified, particularly in times of budget cutbacks, nor is it necessary. This is just one example of the countless decisions that must be made when one considers the problem solving process as a whole.

Decisions are made throughout the problem solving process. The most important decision to make in the process is to determine whether or not a problem exists. Simon presents this point from a different perspective. He argues that "the task of *deciding* pervades the entire administrative organization quite as much as does the task of *doing*--indeed, it is integrally tied up with the latter."[7] As an example, deciding which operational unit should process certain information contained in a file is an operational decision not involving a problem, *per se*. Once a problem has been identified, e.g. two units need a file simultaneously, then and only then does problem solving enter the picture. Often, some problems involve the implementation of policy rather than the development of policy. On the other hand, some problems may require that an existing policy be carried out in a different way.

Finally, creative problem solving may not involve only organizational actors directly. Rather, it may require a significant external actor(s) associated with the agency or business *solving* the problem. One must recognize that making decisions in the problem solving process requires a mindset which complements rather than detracts from the search for solutions (or, properly understood, tentative solutions).

Establishing A Mindset for Decision Making in the Problem Solving Process

Before one can engage in problem solving successfully, one must first recognize the significant role that decision making plays in the process.

Ben Heirs suggests that before one can engage in the decision making process, one must first have engaged in "well-managed, imaginative and rigorous thinking" or, as he puts it, one must first be a professional *decision thinker.*[8] He argues that decision-thinking involves four stages:

Stage 1 The Question. *Formulating* a question that addresses the issue in the clearest possible way, without sacrificing any of its subtlety or complexity, and then gathering the information relevant to answering that question.

Stage 2 The Alternatives. *Creating* the most effective range of alternative answers to the question posed in Stage 1.

Stage 3 The Consequences. Evaluating each alternative that emerges from Stage 2 by thinking through its implications and *predicting* the likely, as well as the possible, consequences. This is not only to provide the basis for making a choice in the next stage, but also to allow for hedging and contingency plans to be created in case that choice proves to be wholly or partially wrong.

Stage 4 The Decision. Here, finally, we come to the 'traditional' decision-making skills of weighing up the probabilities of succeeding with each alternative, measuring the balance between risk and reward offered by each alternative -- and then using our *judgment* to decide upon which alternative to act.[9]

Time constraints force most people to maximize the use of their time. The process of problem solving becomes more efficient when one has developed the mindset of a *decision thinker* An additional advantage in this regard is that having an appropriate mindset allows one to be more open to the use of creative problem solving when dealing with an *ill-structured* problem.

Decision Making In The Group Problem Solving Process

Decisions of one kind or another are constantly being made throughout each step of the problem solving process. The functional perspective to decision making suggests that the actual steps or phases of the process are less important than satisfying certain *requisite conditions* or *critical functions* if a high quality decision is to be achieved.[10] An appropriate understanding of these relationships can contribute significantly to the group problem solving process.

Hirokawa offers four general functions to achieve high quality decisions:

1. *The group needs to understand thoroughly and accurately the problem presented to it.* Given the information available to it,

the group needs to arrive at a "correct" understanding of (a) the nature of the problem, (b) the extent and seriousness of the problem, and (c) the cause(s) of the problem.

2. *The group must marshal a range of realistic and acceptable alternatives.* The group must be aware of a number of appropriate and feasible alternative choices among which an acceptable choice is assumed to exist.

3. *The group must assess thoroughly and accurately the positive consequences associated with each alternative choice.* Given the information available to it, the group needs to recognize all important positive implications and outcomes likely to result from the selection of each alternative choice.

4. *The group must assess thoroughly and accurately the negative consequences associated with each alternative choice.* Given the information available to it, the group needs to recognize all important negative implications and outcomes likely to result from the selection of each alternative choice.[11]

Based on his research, Hirokawa concluded that when two of the above four requisite conditions were satisfied, significantly higher-quality decisions were obtained.[12] He further concluded that the highest quality decisions were

obtained when condition numbers one and four above were satisfied. This was true whether condition numbers two and three were or were not satisfied.[13]

The use of a *devils advocate* procedure is critically important in every stage of decision making because it helps decision makers "discover and clarify their assumptions." This technique is more effective when used in conjunction with specific proposals or alternatives than with the assumptions made early in the process. It is important to note that an individual using devil's advocacy need not embrace the positions articulated. Rather, the devil's advocate role should be recognized for its usefulness in helping the group be more effective in clarifying their assumptions on which decisions will be made.[14]

In order to maximize the effectiveness of decisions made in group problem solving, one must strive to achieve to requisite conditions: (1) the group need to understand thoroughly and accurately the problem presented to it and (2) the group must assess thoroughly and accurately the negative consequences associated with each alternative choice. Achieving this goal will result in much higher-quality decisions. The use of a devils advocate procedure helps to clarify assumptions and is appropriate at any step in the group problem solving process.

Creative Problem Solving

It is important to reemphasize the fact that an *ill-structured* problems do not have certain outcomes associated with available alternatives. Often the problem reflects a conflict between competing goals. Perhaps most important,

risk and uncertainty are impossible to estimate. *Well-structured* problems can typically be solved by standard operating procedures.[15] Such routine efforts are totally inadequate to deal with the lack of information associated with *ill-structured* problems, These require *creative* custom-made solutions.[16] Dunn provides a definition of creativity in problem structuring that can be implicitly extended to represent the essence of creative problem solving generally:

1. The product of analysis is sufficiently *novel* that most people could not or would not have arrived at the same solution;
2. the process of analysis is sufficiently *unconventional* that it involves the modification or rejection of previously accepted ideas;
3. the process of analysis requires sufficiently *high motivation* and *persistence* that analysis takes place with high intensity or over long periods of time;
4. the product of analysis is regarded as *valuable* by policy makers, and other stakeholders, since it provides an appropriate solution for the problem; and
5. the problem as initially posed is so *ambiguous, vague* and *ill defined* that part of the task is to formulate the problem itself.

He points out the creativity is accomplished to the extent that any one (or more) of the above is satisfied.[17]

There are no ready-made or off-the-shelf solutions for *ill-structured* problems. Standard operating procedures may be relied upon to solve many *well-structured* problems but are totally inadequate to deal with the uncertainty associated with ill-structured problems. These require *creative* custom-made solutions.

VanGundy's Problem Solving Model

There are a variety of problem solving models. We believe that VanGundy's is particularly relevant because of his emphasis on using creative problem solving techniques (CPS). His model is extremely compatible with CPS. It is an adaptation the work of Brightman. Both represent modifications of Simon's model presented in his work *The New Science of Management Decision* that involved three stages: (1) intelligence; (2) design; and (3) choice.[20]

There are five steps or stages involved in VanGundy's: (1) stimuli; (2) intelligence; (3) design; (4) choice; and (5) implementation.[21] The first step, *stimuli*, refers to the need for a problem to be recognized. It is important to understand what constitutes a *problem* for VanGundy. He defines the term "as any situation in which a gap is perceived to exist between what is and what should be."[22] The second step, *intelligence,* involves (1) the identification of information used for the initial definition of the problem; (2) the recognition of alternative definitions of the problem; and (3) a selection of the definition deemed

most appropriate. The *design* stage is initiated once a problem definition has been accepted.

The first activity in the design stage is to discern the existence of any applicable *ready-made* solutions to the problem. In the absence of such, creative problem solving (CPS) techniques are identified that would seem suitable to reach the resolution of the problem. Ideas are then generated using a technique(s) selected from among those concluded to be most relevant. The *choice* stage essentially involves evaluation. First, a determination is made as to the most pertinent evaluation criteria. Once selected, the criteria are used to evaluate each possible solution and its consequences. The final activity is to select a solution (or as VanGundy puts it, a *tentative solution*) for implementation. This caveat is important because it emphasizes the fact that new information can become available at any step in the process. Such new information may in fact require going back to a previous step (or the very beginning of the process) to establish the relevance of the additional data.[23]

Stimuli (Problem Recognition)

Different people interpret environmental stimuli or the recognition of a problem in different ways. Some of the difficulty can be associated with the fact that operating problems are "triggered by crisis or noncrisis stimuli," while strategic problems are "triggered by noncrisis, crisis and opportunity (the chance to move toward the organization's long-term goals) stimuli."[24] For all practical

purposes, there is no difference between the two types when it comes to the problem solving process *per se.* The significant difference between operating and strategic problems is determined by the magnitude of committed organizational resources and how the problems involve the communication and political environments.[25] The extent to which a problem penetrates the environment is strictly a matter of interpretation based on the world-view of the observer. Some may not even question whether a problem involves communication or the political environment. Or, some may simply fail to ask any relevant questions that would result in effectively identifying the extent of a problem.[26]

One way of improving on how one interprets stimuli is to use an approach referred to as *strategic issue diagnosis* (SID). Rather than making conclusions directly, individuals using this approach develop inferences and hypotheses which help them to better understand the strategic issues which the stimuli have surfaced.[27] Stated differently, a more accurate recognition of a problem can be made when strategic issues can be inferred or hypothesized from the stimuli. It is, however, important to point out that the information that one relies on to identify a problem must be relevant or recognition of a problem will not take place. Inferences or hypotheses must be reasonable or the issues identified will likely be inappropriate. may

A different perspective of problem recognition, i.e., interpretation of stimuli is provided by Cowan. His model has three states: (1) *gestation/latency* reflects that point in time just prior to that when problem recognition activities are initiated. It is, however, a reflection of an implicit understanding that

conditions in the environment *are changing* but the implications of these changes have yet to be established; (2) *categorization* is the stage where problem recognition actually occurs but cannot be properly described; and (3) *diagnosis,* the final step, characterizes the search for certainty, i.e., the reduction of uncertainty about the problem.[28] This model helps one to understand how this process of problem recognition really evolves.

Of course, some problems can be easily recognized simply because predetermined performance levels decline. This phenomenon is referred to as *aspiration-level triggers.*[29] It should be noted that although these problems are easily defined, one should not assume that they are structured problems. On the contrary, they are quite likely to be ill-structured. What is important is that they are recognized earlier rather than later. Realization of how important this tool could be in problem recognition suggests that it should be an incentive to establish, whenever possible, activity levels that should be expected at any particular point in time. The earlier a problem can be recognized, the earlier a solution can be found to limit the negative impact of the condition.

There are four ideas that can help problem solvers improve their ability to detect problems: (1) *Learning from experience,* recognizing similarities to previous problems; (2) *Planning,* identifying milestones or targets; (3) *Increasing information speed,* establishing mechanisms to provide relevant information quicker to those who need it; and (4) *Increasing information range,* expanding information sources from which problem solvers can act.[30] In addition, they provide an important warning concerning these ideas:

> Each of the approaches suggests ways in which lessons learned from prior experience can be inaccurate or biased. When managers 'learn' or construct explanations about what caused their prior experiences, any errors of attribution or motivational interpretation will make those same attributes salient in current situations. When managers remember distinctive experiences aschematically, they will be likely to over generalize the extent to which a few similar attributes of current situations represent close analogues of the previous distinctive experience. When managers have had a great deal of experience with certain classes of problems, their schematized view of them can cause them to 'fill-in' data that are actually missing in current situations.[31]

This cautionary statement represents a clarion call for multiple definitions of a problem.

Yet another approach for interpreting stimuli provides a particularly pragmatic protocol for problem identification. Stimuli is interpreted in four dimensions: (1) identity; (2) location; (3) timing; and (4) magnitude. *Identity* involves the need to explain the nature of the problem. *Location* relates to the physical location(s) of the problem. *Timing* refers to the frequency with which it occurs. *Magnitude* considers seriousness in the sense of its pervasiveness.[32]

Finally, a Japanese approach attempts to find the most appropriate analysis of a problem by focusing on its *causes*. What appears to be obvious is

all too often a mask or a facade. Some effects can be causes of other problems. In order to accurate identify the base cause of a problem, it may require penetrating several facades. This method requires that at least five generations of causes be identified.[33] In other words, the effects of a problem must be traced backwards. As one uncovers a the cause of one problem, other less obvious problems and their causes can be identified. By working backwards from the most obvious to the respectively less obvious, one is more likely to identify the real source of the problem.

There are obviously a wide variety of approaches to problem identification. The abundance of literature implicitly points out the overwhelming importance of this step of VanGundy's problem solving model. Some may find one approach more compatible than another. Which technique one may used is not important. However, it is critical that the stimuli be interpreted. Whatever the technique, relevant questions must be asked, if available information is to be interpreted so that a problem will be recognized.

Intelligence (Problem Identification)

This step of the process is extremely important because it leads to the ultimate definition of the problem. After the problem has been recognized in the first step of the process, stimulus, there is a need to gather as much additional, relevant information as possible to assure the development of the most accurate definition of a problem. The different values, interests, and expertise of the group

members result in the generation of alternative definitions. Subsequently, the alternative deemed most appropriate is selected. Unfortunately, this step is all too often collapsed into the first step. This is indeed unfortunate because the number and the quality of alternative definitions will be significantly reduced due to a lack of additional relevant information being analyzed. Time, of course, is the villain. When the problem is most pressing, i.e., a crisis situation, the dominant mindset is to react as quickly as possible to minimize the effects of the problem. This is the exact opposite of what should be done. Clearly, the problem is not likely to be diagnosed properly. Resulting solutions to the problem will have an extremely high likelihood of being temporary stopgap measures.

VanGundy stresses the importance of utilizing group techniques at this stage when (1) time is available and (2) acceptance of others is critical.[34] He suggests that there are two redefinitional techniques that are particularly worthwhile: Boundary Examinations and Goal Orientation.[35] The purpose of the Boundary Examinations technique is to "restructure the assumptions of a problem to provide a new way for looking at it."[36] There are four steps to this technique:

1. Write down an initial statement of the problem.

2. Underline key words and phrases and examine them for any hidden assumptions.

3. Without considering the validity of these assumptions, identify any important implications they suggest.

4. Write down any new problem definitions suggested by the implications.[37]

Goal Orientation, on the other hand, is used to clarify goals and/or objectives. There are three steps to this technique:

1. Write down a general description of the problem, being sure to include all pertinent information.

2. Ask: What do I want to accomplish (needs)? What is preventing me from getting what I want (obstacles)? What restrictions must I accept to solve the problem (constraints)?

3. Using these questions as guidelines, write down possible redefinitions of the original problem statement.[38]

Both techniques help members of the problem solving group to define more accurately the problem with which their are confronted. Most importantly, however, they help to force decision makers to recognize the implications of assumptions. VanGundy points out that Boundary Examinations have one important limitation, a lack of structure.[39] Goal Orientation suffers from this

same limitation. It is described as being less of a technique and more of an attitude, i.e., it helps create an *open mind.*[40]

This *intelligence* step is sometimes referred to as a *diagnosis routine.* Often, it is not always a formal, explicit step but it nevertheless is a required task. The active pursuit of this aspect of the process by the Japanese separates these decision makers from those in the United States. There is little to suggest that American decision makers place any importance in diagnosis, *per se.*[41] This may help explain why Japanese industries are perceived to produce better, higher quality decisions.

Design (Generation of Ideas and Tentative Solutions)

This step in the process involves (1) making a search for existing or ready-made solutions to a problem; (2) identifying one or more creative problem solving techniques (CPS); (3) selecting one or more of those techniques; and (4) generating ideas to develop a custom-made solution for a problem.

Several examples of how *ready-made* solutions were identified and implemented to resolve problems in firms have been identified. One was to find another business that had a similar problem and hire the executive who had resolved it.[42] Another approach was to visit other organizations in the same field and duplicate what were identified as the superior features of the competitor's operation as they related to their own perceived problem.[43] A third approach was simply to copy what others in the industry had done to resolve a similar

problem based on second-hand information rather than an on-site visit.[44] One must recognize that such *off-the-shelf* solutions are only applicable to well-defined problems.

Actually using any of the above *off-the-shelf* solutions for an ill-structured problem would very likely be disastrous. More resources are spent on this activity than any other in the problem solving process. The activity of finding *ready-made* solutions as the *search routine*, while effort directed toward finding a *custom-made* solution is referred to as the *design routine*.[45] Research suggests that organizations are likely to develop only one alternative in the design routine because of the costs in time and money.[46]

The use of creative problem solving techniques is particularly important. They will almost always lead to multiple alternatives at a relatively low cost in terms of both time and money. The absence of multiple alternatives presents the obvious conclusion that a single proposed solution is extremely likely to fail to solve the problem. It could even exacerbate it. CPS techniques can certainly mitigate the likelihood of such a potential disaster occurring.

Choice (Selection of Alternative Solutions)

This step of the process involves (1) evaluation of potential solutions; (2) identification of consequences associated with each potential solution; and (3) selection of a tentative solution.

Brightman points out that the various strategies normally associated with the Rational Model i.e, "Statistical Decision Making, Decision Analysis, Bayesian Analysis, and Multiple Objective Decision Making," all focus on this phase of problem solving.[47] It is likewise the case that the vast majority of computer-aided decision making has historically been directed to this phase because of the relative ease of crunching numbers by computer. There are countless programs that can provide remarkable quantitative analysis. However, it must be recognized that not all, possibly not even a majority of ill-structured problems lend themselves to quantification.

Research suggests that this step of the process uses one of three modes of selection: (1) *judgment,* "the individual makes a choice in his/her mind with procedures that he does not, perhaps cannot, explain;" (2) *bargaining,* "the selection is made by a group of decision makers with conflicting goal systems, each exercising judgment;" and (3) *analysis,* factual evaluation is carried out, generally by technocrats, followed by managerial choice by judgment or bargaining.[48] Intuitive decision making is also often used in this step of the process. It is important to keep in mind in this regard that intuition is neither arbitrary nor irrational because it is based on the experience of the decision maker. *Intuitive decision making* as being based on "experience and judgment, rather than sequential logic or explicit reasoning.[49] Finally, some decisions are made simply on the basis of what is deemed as being *right* as opposed to decisions based only on hard data.[50] Research suggests that if the group is to achieve consensus with a high acceptance of the decision, each member must feel free to

express concern about a tentative solution even if this results in having to redefine the problem and start over.[51]

One must always recognize that the selection of a solution at this stage is always subject to change, if in fact new information is obtained. The solution is indeed *tentative*. The environment is ever changing. If such changes impact on the problem at hand, the tentative solution must be modified to accommodate the new condition.

Implementation

This step is obviously critically important. If one identifies the best solution imaginable, it is meaningless unless it is implemented. Perhaps the biggest stumbling block to successful implementation is that those actors critical to implementation may not have been a part of the process which produced the solution.

Implementation often involves an authorization routine, when those making the decision do not have the authority to implement it directly.[52] In this scenario, the decision is forwarded up the organizational hierarchy. At each step up, if it is rejected, the process is started anew. In an instance where conditional acceptance of the decision is made at the highest levels, the problem solving group recycles the solution in an effort to eliminate the stated concerns or objections.[53] This authorization routine is most closely associated with what are often referred to as strategic problems.[54]

If problems are going to be solved, solutions must be implemented. One must be able to identify the critical actors associated with this step of the process. If they have not been involved prior to this step, every effort must be made to have them take to *buy into* or *take ownership in* the solution. This will facilitate the process of implementation.

Small Group Dynamics In Creative Problem Solving

There are a variety of factors which contribute to the success of problem solving in small groups. Group membership must be considered in terms of (1) heterogeneous versus homogenous participants; (2) leadership types and their involvement in the process; (3) the number of participants; and (4) interacting versus nominal techniques.

Two fundamental types of group membership create a troublesome dichotomy. Heterogeneous groups tend to reflect a wide variety of perspectives on problem definition. They also tend to produce more and better solutions. Homogenous groups, on the other hand, are more successful in facilitating group performance.[55]

Implicitly, implementation of solutions is more likely to occur when the decision making group is homogeneous. Different steps in the group problem solving process require different process strategies. Research suggests that (1) *the nominal group process,* where individuals do not interact verbally, is most appropriate for generating information or factfinding and (2) *interacting group*

process, were individuals do interact, should be used for synthesizing and evaluating alternatives. Further, special attention should be given to the fact that there is a need for groups to interact verbally in arriving at consensus on a given solution.[56]

Research strongly suggests that nominal group decisions were superior to interacting groups *only* in *structured* problems.[57] There are also findings that conclude that nominal groups are not superior to interacting groups involved in problem identification when (1) participants are knowledgeable about existing problems and (2) are willing to communicate with the other members of the group.[58] When one recognizes that most group problem solving is involves only ill-structured problems, it certainly suggests that this problem solving approach is wholly inadequate.

Ideally, group membership should be composed of two types of leaders: (1) *task-oriented,* focusing on the work process and (2) *interpersonally-oriented,* where the emphasis is on promoting positive employee relations. The latter is particularly useful in avoiding interpersonal conflict during the decision making process.[59] Some research advocates that group size be limited from five to seven participants and that their selection should be based on their potential contribution to the process, rather than precedent.[60] This argument is based on research which concludes that there are four different types of problems: *emotive decision problems,* that involve "highly value-laden issues;" *technical/factual, policy/planning and crisis decision.*[61] The first type should utilize the "ordinary group" procedure (no structure, open discussion with few alternatives being

identified), while the remaining three should involve some combination of brainstorming, statistical aggregation, the Delphi Technique and/or the Nominal Group Technique because of the structure each would provide to the process.[62]

Other research verifies that the size of a group is indeed a factor in decision making. Findings suggest that if the quality of the group's decision is important, the optimum size is from seven to twelve members.[63] This research also lead to the conclusion that solution quality increases with size, within this range, and that the actual size of the group, within this range, did not have a significant effect on the speed with which decisions were made.[64] Stumpf, Freedman and Zand argue that the characteristics of the members selected may have an impact on the decisions the group makes. They identify three types of members: (1) *expert,* one who has relevant knowledge and skill; (2) *representative,* one who represents a constituency or interest group; and (3) *co-worker,* one who holds a position inside the unit making the decision.[65] Based on their research, the authors concluded in part:

1. When the decision does not require acceptance, representatives are likely to recommend less effective decisions;

2. When the decision requires acceptance and has a broad span and/or when a quality decision is needed but expertise is not available within the manager's span of control, co-workers are likely to recommend less effective decisions; and,

3. When the decision requires acceptance and has a narrow span, external experts are likely to recommend less effective decisions.[66]

They caution that a manager must recognize the significance of each of these roles because an improper combination would negatively impact on the decision's effectiveness.[67]

Two very important findings were made when the consensual approach was compared with the nominal group technique and *ad hoc* versus established decision making groups. It was concluded that conventional interacting groups (as opposed to consensus-seeking) tended to reach decisions by "majority vote, averaging and trading." They tend to be dominated by a single group member more than consensual groups. It was further concluded that *ad hoc* groups tended to perform their decision task "significantly better than the established groups."[68]

Effective communication is essential if the problem solving process is to be successful. Research confirmed the common sense notion that social interaction improves the quality of decisions made by groups. More importantly, it was found that "social interaction among group members appears to foster high quality group decisions when the task facing the group is relatively complex, requires a considerable amount of information processing, raises value questions, or needs to be approached in multiple stages."[69]

The characteristics of individuals selected to participate in the creative problem solving process of small groups will significantly affect the outcome. If

the group is heterogeneous, problem definition will be greatly enhanced. This is fundamentally important in creative problem solving. This type of group will also be much more likely to produce more and better tentative solutions. There is a caveat that is applicable. Implementation is much more likely to result if the group is homogeneous.

Interacting groups are superior to nominal groups in the creative problem solving process. The most appropriate size of a group is between seven and twelve members. Within this range, solution quality is optimized. Where possible two leadership types should be involved in the process, i.e., one that is task-oriented and one that is interpersonally-oriented. When possible, membership should be composed of representatives of special interests. When dealing with ill-structured problems, social interaction within the group should be encouraged. All of these factors of group dynamics need to be recognized, if creative problem solving is to be maximized.

Group Creativity and Innovation

It is important to recall how we define the term *creative* as it is used in conjunction with the phrase creative problem solving: the generation of ideas that may or may not already exist but are new to the organization involved. *Innovation* is understood to mean: the *adoption* and *implementation* of ideas generated to solve nonroutine problems through creative problem solving techniques.

Solving problems almost inevitably brings about change. Different people cope quite differently with change. Sociologists have studied change from a macro perspective. Robert H. Lauer argues that:

> The perceived desirability or undesirability of change is the crucial factor in whether or not the change generates psychic distress. A high rate of change appears to generate more stress than a low rate, but the most intense stress occurs when the change is perceived to be both rapid and undesirable.[70]

Citing the work of Everett Rogers' *Diffusion of Innovations*, Lauer presents five characteristics that affect the rate of adoption:

1. People will tend to embrace an innovation to the extent that they perceive the innovation as enhancing "their advantage relative to the existing situation."

2. People will tend to embrace an innovation to the extent that the innovation has "compatibility with their existing values and needs."

3. "The rate of adoption of innovations will be affected by their perceived complexity."

4. Innovations are more likely to be adopted "to the extent to which it is possible to institute them on a trial basis."

5. The adoption of innovations is more likely when "the potential adopter can observe the effects of the innovation."[71]

Generally, when one refers to organizational innovation, no distinction is made between technical and administrative innovation. Research strongly suggests that such a distinction *should* be made because important implications for organizational performance can be surfaced. *Technical innovation* has been defined as "a means of changing and improving the performance of the technical system of the organization,"[72] i.e., the work activity of employees. *Administrative innovations* are defined as those that "occur in the social system of an organization"[73] i.e., the working relationships among employees, (e.g., rules and regulations). It is important to emphasize the fact that it is not unusual for an organization to adopt an innovation developed by another organization or industry.[74] Damanpour and Evan found that "the adoption of administrative innovations facilitates the adoption of technical innovations."[75] And, most importantly, they conclude that "a balanced implementation of administrative and technical innovations would help to maintain the equilibrium between the social and technical systems, *which in turn would lead to high performance*"[76] [emphasis added].

Research has been conducted on the question of whether or not people who tend to be good problem solvers are also creative. This is in fact the case,

at least when multiple solutions to a problem exist.[77] There is, however, no guarantee that creative problem solving techniques will be used. There is convincing evidence that effective leadership is required, if minority opinions are to be represented and considered.[78] In other words, a majority in a group may prevent the best solution to a problem from being identified. The group leader or facilitator has an important role in making certain that a majority in a group does not dominate the process. When this happens creativity is obviously stifled.

The structure of a group process can inhibit creativity. Glover and Chambers concluded that as the structure of a small group increases, "fluency, flexibility and originality decrease." Their research suggests that one element of creativity, elaboration, is not affected by a structured group process.[79]

When there is resistance in the group to innovative change, it may require a dominate leader to create an environment conducive to change. Problem solving groups dealing with new tasks will most readily adapt to innovative change when the leader of the group and the channels of communication are already established and known by the other members.[80] There is also evidence that some communication networks are more appropriate than others in the various phases of innovation.[81] A hierarchical wheel communication structure, i.e., the authority relationship of decision making at the top is an integral element of the communication structure where the channels of communication are predefined, and is most appropriate for the selection (problem solving)[82] and retention (implementation)[83] stages,[84] while an all-channel (less hierarchical with

communication channels to each group member for each member)[85] is more appropriate for the enactment (idea development)[86] or occurrence stage.[87]

Being innovative obviously involves some risk. It must be recognized that groups are more likely to engage in innovative problem solving when one person takes the responsibility for potential failure at the beginning of the problem solving group meeting.[88] Perhaps most important, the reality of *risk* as it relates to innovative problem solving, is essentially a process where a group norm is developed to accept change, i.e., those who are reluctant to embrace change are "brought up to a level, through the group process, of greater risk taking and the resultant risk level is higher than the average for the group." But this can only occur when an individual is knowingly willing to take responsibility for failure should it occur.[89]

Butler argues that activities involved in creative problem solving that lead to innovation can be classified into two stages. The first stage, *organizing,* is more likely to succeed, i.e., encourage the group to adopt change, when a *maintenance specialist* type leader is used, i.e., a leader exercising "strong social influence and interpersonal skills."[90] The second stage, *task,* requires a *task specialist*, i.e., one who is "imaginative, hard-headed, realistic, persuasive, good at formulating problems, skilled in planning and carrying the task to completion."[91] It should be noted that either leader may not be the head of the organizational hierarchy. Realistically, the chief operating officer will in all likelihood take the responsibility for the possible failure of an innovation but will delegate the roles of maintenance specialist and task specialist to appropriate members of the

problem solving group. The CEO might, in fact, take on the role of what Butler describes as an *idea specialist*, i.e., an entrepreneur for innovation.[92] However, an important caveat must be recognized. Individuals working together, over time, in a problem solving group will adopt norms that may make solving new types of problems difficult even though they may have been successful in the past. This potential hazard can be avoided to the extent that these norms that lead to conformity within the group can be prevented from developing.[93]

Group creativity and innovation should go hand-in-hand. Unfortunately, this does not always happen. Innovation *always* means change. It is crucial that change be perceived as desirable. Innovation is most likely to take place when it is compatible with existing values and needs. Whenever possible, innovations should be introduced on a trial basis. The adoption of administrative innovations facilitates the adoption of technical innovations. A balance between the two helps to stabilize the social and technical systems within an organization.

Both creativity and innovation can be stifled. This can happen when the organizational leadership fails to encourage risk-taking and/or refuses to except responsibility for failure if it should occur. One must work against the development of group norms which lead to conformity. Both creativity and innovation are most likely to result when creative problem solving techniques are employed. If organizations are going to solve complex problems, they must be innovative.

Criteria For Evaluating Selected Problem Solving Approaches

In order to merge the sections of this Chapter into a coherent whole, we will establish a set of criteria for evaluating five selected approaches to group problem solving. Three of the most common, the Traditional Informal (*ad hoc*) group, the Formal Committee, and the Nominal Group Technique will then be evaluated using this set of criteria. Two computer-assisted approaches, The Idea Machine and Network Conferencing, will be evaluated in Chapter 3. It is important to evaluate these approaches to determine which are most conducive to the development of creative solutions to ill-structured problems.

There are a variety of approaches to problem solving. Perhaps the three most common are the *ad hoc* informal meeting; (2) the Formal Committee meeting; and (3) the Nominal Group Technique. Each of these approaches will be discussed subsequently in this Chapter. In recent years, computers have come to play an important role in group problem solving. Most often referred to as computer-assisted group problem solving, we will provide an overview of this phenomenon in Chapter 3. We will also evaluate two of these computer-assisted approaches: (1) network conferencing and (2) The Idea Machine (TIM).

In order to evaluate the three noncomputer-assisted and two computer-assisted approaches to group problem solving, the following criteria will be used:

Holistic Structure Does the approach cover all of the dimensions of the problem solving process? Any technique that one might

utilize to solve a problem is likely to be unsuccessful if it does not relate to all of the dimensions of the problem solving process. It is equally important that any effort at problem solving fully incorporate *all* of the dimensions of the process.

Provision of Stimuli Does the approach provide a stimulus to the members of the group and their thought processes and thereby expand their capacity to think creatively? If an approach does not stimulate the participant's thinking, few, if any, creative ideas to solve a problem will be generated.

Reduction of Status and Role Differentiation Does the approach neutralize the status and roles of the members of the group? Unless status and roles are neutralized, creativity will be stifled.

Suspension of Criticality Does the approach suspend critical responses by participants and thus encourage creative thinking? Certainly critical comments are necessary at a subsequent step of the creative problem solving process. However, if such comments are made prematurely, creative thinking will be stifled.

Fosters Dialogue and Consensus Does the approach enable genuine dialogue that eventually leads to true consensus? Successful

implementation will be much more likely if support for an idea has been developed through dialogue and consensus.

Environmental Sensitivity Does the approach incorporate a recognition of environmental (e.g., political, economic, demographic, technological) concerns, interests? Failure to do so will lead to an inappropriate solution.

Effectiveness Does the approach produce ideas that are worthy of implementation? The number of ideas that can be generated is less important than the quality. If ideas cannot be implemented the approach is ineffective.

These criteria do not lend themselves to quantification. However, one can subjectively identify a probability for any one of the criteria on the basis of a low, medium, or high likelihood.

Traditional Informal (ad hoc) Group Problem Solving

The *Traditional Informal (ad hoc)* group refers to the spontaneous meeting of individuals who discuss a problem(s). In an intraorganizational context, an example would be staff members getting together on a coffee break. In an interorganizational context, an example would be participants in a

professional organization's conference meeting over drinks to discuss common problems.

The great appeal of this technique is that it can take place without either advance notice or preparation. One can spontaneously meet and discuss a problem with anyone with whom the opportunity presents itself. The lack of formality, however, is likely to produce only cursory notes on the discussion, if any. More likely, there is no record or note keeping at all. There is little opportunity to have any discussion beyond the surface level. This type of technique is referred to as an *ordinary group procedure*, which is very unstructured and results in few alternative solutions being suggested.[94] This type of approach to problem solving can be productive from the point of view of what has been described as *strategic issue diagnosis*, i.e., developing inferences and hypotheses to help develop and appropriate understanding of a strategic issue.[95]

Ad hoc groups are not compatible with the various steps associated with any problem solving model. Generally, such an approach does not have any mechanism for providing stimulus for the generation of tentative solutions. Typically, members of this type of problem solving group have focused mindsets which certainly inhibit creative thinking. Status and role are almost always present in the minds of subordinates. Critical comments are never suspended. Dialogue and consensus are highly unlikely in terms of all of the critical actors involved the problem solving process. This is true because *ad hoc* groups tend to involve very few people. Recognition of environmental influences may occur but

it is highly unlikely. Implementation will almost never be possible following this approach to problem solving.

Formal Committee Group Problem Solving

Formal Committee Meetings tend to be extremely formal due in large part to a commitment to the structure of an agenda. Typically, information sharing is provided in the form of reports. These are generally reduced to a verbal summary because of time constraints. The decision making process is usually unstructured, face-to-face discussion.[96]

Two major advantages of the Formal Committee over the Traditional Informal (*ad hoc*) technique are (1) the participants usually receive advance notice of the meeting and (2) agendas are typically provided in advance. Group participation is small and highly selective. While the agenda does provide a structure for the meeting, it is not likely to incorporate a problem solving structure.

The probability of a Formal Committee being keyed to any problem solving model is extremely low. Any provision for stimuli is highly unlikely. The reduction of status and role differentiation will almost never occur. It would be extremely rare for individuals in this setting to suspend critical responses to ideas. There is probably a fifty-fifty chance that dialogue and consensus will be fostered. However, the probability that the Formal Committee will be sensitive to their environment is extremely high. It is highly unlikely that ideas deemed

worthy of implementation will be generated with this approach. On the other hand, this should not be confused with the fact the most important feature of the Formal Committee is that it does provide a forum for the ultimate determination of how a problem will be resolved and the resulting implementation of the solution is extremely likely. More often than not, alternatives are provided the Committee members from either subcommittees or task forces which have been established to develop alternative solutions to a problem.

Nominal Group Technique for Group Problem Solving

In essence, the Nominal Group Technique involves both verbal and written responses to a predetermined question in an effort to resolve a problem. Carl Moore describes the four steps of this CPS technique:

1. *Silent generation of ideas in writing:* Working silently and independently, participants jot down their responses to a stimulus question.
2. *Round-robin recording of ideas:* When called upon, each participant contributes a single idea that is recorded on a large flip-chart. Discussion of the ideas is not permitted. Completed sheets are taped to the wall so that they can be seen by the group. The group facilitator continues to call upon the participants until all ideas have been recorded or the group

determines that they have produced a sufficient number of ideas.

3. *Serial discussion of the list of ideas:* The participants discuss each idea on the list so that they are clear about the meaning of the ideas.
4. *Voting:* The participants identify what each of them believes are the most important ideas, they rank-order their preferences, the votes are recorded on the flip-chart, and the voting pattern is discussed.[97]

The major advantages of this technique are (1) the reduced costs compared to other techniques and (2) an increased cohesiveness and commitment to the group decision(s).[98] Moore argues that this CPS technique is "helpful in identifying problems, exploring solutions, and establishing priorities."[99] However, he suggests that this technique has some important limitations, among them being that it is not appropriate for all questions and all groups and the technique gives the impression that the final product represents a group consensus when in fact the voting procedure is used for closure purposes only.[100]

One advantage of this technique is that it can accommodate larger numbers of participants than typically found in formal committees. NGT is only superior to other techniques when the problems are *structured.*[101] It also should be noted that this technique can stifle the content and volume of ideas generated by participants. This is especially true when the group membership is composed

of both superiors and subordinates. Subordinates may be extremely cautious in what they say and do.

This approach is not associated with any problem solving model, per se. The facilitator, however, could integrate the steps of a model with some difficulty. While the facilitator does provide an initial stimulus, the likelihood that the participant's capacity for thinking creatively will be expanded is about fifty-fifty. The reduction of status and role differentiation can occur but the probability that it will is also only fifty-fifty. The mechanism for silent generation of ideas in writing does suspend critical responses. The probability that this technique would foster dialogue and consensus is extremely low. While it is not likely, it is possible that some in the group would raise environmental considerations. With NGT, consensus-building and subsequent support for ideas is very unlikely. This approach can produce ideas worthy of implementation. Yet, the likelihood of implementing such ideas is very low.

Summary

Complex, nonroutine problems require creative problem solving techniques (CPS). We believe that any CPS technique should be used in conjunction with VanGundy's problem solving model. The number of participants in a small problem solving group should be in the range of seven to twelve. Members need to interact verbally in arriving at consensus on a given solution. Consensus can only be achieved when each member feels free to express concern about a

tentative conclusion. If a high quality decision is to be achieved, the group must have a through and accurate understanding of the problem and the negative consequences associated with each alternative choice to solve the problem.

Examination has shown that heterogeneous groups tend to reflect a wide variety of perspectives on problem definition. They also tend to produce more and better solutions. Homogenous groups, on the other hand, are more successful in reaching consensus but the performance of the group will be sacrificed somewhat. Nominal groups are not superior to interacting groups. Innovations should be instituted on a trial basis. Technical innovations can be facilitated by the prior adoption of complimentary administrative innovations.

An appropriate set of criteria for evaluating different approaches to small group problem solving would be composed of the following characteristics:

(1)*Holistic Structure* Does the approach cover all of the dimensions of the problem solving process? Any technique that one might utilize to solve a problem is likely to be unsuccessful if it does not relate to all of the dimensions of the problem solving process. It is equally important that any effort at problem solving fully incorporate *all* of the dimensions of the process; (2) *Provision of Stimuli* Does the approach provide a stimulus to the members of the group and their thought processes and thereby expand their capacity to think creatively? In an approach does not stimulate the participant's thinking, few, if any, creative ideas to solve a problem

will be generated; (3) *Reduction of Status and Role Differentiation* Does the approach neutralize the status and roles of the members of the group? Unless status and roles are neutralized, creativity will be stifled; (4) *Fosters Dialogue and Consensus* Does the approach enable genuine dialogue that eventually leads to true consensus? Successful implementation will be much more likely if support for an idea has been developed through dialogue and consensus; (5) *Suspension of Criticality* Does the approach suspend critical responses by participants and thus encourage creative thinking? Certainly critical comments are necessary at a subsequent step of the creative problem solving process. However, if such comments are made prematurely, creative thinking will be stifled; (6) *Environmental Sensitivity* Does the approach incorporate a recognition of environmental (e.g., political, economic, demographic, technological) concerns, interests? Failure to do so will lead to an inappropriate solution; and (7) *Effectiveness* Does the approach produce ideas that are worthy of implementation? The number of ideas that can be generated is less important than the quality. If ideas cannot be implemented the approach is ineffective.

While these criteria do not lend themselves to quantification, they can be subjectively identified as a probability for any one of the criteria on the basis of a low, medium, or high likelihood.

Chapter 3 will focus on computer-assisted group problem solving. The understanding of the creative problem solving process established in this Chapter will be further developed by reflecting on the impact on problem solving of a positive computer culture. The Idea Machine will be introduced and described as a particularly worthwhile technique for creative problem solving.

Chapter 3 - Computer-Assisted Group Problem Solving

The purpose of this Chapter is to (1) present an overview of the development of computer-assisted group problem solving; (2) reflect on the impact of a positive computer culture; (3) introduce The Idea Machine (TIM); (4) highlight two selected computer-assisted problem solving approaches; and (5) evaluate the Traditional Informal, Formal Committee, Nominal Group Technique, Network Conferencing, and TIM using the criteria developed in Chapter 2.

An Overview Of The Development Of Group Decision Support Systems

The development of computers, from the vacuum tubes of the fifties to the transistors of the late sixties through the micro chips of the eighties have played a role in group decision making that is likely to culminate in a dominate position in the nineties. The first concerted efforts to utilize computers in the problem solving process began in the late 1960s. Joyner and Tunstall developed a

computer program based on the work of Cyert, March and Simon in problem solving theory.[1]

To oversimplify, the computer prompted the participants in each step of a four-step problem solving model. In essence, the computer would direct the group to follow instructions relating to a brainstorming technique. As an example, the computer would ask "Will someone propose an initial solution to the problem."[2] One group member would type the letter "Y" (for yes) or "N" (for no). In each step, the participants recorded their responses on paper. The computer merely tutored the group. The only input in addition to a "Y" o or an "N" was an "H" (for halt) which ended the program.[3]

While this early effort at computer-assisted problem solving was limited to a tutorial function, it is extremely important to emphasize the point that keyed to a problem solving model. Subsequent development in decision-support systems (DSS) did not relate to any problem solving model. DSS were used primarily for quantitative applications, e.g., financial management forecasts. The work of Joyner and Tunstall represents the beginning of what would develop into the group decision support systems (GDSS) which are available today.

When one considers the difficulties associated with writing programs during the late 1960s, it can easily be understood how this early effort was somewhat less than an overwhelming success. Yet, even an admittedly naive program, compared to today's standards, yielded important results. Though lacking in flexibility and resulting is somewhat lower quality solutions,[4] the effort provided an impetus for future development. Perhaps the most important

contribution of this work was the fact that the use of the computer was tied directly to each step of a problem solving model.

Decision Support System (DSS) refers to the use of a computer as an aid to problem solving. It became viable toward the end of the seventies. Though limited largely to computational programs, it represented a major breakthrough in helping decision makers make meaningful decisions, primarily in financial planning.[5] The significance of the DSS was that it was being used by members of management, rather than members of the data processing department. The critical point that needs to be emphasized was that the increasing capacity of computers to quickly crunch large data sets could be used by decision makers. The simultaneous development of software compatible with group problem solving represents a milestone in the development of computer-assisted decision support systems.

The term Group Decision Support System (GDSS) characterizes the use of computers by noncomputer professionals in group problem solving. Keen and Wagner provided an illustration of the value to decision making of one early application of a DSS: An executive vice president was contemplating developing a chemical plant. Using data from a DSS model, he was 99% certain of the appropriateness of the investment. Yet, he was not absolutely certain. He was able to make his decision, when the model provided him a risk analysis that was run in less than an hour.[6] While this use of the computer is not tied to a problem solving model, the value of the computer was that data could be processed with

great speed and accuracy which allowed decision makers to respond much quicker than had previously been possible.

In response to the recognition that group problem solving was susceptible to a dominant personality controlling the process, computer-mediation techniques were developed. This was achieved primarily through the development of computer-mediated communication within the conferencing format. A second development, electronic mail also represented a contribution to the mediation of communication by computer. The term computer-mediation is used to describe a technique(s) which help participants, some might say control them, in group problem solving. These techniques have been limited primarily to (1) voting; (2) recording preferences; and (3) identifying who will be allowed to input information into the computer at any particular time. Electronic mail reflects the capacity of computers to send and receive written communication between individuals. Users need not be present to receive mail. At the time a person logs on to a terminal, a prompter will indicate that a message (mail) has been received.

Ronald E. Rice noted the lack of research on appropriate applications for this development in the use of computers and specifically called on academics to focus on small group applications, among others.[8] Subsequent research involved the use of a computer in mediating a group problem solving process via telephone conferencing.[9] Members of the group had to signal their intention to speak and also had to wait until selected by the computer.[10] In addition to mediating the group discussion, the computer recorded data during the entire session for subsequent analysis by researchers.[11] Stodolsky concluded that such a mediation

function can be worthwhile in decision support systems. The members of of the group did not have any significant difficulty adapting to its use. On the downside, however, when the mediation mechanism malfunctioned, the entire group became frustrated.[12]

A major development in computer-assisted group problem solving took place with a sophisticated GDSS experiment involving real-world business executives in a simulated board meeting.[13] This project was referred to as *electronic conferencing*, meaning the use of data analysis and graphic-display equipment.[14] While some technical problems were identified during the simulation, the executives found the idea of using computers to make decisions worthwhile. One executive felt that such a system should be housed in planning departments of businesses.[15] On the other hand, another executive observed that "the process seems more applicable to quantitative analyses and presentations than to qualitative considerations."[16]

Another significant breakthrough was the development of a *decision room* at the University of Arizona. Largely supported by grants from IBM and NCR, faculty members developed this problem solving approach in a laboratory setting. It utilized the computer to incorporate an electronic brainstorming process.[17] It marked an important turning point in the use of GDSS, rather than being effectively restricted to quantitative applications, the focus was on the development of qualitative ideas.[18] This represented a significant advance for GDSS because it greatly enhanced a rather ineffective creative problem solving

technique, brainstorming. Ideas were suggested anonymously followed by open face-to-face discussions moderated by a facilitator.[19]

Nunamaker, Applegate, and Konsynski found several limitations with the decision room approach to problem solving.

> These include the limits imposed on the "world view" of the problem as a result of the size of the computer screen, the unfamiliarity of the keyboard interface as a creative tool for executives, and the limitations of the network for processing multiple, simultaneous file transfers.[20]

They argue however that the benefits outweigh the negative aspects identified above. Perhaps most importantly, they suggest that this approach to brainstorming "appears to neutralize many of the group effects that have been responsible for poor performance of group brainstorming in the past."[21]

Perhaps its most important value is the fact that a dominant personality cannot control the outcome. The decision room format allows participants to interact individually with the computer from their own keyboard. Research suggests that when a facilitator inputs data it detracts from the spontaneity of the group. The preferred approach is to have each participant using their own terminal, suggesting that they will have a sense of control over the system rather than being controlled by it.[22]

At about the same time that the *decision room* was being developed, The Idea Machine (TIM) was being created by Dr. John Dickey at the Virginia

Polytechnic Institute & State University. TIM is described in greater detail in a subsequent section of this Chapter. However, some of the unique features of TIM which set it apart from other GDSS are as follows:

1. It has a rich variety of data bases.
2. It generates concepts.
3. It relies on face-to-face interaction.
4. It allows participants to use analogical reasoning.
5. It is portable.

The data bases provide a rich source from which computer concepts can be generated. A description and examples are provided for each concept. From a practical point of view, the number of concepts is unlimited. This serves as a continuous source of stimulation for the participants. Members of a group find the use of analogical reasoning particularly satisfying because it has a liberating effect of creativity energy. None of the participants are reacting to roles or status, instead they react to the stimulus of the concepts generated by TIM. The portability feature means that it can be made available wherever it may be most convenient for participants.

Research has been conducted involving computer-mediated communication, as opposed to face-to-face discussions. In the first experiment communication was interactive; not only requiring the subjects to type in a response, but also to simultaneously read responses to previous messages. The findings of this study suggested, when compared to face-to-face discussions, (1)

there was more equal participation among members of the group; (2) actual responses were less inhibited; and (3) the ultimate decisions were significantly different than the initial preferences of the participants.[23]

A second experiment used a sequential rather than simultaneous response format. Although the decision outcomes were essentially the same as those in the first experiment, there were some differences: (1) the subjects preferred the format of the first experiment over the format of the second and (2) dominance by individuals was noted by their reluctance to release control of the cursor, i.e., they were not allowing others to use the computer to respond.[24]

A third experiment involved the use of computer-mail that allowed participants to respond at their own convenience. While the results for this were about the same as those in the other two. The use of computer-mail, as a group-decision process, resulted in an almost comparable task orientation (commitment to the task) as that found in face-to-face groups.[25] There are some important implications here for the group DSS (or GDSS): (1) in the decision room format, there may be a need to reassess individual participant interaction with the computer, and (2) the study seems to give strong support for the concept of computer network conferencing for group decision making.

Development of group decision support systems (GDSS) has reached a point where they can be designed to specific organizational needs. Decision makers today are often faced with the fact that they have more information than they can use.[26] This could be referred to as *information overload* At the same time, many of these individuals tend to complain about the lack of adequate,

relevant information.[27] Some GDSS applications could result in *information overload* An important development at the Massachusetts Institute of Technology may ameliorate this potential condition. Supported by a number of grants, members of the MIT faculty developed an intelligent information-sharing system for intraorganizational use. Their *Information Lens System* is an automated message filtering system. Messages are filtered from three different perspectives: (1) *cognitive:* where the contents of a message are matched to potential recipients needs; (2) *social:* where both the topic of the message and the characteristics of the sender are identified; and (3) *economic:* which utilizes a variety of cost-benefit mechanisms to determine, among other things, appropriate recipients.[28] Such a system could ultimately provide decision makers with critical, accurate information on which operational decisions could be based on a routine basis.

Perhaps, the future of GDSS will largely be directed by what is termed *network conferencing.* In essence, network conferencing allows participants in different geographical locations to communicate with each other by video, audio or computers. This technique not only saves money in terms of travel-associated expenses but also can contribute significantly to employee productivity.[29] He argues that computer network conferencing is superior to video and/or audio because the latter two require the participants to be present during the conference. While individuals can communicate in what Moldow refers to as a *conversation* mode, in the former, he suggests that the real advantage provided by using the computer is that it does not require the simultaneous presence of the

members of the group. This approach really has no limitation as to the number of people who can be involved in the process but as he points out, the most important advantage is the flexibility of computer networking; in terms of location, participants can be located in remote geographical areas and, in terms of time, they can participate at their convenience.[30]

Group size is really unlimited with networking. In most instances, this feature could open the selection process to include individuals who would not normally be involved because of the costs or a lack of time. The technique is very structured. This results in extremely enhanced communication clarity. Problem recognition is extremely likely. It also is very probable that creative ideas will be generated. This type of structure makes it convenient for decision makers to participate. This means that it should be extremely plausible to see ideas being implemented.

While groups utilizing GDSS have achieved more speed and greater support for their decisions, there is no conclusive evidence to date that the quality of these decisions has been improved as a result of the process.[31] On the other hand, Huber argues that environmental complexities will literally force post-industrial organizational decision makers to resolve problems more frequently and faster. He suggests that this will be accomplished by the adoption of (1) advanced communication and computing technologies (he describes these as C^2 technologies); (2) improved group-decision technologies and structures; and (3) decision process-management.[32]

To oversimplify, Huber's approach to decision process management is a call for extremely formal decision making, e.g., decisions will be viewed as projects, therefore organizations will take a project-management approach to decision making.[33] He argues that decision making will be improved, both in terms of efficiency *and* effectiveness, by "creatively integrating C^2 technologies into group-decision technologies."[34] It is all the more remarkable then to anticipate a significant increase in the use of group decision support systems.

The Positive Effect Of A Computer Culture

One significant reason for the increasing applicability of group decision support systems (GDSS) generally and The Idea Machine particularly has been the emergence of a computer *culture* throughout the public and private sectors. sectors. This *computer culture* has come to prominence only during the past decade. It is composed of a variety of sub-cultures that leads to several interesting contradictions. In recent decades, computers have become a dominant factor in what has been characterized as a *cult of efficiency.*[35] However, the substantial increases in efficiency associated with the computer's capacity to process volumes of data does not simultaneously mean an improved decision making process or that better decisions are automatically achieved. People now *expect* that instant information will lead to instant analysis which will result in instant decisions.[36] While the quality of both information and decisions can be enhanced by computers, there is no guarantee that this will occur. A cliche which

has been associated with data processing for more than a generation is *garbage in, garbage out.* This expression reflects the fact that computers are, indeed, machines which only function according to the instructions of programmers and can only utilize data which has been input into the system.

An incredible mystique has developed about computers. Probably the vast majority of people are overwhelmed by what computers can do. Computers are *magic* and like magicians, only programmers know how the *tricks* really work. Computers impact our lives daily. We have come to rely on computers to the point that if, by magic, they disappeared overnight, business and government could not function. This reality manifests itself in terms of *power* and *control*, i.e., those who have computers (or access to them) have power, have control. Of course, it may only be an illusion, such power and control may not, possibly cannot, always be transferred into action. But what is important is that a culture has developed that associates computers with power and those who use them with control. This is most obvious in decision making.

Decision makers have both the power and control necessary to affect countless lives. It is not unusual to hear a decision maker justify his/her action solely on the basis of a computer analysis of a situation. Implicitly, the rationale is that the decision was made by the computer, not the individual. This potential for power and control is captured by Dennis P. Donnelly:

> If one deals with numerical problems, the computer acts as a number cruncher; if one deals with symbolic problems, the machine as a

> symbol manipulator. As such, the computer must be viewed, at the least, as a tool used to extend the human capabilities of language and thought. As machines grow in complexity and overall capability, the functionality of the machine can no longer be viewed as simply a tool but must be regarded as an actual extension of man's hitherto unique symbol-manipulating capabilities[37] . . . .
>
> The mutual exploitation of power between computer and communication systems may be a key element in the decision making process whether the problem is an internal corporate matter, a local political problem, or an international crisis[38] . . .

The fact that the use of computer network conferencing lacks any restrictions on location, time or the number of participants gives the point above even more significance.[39]

A decade ago most people had little, if any, understanding of what computers could do or were doing. The attitude of most people, at that time, was very negative concerning the use of the machine. However, these same people would soon be face-to-face with computers in the course of everyday life.[40] The sales of computers for use in the home have sky-rocketed. Arguably, one reason, perhaps the most important reason, for this phenomenon has been the development of computer use in schools by students. The title of Flaherty's book, *Humanizing the Computer,*[41] reflects both the reason and the reality of how

computers have become a part of all of our lives. He points out children around the country are being introduced to computers and their practical applications for learning as early as kindergarten.[42] The proliferation of computers had reached the point by 1984 four computer subcultures could be identified: artificial intelligence;[43] hackers;[44] personal home computers;[45] and, computers in school.[46]

Wilkins and Ouchi argue "that the extent to which organizations will develop cultures (in the sense of distinct and locally shared social knowledge), especially at the level of the whole organization, will vary and indeed be relatively infrequent."[47] Certainly thousands of executives are using computers as a part of their daily routine and tens of thousands regularly use the output of computers on a daily basis. The TIM process does not intimidate executives because they have come to rely on computers, directly or indirectly. TIM also takes advantage of the mystique of computers by creating an atmosphere conducive to creative thinking. The metaphor of *magic* is appropriate when related to computers. The very name of TIM, The Idea Machine, suggests that the computer will provide appropriate ideas. Of course, this is not true but the mystique of the computer is highly suggestive that any problem can be solved by some mysterious means. Normally introverted, close-to-the-vest decision makers readily participate and make contributions to the problem solving process with TIM as if, indeed, by magic.

The Idea Machine as a CPS Technique

The Idea Machine (TIM) was developed by John W. Dickey over the past seven years (see Appendix A).[48] We previously identified TIM as a group decision support system (GDSS). It certainly is that but it is also much more. It is a computer-assisted CPS technique. In this regard, TIM can be viewed from two different perspectives: (1) as a creative problem solving technique, *per se* and (2) as a group interaction process. The latter will be presented in Chapter 4. In this Chapter, we will discuss TIM as a CPS technique. In essence, ideas are produced by analogy from computer computer-generated concepts utilizing any one of sixteen available data bases. There are six major steps involved in the process. Each step will be described utilizing examples from the participants in the grant with the Virginia Department of Corrections and the first SJI grant.

Problem Description and Analysis

The first step involves three activities: (1) statement of an Aim; (2) identification of the client and user, e.g., SJI was the client and participating states were the users; and (3) establishing a time horizon, e.g., when the objective is to identify ideas to be implemented in the short-term, generally a time horizon of six months or less is used. Longer time horizons are employed when it is anticipated that capital projects will be involved and/or funding is dependent on an outside source.

It should be pointed out that there is a physical limitation on the description of an Aim, approximately 35 spaces. While this does not represent a serious concern, it does mean that the Aim must be carefully phrased. Typically, though not always, the Aim is a representation of a particular definition of a problem. Stated differently, the selection of an Aim is largely, if not exclusively, based on the perceptions of the participants about how the problem should be defined. As an example, the goal of corrections was to reduce overcrowding. In order to achieve this goal, the Virginia Department of Corrections identified three aims:

- Use Money More Efficiently
- Make Training Programs More Effective
- Increase NonIncarceration Sentences

Word Selection

The second step of the TIM process is the selection of two subject words (nouns) and two descriptor pairs (adjectives) from a preexisting list of over 100 nouns and adjectives provided by TIM. Initial selections are typically made prior to the final choices. Once the selections have been made, each word identified will be searched from each (or any) of the sixteen concept data base sources. When the computer search makes a match on one or more of the selected words, the program will identify a concept from which ideas may be generated by analogy with the concept. Most often, the rationale used for selecting these

words is based on how close they *fit* with the Aim. As an example, participants in both SJI grants selected the subject word *justice* more frequently than any other word.

Generation of Ideas

Two examples will reflect the rich diversity of concepts that different words can generate. With an Aim of "Expand the use of technology throughout the system," the descriptor pair "large < >small" identified the concept *African elephant* from the Variety I Definitional Concepts file. By analogy, the idea below was generated:

> To encourage automation, have judges and clerks observe, firsthand, courts currently utilizing automated systems.

Utilizing the noun "justice" in the Proverbs file, the concept of *might overcomes right* resulted in the ideas presented below:

> Establish a committee to review prosecutorial domination of the criminal case calendar.

and

Establish better communication links between appellate and trial courts (e.g., support forecast management decisions--dismissing complaints or sanctions imposed).

One could easily be mystified as to how the concept of an African elephant could, by analogy, lead to the idea of "To encourage automation, have judges and clerks observe, firsthand, courts currently utilizing automated systems." Each time TIM presents a concept, the properties associated with the concept and an example are also provided. In this case, the examples were:

Hati is an African elephant.
Hati has huge ears that completely cover his shoulders.
Hati is resistant to training.
Hati is 11 feet tall at the shoulders.

One of the participants remarked something to the effect of "Well, I didn't realize that judges were like African elephants but they are certainly resistant to training." The discussion which followed that comment centered on how to break down the judges' (and clerks') resistance to becoming involved in an automated system. Some of the suggestions dealt with identifying journal articles which illustrated the many advantages associated with automation. There was, however, a recognition that while clerks and judges can intellectually accept the fact that automation can enhance efficiency, many are unwilling to become

personally involved even remotely with any data processing system. The group agreed that the most logical first step was for them to observe, firsthand, how tasks could be improved. It would also show that, in most instances, they would only have to learn to type, if they did not already possess that skill. The resulting idea was then recorded.

Typically, the facilitator will generate the first idea or two to illustrate how this step of the process works. The truly fascinating aspect of this event is the participants will often define a concept in completely different ways from one another. Sometimes, just a word in the concept will spark an idea. It is not unusual to have a lively discussion about the different assumptions being made that is also beneficial in terms of idea quality and production. Sometimes, a group will develop ideas and subsequent discussion of them, using the same concept, for over an hour. The rule of thumb used by the facilitator is not to interrupt the process by having the computer identify a new concept until the discussion and idea generation from the previous concept has been exhausted.

Idea Screening

In idea screening each participant comments on each idea as to its importance and implementability. Critical comments have, in fact, been suspended until this step, in order to encourage creative thinking. thinking. If environmental concerns have not already been identified earlier in the process they will be in this step of the process. Because the participants generally reflect

diverse expertise within an agency, each has a different perspective of an idea. Once the comments of each individual have been made concerning a particular idea, the group will screen it on using the following categories:

The idea has been done before:

- _____ Successfully
- _____ Unsuccessfully

The idea has not been done before:

- _____ More information is needed to determine its feasibility
- _____ It would not be feasible under current conditions
- _____ It could be useful given contingencies
- _____ It merits more consideration or further study
- _____ It should be implemented as soon as possible

At this point, one of the participants will suggest what he/she believes to be an appropriate category for a particular idea. Generally, discussion will ensue about why or why not the category is applicable. Ultimately, consensus is reached about which category the idea should be assigned. Most often, discussion centers on whether an idea should be categorized as worthy of implementation or that it requires further study. It also vividly illustrates the fact that different group members have different expertise and different world views.

Idea Packaging and Evaluation

Once the ideas have been categorized, they can be evaluated in terms of their potential for implementation. As an example, some ideas will require minimal funding, while others might require significant amounts. Ideas also might be evaluated based on the ease of implementation or the benefits associated with each. Participants can use any evaluation criteria they feel applicable in this regard.

A final aspect involves the complimentarity of ideas. Some ideas may in fact be closely associated with each other. As an example, ideas involving the application of data processing equipment may be very complimentary and should be considered at the same time. To illustrate, one idea might be to provide each office with a computer. Another idea might be to initiate electronic mail among offices. If different offices were to purchase different computers, they might not accommodate electronic mail between sites. Thus, packaging of ideas can be very important. It should be noted that this step may not take place due to a lack of time. Generally, sessions are scheduled from 9:00 AM to 4:00 PM. It is not unusual for the group to generate and discuss ideas aggressively until 2:30 PM or 3:00 PM. The remaining time is then devoted to screening these ideas.

Reporting

The TIM process can produce a variety of reports including (1) Idea Generation; (2) Idea Screening; (3) Idea Packaging; and (4) a Final Report. The first can provide participants with a listing of the ideas generated for each Aim. It is this report that is used by the participants to comment on each idea. The Idea Screening Report is utilized to determine whether the idea should be implemented, studied further, or rejected. Each participant makes an individual judgment in this regard. The decision is based on the selection of the majority of the participants.

An Interim Report is prepared and sent to each member of the group following their session with TIM. Subsequently, a Final Report is prepared representing all of the sessions held. The Final Report captures the efforts of each participant. In the case of the SJI grants, copies of the Final Report are sent to *all* of the state court administrators around the country. The Report can be a very important management tool. While some ideas may involve policy, others may not. Furthermore, some ideas might involve just one unit, while some ideas might involve many or all units in an agency. Management can use the Final Report to plan for the implementation and/or further study of the ideas generated.

It is important to point out that these six steps incorporate each step of VanGundy's problem solving model. No attempt at problem solving can be completely successful if it is not keyed to some problem solving model.

Comparing Selected Computer-Assisted Group Problem Solving Approaches

In Chapter 2, three noncomputer-assisted approaches were compared using a set of criteria developed in the same Chapter. Here, we will use the same set of criteria to evaluate two computer-assisted approaches to problem solving: (1) Network Conferencing and (2) The Idea Machine.

Network Conferencing can best be described as a system of individuals who communicate with each other by computer modem over a telephone line. Since one does not have to be present to engage in communication, the actual number of people who could participate in the problem solving process is, in theory, unlimited.

This approach is not associated with any problem solving model. However, it could easily be designed to be compatible with one. There is no built-in mechanism currently with Network Conferencing which would provide a stimulus for participants. However, it would not be difficult to do. As an example, The Idea Machine could be used in this regard. There is a high probability that status and role differentiation would be reduced. However, there is only a fifty-fifty probability that critical comments would be suspended. Dialogue and consensus should be very high for Network Conferencing. The same likelihood exists for environmental sensitivity. There is a strong likelihood that this approach would generate ideas that would be worthy of implementation.

The Idea Machine incorporates each step of VanGundy's problem solving model. It does indeed have a holistic structure. The generation of concepts by

	Techniques				
Evaluation Criteria	Traditional Informal	Formal Committee	Nominal Group Technique	Network Conferencing	TIM
Holistic Structure	low	low	low	medium	high
Provision Of Stimuli	low	low	medium	medium	high
Reduction Of Status and Role Differentiation	low	low	medium	high	high
Suspension Of Criticality	low	low	high	medium	high
Fosters Dialogue And Consensus	low	medium	low	high	high
Environmental Sensitivity	low	high	low	high	high
Effectiveness	low	low	low	high	high

Figure 3.1
Evaluation Criteria For Selected Problem Solving Techniques

the computer certainly provides a stimulus for participants to think creatively. Status and role differentiation are extremely likely. TIM is designed to suspend critical responses until ideas are screened. Creative thinking therefore is not inhibited. Perhaps TIM's most important feature is that it evokes true dialogue and genuine consensus. There is a high probability that environmental concerns and issues will be identified. TIM has a special focus on implementation built into the process. However, as with any approach to problem solving, implementation can only be assured to the extent that the actors who play a critical role in implementation take ownership in the solution.

Comparison of Five Selected Group Problem Solving Techniques

In Chapter 2, the Traditional Informal (*ad hoc*), the Formal Committee, and the Nominal Group Technique approaches to problem solving were described and discussed. In this Chapter. we made a similar analysis of two computer-assisted approaches: Network Conferencing and The Idea Machine. These five approaches are compared and contrasted in Figure 3.1 below using the Criteria for Evaluation developed in Chapter 2. The set of criteria contained the following characteristics:

1. Holistic Structure
2. Provision of Stimuli
3. Reduction of Status and Role Differentiation

4. Suspension Of Criticality
5. Fosters Dialogue and Consensus
6. Environmental Sensitivity
7. Effectiveness

When compared to the Traditional Informal (*ad hoc*) group, the Formal Committee, the Nominal Group Technique, and Network Conferencing, TIM equals or surpasses these techniques in each of the seven criteria used for evaluation.

Summary

In this Chapter, we presented an overview of the development of group decision support systems. There are several factors which account for the remarkable increase in the use of computers as an aid in the problem solving process:

1. The speed and capacity of computers have increased dramatically;
2. the cost of computers has dropped substantially;
3. a computer culture has developed which has had a positive effect on executives with little or no computer expertise; and
4. software has become truly user-friendly.

There is reason to believe that these trends will continue well into the twentieth century. By that time computers about the size of an attache case will likely have the capacity to store and manipulate about a thousand times more data at a tiny fraction of the cost of a computer system thirty years ago.

We introduced The Idea Machine (TIM) as a creative problem solving technique. Each of the six steps, problem description and analysis, word selection, generation of ideas, idea screening, idea packaging and evaluation, and reporting were described. We concluded this presentation with the very important observation that TIM incorporates every step of VanGundy's problem solving model.

The set of criteria developed in Chapter 2 was used to evaluate Network Conferencing and TIM. Then, we compared all five problem solving approaches, the Traditional Informal (*ad hoc*) group, the Formal Committee, the Nominal Group Technique, Network Conferencing, and TIM, based on their evaluation with this criteria. We found TIM to equal or surpass the other four approaches.

In Chapter 4, we will show the ongoing development of TIM. Three field trials will be used to show (1) how TIM was used in real-world settings; (2) insights and reflection on the improvements which have been made in the TIM process; and (3) how participants in the three field trials evaluated TIM.

Chapter 4 - Field Trials, Insights, and Evaluations

The purpose of this Chapter is to show the ongoing real-world development of TIM. This will be accomplished by (1) reviewing a problem which was the basis of a field trial with TIM; (2) reviewing the experience of TIM being used to develop ideas to ameliorate this problem by executives with the Virginia Department of Corrections; (3) describing improvements which were made as a result of this field trial; (4) reviewing a problem which was the basis of the first field trial with the State Justice Institute (SJI): (5) reviewing the experience of TIM being used in conjunction with this first SJI field trial; and (6) describing TIM as a group interaction, using example from the second SJI field trial. After each problem is introduced, a description of how TIM was used in a project with the Virginia Department of Corrections and the first project with the State Justice Institute to develop ideas to ameliorate each respective problem will be provided.

Overcrowding in Corrections

This researcher was a member of the Virginia Department of Corrections (VDOC) Academic Research Consortium (ARC). The VDOC requested members of the ARC to focus their attention on the problem of prison overcrowding. Small grants were provided for selected projects in this regard. The VDOC was interested in developing strategies to cope with the problem. As a result, agreement was reached to use TIM as a field trial to develop ideas to reduce prison overcrowding.

The most pressing problem in corrections during the 1980s has been prison and jail overcrowding. More offenders are being incarcerated in both prisons and jails than ever before.[1] Part of the overcrowding in jails can be attributed to the backup of convicted felons awaiting space in prisons already exceeding their capacity.[2] No comprehensive policy has been developed by any of the states or the Federal government to eliminate or even significantly ameliorate this critical problem. All three branches of government have attempted to resolve the existing problems associated with prison overcrowding by viewing the phenomenon in isolation. This policymaking approach is likely related to the fact that correctional agencies themselves have failed to establish clearly defined comprehensive policies to deal with incarcerated offenders. Instead, competing, often conflicting, correctional models have been adopted by prison officials. Travis, Schwartz, and Clear argue that "as each new concept or theme emerged, the older philosophy did not disappear; it either became merged with the newer

one, or else simmered below the surface, remaining as the underlying purpose of a great many people working in corrections."[3]

Correctional agencies have been and continue to be reactive. Policies are created to respond to current problems. The resulting fragmentation reflects the larger problem--a lack of any real consensus, at any particular point in time, as to the appropriate role for corrections in our society. This absence of a comprehensive approach manifests itself all too frequently in unintended consequences. One of the most obvious is the high rate of recidivism, i.e., the reincarceration of offenders convicted of committing subsequent crimes. As an example of just how serious this problem is:

> Of the 108,580 persons released from prisons in 11 States in 1983, representing more than half of all released State prisoners that year, an estimated 62.5 percent were rearrested for a felony or serious misdemeanor within three years, 46.8 percent were reconvicted, and 41.4 percent returned to prison or jail.[4]

The fact is that the vast majority of inmates are released back into society. The extremely high recidivism rate substantially contributes to the problem of overcrowding in our jails and prisons. It would be completely unreasonable to think in terms of *eliminating* recidivism. Yet, it would be just as unreasonable to ignore the reality of recidivism and its direct link to overcrowding. What we do know is that correctional policies which result in nothing more than an early

release for an inmate to reduce jail or prison crowding have the unintended consequence of offenders continuing their criminal activities immediately following their release.

Prison inmate populations have indeed exploded in the last decade. In a special report, the Bureau of Justice Statistics suggests how dramatic this increase has been during the last decade: "Between 1930 and 1984 the State prison population more than tripled . . . . About two-thirds of this increase, however, occurred between 1975 and 1984."[5] The 1984 Prison Census found that although living space had been increased by about 29% between 1979 and 1984 with the addition of 138 new state facilities and the renovation/expansion of existing facilities, the prison inmate population increased 45% during the same time frame.[6] Jails certainly have not been immune to similar overcrowding. Surveys show that between 1978 and 1983, inmate population in jails increased 41% (65,157) while the number of beds increased only 11% (218,036).[7] The trend continues. Prison population throughout the United States, during calendar 1988, increased 7.4 percent over calendar 1987.[8] The Bureau of Justice Statistics explains this phenomenon as the "result of public demand for stiffer sentences, increased use of mandatory sentencing and demographic changes that have enlarged more 'prison-prone' age groups in society . . ."[9]

The courts have played a significant role in addressing both prison and jail overcrowding. Overcrowding has placed significant demands on the courts' time and attention. Currently, "thirty-six states, the District of Columbia, Puerto Rico and the Virgin Islands are operating under court orders because of violations of

the constitutional rights of prisoners . . . Each of these orders has been issued in connection with total conditions of confinement and/or overcrowding."[10] "In addition, legal challenges to major prisons are presently pending in five other states."[11] Hall points out that "judges make more decisions affecting jail population than anyone else; this often makes them leaders in seeking jail-crowding solutions."[12]

TIM and Prison Overcrowding

Working through the Academic Research Consortium of the Virginia Department of Corrections (VDOC), a field trial was arranged with key executives in the VDOC to use TIM to develop ideas to ameliorate the problem of prison overcrowding.

In February, 1987, key members of the Virginia Department of Corrections were involved in a TIM session pursuant to a VDOC field trial. The fundamental problem that was addressed was prison overcrowding. This problem was defined from three different perspectives (or Aims): (1) Use Money More Efficiently; (2) Make Prison Training Programs More Effective; and (3) Increase NonIncarceration Sentences. The rationale for the first was that while the Virginia General Assembly had provided some additional funds for new construction, the operating budget had not been substantially increased. This meant, for all practical purposes, that existing programs could not be expanded unless some programs were reduced or eliminated entirely. From this perspective

the focus was on determining how appropriated funds could be better, more productively spent. The rationale for the second Aim was a recognition that released offenders without salable skills would very likely revert back to a life of crime. Certainly, one very significant portion of any prison population is the former inmate convicted of a subsequent crime, a recidivist. If recidivism could be reduced, prison populations would automatically decline in proportion. The third Aim reflects the fact that more alternatives to incarceration would certainly provide a mechanism for reducing prison overcrowding. During the day, 127 ideas were developed. Of this number, ninety-five were identified as appropriate for implementation.

Among many ideas generated for the first Aim, one was by far the most worthwhile from everyone's point of view but it was also potentially fraught with risk. The idea was:

> Utilize inmate labor to renovate residential facilities in ghetto areas. This would provide them with salable skills. It would increase property values through restoration.

Such an idea would provide a mechanism where offenders could really *pay back* society for their crimes in a very tangible way. At the same time, these convicts could learn very salable work skills while simultaneously improving housing stock, which would normally never be done. Some six months after this idea was proposed, the Charles Kuralt *Sunday Morning* show on CBS aired a feature on

Project Rehab in Lima,Ohio. This nonprofit organization utilized female offenders from the Women's Prison, some 61 miles away, to renovate completely ghetto housing in Lima. Project Rehab had the support of the local churches, the business community and, surprisingly, it was supported by all of the unions. The program has been remarkably successful.[13]

Many of the ideas to "Make Prison Training Programs More Effective" involved the inmates directly. As an example:

> Give additional 'goodtime' or 'money' to inmates who develop money-saving ideas.

On a more personal basis,

> Provide each released inmate with a 'Manual for Coping' which would include the names of organizations which could provide assistance, e.g., job counseling from the state employment security agency or a crisis intervention hotline phone number." Another

Another idea along this vein was to:

> Instill the norms of good money management in offenders. How to spend money wisely while they are incarcerated and following their release.

Perhaps the one idea along this line of thought that had the greatest potential was:

> Establish a program to 'Adopt A Former Inmate.' An individual or an organization, such as a church, would establish a one-on-one relationship with each released inmate to provide a support system for the inmate during and after the transition period following his/her release from incarceration.

From a purely pragmatic perspective, the most crucial ideas was to:

> Key skills development programs to labor market forecasts of job availability.

Obviously, even the best license-plate maker in the country is not likely to get hired, based on this skill, upon his release from prison.

The reporting phase of this field trial was done by mail. An Interim Report listing all of the ideas and space for comments below each was sent to every participant. When all had been received, a Final Report was prepared. It included every comment of each participant (except a few that were not legible). The screening categories were tallied for each idea. The category selected most frequently was used as the group preference. In those instances where the vote was split, no category was selected.

Many of the comments by the VDOC participants reflected considerable thought about the consequences of each idea. As an example, one idea was:

> Provide each released inmate with a 'Manual for Coping' that would include the names of organizations that could provide the former inmate assistance, e.g., job counseling from the employment security agency and a crisis intervention hotline telephone number.

The participant's comments on this idea were: (1) implement through Virginia Cares; (2) has potential, updating manuals for various areas would require several staff, full-time; and (3) if enough can read. In other instances, no comments were given, only a screening category was selected. As an example, the idea:

> Place a heavier emphasis on salable skill development of inmates. Utilize inmate input for ideas on particular skills. Utilize employment security department labor information and forecasts of labor demands here and throughout the country.

was unanimously categorized as an idea worthy of implementation but no one felt the need to make any comments concerning the idea.

Implementation

While there was a strong consensus of support for all of the ideas identified as worthy of implementation in the Virginia Department of Corrections project, none of the ideas had been implemented as of August 1, 1987, some six months after the session had been held. The reasons for this phenomenon were variously described by some of the individuals involved in the TIM session as (1) the public would be supportive for few, if any, of the ideas involving inmates; (2) funding does not exist to implement ideas; (3) there is no need to change; and (4) there is no external support for adoption of ideas.

In reality, a small group of legislators quite literally control the operation, i.e., appropriations for operations, and without their support no changes can be made. Since these legislators take great pride in their conservative approach to corrections and are continuously reelected on a *get tough on crime* platform, nothing that could be perceived as valuable or worthwhile for inmates is apt to be endorsed. The only way that these legislative decision makers might be likely active supporters of any innovative changes would be to include them as active participants in their development.

Lessons Learned From The DOC Experience

A variety of lessons has been learned which have improved various aspects in the mechanics of conducting a TIM session. Four problems were evident with the TIM session with the Virginia Department of Corrections: (1) the room was too small and extremely warm; (2) certain key executives were constantly coming and going; (3) subordinates, in some instances, were all too obviously being very guarded in their comments; and (4) there was a significant delay in participants screening the ideas in an Interim Report (see Appendix B).

The size of the room created an awkward situation in seating and movement within the room. Combined with an already warm temperature, the heat created by the equipment made the participants very uncomfortable. Certain executives were accepting phone calls during the session, and their leaving and returning was a major disruption. Perhaps the most negative feature was that subordinates frequently would withhold their comments until their superiors had addressed an issue and then would support their position. Subsequently, these problems were remedied with the two State Justice Institute projects. Sessions were held in hotel meeting rooms. A working lunch was provided so that none of the participants were lost by any distractions. Finally, participants were selected on the basis of their potential contributions and expertise, rather than their availability.

During the field trial with the Virginia Department of Corrections, we reproduced the ideas on the Virginia Tech mainframe and sent them to the

participants in the form of an Interim Report for their comments and screening. This proved to be particularly frustrating. Three completed and returned their copies within approximately five weeks. However, the others did not complete theirs for almost six months. Countless calls were made to urge them to complete and return the Reports with their respective comments.

Perhaps the most important lesson that was learned is that key actors who control implementation of any ideas to ameliorate prison overcrowding (or any other problem) must be an active participant in the TIM process. They must, in effect, take ownership of ideas which should be implemented. Then, and only then, will implementation take place.

Court Delay and Congestion

Two projects were sponsored by the State Justice Institute (SJI), a federal agency whose mission is to fund research dedicated to improving operation of state court systems. The first was restricted to focusing only on the problem of court delay and congestion.

Court delay and congestion have been studied, written and talked about as a serious concern of academics and court officials for over a decade.[14] Yet, the associated problems have largely gone unresolved. That is not to say that some inroads have not been made in this area. As an example, every state (and the Federal government) has promulgated either a speedy trial *rule* or *law* for criminal cases. Such rules or laws have had a limited, positive impact on the

problem of court delay. However, lawyers continue to find ways to defeat their intent. As a result, the state judicial systems continue to have problems with court delay and congestion. Perhaps a contributing factor is the lack of uniformity among the jurisdictions. Some state court systems are completely centralized, e.g., Virginia; other state court systems are completely decentralized, e.g., Georgia; and a few state court systems are a mixture, e.g., Maryland, where the limited jurisdiction courts and the appellate courts are centralized but the trial courts (general jurisdiction courts) are decentralized.

There are significant difficulties associated with problem solving in the courts that can directly be related to judges in states with decentralized court systems and indirectly with centralized systems. There is no consistency among the states in how judges are selected. Five different selection processes have been identified: (1) partisan election; (2) nonpartisan election; (3) merit selection; (4) gubernatorial selection; and (5) appointment by the legislature.[15] While the American Bar Association has advocated the selection of judges through a merit system since 1974,[16] over 80% throughout the United States were still being elected in 1986.[17] To muddy the waters even more, many judges in limited jurisdiction courts are not even lawyers by training. Stumpf points out that "indeed, in only six states is lay judging not permitted, resulting in some 14,000 nonattorney judges on the bench throughout the United States as of 1980."[18]

Court administration in the states is largely limited to local jurisdictions. Glick captures this reality:

> Nearly all the states have a full-time *state court administrator,* similar to the federal court administrator, who is employed and supervised by the state supreme court and oversees certain functions of of the state court system. The administrator's office does research on administrative problems, gathers statistics on caseloads, and may do some long-range budget and other planning. However, the job and the power of the supreme court are very limited in most states. A few states have granted the supreme court power to supervise the entire court system, but decentralization and local control still are typical in over forty states.[19]

Most people recognize the considerable discretion available to judges in administering the law, yet few recognize just how extensive the power of judge is in terms of court administration. When one does recognize this truth, the difficulties associated with problem solving in the courts becomes much easier to understand.

There is a fundamental dilemma that exists in both civil and criminal cases but is most easily recognized in criminal cases--court delay may in fact be directly related to procedural rights guaranteed the defendant, by statute, rule and/or Supreme Court decisions. Falsgraf, former president of the American Bar Association, points out that "our complex system of laws and procedure demands a balancing between the need for expediency and the need to allow the full exercise of rights."[20] On the other hand, he cautions that "delay" and the costs

associated with litigation have led some to "forfeit their right to justice." Sipes points out that "during the decade between 1970 and 1980 more research was conducted concerning the causes and cures of court delay than any other period in the history of this country."[21] No "one best way" to reduce delay in courts has been identified. Yet there is a clear consensus that the *local legal culture* is a critical factor affecting case processing times and must be taken into account in developing a delay reduction or prevention program."[22]

TIM and Court Delay and Congestion

Two projects were sponsored by the State Justice Institute (SJI), a Federal agency whose mission is to fund research dedicated to improving the operation of state court systems. The first field trial with SJI was restricted to problems associated with Court Delay and Congestion. Sessions among the eight participating states consisted of a minimum of five to a maximum of eight participants. Each participant was a member of the top management team or a judge, with one exception. In Kansas each "professional" staff member of the Office of Judicial Administration participated in one of three daily sessions. Participants brought uniquely different mindsets to the session. Each had expertise in some area of court administration and/or the courts. This diversity of expertise is highly complimentary to the TIM process both in the generation of ideas and in the evaluation of ideas.

While the reduction of court delay and congestion was used as an Aim in each TIM session with the eight participating states, it is interesting to note that every state viewed the problem from more than one perspective, each of which was converted to an Aim. As a matter of fact, this *problem* was redefined in fourteen different ways. These provide a demonstration of how *elaboration* of the problem resulted in different aspects of court delay and congestion being brought to the surface. Perhaps most importantly, it reflects the direct relationship to (and appropriateness of) VanGundy's problem solving model. Some of these Aims are identified below:

- Address Judicial Isolation
- Enhance Alternative Uses Of Computers
- Enhance Job Satisfaction Of Judicial Employees
- Improve Court Record Preparation For Appeals

To elaborate upon the first Aim above, when a judge perceives him/herself as being isolated from the other courtroom actors, he may take actions that result in delay. As an example, a judge may take a motion under advisement to check precedents. On the other hand, the judge may simple react in this way on a routine basis. Rather than researching a point of law, the judge could require that counsel for both sides submit written briefs with regard to the contested motion. Delay is minimized, if not avoided when courtroom actors know in advance that a judge will require written arguments on contested points of law. Granting needless continuances or failing to require the parties to pursue pretrial

activities as scheduled represent other examples which contribute to delay. Some judges may fail to recognize that actions result in delay or contribute to others to cause delay. This can happen when a judge isolates him/herself from significant actors in the court system.

With reference to the second Aim, the lack of computers and/or the inappropriate use of computers (most likely, not maximizing their use) can certainly contribute to the congestion of cases in a court. Naturally, the third Aim assumes that when employees in any organization are dissatisfied, it often impacts negatively on both the quantity and quality of their work.

While individuals can appeal a decision in both civil and criminal cases as a matter of right, it is much easier to see how the problem of delay can be exacerbated in criminal cases. A convicted offender has the right to a first appeal. Since the vast majority of offenders are indigent, there is no cost to the criminal. Often, these individuals will therefore appeal in order to delay the imposition of incarceration or simply to allow them to get out of prison, albeit for only a short time, to make court appearances. The point is that the volume of appeals represents a significant area of concern for congestion and delay in appellate courts, since most of these appeals are made with no significant prospects for success.

The representatives of Alabama placed this whole issue of delay in perspective. What for some may be *delay* is interpreted as being in the best interests of a client for others. Before any realistic solutions to the problem of delay can be identified, there has to be consensus as to an appropriate definition

of delay. The participants in Alabama captured this point with the following idea:

> A consensus should be reached as to exactly what constitutes 'court delay' among the courtroom actors.

Obviously, a defense attorney who seeks a continuance for a client would argue that he/she is serving that clients best interests and that the motion for a continuance should not be construed as contributing to delay. Of course, the reality is that all motions for a continuance do, indeed, contribute to the congestion in courts.

This same group recognized that computers are only as worthwhile as their use makes them. Two ideas were developed to help resolve this dilemma:

> Create a 'think tank' to develop new and innovative uses for automated systems throughout the court system.

and

> Establish some type of reward or recognition for employees who suggest applicable new uses of automation for the courts.

Georgia has a completely decentralized court system. The significance of this is that judges are quite literally independent from any control, absent a Rule of the Court. Recognizing this situation, the participants from Georgia felt that an appropriate inducement to gain judicial participation in innovation would be to:

> Establish an honors breakfast and press conference for the chief judges in the top five circuits in the state. These judges would, in turn, reflect on those enhancements that lead to a reduction in court delay in their respective circuits.

This group also recognized the potential of computers to reduce delay and congestion and developed a second Aim: Enhance The Utilization Of Automation. One could reasonably argue that states with decentralized systems need automation even more than centralized ones. Noting the lack of any uniformity in the use of computers, let alone the vast array of different brands and capacities of the units in use, this group suggested:

> Establish an 'electronic appropriate response to the problem would be to "Establish an 'electronic noteboard' within each Clerk's office that would provide a computer link for updated and innovative changes being communicated between Clerks' offices. The AOC

(state administrative office of the courts) also could communicate new software availability to Clerks.

To achieve some sense of standardization, they encouraged the idea to:

Utilize a data base management system to provide research capability on such things as appellate cases; judicial qualifications commission opinions; benchbooks; Attorney General's Opinions; and pattern jury instructions.

The Kansas participants had an interesting approach to the problem of delay that involved the use of volunteers. The two examples suggest how volunteers could play a a role in reducing court congestion:

Utilize 'volunteers' in court-related, nonsensitive areas.

and

Utilize volunteers (e.g., college interns) in local courts and clerk's offices during times of exceptional workload.

The former points out that the use of volunteers must be restricted. The latter represents a response to special situation where the volume of cases increases

abnormally. A good example of this has been the remarkable jump in the number of drug cases being tried by prosecutors.

This State, however, was unique, in terms of the project, in another way. The State Court Administrator agreed to participate only if all of his professional staff would be allowed to be in the TIM sessions. This required three one-day sessions. It also resulted in five additional Aims or definitions of the problem of court delay and congestion:

- Enhance Alternative Uses Of Computers
- Enhance Resources Available To The Court
- Enhance The Use Of ADR (Alternative Dispute Resolution)
- Expedite Implementation of CSE (Child Support Enforcement) Computer System
- Maximize Utilization Of Existing Human Resources

The Maryland participants focused on the use of benchmarks to reduce delay. All too often, judges give attorneys considerable leeway in meeting court dates. Few judges deny motions for continuances with any regularity. One idea that might mitigate this tendency was that:

> Courts should 'control' the flow of cases, not attorneys. The existing rules of the court should be followed rather than allowing attorneys greater flexibility.

While benchmarks played a dominant role in ideas to control delay, such as:

> Benchmarks should be established for continuances, number of cases that should be set per day, maximum age of a case,

An entirely different focus on long-term planning resulted in the idea to:

> Identify existing and anticipated issues that may confront the court (e.g., drugs or AIDS) and the impact associated with the resources of the courts." and "Create a 'futures' committee to study where the courts will be in terms of numbers of civil cases, misdemeanor and felony cases.

North Dakota approached the problem of delay from three other perspectives: Their Aims were (1) Improve Court Record Preparation For Appeals; (2) Enhance Job Satisfaction Of Judicial Employees; and (3) Improve Judicial Services to Indians. A significant problem for this state is its relationship with the various Indian tribes. In certain instances, Indians can use and can be tried in state courts. However, by virtue of the Indians' status with the Federal government, most issues could be resolved by tribal law. Unfortunately, few Indians are trained in the law. This often results in a very unequal application of tribal law. One idea to help ameliorate this problem was to:

Award scholarships to Indians to attend law school with the *proviso* that they return to the reservation to practice law.

Another approach would be helpful was to:

Encourage the state bar association to provide *pro bono* (free) services to Indians.

Pro bono services would be of obvious benefit to the individuals in need of legal services but it would not be the only benefit. Lawyers providing such services would gain greater awareness of the problem. This could lead to involving other lawyers and, ultimately, the state bar association might become directly involved in sponsoring Indians in law schools.

As with most other states, North Dakota has problems with appeals backing up. Every appeal requires the preparation of the trial transcript, since only points of law can be raised on appeal, i.e., new new testimony is not permitted. Transcripts are prepared by the court reporters. Some states such as North Dakota contract with individuals to be court reporters, rather than having them on the state payroll. In such cases, there is no requirement that such individuals have state-of-the-art transcribing equipment. One idea to help resolve this problem was to try to convince court reporters to convert to more modern means of transcription:

Create the mindset that court reporters are the managers of the transcript not technicians for a specific technology.

It should be recognized that court reporters without state-of-the-art equipment might take ten times longer to prepare a transcript for an appeal. Current technology would allow most transcripts to be prepared in hours rather than days. This time savings would clearly have a positive impact on the problem of delay in appellate cases.

Most of the group involved in the New Jersey TIM session were senior members of the executive office of the state court system. However, two participants were jurists (an appellate judge and a trial judge). The latter was extremely frank in his comments about those who preside in court. These remarks would not typically be made by administrators because of possible ramifications, but because of his prestige and integrity among his peers, this judge made a major contribution to the session. As an example, he proposed the idea to:

Establish a study to determine who 'really' uses trial time (both civil and criminal). Such information could result in more appropriate policies.

This reflects the ongoing argument that criminal cases are being heard much faster than criminal cases. Every state has either a Speedy Trial law passed by

the legislature or a Speedy Trial rule promulgated by the state supreme court. As an example, a case must go to trial within 90 of arraignment. There are those who argue that a Speedy Trial rule is not the panacea that it was intended to be. Whenever a continuance is granted to the defense the clock is stopped, i.e., the number of days are not counted during the period of the continuance. Others argue that civil cases would move through the courts must faster, if the parties really wanted them to be resolved at a faster pace. One must recognize that delay can be a tactical advantage to the defense in civil cases just as it is in criminal cases.

A substantial amount of time was spent on the benefits associated with educating potential litigants. Often these individuals lack any knowledge of the law or of appropriate alternatives to the courts. In response to this issue was the idea to:

> Provide a computerized data base for attorneys and clients to utilize in conjunction with a determination as to the most appropriate settlement technique (process) and settlement (value) for a particular type case.

In criminal cases where the defendant is found guilty but is not incarcerated, there is always the question of whether or not the defendant should be ordered to make restitution, be required to provide community service, or both. More often than not, arguments are made on both sides in open court.

This certainly takes an inordinate amount of time when one considers the volume of cases that do not result in incarceration. As a result, one could argue that perhaps the most substantive idea directly dealing with delay was offered by the trial judge:

> Provide statutory requirement of presumptive restitution and/or community service in criminal cases involving noncustodial sentences.

In other words, any time an offender was not sentenced to incarceration, restitution and community service would be presumed to be a part of his sentence. Since most cases are plea bargained, greater uniformity would be achieved in sentencing and, just as importantly, restitution would be substantially increased. Further, arguments to show that restitution can not be made would have to be resolved by the parties as a part of the plea bargain. With this mechanism in place, the demands on a judge's time, in this function, could be reduced substantially.

The Virginia participants emphasized the need for greater flexibility in the system. Characteristic of this approach was:

> Be more flexible in establishing procedures for ADR (Alternative Dispute Resolution) diversion.

Perhaps even more important in terms of flexibility was the idea to:

Expand the jurisdiction of judges statewide. Assign where the need is greatest at the moment.

Although it has yet to be adopted in Virginia, one idea is likely to be adopted throughout the Country. Driving offenses represent an extremely high percentage of all court cases. In the absence of criminal violations, these cases, normally referred to as infractions, do not need to be heard by judges. The Virginia participants' response to this high volume activity was to:

Remove traffic infractions from district courts (e.g., to the Department of Motor Vehicles).

An entirely different perspective to the problem of delay reflected the innovation in the private sector relating to the use of computers off-site. In many work situations, people can do exactly what they would normally do in an office in their homes. Data can be sent over telephone lines, processed at home, and returned to the main computer with relative ease. The following idea incorporates this flexibility:

Establish an electronic clerk's office. Any administrative work function could be done off-site during nonbusiness work hours.

In order for this idea to be implemented, the clerk's office would have to computerize its functions, i.e., an electronic office. Then work could be sent by telephone modem to employees working at home.

Perhaps the most "way-out" idea was to:

> Establish a consumer research and product development branch (of the court system) and create viable responses.

Wisconsin also had two judges among the participants. The group addressed a most serious but seldom talked about problem relating to delay: "Address Judicial Isolation." Judges, in their normal routine, are almost universally segregated from the world outside the courts. This is most easily understood when judicial rulings receive considerable, often negative press. One idea to address this issue was to:

> Provide training and/or counseling (for judges) on the subject of judicial stress.

Of course, the problems of judges can be far more complex as expressed by:

Distinguish between institutional and individual autonomy (judicial independence). Promote procedural uniformity as appropriate.

One way of helping judges, both in terms of productivity and expanding their knowledge base, is to introduce them to technology. As an example:

Provide adequate training and support for each possible application of technology (where possible, off-site and/or after hours).

Recognition that the vast differences in computers can often make communication difficult when utilizing this medium, the solution was to:

Establish a minimum level of compatibility among different automated systems across jurisdictional lines. This would allow cost-effective centralized maintenance and support. Networking between judges would be enhanced.

First SJI Project Evaluations

No formal evaluation was conducted at the conclusion of the Virginia Department of Corrections project. Under the first SJI field trial, only the participating administrators evaluated TIM.

The evaluation form (see Appendix D) that was used by state court administrators involved in the first SJI project had five sections: (1) an overall evaluation of the session (see Figure 4.1); (2) a judgment as to the need to provide other states with the opportunity of using TIM; (3) a status check of ideas deemed worthy of implementation (from the *number where implementation is not planned* to the *number of ideas that have been or are being implemented*); (4) an assessment of ideas found worthy of further study (from *number where implementation is not planned* to *the number where implementation is anticipated*); and (5) a provision for Other Comments.

As a group, these administrators found the TIM process to be *more* than worthwhile (4.14, where 4.0 was worthwhile and 5.0 was extremely worthwhile). Some interesting points were made in the Other Comments section of the evaluation. They are presented *verbatim* below:

Kansas:

> Since Kansas has an established delay reduction program, our staff did take time to discuss other topics in addition to outlining approaches to reducing delay. The opportunity to outline proposed goals and/or approaches relative to our office functions is always valuable.

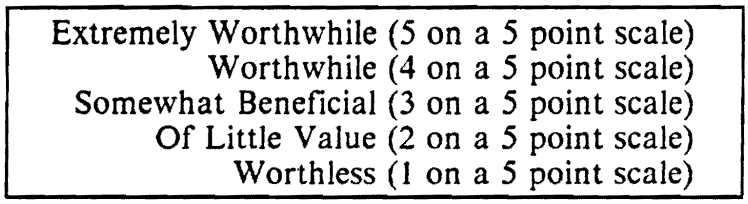

Figure 4.1
Session Evaluation Scale

Several of the suggestions for reducing congestion and court delay given by staff in the other administrative offices were most interesting and worthy of follow-up contact to discuss whether the plans were implemented.

Maryland:

Very well done.

North Dakota:

Implementation of ideas *must* have high level policy making support and that would come only with direct involvement in the process.

Wisconsin:

The exercise was beneficial. Gave us an opportunity to give unhurried attention to profound issues as a team.

Particularly raised administrative consciousness of judge participants who generated a high level of enthusiasm for the process.

In my view, definitely worth repeating and expanding.

Well conceived.

While all of the participating state court administrators had the opportunity to comment, only the four above choose to do so.

Implementation

At the conclusion of the first SJI project, 349 ideas had been generated in association with the problem of court delay and congestion. This issue was elaborated on from fourteen different perspectives.[23] Over eight percent of the ideas had been or were in the process of being implemented at the time the Final Report was published. Many of the ideas were generalizable to nonparticipating state court systems. participating administrators evaluated TIM. All of the participants in the second

Improvements In TIM Sessions

The Virginia Department of Corrections use of the Interim Report to solicit comments and screen ideas was obviously inappropriate because it took approximately six months to complete this task. In the subsequent SJI field trials, the idea screening phase was done as one of the last activities of the session itself. This approach completely eliminated the time delay experienced with the

Department of Corrections. Not only has the time lag been eliminated, the cost, in terms of time and money, in repeated contacts, is no longer an issue. Perhaps most important, when this activity is conducted at the time of the session, ideas and related comments are fresh in the minds of the participants. A true consensus, under these conditions, is far more likely.

There were two instances, in the second SJI project, where the tables in the meeting rooms were less than stable. This resulted in the projector vibrating, that was very annoying because the image on the screen was also vibrating. This physical arrangement of the table has been greatly improved. Rather than having the table arranged in a conference style with the computer equipment on one end, we now have the table arranged in a U-shape. The computer equipment can all be placed on the floor (except for the computer, itself). This has eliminated the problem. A related difficulty was also remedied--when the equipment was on the table, some members of the group had difficulty seeing the entire screen. With the U-shape, everyone has a clear, unobstructed view of the screen.

One area of concern that has yet to be resolved is an adequate description of TIM. It is almost impossible to describe the process over the telephone. At this point in time, the reputation associated with TIM has largely eliminated the problem. However, for those not familiar with TIM, the need to describe the process remains. It takes about ten to fifteen minutes at the start of a session to describe the process. It flows very well. Yet, when one tries to introduce TIM by phone or letter to a potential user, it is not always successful. Three

individuals have commented on their session evaluation that it would be useful to have materials describing TIM sent to the participants before a session is held. We have sent brochures on TIM to court administrators who wanted to have more information, but there is no indication that they took the time to read the material.

TIM As A Group Interaction

Experience with the first two field trials made it clear that TIM should not be considered simply as a useful CPS technique. It is much more because it evokes meaningful group interaction. It has the capacity to create dialogue.

The most important difference between TIM and other computer-assisted GDSS is its use of analogical reasoning by the participants. Other GDSS rely primarily on the brainstorming technique or a facilitator to develop ideas to solve problems. TIM's computer-generated concepts evokes and enhances the use of analogical reasoning. Each TIM session incorporates a process of interaction among the participants that builds on their especially worthwhile comments. To capture the essence of this process, we will present a brief description of each session held under the second State Justice Institute field trial. Where applicable, insights associated with each session will be presented.

Connecticut

The State Court Administrator for Connecticut is a judge and perhaps the most ecletic in his interests of the administrative directors of state courts. His interest in having a TIM session centered on two Aims: (1) Identify A Normative Organizational Culture and (2) Improve Leadership Skills. Of the nine ideas developed under the first Aim, five were identified as goals for the organization. Based on our experience, this is remarkable because TIM facilitates achieving this objective.

In this session, the participants indicated that commitments on their time had previously prevented them from reflecting on how they might improve their leadership skills, let alone thinking about a normative organizational culture. They suggested that TIM was valuable in this regard because it provided a focus and a framework that they found particularly well-suited to their time constraints.

Illinois

This session involved the Director of State Courts and each of his Deputy Directors. Two Aims were identified. The first was Enhance The Use Of Innovation. The second, Improve The Confidence Of The Court In The Administrative Office Of The Courts, was done in confidence, i.e., the results would not be publicized in the Final Report (see Appendix C) to all state court

administrators. Although none of the ideas generated under the first Aim was identified as worthy of immediate implementation, three were felt appropriate for implementation if certain conditions prevailed. This should not be surprising. Resistance to change is a very human characteristic. But it does reinforce the point that administrators do need to look for conditions that are conducive to the introduction of change. Perhaps most important, six goals were identified for this first Aim.

The second Aim was proposed by the State Court Administrator, who showed remarkable candor in his desire to improve his working relationship with the members of the Supreme Court of Illinois. The likely single greatest stumbling block for him was that he had to deal with a collegial body making decisions, rather than working with just the Chief Justice in his role as the chief executive officer for the state court system. One reason offered for this situation was that the majority of the Court members had been Chief Justice at one time or another. In any case, the Director was having considerable difficulty getting the Court to act on the vast majority of the issues he presented them. This issues varied from policy problems to operational matters.

Clearly the most important aspect of this session was the open, honest communication between the Director and his Deputies that TIM helped to create. The focus was on improving the working relationship between the administrator's office and the court in order to improve court administration throughout the state. A second factor acknowledged to be extremely important was that, in the absence of a TIM session, issues not associated with the day-to-day activities of

the Administrative Office for the Courts would be very unlikely to appear on any meeting agenda. Like any other organization, limited resources translates into giving attention to only the most pressing problems at any point in time.

Indiana

The Chief Justice of the Supreme Court of Indiana was among those participating in that State's session. His approach was quite different. He elected to answer only questions directed to him by other participants during the morning. One of the participants explained that the Chief Justice did not want to dominate the process or influence other participants to limit discussion or prevent sensitive issues from being considered. However, during the afternoon he was extremely involved in the process. Two Aims were identified in this session: (1) Seek Additional Funding Sources And/Or Alternatives and (2) Improve Judicial Employee Job Satisfaction. The discussion during the morning centered on cultivating the public's interest and support in the court system. The afternoon was devoted to developing ideas under the second Aim.

The most important insight from this session was the recognition that all critical actors in the decision making process need to be involved. There was an acknowledgement that certain key legislators should have been present, if some of the ideas were to receive the support necessary for implementation.

Massachusetts

Every key decision maker in the Massachusetts judiciary participated in the TIM session. Prior to the actual session, it was mutually agreed that the Aim would be to generate ideas that would address the high turnover of talented personnel. However, three days before the session was scheduled, Governor Dukakis vetoed a supplemental appropriation bill for the judiciary. The fiscal problems of the Commonwealth are enormous. The State has a deficit of some half billion dollars and additional demands for supplemental funding in the current budget year of over a billion dollars. As a result, the session was completely dedicated to developing ideas to deal with this budget crisis. The Aim for this session was changed to Establish A FY90 Budget Strategy.

The participants essentially fell into two groups: (1) those wanting to play an aggressive, confrontational role with the executive and legislative branches and (2) those wanting to play a compromise role, primarily working behind the scene with key legislators and members of the administration. Among the former group, two judges were really quite willing, if not anxious, to issue a *writ of mandamus* (an order to a public official to do his duty). In this crisis situation, the *writ* would be issued to the State Treasurer to pay judicial bills. While this was certainly a minority position, it reflected the seriousness of the potential confrontation with the two other branches of the State government.

Thirty-six ideas were generated throughout the day. The proactive group focused primarily on support by the judiciary for some type of special tax with

the proceeds dedicated to the use of the judiciary. The remaining judges focused on less confrontational ideas and/or ones that would not place the judiciary in a position where they would enter into the public debate between the other two branches and various interest groups.

The Chief Justice joined the group during the last three hours of the session. Each of the thirty-six ideas was presented and discussed. The Chief Justice indicated his support or opposition to them. At the conclusion the group reached a position of consensus on an appropriate strategy to deal with its budget crisis. Fourteen of these ideas were adopted for implementation. This situation represented, for the first time, an opportunity for TIM to be used to develop a strategy for the judiciary in their position as a co-equal branch of the government. It also reflects how conflicting perspectives can be dealt with in a positive manner by ultimately achieving consensus.

Rhode Island

The Rhode Island judiciary is extremely political in its composition. Judges and Justices are all former members of the legislature. All other judicial employees are appointed based on their political connections, not their expertise. Perhaps the greatest problem associated with the Rhode Island judiciary was captured in a recent poll of the citizenry, that reflected both a lack of confidence in the judiciary and significant ignorance about its activities and functions. In sum, it was the most negatively perceived of the three branches in the State.

This session was different from several perspectives. First, the State Court Administrator failed to arrive for the session. All of the participants were of deputy state administrator rank or senior officials at the local level. One judge participated. Two Aims were identified: (1) Improve The Perception Of The Judiciary and (2) Improve Communication Within The Judiciary. Much of the discussion during the day focused on the problems each of the deputy directors had in working with their own subordinates and in meeting overall objectives. Communication between the Director and the Deputy Directors has been both inconsistent and infrequent. The Director's management style was described as similar to that of former President Ronald Reagan. Communication between the Chief Justice and the Deputy Directors was much more frequent, though initiated only by the Chief Justice.

Clearly, TIM can not be a *cure-all.* Where situations exist, such as that found in Rhode Island, only fundamental changes can resolve the problems created when political influence permeates both the state and local organizations composing the judicial branch. This requires a commitment from the top. When the organizational leadership establishes a mindset to encourage positive change, TIM can certainly be a useful mechanism to develop ideas to introduce innovations.

Extremely Worthwhile (5 on a 5 point scale)	17 (31%)
Worthwhile (4 on a 5 point scale)	34 (63%)
Somewhat Beneficial (3 on a 5 point scale)	03 (06%)
Of Little Value (2 on a 5 point scale)	00 (00%)
Worthless (1 on a 5 point scale)	00 (00%)

Figure 4.2
Session Evaluation Results

Enhanced Evaluation Procedure

No formal evaluation was conducted at the conclusion of the Virginia Department of Corrections project. Under the first SJI field trial, only the participating administrators evaluated TIM. In contrast, all of the participants in the second SJI project evaluated TIM. They also compared it to other selected problem solving techniques.

Second SJI Project Evaluations

An evaluation/survey form was developed for use by all of the participants in the second SJI field trial (see Appendix E). This instrument was divided into two sections: (1) evaluation of the TIM session and (2) a survey comparing the experience of each individual with TIM and other selected techniques (see Results of Survey section below).

The overall evaluation of TIM by participants in the second SJI field trial was 4.24 on a five point scale. The results are provided in Figure 4.2. The fact that the mean is as high as it is speaks very favorably about the value of the TIM sessions.

TIM is in terms of	Superior	Better	Comparable	Worse	Inferior
Communication	( )	( )	( )	( )	( )
Solutions	( )	( )	( )	( )	( )
Structure	( )	( )	( )	( )	( )

Figure 4.3
Sample Survey Continuum

Results Of Survey

Each participant in the second SJI field trial was asked to compare his/her use of TIM and their respective experiences with (1) informal groups; (2) formal committee meetings; and (3) the nominal group technique. Each comparison was based upon three characteristics: (1) communication, i.e., was the discussion and exchange of information better or worse?; (2) solutions, i.e., was the quality of ideas higher or lower?; and (3) structure, i.e., did the structure of the technique enhance or inhibit problem solving? Figure 4.3 below reflects the continuum[1] for each element being compared.

When asked to compare informal groups with the efficacy of TIM, on a score of 1 to 5, respondents found TIM to be preferable in each instance. *Communication* with TIM was rated 3.65 on a five point scale. The mean response for *solutions* was 3.60. *Structure* had the highest rating at 3.98. The results of comparing TIM with formal committees was even more dramatic: *Communication*, 3.82; *solutions*, 3.64; and *structure*, 4.07.

Comparing TIM with the nominal group technique resulted in ratings of 4.04, *communication*; 4.15, *solutions*; and 4.22, *structure.*

These results can be interpreted rather easily. The informal group meets on an *ad hoc* basis. At best, the discussion centers on limited information about a problem. Often, the reality is that the discussion really only focuses on problem definition. Any solution to a particular problem is likely to occur only to the

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[1] Each category within the Continuum was assigned a number in order to compute mean responses, i.e., Superior, 5; Better, 4; Comparable, 3; Worse, 2; and Inferior, 1.

extent that the problem is well-structured, i.e., ill-structured problems are almost impossible to resolve in this setting.

Formal committees almost always operate on an agenda. It is not unusual for a problem to be tabled for further study or assigned to a subcommittee to prepare a report for a subsequent meeting of the full committee. Thus communication often is limited. Solutions do obviously occur but often only over a significant period of time. The structure of formal committees often works against the innovative resolution of problems due to (1) time constraints on discussion and (2) the need to address other agenda items. The obvious exception to this is when a committee is formed to meet a crisis condition.

The superiority of TIM over the nominal group technique makes a great deal of sense. Communication in the latter is extremely restricted and narrowly focused. While the nominal group technique is highly structured, it does indeed prevent open, uninhibited discussion both in terms of problem definition and solutions.

Each respondent was given an opportunity to make any comments not specifically addressed by the survey under Other Comments. Selected comments are provided below:

> Overall very helpful, it was a most beneficial use of my time (Connecticut).

Technique provided focused discussion, very worthwhile--should help management team with future initiative, I would like to do it again (Illinois).

Could ultimately result in some significant improvements. Time well-spent. Use of computer to facilitate discussion and orientation of ideas, outstanding (Indiana).

Well done (Massachusetts).

Very worthwhile effort (Rhode Island).

While all of the comments were not presented, those above are indeed representative of those not reproduced.

Improved Screening Of Ideas

The procedure used to evaluate the ideas was significantly improved for the second State Justice Institute field trial. The screening of ideas was expanded and a scoring mechanism was added.

Participants in the second SJI project are now using a much improved screening tool (see Figure 4.4 below). The category deemed most appropriate for

1	Idea cannot be assigned a status at this time (NONE GIVEN)
2	Idea has been tried, unsuccessfully, in the past (UNSUCCESSFUL)
3	Idea has been tried, successfully, in the past (SUCCESSFUL)
4	Idea really is a goal to be achieved (GOAL)
5	Idea will not work under second condition (INFEASIBLE)
6	Idea requires more thought and clarification (MUSE)
7	Idea might be useful but more information is needed (INFO NEEDED)
8	Idea useful only if certain conditions prevail (CONTINGENCY)
9	Idea has strong potential for implementation (IMPLEMENT)

Figure 4.4
Screening Status Chart

each idea is reached by group consensus, often after considerable discussion. One of the the most significant aspects of this part of the process is a focused attention directed toward the product of the entire activity of the day. When a determination is made that a particular idea should be implemented, it is much more likely to be achieved. When an idea is identified as contingent on certain conditions prevailing, there is a general understanding of what those conditions are when this category is selected.

This Screening process is a crucial step in dialogue because some ideas may ultimately be identified as infeasible or as having been tried elsewhere unsuccessfully. Some participants closely identified with such an idea could be negatively affected, if discussion leading to the decision gets out-of-hand or is abruptly ended. Consensus seeking is a critical aspect of this activity.

One especially irritating aspect of the idea screening part of a TIM session is that there is strong potential for disagreement among the members of the group between classifying an idea as a Goal (#4) or Implement (#9) (see Figure 4.4). It is true, of course, that a rationale can be given for either. However, when there is extended discussion on which screening category is most appropriate, as was the case in three sessions, individuals can become offended. A certain amount of debate is worthwhile because it can clarify issues and help achieve general agreement. Interruption of an extended discussion by the facilitator can cause some resentment on the part of some participants. It requires very gentle nudging and even then some may feel that they have been arbitrarily overruled. The same difficulties are associated with Muse (#6) and More Information Needed (#7),

although to a lessor degree. This difficulty is essentially one of overlapping categories which causes confusion.

The final step of the process is the rating of each idea for importance and effort. The *Importance Rating* is based on a scale from 1 to 10, where 1 reflects an idea that is of very little importance and 10 one that is extremely important. The *Effort Rating* is also based on a scale of 1 to 10, where 1 reflects an idea that is relatively easy to implement and 10 one which will require a maximum of effort. The resulting *Score* for each idea is computed as follows:

Score = (10 - Effort Rating) X Importance Rating.

Ideas now can be sorted by score.

Summary

The essence of TIM can best be described as focused group interaction. Examples of the TIM process being used by participants in the second SJI field trial show that groups with diverse membership interests and expertise can effectively address widely disparate problems with relative ease. Important improvements have been made in the mechanics of conducting a TIM session. Evaluations by participants in the second SJI field trial strongly suggest a preference for TIM, as a problem solving technique, over *ad hoc* meetings, formal

committee meetings and the Nominal Group Technique. They found TIM to be a *more* than worthwhile technique for creative problem solving.

In the second SJI field trial each state had different objectives in using TIM. In each instance, the TIM process accommodated the needs of the participants by enhancing the understanding of the problem at hand and stimulating focused discussion. TIM was most valuable in (1) providing a format to focus attention on problems that had been recognized but not dealt with due to perceived time constraints; (2) identifying organizational goals; and (3) developing ideas to help ameliorate problems.

TIM, like other GDSS, can access quantitative decision aids, e.g., Quantitative Systems for Business. Unlike other GDSS, TIM is portable. It can be made available whenever and wherever it is convenient for members of a problem solving group to meet. Most importantly, however, TIM can be distinguished from other GDSS by the following unique characteristics:

1. It has sixteen data bases from which concepts can be generated;
2. It allows participants to use analogical reasoning to generate ideas; analogical reasoning encourages free association of ideas;
3. It fully incorporates all of the dimensions of VanGundy's problem solving model;
4. It provides a stimulus to the members of the group and their thought processes and thereby expands their capacity to think creatively;

5. It neutralizes the status and roles of the members of the group;
6. It suspends critical responses by participants until a subsequent step of the process which encourages creative thinking;
7. It fosters dialogue and consensus;
8. It incorporates a recognition of environmental concerns, interests in the screening process; and
9. It produces ideas that are worthy of implementation.

We believe that these features place TIM in a preeminent position in computer-assisted group problem solving.

Chapter 5 - Conclusion

In Chapter 1, we declared that the purpose of this dissertation would be to (1) review and evaluate selected group problem solving techniques so as to provide a basis for setting out an evaluative criteria for assessing such techniques; (2) trace the development of decision support systems and place TIM with in the context of this history (showing it to be a step forward in evolution of such techniques); (3) describe the use of TIM in the context of three public sector projects--showing the dynamics or context of its use; and (4) evaluate TIM relative to the evaluative criteria set out earlier, using participant survey data as a data base and backdrop for the analytic assessment.

Comparisons of Selected Group Problm Solving Approaches

In Chapter 2, we established evaluative criteria to compare and contrast the Traditional Informal (*ad hoc*), the Formal Committee, and the Nominal Group Technique in Chapter 2 and The Idea Machine and Network Conferencing in Chapter 3. Seven characteristics were identified in the criteria:

Holistic Structure Does the approach cover all of the dimensions of the problem solving process? Any technique that one might utilize to solve a problem is likely to be unsuccessful if it does not relate to all of the dimensions of the problem solving process. It is equally important that any effort at problem solving fully incorporate *all* of the dimensions of the process.

Provision of Stimuli Does the approach provide a stimulus to the members of the group and their thought processes and thereby expand their capacity to think creatively? In any approach does not stimulate the participant's thinking, few, if any, creative ideas to solve a problem will be generated.

Reduction of Status and Role Differentiation Does the approach neutralize the status and roles of the members of the group? Unless status and roles are neutralized, creativity will be stifled.

Suspension of Criticality Does the approach suspend critical responses by participants and thus encourage creative thinking? Certainly, critical comments are necessary at a subsequent step of the creative problem solving process. However, if such comments are made prematurely, creative thinking will be stifled.

Fosters Dialogue and Consensus Does the approach enable genuine dialogue that eventually leads to true consensus? Successful implementation will be much more likely if support for an idea has been developed through dialogue and consensus.

Environmental Sensitivity Does the approach incorporate a recognition of environmental (e.g., political, economic, demographic, technological) concerns, interests? Failure to do so will lead to an inappropriate solution.

Effectiveness Does the approach produce ideas that are worthy of implementation? The number of ideas that can be generated is less important than the quality. If ideas can not be implemented the approach is ineffective.

We concluded that the Traditional Informal *ad hoc* group probability was low for all seven criteria. The Formal Committee has a low probability for holistic structure, provision of stimuli, reduction of status and role differentiation, reduction of status, and effectiveness. It has a medium probability for fosters dialogue and consensus and a high probability for environmental sensitivity.

The Nominal Group Technique has a low probability for holistic structure, fosters dialogue and consensus, environmental sensitivity, and effectiveness. Its probability is medium for provision of stimuli and reduction of status and role

differentiation. Finally, its probability for suspension of criticality is high. While Network Conferencing has a medium probability for holistic structure, provision of stimuli, suspension of criticality, and environmental sensitivity. It has a high probability for reduction of status and role differentiation, fosters dialogue and consensus, and effectiveness. TIM has a high probability for all seven criteria. Based on this evaluation, we conclude that The Idea Machine is a superior group problem solving approach when compared with the other four.

Superiority of TIM As A CPS Technique

One can have access to quantitative programs through the TIM process. However, its capability for qualitative solutions to problems is what sets it apart from other GDSS. It does this by analogy with concepts generated from its sixteen data bases and group dialogue and consensus.

Decision makers routinely utilize analogical reasoning.[1] As a result, decision makers are almost always comfortable working by analogy and find the TIM process quite compatible in this regard.

Effective group communication is essential if the problem solving process is to be successful. Research has confirmed the common sense notion that social interaction improves the quality of decisions made by groups. Group interaction is an integral part of the TIM process. Perhaps more importantly, research has shown that there is a direct relationship between social interaction and high

quality decisions when dealing with ill-structured problems.[2] TIM is extremely compatible with VanGundy's problem solving model.

When one realizes the potential difficulty associated with problem definition, it is easy to understand why so much emphasis is placed on this task. We know that most organizations seek to resolve problems by maintaining a narrowly focused approach to both problem definition and proposed alternatives. Sometimes this is due to a lack of resources (both time and money. All too often, this is the result of having the same people with the same point of view working on problems, rather than involving individuals with different world views representing various levels of the organization. This results in a failure to consider any *strongly differing* alternatives.[3]

We know that extremely complex problems cannot be reduced to a single comprehensive problem statement.[4] Multiple problem statements or definitions are only likely to the extent that a variety of interests and perspectives are present. Since TIM incorporates VanGundy's problem solving model into a TIM session, we encourage multiple definitions because they will result in different alternatives. We encourage different views of the world in TIM sessions. It not only results in different definitions of a problem but because the process suspends criticality a much richer variety of ideas will likely result.

We conclude that The Idea Machine is indeed superior to other creative problem solving techniques.

The Efficacy of TIM In Three Projects

Experience utilizing The Idea Machine process in field trials, both with the Virginia Department of Corrections and with the State Justice Institute, suggests that employees within an organization can resolve many problems when given the opportunity. It also strongly suggests that one of the greatest assets of TIM is that it almost always brings people together who would not normally discuss problems or seek solutions to problems routinely. In each TIM session, the participants had different job descriptions and expertise within the agency. As a result, each had a somewhat different world view. These different perspectives contributed significantly to the generation and evaluation of ideas to determine if they were worthy (or not) of implementation. This is critically important, because after ideas have been identified to resolve problems, they are evaluated from these different perspectives before a determination is made to adopt (or not) and implement an idea. As a result, unintended consequences or problems associated with implementation will often be identified before an idea is adopted due directly to this rich diversity in perspective.

The TIM process takes the complexities, often ambiguities of ill-structured problems into account by having participants identify multiple definitions or problem statements which are called Aims. Each Aim is then addressed individually. A good example of this would be the identification of fourteen Aims by participants in the first State Justice Institute field trial:

Address Judicial Isolation

Enhance Alternative Uses Of Computers

Enhance Job Satisfaction Of Judicial Employees

Enhance Judges' Use Of Technology

Enhance Resources Available To The Courts

Enhance The Use Of ADR

Enhance The Utilization Of Automation

Expand The Use Of Technology Throughout The System

Expedite Implementation Of CSE Computer System

Improve Court Record Preparation For Appeals

Improve Judicial Services To Indians

Improve The Quality Of Performance Throughout The System

Maximize Utilization Of Existing Human Resources

Reduce Court Congestion And Delay[5]

Ostensibly the participants redefined the *problem* of court delay and congestion in fourteen different ways. Rather than generating ideas for just one definition, they are developed for each problem redefinition. Each of these *subproblems* or redefinitions represented different views of the world, as a result of the expertise, interests and values of the members of the group, as to what constituted or contributed to the megaproblem of delay and congestion in the courts. Taken together, these definitions and resulting ideas have the potential to result in more appropriate solutions.

Participants in the second SJI project were consistent in finding TIM to be extremely efficacious as a creative problem solving technique.

The Special Benefits Of TIM Group Interaction

There are several benefits associated with using TIM in the decision making process because the concepts are generated in a value-free manner by the computer. We encourage those who use TIM to have a rich diversity of expertise and points-of-view. On their own, individuals with significantly different interests and ideologies are quite likely to reach an impasse rather quickly. Those sharing the dominant mindset will likely control the outcome, if indeed any decision(s) can be made. TIM help to neutralize these competing perspectives by depersonalizing the discussion. Participants are reacting to the computer not each other.

It is fascinating to watch the interaction in a TIM session. The rigidity associated with defending one's position is largely eliminated because the individuals are reacting to interpretations of a computer-generated concept. Implicitly, participants broaden the discussion because TIM has no ideological perspective. It is a neutral stimulus. One benefit of such unconstrained discussion is a greater understanding of the available ideas developed to solve the problem at hand. Perhaps most importantly, unintended consequences of proposed solutions are much more likely avoided when there is a diversity of expertise among the participants *and* discussion is unrestricted by ideology or a dominant coalition. Finally, the computer can be used as a convenient scapegoat. Individuals will not lose face by proposing ideas that may be perceived as

unpopular or unrealistic because they were made in response to the computer concept.

TIM, like other GDSS, can access quantitative decision aids, e.g., Quantitative Systems for Business. Unlike other GDSS, TIM is portable. It can be made available whenever and wherever it is convenient for members of a problem solving group to meet. Most importantly, however, TIM can be distinguished from other GDSS by the following unique characteristics:

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5. It neutralizes the status and roles of the members of the group;
6. It suspends critical responses by participants to a subsequent step of the process which encourages creative thinking;
7. It fosters dialogue and consensus;
8. It incorporates a recognition of environmental concerns, interests; and
9. It produces ideas that are worthy of implementation.

We conclude that TIM occupies a preeminent position among CPS techniques.

Need for Further Research

As Huber has pointed out, post-industrial organizations are going to have to adopt what he refers to as C^2 technologies, if they are going to compete.[6] For all practical purposes, C^2 technologies are synonymous with what Johansen calls *Groupware.*[7] Seventeen different approaches have been identified with this generic reference to team creative problem solving techniques.[8] There is clearly no one approach that can be identified at this point in time as the best. There also is a critical need for further study of these techniques to identify, where possible, if one or more are more appropriate than others. Or, it may be that some techniques are particularly well-suited for heavy industry applications, while others may be more applicable to service industries. Possibly, nonprofit organizations should use specific techniques. The development of highly sophisticated approaches to problem solving has been so rapid that researchers have been unable to keep pace with relevant studies. Countless questions need to be answered. While there is a paucity of information now, a literature base is needed upon which business and government can rely.

We believe that TIM could play a significant role as one of what Huber refers to as C^2 technologies. As improved versions become available the likelihood of this assertion becomes even greater. Our research has been limited to only three public sector projects. Two involved the courts and one involved corrections. This represents a vary narrow incursion into the public sector. Much more work with TIM needs to be done in this area in an effort to determine

where it might be most useful and under what circumstances it would be most appropriate. Although TIM has been used in several private sector projects, no research has been conducted to determine how the private sector could best utilize this creative problem solving technique.

Most importantly, there is a compelling need for further research in the public sector to reduce the gap between limited resources and the need to provide improved services. The environment must be continuously monitored for developments in technology which will improve efficiency and reduce costs. We must take care to recognize that successful applications of new technological advances may be transferable from the private to the public sector. Continuing research will identify these windows of opportunity.

Summary

The use of analogical reasoning by participants is one of TIM's most attractive features. Decision makers are typically quite comfortable with this approach and are generally accustomed to using it. TIM makes maximum use of the expertise of participants, when dealing with ill-structured problems. Hirowaka established four decisional functions for quality decisions.[9] TIM can (and does) incorporate each into the problem solving process.

Another important feature of TIM is the fact that multiple definitions of a problem can each be converted into an Aim in the process. Creative solutions are much more likely when a variety of problem definitions are used because (1)

different definitions require different assumptions and (2) bringing such assumptions to the surface helps the group to gain a better understanding of possible alternatives and their consequences. As Volkema points out, no complex, i.e., ill-structured, problem can be reduced to one interpretation or a single problem statement.[10]

It seems reasonable to conclude that the development of a computer *culture* must play a part in the successful application of TIM to problem solving. The mystique associated with computers is like a *magnet.* It attracts executives who have come to recognize the contribution that computers have made in recent decades. Whether they are computer literate or not is irrelevant. What is relevant is that such decision makers have high expectations that computers can help resolve problems. Because TIM is so user-friendly, it can help decision makers fulfill their expectations.

Dalkey, codeveloper of the Delphi Technique, made a remarkably accurate forecast in 1972. He suggested that:

> Much more powerful ways of using groups can be envisaged--for example, on-line computer systems with members of the group interacting with other members, with rapidly accessible data, and with sophisticated computations--that will look a great deal more like "cooperative thinking."[11]

What Dalkey envisioned then has become a reality today. While there is still a need for further research in both public and private applications, it seems reasonable to conclude that The Idea Machine can legitimately claim to be on the leading edge of what can only be described as a revolutionary approach to problem solving.

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Appendix A. Historical Development of TIM

TIM (The Idea Machine) was developed by John W. Dickey, Virginia Polytechnic Institute & State University. Professor Dickey has a joint appointment with the College of Architecture and Urban Studies and the Center for Public Administration & Policy, Virginia Tech. An internationally known scholar and practitioner in planning and problem solving, he has authored ten books on related topics and has given numerous presentations at national and international conferences. He has worked on applied research projects in over 20 countries around the world.

Work has progressed over the last six years on the development of a system for computer-assisted innovation. This stemmed originally from Artificial Intelligence-related efforts in the creation and use of expert systems for management and planning purposes, particularly for transportation engineering and planning. This effort broadened when it became apparent that creative solutions were considerably beyond the pale of such expert systems.

TIM has evolved to the point where it now involves the latest in technology, such as state-of-the-art micro-computers, CD-ROMs, Video Disks, and audio CD's. TIM also contains unique computer programs for generation, text searching, screening, and packaging of ideas. To our knowledge there is no comparable system in the world.

The development of TIM has been an interdisciplinary endeavor. Faculty and students from eleven disciplines--including Civil and Electrical Engineering, Computer Science, Business, Urban Planning, and Public Administration and Policy--have been involved.

Over 50 different problems have been addressed so far, and these have been as diverse as the participants. They have ranged from finding economic ways to test VLSI chips; to helping reduce Virginia's prison population; to supplying alternative endings to an Isaac Asimov novel. Clients have included individual scientists, state and local governments, the Navy, and small as well as large firms. Papers on TIM have been given at five international symposia, including those sponsored by the American Society of Civil Engineers, American Society of Mechanical Engineers, the International Council for Building Research and Documentation, and the Society for Systems Science and Cybernetics.

The central part of TIM is its concept search process. There are currently 16 major sources (i.e., data bases) of concepts (including, for instance, the

McGraw Hill Concise Encyclopedia of Science and Technology on CD-ROM). The user starts the search by identifying, in one sentence, an "aim" to be achieved. He then selects four words (from TIM's vocabulary of about 200 words) that best describe that aim. Concepts in each of the data bases are tied to the word vocabulary. Subsequently (and to over-simplify greatly), a match is attempted between the words describing the aim and those associated with the various concepts. If a match is found, the corresponding concept is presented and the user aided in drawing an analogy to identify ideas to help achieve the aim. The "aim," matching words, data base, and concept generated for each idea is presented in this Report.

A potentially powerful feature in this process is that of "analog distancing." The words in TIM's vocabulary are enmeshed in a "semantic network" in which the words closest in meaning to any one are one link away, second closest two links away, and so on. It therefore is possible to create a more "far out" search by using not the original words that describe the aim but some set at a given "analog distance" (number of links) away from them. This allows accessing of some fascinatingly different (but still somewhat similar) concepts, perhaps resulting in equally fascinating ideas.

Appendix B. Sample Interim Report To Participants

Indiana
Interim Report

By
Sidney C. Snellenburg
Center for Public Administration & Policy
Virginia Polytechnic Institute & State University

For
State Justice Institute

Participants

Chief Justice Randall T. Shepard,
Indiana Supreme Court

Judge John G. Baker,
Indiana Court of Appeals

Judge Bruce C. Embrey,
Miami County Circuit Court

Judge Kenneth K. Johnson,
Marion County Superior Court

Judge Gerald S. Zore,
Marion County Superior Court

Bruce A. Kotzan,
State Court Administrator

Connie L. Campbell, Clerk
Allen County Circuit Court

Lilia Judson,
Asst. State Court Administrator

Executive Summary

The ideas generated on Monday, September 25, 1989 are listed according to rank scores within each screening category for each respective Aim. The rank scores will be found below each idea. A Summary Idea Scores table is provided at the end of the listing of ideas for each Aim.

Twenty-five ideas were generated for the Aim: Seek Additional Funding Sources and/or Alternatives. Nineteen ideas were generated for the Aim: Improve Judicial Employee Job Satisfaction. Some ideas were combined with other ideas, as was agreed at the conclusion of our session with TIM. If you would like to have the phrasing of any particular idea changed, please let me know.

Background

A new hardware/software system has been developed over the last eight years to aid in solving problems and developing policy alternatives. The central purpose of The Idea Machine (TIM) is to offer a computer-generated approach to help people develop and assess ideas. TIM is being made available to state courts through a grant funded by the State Justice Institute.

The TIM Process

The Idea Machine (TIM) process involves several steps: (1) identification of an Aim which reflects the targeted problem to be addressed. In this instance,

Indiana had two Aims: Seek additional funding sources and/or alternatives and Improve judicial employee job satisfaction; (2) selection of two subject words and two pairs of descriptor words. For the first Aim, the words *justice, money, private/public and inexpensive/expensive* were selected. The words *employed person, attitude, angry/contented and intellect/non* were selected for the second Aim; (3) generation of ideas by analogy with concepts brought out by the computer; and (4) screening of ideas generated for each Aim. Each step of the process is achieved by group consensus.

The TIM screening process requires the participants to select the most appropriate status for each idea from the table below:

1	Idea cannot be assigned a status at this time (NONE GIVEN)
2	Idea has been tried, unsuccessfully, in the past (UNSUCCESSFUL)
3	Idea has been tried, successfully, in the past (SUCCESSFUL)
4	Idea really is a goal to be achieved (GOAL)
5	Idea will not work under current condition (INFEASIBLE)
6	Idea requires more thought and clarification (MUSE)
7	Idea might be useful but more information is needed (INFO NEEDED)
8	Idea useful only if certain conditions prevail (CONTINGENCY)
9	Idea has strong potential for implementation (IMPLEMENT)

The final step of the process is the rating of each idea. The *Importance Rating* is based on a scale of 1 to 10 where 1 reflects an idea which is relatively unimportant and 10 one that is extremely important. The *Effort Rating* is also based on a scale of 1 to 10 where 1 reflects an idea that is relatively easy to implement and 10 one which will require a great deal of effort to implement. The *Score* for each idea is computed as follows: (10 - Effort Rating) X Importance Rating.

Aim: Seek Additional Funding Sources and/or Alternatives

Indiana Idea #14

Incorporate the legislative interests of judges with those of clerks (and vice versa) to the mutual interest and/or benefit of both. As an example, expand the use of legislative bulletin to clerks or their legislative committees.

Status: (9) - Implement

Importance Rating: 9 Effort Rating: 3 Score: 63

Indiana Idea #8

Refocus the *State of the Judiciary* report to emphasize the problem areas that need to be addressed as well as highlighting the positive aspects.

Status: (9) - Implement

Importance Rating: 6 Effort Rating: 1 Score: 54

Indiana Idea #6

The state court administrator, judicial center and judges association should initiate a more effective and innovative information exchange.

Status: (9) - Implement

Importance Rating: 8 Effort Rating: 5 Score: 40

Indiana Idea #21

Encourage the expansion of Summary Resolutions in domestic relation cases.

Status: (9) - Implement

Importance Rating: 6 Effort Rating: 6 Score: 24

Indiana Idea #15

Have different groups (judges, clerks, etc.) meet to discuss specific problem areas impacting the various actors in the system.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 4 Score: 42

Indiana Idea #9

Develop *administrative* news clips on a monthly basis on any changes in procedure.

Status: (8) - Contingency

Importance Rating: 6 Effort Rating: 5 Score: 30

Indiana Idea #4

Address the state committees of both parties to encourage increased financial support for the courts (refocus on the problems beyond just salaries.

Status: (8) - Contingency

Importance Rating: 3 Effort Rating: e Score: 21

Indiana Idea #7

Problems of the judiciary must be made public so that they can recognize the need for change and support. Local judges, clerks, etc. need to keep local citizens informed of needs.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 7 Score: 21

Indiana Idea #10

Use judicial divisions to promote unity of purpose which should enhance subsequent support among nonjudicial actors. Formally establish small groups (across county lines) to develop a better understanding of current problems. Use judicial districts for the purposes of problem solving.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 7 Score: 21

Indiana Idea #25

Have the state take responsibility for the collection of fines and costs. Use of social security numbers could result in State Tax refund intercepts.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 7 Score: 21

Indiana Idea #22

Establish a statewide Settlement Week. Further, establish Settlement periods for particular types of cases. Example, have Settlement week for insurance cases in December because insurance companies can then clear their reserves which would be a a great incentive for them to settle.

Status: (8) - Contingency

Importance Rating: 8 Effort Rating: 8 Score: 16

Indiana Idea #18

Define *functions* rather than authority of actors such as a local court administrator (funding of services rather than positions). The emphasis should be on which functions or duties should be conducted at the local level.

Status: (8) - Contingency

Importance Rating: 8 Effort Rating: 8 Score: 16

Indiana Idea #27

Have the legislature conduct a Judicial Impact study on any legislation impacting the courts (including any right or remedy).

Status: (8) - Contingency

Importance Rating: 5 Effort Rating: 8 Score: 10

Indiana Idea #2

Lease technology/equipment in order to maintain state of the art equipment.

Status: (8) - Contingency

Importance Rating: 3 Effort Rating: 7 Score: 9

Indiana Idea #29

Centralize the probation function but retain within the judiciary. Have the state fund this activity. Have regional probation offices, rather than county probation offices, coordinate legislative approach with counties.

Status: (7) - More Information Is Needed

Indiana Idea #13

Have District conferences in the fall rather than the spring in order to take advantage of legislative initiatives proposed by the Judges' Association and others.

Status: (6) - Muse

Importance Rating: 3 Effort Rating: 3 Score: 21

Indiana Idea #28

Publicize the existence and the dollar amounts in the School Fund and the limitations on its use. Convince the state to provide offsetting funds to benefit the judiciary.

Status: (6) - Muse

Importance Rating: 7 Effort Rating: 10 Score: 0

Indiana Idea #3

Encourage political parties to do public opinion polling to influence support for increased funding.

Status: (6) - Muse

Importance Rating: 5 Effort Rating: 10 Score: 0

Indiana Idea #1

Initiate central purchasing for equipment and supplies to achieve greater savings.

Status: (5) - Infeasible

Indiana Idea #17

Have the orientation of judges focus on public relations beyond working on reelection efforts.

Status: (4) - Goal

Importance Rating: 9 Effort Rating: 7 Score: 27

Indiana Idea #16

Utilize public relations function positively to impact on both the public and the legislature.

Status: (4) - Goal

Importance Rating: 9 Effort Rating: 7 Score: 27

Indiana Idea #20

Give judges a vision greater than themselves (frame of reference is too small).

Status: (4) - Goal

Importance Rating: 7 Effort Rating: 8 Score: 14

Indiana Idea #24

Encourage the enforcement of collections and judgments in cases where applicable.

Status: (4) - Goal

Importance Rating: 6 Effort Rating: 8 Score: 12

Indiana Idea #5

Develop better communication among judges to share information on problems/solutions to garner mutual support and agreement. (Judges should adopt a staff perspective once solutions are identified.

Status: (4) - Goal

Importance Rating: 9 Effort Rating: 9 Score: 9

Indiana Idea #26

All fines and court costs should go to the support of the courts as opposed to funding other nonjudicial activities.

Status: (2) - Unsuccessfully Tried In The Past

Summary Idea Scores

Idea Number	Status	Effort	Importance	Score
14	9 - Implement	3	9	63
8	9 - Implement	1	6	54
6	9 - Implement	5	8	40
21	9 - Implement	6	6	24
15	8 - Contingency	4	7	42
9	8 - Contingency	5	6	30
4	8 - Contingency	3	3	21
7	8 - Contingency	7	7	21
10	8 - Contingency	7	7	21
25	8 - Contingency	7	7	21
22	8 - Contingency	8	8	16
18	8 - Contingency	8	8	16
27	8 - Contingency	8	5	10
2	8 - Contingency	7	3	9
29	8 - More Info Needed	10	5	0
13	6 - Muse	3	3	21
28	6 - Muse	10	7	0
3	6 - Muse	10	5	0
1	5 - Infeasible			
17	4 - Goal	7	9	27
16	4 - Goal	7	9	27
20	4 - Goal	8	7	14
24	4 - Goal	8	6	12
5	4 - Goal	9	9	9
26	2 - Tried But Unsuccessful			

Aim: Improve Judicial Employee Job Satisfaction

Indiana Idea #9
Judges should publicly recognize innovative activity of subordinates.
Status: (9) - Implement
Importance Rating: 9 Effort Rating: 1 Score: 81

Indiana Idea #2
Judges should openly encourage communication; encourage ideas for positive change.
Status: (9) - Implement
Importance Rating: 8 Effort Rating: 4 Score: 48

Indiana Idea #14
Distribute notice of important opinions by trial judges.
Status: (9) - Implement
Importance Rating: 6 Effort Rating: 2 Score: 48

Indiana Idea #13
Highlight new programs which have been initiated and have proven to be successful.
Status: (9) - Implement
Importance Rating: 7 Effort Rating: 4 Score: 42

Indiana Idea #1
Improve communication between the court and all agencies involved with the court. Judges want to hear both praise as well as negative feedback. Judges need to know what is and is not working.
Status: (9) - Implement
Importance Rating: 7 Effort Rating: 4 Score: 42

Indiana Idea #8
Judges should be publicly recognized for their work which is innovative.
Status: (9) - Implement
Importance Rating: 8 Effort Rating: 5 Score: 40

Indiana Idea #11
Delegate decision making authority to the lowest possible level to help encourage initiative and innovation.
Status: (9) - Implement
Importance Rating: 4 Effort Rating: 8 Score: 8

Indiana Idea #18

Develop a *mentoring* program where senior judges work with junior judges in an advisory capacity.

Status: (8) - Contingency

Importance Rating: 4 Effort Rating: 6 Score: 16

Indiana Idea #17

Establish a procedure where the senior judge in each district serves as a point of contact for the local bar to raise issues concerning judges. The senior judge would review, discuss each issue with the judge involved.

Status: (8) - Contingency

Importance Rating: 4 Effort Rating: 8 Score: 8

Indiana Idea #5

Encourage the use of retreats by judges within each district.

Status: (8) - Contingency

Importance Rating: 4 Effort Rating: 8 Score: 8

Indiana Idea #15

Develop a strategy to allow judges to conduct a thorough self-analysis in terms of quality of work and quantity of work.

Status: (8) - Contingency

Importance Rating: 6 Effort Rating: 10 Score: 0

Indiana Idea #16

Initiate a *peer review* within each District. Critique would be made available to presiding judge by peer(s).

Status: (8) - Contingency

Importance Rating: 6 Effort Rating: 10 Score: 0

Indiana Idea #12

Create a mechanism to recognize and build on innovative opportunities. Example, publicize the fact that a judge has just heard a case which is a first-of-a-kind -- recognize the judge as an *expert* in certain types of cases.

Status: (7) - More Information Is Needed

Importance Rating: 6 Effort Rating: 8 Score: 12

Indiana Idea #3

Encourage introspection by judges with an eye toward change.

Status: (7) - More Information Is Needed

Importance Rating: 6 Effort Rating: 10 Score: 0

Indiana Idea #6

Extend the Judicial Conference by one day to accommodate informal interactions among judges.

Status: (6) - Muse

Importance Rating: 3 Effort Rating: 10 Score: 0

Indiana Idea #4

Provide time for fraternization among judges at district and/or state judicial meetings.

Status: (3) - Successful

Indiana Idea #10

Encourage judges to be cognizant of public relations and how it can be used positively.

Status: (3) - Successful

Indiana Idea #7

Have six of the thirty-six hour Continuing Legal Education requirement during each three-year period by filled by out-of-state training.

Status: (3) - Successful

Indiana Idea #19

Have a portion of each annual Judicial Conference focus on (1) stress management; and (2) recreation/interaction.

Status: (5) - Infeasible

Summary Idea Scores

Idea Number	Status	Effort	Importance	Score
9	9 - Implement	1	9	81
2	9 - Implement	4	8	48
14	9 - Implement	2	6	48
13	9 - Implement	4	7	42
1	9 - Implement	4	7	42
8	9 - Implement	5	8	40
11	9 - Implement	8	4	8
18	8 - Contingency	6	4	16
17	8 - Contingency	8	4	8
5	8 - Contingency	8	4	8
15	8 - Contingency	10	6	0
16	8 - Contingency	10	6	0
12	6 - More Info Needed	8	6	12
3	8 - More Info Needed	10	6	0
6	6 - Muse	10	3	0
19	3 - Successful			
4	3 - Successful			
10	3 - Successful			
7	5 - Infeasible			

Appendix C. Proposed Final Report to the State Justice Institute, 1990

INNOVATIVE IDEAS FOR STATE COUTRTS

FINAL REPORT

SIDNEY C. SNELLENBURG
JOHN W. DICKEY
WILLIAM L. MURRAY

FOR
STATE JUSTICE INSTITUTE

DISCLAIMER

This document was developed under a grant from the State Justice Institute. Points of view expressed herein are those of the authors and do not necessarily represent the official position or policies of the State Justice Institute.

EXECUTIVE SUMMARY

Two hundred and two ideas were generated by the six participating states under a State Justice Institute-funded grant. Our judgment that the quality of ideas would be superb has been borne out. Fifty-nine of these ideas were determined to be worthy of implementation as soon as possible. Another thirty-six ideas were identified as being appropriate for implementation if certain conditions prevail. Perhaps most important, from a long-range perspective, thirty-one goals were identified.

Each participating state focused on areas of special interest which were reflected in their Aims. Each of these Aims is identified below:

- Enhance The Use Of Automation
- Establish A FY90 Budget Strategy
- Identify A Normative Organizational Culture
- Improve Communication Within The Judiciary
- Improve Judicial Employee Job Satisfaction
- Improve Leadership Skills
- Improve The Perception Of The Judiciary
- Reduce Court Delay And Congestion
- Reduce The Time From Indictment To Disposition
- Seek Additional Funding Sources And/Or Alternatives

We believe that many of the ideas, if not most, are generalizable to all states whether they have unified, modified, or decentralized court systems.

Each participating state evaluated the ideas they generated on the basis of their own needs. Upon evaluation of all of the ideas, other states may find that some ideas identified as requiring further study may more appropriately fall under the category of being worthy of implementation and vice versa.

We are extremely pleased with the evaluation of the TIM experience by the participants. Of the fifty-four responses, the mean overall rating of the sessions was 4.24. These break down as follows:

Extremely Worthwhile (5 on a 5 point scale)	17 (31%)
Worthwhile (4 on a 5 point scale)	34 (63%)
Somewhat Beneficial (3 on a 5 point scale)	03 (06%)
Of Little Value (2 on a 5 point scale)	00 (00%)
Worthless (1 on a 5 point scale)	00 (00%)

We are delighted to have had the opportunity to participate in this project and hope to be able to serve the state court systems again in the future.

INTRODUCTION

The objective of this research funded by the State Justice Institute was to develop innovative ideas for problems at both the trial and appellate levels of state courts. This was accomplished utilizing a computer hardware/software system with the acronym TIM developed by John Dickey, Virginia Polytechnic Institute & State University (TIM is described on the next page). The project was conducted in six states. The following Court Administrators played instrumental roles in the success of this project:

- Connecticut, Judge Aaron Ment
- Delaware, Lowell Groundland
- Illinois Samuel Conte
- Indiana, Bruce Kotzan
- Massachusetts, Justice Arthur Mason
- Rhode Island, Matthew Smith

Each of these Court Administrators appointed members of their respective staffs and judges (the Chief Justice in Indiana and in Massachusetts also participated). Idea generation sessions were held in the capital of each participating state. Subsequently, each participant was asked to comment on and then screen each idea developed by their respective state. The basis for screening was as follows:

1 Idea cannot be assigned a status at this time (NONE GIVEN)
2 Idea has been tried, unsuccessfully, in the past (UNSUCCESSFUL)
3 Idea has been tried, successfully, in the past (SUCCESSFUL)
4 Idea really is a goal to be achieved (GOAL)
5 Idea will not work under current condition (INFEASIBLE)
6 Idea requires more thought and clarification (MUSE)
7 Idea might be useful but more information is needed (INFO NEEDED)
8 Idea useful only if certain conditions prevail (CONTINGENCY)
9 Idea has strong potential for implementation (IMPLEMENT)

The final step of the process was the rating of each idea. The *Importance Rating* is based on a scale from 1 to 10, where 1 reflects an idea which is relatively unimportant and 10 one that is extremely important. The *Effort Rating* is also based on a scale of 1 to 10, where 1 reflects an idea that is relatively easy to implement and 10 one which will require a great deal of effort. The resulting *Score* for each idea is computed as follows: (10 - Effort Rating) X Importance Rating.

This Final Report is the product of contemporary practitioners. The Project Participants are listed under their respective state. While court administration is unique in each state, many of the ideas identified by the participants should be generalizable elsewhere. The ideas of each state are presented in the order of their rank scores within each category beginning with those found worthy of implementation and ending with those ideas where no status was assigned.

HISTORICAL DEVELOPMENT OF TIM

TIM (The Idea Machine) was developed by John W. Dickey, Virginia Polytechnic Institute & State University. Professor Dickey has a joint appointment with the College of Architecture and Urban Studies and the Center for Public Administration & Policy, Virginia Tech. An internationally known scholar and practitioner in planning and problem solving, he has authored ten books on related topics and has given numerous presentations at national and international conferences. He has worked on applied research projects in over 20 countries around the world.

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CONNECTICUT

PARTICIPANTS

Judge Aaron Ment,
Chief Court Administrator

Judge F. X. Hennessy,
Deputy Chief Court Administrator

Robert Bosco, Acting Director,
Office of Adult Probation

Joseph Keefe, Executive Secretary,
Judicial Department

James O. Cavanaugh, Executive Director,
Administrative Services

Faith A. Mandell,
Director of External Affairs

Joseph D. D'Alesio,
Director of Court Operations

Anthony J. Salius, Director,
Family Division

Anthony Fisser, Director,
Continuing Education

AIM: IDENTIFY A NORMATIVE ORGANIZATIONAL CULTURE

Connecticut Idea #5

The organizational culture presently provides expectations of doing more with less in providing services externally and internally. The culture should recognize that additional resources may improve but will never change this expectation.

Status: (9) - Implement
Importance Rating: 5 Effort Rating: 8 Score: 10

Connecticut Idea #1

The most important value that should be associated with this organization is *fairness* both from an internal and external perspective. This value is not presently perceived as currently being pervasive throughout the organization.

Status: (9) - Implement
Importance Rating: 10 Effort Rating: 10 Score: 0

Connecticut Idea #2

Risk-taking, i.e., not being afraid to fail should be encouraged. Innovation, as an example, requires taking changes. Flex-time is another example of *risk-taking*.

Status: (8) - Contingency
Importance Rating: 7 Effort Rating: 4 Score: 42

Connecticut Idea #7

The organizational culture should reflect the fact that ethical behavior should go beyond the *work ethic* to include ethical conduct in all activities.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 5 Score: 50

Connecticut Idea #8

The organization's culture should reflect a justifiable self-confidence in the independence and importance of our mission. The organization must convey the fact that the reality matches the mission to all involved (internal/external)

Status: (4) - Goal

Importance Rating: 9 Effort Rating: 9 Score: 9

Connecticut Idea #6

The present organizational culture expects that all employees act in a *professional manner.* In order to realize this expectation, appropriate action should be taken to foster and recognize the importance of acting professionally.

Status: (4) - Goal

Importance Rating: 8 Effort Rating: 9 Score: 8

Connecticut Idea #9

The organizational culture should be to maximize the use of existing resources toward defined goals. Self-confidence and pride should be maintained if inadequate resources do not adequately exist or if risks taken should fail.

Status: (4) - Goal

Importance Rating: 7 Effort Rating: 9 Score: 7

Connecticut Idea #3

Another organizational goal/value should be in providing the most equitable, effective and efficient delivery of services. All employees must recognize the fundamental nature of the organization as being service oriented.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Connecticut Idea #4

The most important resource of the organization is the employee. The existing organizational culture is that the employees will go the extra mile in providing services for the public but not internally.

Status: (1) - None Given

AIM: IMPROVE LEADERSHIP SKILLS

Connecticut Idea #5

Encourage subordinates to take the initiative in problems (or problem solving); in identifying objectives; in implementing the goals and objectives of the organization (division).

Status: (9) - Implement

Importance Rating: 9 Effort Rating: 4 Score: 54

Connecticut Idea #11

A good leader has to defend his subordinates' acting in good faith both from sources within and without of the organization.

Status: (9) - Implement

Importance Rating: 9 Effort Rating: 4 Score: 54

Connecticut Idea #7

Recognize and reward subordinates for exemplary effort.

Status: (9) - Implement

Importance Rating: 9 Effort Rating: 5 Score: 45

Connecticut Idea #9

Establish milestones for subordinates to reaffirm that what is being done reflects appropriate action. Each milestone should reflect substantial progress from the previous milestone.

Status: (9) - Implement

Importance Rating: 9 Effort Rating: 5 Score: 35

Connecticut Idea #6

Give subordinates a *stake* in the outcome of objectives and goals. Recognize the strengths of subordinates before involving them in specific assignments.

Status: (9) - Implement

Importance Rating: 9 Effort Rating: 9 Score: 9

Connecticut Idea #8

Subordinates must be criticized constructively. Separate the person from the problem.

Status: (9) - Implement

Importance Rating: 9 Effort Rating: 9 Score: 9

Connecticut Idea #3

Leaders should have the vision to set the goals for the organization.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 10 Score: 0

Connecticut Idea #1

The role of leader requires effective communication of the goals of the organization: (1) by example; (2) by word; and (3) by symbol. The communication must be clear--no mixed signals. Consistency must be maintained. Communication is two-way, etc.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 10 Score: 0

Connecticut Idea #10

A good leader is (1) visible; (2) listens; (3) must be open; and (4) must be aware of a subordinates strengths and weaknesses.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 10 Score: 0

Connecticut Idea #2

In addition to communication, employees must be motivated to adopt the goals of the organization and work toward their achievement.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 10 Score: 0

Connecticut Idea #12

Risk-taking, properly understood, involves suggesting ideas or taking actions which would otherwise not be taken for political reasons or Political repercussions. Positive or negative feedback is essential in every instance.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 10 Score: 0

Connecticut Idea #4

The test for effective leadership can be determined based upon the achievement of the goals identified above.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 10 Score: 0

DELAWARE

PARTICIPANTS

Judge Susan Del Pesco,
Superior Court

Judge Richard S. Gebelein,
Superior Court

Judge Henley Graves,
Superior Court

Judge Jerome D. Herlihy,
Superior Court

Judge Henry duPont Ridgel,
Superior Court

Judge Albert J. Stiftel,
Presiding Judge, Superior Court

Lowell L. Groundland, Director
Administrative Office of the Courts

James D. Brown,
Information Resource Manager

Thomas J. Ralston,
Court Administrator

Samuel McKeeman,
Assistant to the Governor

AIM: REDUCE COURT DELAY AND CONGESTION

Delaware Idea #33

Explain to elected officials about the unique nature of many cases in Delaware courts (e.g., large corporate cases, especially toxic torts).

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 1 Score: 90

Delaware Idea #14

Have a written plan to communicate expectations and consequences of failure for both prosecutors and public defenders.

Status: (9) - Implement

Importance Rating: 9 Effort Rating: 3 Score: 63

Delaware Idea #3

Establish written goals for the Attorney General's Office. Then judges can respond to prosecutor's needs.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 8 Score: 20

Delaware Idea #4

Set timetables with meaningful sanctions for key adjudication decision points. Get appropriate cooperation from all relevant parties. Monitor compliance. *NOTE: Idea #5 and Idea #6 were combined with Idea #4.*

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 8 Score: 20

Delaware Idea #35

Have an analysis of cases differentiated by complexity, likelihood of trial, etc. i.e., identify those cases that can not meet routine time standards then treat these cases as appropriate.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 8 Score: 20

Delaware Idea #30

Use Masters to screen prisoner mail to judges e.g., habeas corpus issues.

Status: (9) - Implement

Importance Rating: 8 Effort Rating: 8 Score: 16

Delaware Idea #24

Provide beepers for Assistant Attorney Generals, Public Defenders and bailiffs.

Status: (8) - Contingency

Importance Rating: 8 Effort Rating: 8 Score: 16

Delaware Idea #36

Identify specialized resources for certain types of cases, e.g., drug cases where there is a backlog in lab analysis.

Status: (8) - Contingency

Importance Rating: 8 Effort Rating: 8 Score: 16

Delaware Idea #23

Use facilities during other times of the day e.g., night court.

Status: (8) - Contingency

Importance Rating: 2 Effort Rating: 10 Score: 0

Delaware Idea #28

Use electronic mail to communicate with multiple parties, e.g., lawyers.

Status: (7) - More Information Needed

Importance Rating: 5 Effort Rating: 10 Score: 0

Delaware Idea #12

Send Special Assistant to the Governor through the system--attach to Attorney General's Office with a defendant--to track the defendant through the system.

Status: (6) - Muse

Importance Rating: 7 Effort Rating: 1 Score: 63

Delaware Idea #16

Start civil cases on Tuesday instead of Monday, so we will know how many cases can be handled by the end of the week.

Status: (6) - Muse

Importance Rating: 5 Effort Rating: 1 Score: 45

Delaware Idea #17

Have judges' meeting later in the week rather than on Monday morning.

Status: (6) - Muse

Importance Rating: 5 Effort Rating: 3 Score: 35

Delaware Idea #34

Develop a security plan for the courthouse and perimeter.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Delaware Idea #21

Have immediate access to FBI, NCIC records, along with instructions on how to read these reports.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Delaware Idea #10

Have better defined and uniform procedures by judges (as distinguished from court rules.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Delaware Idea #32

Use better "marketing" terminology to get funding for desired programs.

Status: (3) - Successful

Importance Rating: 10 Effort Rating: 1 Score: 90

Delaware Idea #27

Explore the best applications of new technologies to improve case flow management in the justice system.

Status: (3) - Successful

Importance Rating: 10 Effort Rating: 2 Score: 80

Delaware Idea #26

Have Attorney General's Office/police process intake by phone or fax.

Status: (3) - Successful

Importance Rating: 8 Effort Rating: 1 Score: 72

Delaware Idea #19

Get assistance from the Attorney General's Office on the likelihood of going to trial in each particular case. Have a better way to identify cases that are ready to go to trial e.g., prioritize them. *NOTE: Idea #18 was combined with Idea #19.*

Status: (3) - Successful

Importance Rating: 10 Effort Rating: 3 Score: 70

Delaware Idea #11

Have a workshop with the key actors in each court i.e., prosecutors, public defenders, court administrators and judges who normally work together routinely.

Status: (3) - Successful

Importance Rating: 8 Effort Rating: 5 Score: 40

Delaware Idea #13

Have a formalized training program in the Attorney General's Office and the Public Defender's Office.

Status: (3) - Successful

Importance Rating: 8 Effort Rating: 5 Score: 40

Delaware Idea #20

Have same day, signed sentencing orders to expedite adjudication.

Status: (3) - Successful

Importance Rating: 8 Effort Rating: 7 Score: 24

Delaware Idea #8

Get more court reporters and/ or automation.

Status: (3) - Successful

Importance Rating: 10 Effort Rating: 8 Score: 20

Delaware Idea #22

Have holding cells on each floor.

Status: (3) - Successful

Importance Rating: 7 Effort Rating: 10 Score: 0

Delaware Idea #7

Provide more facilities (in terms of both quantity and quality) for adjudication e.g, larger courtrooms designed for 1990s volume of cases.

Status: (3) - Successful

Importance Rating: 10 Effort Rating: 10 Score: 0

Delaware Idea #2

Animate the Attorney General's Office to promptly prepare intake cases and respond to discovery.

Status: (3) - Unsuccessful

Importance Rating: 10 Effort Rating: 5 Score: 50

Delaware Idea #15

Recognize the need for change and make a commitment to implement changes where appropriate.

Status: (3) - Unsuccessful

Importance Rating: 10 Effort Rating: 6 Score: 40

Delaware Idea #1

Animate the Public Defenders to see their clients.

Status: (3) - Unsuccessful

Importance Rating: 10 Effort Rating: 10 Score: 0

Delaware Idea #29

Expand the use of videophone in a variety of situations where applicable.

Status: (1) - None Given

Delaware Idea #31

Expand the case review process.

Status: (1) - None Given

Delaware Idea #9

Add more paralegals to the Attorney General's staff, toxicologists in the Department of Health & Human Services and Masters to the court staff.

Status: (1) - None Given

AIM: REDUCE THE TIME FROM INDICTMENT TO DISPOSITION

Delaware Idea #18

Provide telephone communication between incarcerated defendants and their attorneys.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 2 Score: 80

Delaware Idea #6

Make all requests for continuance in writing, with copies to all parties.

Status: (9) - Implement

Importance Rating: 7 Effort Rating: 1 Score: 63

Delaware Idea #9

Ask the Chief Justice to amend the transfer forms from the Court of Common Pleas to disclose costs and consequences of transfer to Superior Court for a jury trial.

Status: (9) - Implement

Importance Rating: 6 Effort Rating: 6 Score: 24

Delaware Idea #19

Have immediate sanctions on attorneys and/or parties for unreasonable delay.

Status: (8) - Contingency

Importance Rating: 8 Effort Rating: 1 Score: 72

Delaware Idea #12

Schedule case reviews closer to trial date.

Status: (8) - Contingency

Importance Rating: 9 Effort Rating: 3 Score: 63

Delaware Idea #13

Judges should schedule more time between indictment and arraignment for defendants.

Status: (8) - Contingency

Importance Rating: 6 Effort Rating: 1 Score: 54

Delaware Idea #15

Use computer projection system to show name of defendant, nature of crime, witness list, lawyers, law firm, etc. Also put in other messages, e.g., to the jury.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 6 Score: 28

Delaware Idea #14

Use phone voice mail to send dates to defendants, jurors, lawyers, etc.

Status: (8) - Contingency

Importance Rating: 5 Effort Rating: 7 Score: 15

Delaware Idea #2

Give incentives to plea early.

Status: (6) - Muse

Importance Rating: 10 Effort Rating: 1 Score: 90

Delaware Idea #1

Have defendants housed closer to venue.

Status: (4) - Goal

Importance Rating: 7 Effort Rating: 4 Score: 42

Delaware Idea #4

Ask for resources when you have decision-makers' attention.

Status: (3) - Successful

Importance Rating: 10 Effort Rating: 1 Score: 90

Delaware Idea #3

Have immediate sentencing in a higher percentage of cases.

Status: (3) - Successful

Importance Rating: 10 Effort Rating: 3 Score: 70

Delaware Idea #5

When the participants are present, try to resolve the case.

Status: (3) - Successful

Importance Rating: 8 Effort Rating: 5 Score: 40

Delaware Idea #7

Have regular calendar calls on old civil cases.

Status: (3) - Successful

Importance Rating: 8 Effort Rating: 6 Score: 32

Delaware Idea #8
Prepare a written list of unindicted defendants on a regular basis.
Status: (3) - Successful
Importance Rating: 10 Effort Rating: 8 Score: 20

Delaware Idea #16
Expand video arraignments to Kent and Sussex counties.
Status: (3) - Successful
Importance Rating: 10 Effort Rating: 9 Score: 10

Delaware Idea #10
Use more experienced prosecutors to screen cases.
Status: (3) - Successful
Importance Rating: 10 Effort Rating: 9 Score: 10

Delaware Idea #11
Use more experienced public defenders to advise clients on merits of plea offers.
Status: (3) - Successful
Importance Rating: 10 Effort Rating: 9 Score: 10

Delaware Idea #17
Use videos for attorney-client contact in Kent and Sussex counties.
Status: (1) - None Given

ILLINOIS

PARTICIPANTS

Samuel D. Conti,
Director

R. Barry Bollensen,
Assistant Director

Douglas Bowie,
Associate Director

Maureen Connor,
Assistant Director

Carter Cowles,
Assistant Director

Edwin Kennedy,
Assistant Director

Gerald B. Kuban,
Assistant Director

Marcus Reinkensmeyer,
Assistant Director

AIM: ENHANCE THE USE OF AUTOMATION

Illinois Idea #15

Emphasize the ability and the advantages of the AOIC in their role as coordinator for automation hardware/software.

Status: (8) - Contingency
Importance Rating: 10 Effort Rating: 6 Score: 40

Illinois Idea #8

Acquaint the Court and funding authorities as to the needs which have been identified and the ability and the desirability of the AOIC to meet/shape a response to these needs.

Status: (8) - Contingency
Importance Rating: 9 Effort Rating: 9 Score: 9

Illinois Idea #10

Determine whether existing automation systems should be replaced, whether modern technologies e.g., telecommunications can be utilized to tie all systems together, or whether both of the above can be combined.

Status: (8) - Contingency
Importance Rating: 10 Effort Rating: 10 Score: 0

Illinois Idea #1

The Court Administrator's Office should establish protocol for all automation equipment and software. NOTE: This idea also incorporates two other ideas: Illinois Idea #2 "Development and deployment of uncoordinated equipment and software can be dysfunctional." and Illinois Idea #3 "Electronic communication needs to be harnessed or orderly and coordinated but can be random in terms of innovative ideas. Encourage innovation at all levels but require accurate communication and functionality."

Status: (7) - More Information Is Needed

Importance Rating: 8 Effort Rating: 10 Score: 0

Illinois Idea #4

Conduct a survey to determine the needs and wants of all potential users throughout the system to identify services which the state could provide or coordinate. NOTE: This idea also incorporates Illinois Idea #5 "Adduce and provide a statement of automation options available to users by (1) first training t establish a knowledge base; (2) identify existing hardware/software through field visits prior to survey; and (3) then identify user needs." and Illinois Idea #6 "Identify available technology and services to satisfy the needs of users. Create a list of available options for consideration by users and policy makers."

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 5 Score: 50

Illinois Idea #11

Identify data elements and construct data dictionary for users and construct a data glossary for technicians. Proposed routines and procedures for capturing, entering, arraying, retrieving, updating, and analyzing data.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Illinois Idea #12

Technical staff (with policy guidance) must first identify, select (with respect to both hardware and software), install, and effectively use hardware and software.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Illinois Idea #13

Procedures (surveys, committee reviews, field reviews, outside experts, ongoing dialogue with users) must be established to enable users and planners to recommend changes to the system.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Illinois Idea #14

The AOIC must establish communication protocols and hardware/software compatibility standards to allow for uniform and/or coordinated development and deployment of automated systems within and between courts, AOIC and executive agencies. Note: This Idea also incorporates Illinois Idea #7 "Work with users to determine which options are available and feasible."

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Illinois Idea #9

Ideas identified in/for one location should be evaluated, adapted and shared throughout the system.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

INDIANA

PARTICIPANTS

Chief Justice Randall T. Shepard,
Indiana Supreme Court

Judge John G. Baker,
Indiana Court of Appeals

Judge Bruce C. Embrey,
Miami County Circuit Court

Judge Kenneth K. Johnson,
Marion County Superior Court

Judge Gerald S. Zore,
Marion County Superior Court

Bruce A. Kotzan,
State Court Administrator

Connie L. Campbell, Clerk
Allen County Circuit Court

Lilia Judson,
Asst. State Court Administrator

AIM: SEEK ADDITIONAL FUNDING SOURCES AND/OR ALTERNATIVES

Indiana Idea #14

Incorporate the legislative interests of judges with those of clerks (and vice versa) to the mutual interest and/or benefit of both. As an example, expand the use of legislative bulletin to clerks or their legislative committees.

Status: (9) - Implement
Importance Rating: 9 Effort Rating: 3 Score: 63

Indiana Idea #8

Refocus the *State of the Judiciary* report to emphasize the problem areas that need to be addressed as well as highlighting the positive aspects.

Status: (9) - Implement
Importance Rating: 6 Effort Rating: 1 Score: 54

Indiana Idea #6

The state court administrator, judicial center and judges association should initiate a more effective and innovative information exchange.

Status: (9) - Implement
Importance Rating: 8 Effort Rating: 5 Score: 40

Indiana Idea #21

Encourage the expansion of Summary Resolutions in domestic relation cases.

Status: (9) - Implement
Importance Rating: 6 Effort Rating: 6 Score: 24

Indiana Idea #15

Have different groups (judges, clerks, etc.) meet to discuss specific problem areas impacting the various actors in the system.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 4 Score: 42

Indiana Idea #9

Develop *administrative* news clips on a monthly basis on any changes in procedure.

Status: (8) - Contingency

Importance Rating: 6 Effort Rating: 5 Score: 30

Indiana Idea #4

Address the state committees of both parties to encourage increased financial support for the courts (refocus on the problems beyond just salaries.

Status: (8) - Contingency

Importance Rating: 3 Effort Rating: e Score: 21

Indiana Idea #7

Problems of the judiciary must be made public so that they can recognize the need for change and support. Local judges, clerks, etc. need to keep local citizens informed of needs.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 7 Score: 21

Indiana Idea #10

Use judicial divisions to promote unity of purpose which should enhance subsequent support among nonjudicial actors. Formally establish small groups (across county lines) to develop a better understanding of current problems. Use judicial districts for the purposes of problem solving.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 7 Score: 21

Indiana Idea #25

Have the state take responsibility for the collection of fines and costs. Use of social security numbers could result in State Tax refund intercepts.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 7 Score: 21

Indiana Idea #22

Establish a statewide Settlement Week. Further, establish Settlement periods for particular types of cases. Example, have Settlement week for insurance cases in December because insurance companies can then clear their reserves which would be a a great incentive for them to settle.

Status: (8) - Contingency

Importance Rating: 8 Effort Rating: 8 Score: 16

Indiana Idea #18

Define *functions* rather than authority of actors such as a local court administrator (funding of services rather than positions). The emphasis should be on which functions or duties should be conducted at the local level.

Status: (8) - Contingency

Importance Rating: 8 Effort Rating: 8 Score: 16

Indiana Idea #27

Have the legislature conduct a Judicial Impact study on any legislation impacting the courts (including any right or remedy).

Status: (8) - Contingency

Importance Rating: 5 Effort Rating: 8 Score: 10

Indiana Idea #2

Lease technology/equipment in order to maintain state of the art equipment.

Status: (8) - Contingency

Importance Rating: 3 Effort Rating: 7 Score: 9

Indiana Idea #29

Centralize the probation function but retain within the judiciary. Have the state fund this activity. Have regional probation offices, rather than county probation offices, coordinate legislative approach with counties.

Status: (7) - More Information Is Needed

Indiana Idea #13

Have District conferences in the fall rather than the spring in order to take advantage of legislative initiatives proposed by the Judges' Association and others.

Status: (6) - Muse

Importance Rating: 3 Effort Rating: 3 Score: 21

Indiana Idea #28

Publicize the existence and the dollar amounts in the School Fund and the limitations on its use. Convince the state to provide offsetting funds to benefit the judiciary.

Status: (6) - Muse

Importance Rating: 7 Effort Rating: 10 Score: 0

Indiana Idea #3

Encourage political parties to do public opinion polling to influence support for increased funding.

Status: (6) - Muse

Importance Rating: 5 Effort Rating: 10 Score: 0

Indiana Idea #1

Initiate central purchasing for equipment and supplies to achieve greater savings.

Status: (5) - Infeasible

Indiana Idea #17

Have the orientation of judges focus on public relations beyond working on reelection efforts.

Status: (4) - Goal

Importance Rating: 9 Effort Rating: 7 Score: 27

Indiana Idea #16

Utilize public relations function positively to impact on both the public and the legislature.

Status: (4) - Goal

Importance Rating: 9 Effort Rating: 7 Score: 27

Indiana Idea #20

Give judges a vision greater than themselves (frame of reference is too small).

Status: (4) - Goal

Importance Rating: 7 Effort Rating: 8 Score: 14

Indiana Idea #24

Encourage the enforcement of collections and judgments in cases where applicable.

Status: (4) - Goal

Importance Rating: 6 Effort Rating: 8 Score: 12

Indiana Idea #5

Develop better communication among judges to share information on problems/solutions to garner mutual support and agreement. (Judges should adopt a staff perspective once solutions are identified.

Status: (4) - Goal

Importance Rating: 9 Effort Rating: 9 Score: 9

Indiana Idea #26

All fines and court costs should go to the support of the courts as opposed to funding other nonjudicial activities.

Status: (2) - Unsuccessfully Tried In The Past

AIM: IMPROVE JUDICIAL EMPLOYEE JOB SATISFACTION

Indiana Idea #9
Judges should publicly recognize innovative activity of subordinates.
Status: (9) - Implement
Importance Rating: 9 Effort Rating: 1 Score: 81

Indiana Idea #2
Judges should openly encourage communication; encourage ideas for positive change.
Status: (9) - Implement
Importance Rating: 8 Effort Rating: 4 Score: 48

Indiana Idea #14
Distribute notice of important opinions by trial judges.
Status: (9) - Implement
Importance Rating: 6 Effort Rating: 2 Score: 48

Indiana Idea #13
Highlight new programs which have been initiated and have proven to be successful.
Status: (9) - Implement
Importance Rating: 7 Effort Rating: 4 Score: 42

Indiana Idea #1
Improve communication between the court and all agencies involved with the court. Judges want to hear both praise as well as negative feedback. Judges need to know what is and is not working.
Status: (9) - Implement
Importance Rating: 7 Effort Rating: 4 Score: 42

Indiana Idea #8
Judges should be publicly recognized for their work which is innovative.
Status: (9) - Implement
Importance Rating: 8 Effort Rating: 5 Score: 40

Indiana Idea #11
Delegate decision making authority to the lowest possible level to help encourage initiative and innovation.
Status: (9) - Implement
Importance Rating: 4 Effort Rating: 8 Score: 8

Indiana Idea #18

Develop a *mentoring* program where senior judges work with junior judges in an advisory capacity.

Status: (8) - Contingency

Importance Rating: 4 Effort Rating: 6 Score: 16

Indiana Idea #17

Establish a procedure where the senior judge in each district serves as a point of contact for the local bar to raise issues concerning judges. The senior judge would review, discuss each issue with the judge involved.

Status: (8) - Contingency

Importance Rating: 4 Effort Rating: 8 Score: 8

Indiana Idea #5

Encourage the use of retreats by judges within each district.

Status: (8) - Contingency

Importance Rating: 4 Effort Rating: 8 Score: 8

Indiana Idea #15

Develop a strategy to allow judges to conduct a thorough self-analysis in terms of quality of work and quantity of work.

Status: (8) - Contingency

Importance Rating: 6 Effort Rating: 10 Score: 0

Indiana Idea #16

Initiate a *peer review* within each District. Critique would be made available to presiding judge by peer(s).

Status: (8) - Contingency

Importance Rating: 6 Effort Rating: 10 Score: 0

Indiana Idea #12

Create a mechanism to recognize and build on innovative opportunities. Example, publicize the fact that a judge has just heard a case which is a first-of-a-kind -- recognize the judge as an *expert* in certain types of cases.

Status: (7) - More Information Is Needed

Importance Rating: 6 Effort Rating: 8 Score: 12

Indiana Idea #3

Encourage introspection by judges with an eye toward change.

Status: (7) - More Information Is Needed

Importance Rating: 6 Effort Rating: 10 Score: 0

Indiana Idea #6

Extend the Judicial Conference by one day to accommodate informal interactions among judges.

Status: (6) - Muse

Importance Rating: 3 Effort Rating: 10 Score: 0

Indiana Idea #4

Provide time for fraternization among judges at district and/or state judicial meetings.

Status: (3) - Successful

Indiana Idea #10

Encourage judges to be cognizant of public relations and how it can be used positively.

Status: (3) - Successful

Indiana Idea #7

Have six of the thirty-six hour Continuing Legal Education requirement during each three-year period by filled by out-of-state training.

Status: (3) - Successful

Indiana Idea #19

Have a portion of each annual Judicial Conference focus on (1) stress management; and (2) recreation/interaction.

Status: (5) - Infeasible

MASSACHUSETTS
PARTICIPANTS

Chief Justice Paul J. Liacos,
Supreme Judicial Court

Chief Justice Robert L. Steadman,
Supreme Court

Chief Justice Arthur M. Mason,
Chief Administrative Justice

Chief Justice Marilyn M. Sullivan,
Land Court

Chief Justice Christopher J. Armstrong,
Appeals Court

Chief Justice William J. Tierney,
Municipal Court

Chief Justice F. G. Poitrast,
Juvenile Court

Chief Justice Samuel E. Zoll,
District Courts

Chief Justice Alfred L. Podolski,
Probate & Family Court

Mary Jane Moreau,
Manager, Planning & Development

AIM: ESTABLISH A FY90 BUDGET STRATEGY

Massachusetts Idea #13

Change the perception that monies flowing through the courts are not being used by the courts but are earmarked by statute for use by other agencies.

Status: (9) - Implement
Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #9

The judiciary should make the position of not wanting a *confrontation* clear to both the executive and legislative but that such a position can not be maintained indefinitely.

Status: (9) - Implement
Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #3

Chief Justice Liacos must exercise a strong leadership role in addressing the funding shortfall.

Status: (9) - Implement
Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #15

Hire personnel consistent with the language of applicable statutes.

Status: (9) - Implement
Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #19

Suggest that all entry fees be made available for the use of the courts.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #20

A delegation of selected judges should meet directly with critical actors in the legislature. The Chief Justice should conduct a press conference with this delegation in the presence of the media showing unified support.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #23

The Chief Justice should actively garner support from all court personnel (probation association, clerk's association, etc.), the press, to convey the potential devastation to the courts which will occur without additional funding.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #24

This group should privately address selected members of the legislature before going public for support of the court in seeking additional funding. The legislature should be made aware of how far the judiciary is willing to go.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #26

It should be emphasized that in the absence of adequate funding the constitutional mandate of the courts is not being observed.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #27

In instances where large small claims exist utilize 2nd/3rd year law students to help resolve cases where parties agree to utilize them.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #30

Suggest that legislators must file an impact study with every bill involving the courts. The impact study must be made part of the filling of the bill.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #34

The legislative and executive mindset must be changed vis a vis the judicial budget.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #36

If reduction in force is required, some financial inducement should be offered for early retirement e.g., a half-year's pay. This would help retain the most talented, less senior court personnel.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #12

The Chief Justice of the Supreme Judicial Court should explain to to the Governor that he will be exercising a strong role on behalf of the judiciary in pursuing additional funding.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #14

Vacant positions should be filled just prior to the end of the current fiscal year.

Status: (8) - Contingency

Importance Rating: 10 Effort Rating: 0 Score: 100

Massachusetts Idea #16

Inform the Chief Justice that it is the resolve of this group that we fill all existing vacancies which we feel should be filled now rather than later.

Status: (1) - None Given

Massachusetts Idea #17

Inform the Chief Justice that the consensus of this group favors taking advantage of the public's anti-crime posture and using it to garner additional financial support for the courts.

Status: (1) - None Given

Massachusetts Idea #18

Inform the Chief Justice that this group favors the use of an additional tax (possibly the sales tax, possibly no specific tax at all) dedicated to the support of the courts.

Status: (1) - None Given

Massachusetts Idea #7

The Chiefs should unanimously support an action such as a tax surcharge and approach the Speaker directly. Let the Speaker and the legislature *use* the judiciary as the whipping boy for the tax surcharge.

Status: (1) - None Given

Massachusetts Idea #8

The judiciary should take advantage of the timing of the legislature working on a tax proposal by taking the initiative and presenting the judiciary's position.

Status: (1) - None Given

Massachusetts Idea #21

A specified, targeted supplemental budget should be proposed by the Chief Justice to the legislature. In describing what is needed, all requests should be tied directly to the existing criminal justice crisis.

Status: (1) - None Given

Massachusetts Idea #22

The Chief Justice must limit the approach for support for the courts to a concern for the judicial system being able to cope with the criminal justice system generally rather than competing with other valid special interests.

Status: (1) - None Given

Massachusetts Idea #2

Any proposed funding scheme would have to have the full, active support of the Court and the Bar.

Status: (1) - None Given

Massachusetts Idea #10

The judiciary should go on record as being in support of some type of tax which will provide some funding to the courts under the umbrella of an *anti-crime* effort.

Status: (1) - None Given

Massachusetts Idea #25

Vacancies should be filled based on the determination of each respective Chief Justice on the basis that each applicable (essential) position is critical in terms of efficiency and effectiveness.

Status: (1) - None Given

Massachusetts Idea #1

Propose a *crime prevention tax* piggybacked onto an existing tax e.g., sales tax, which would be dedicated entirely to the court system.

Status: (1) - None Given

Massachusetts Idea #28

Priority of different types of cases should be identified and promulgated as one response to the current budget crunch.

Status: (1) - None Given

Massachusetts Idea #29

Attempt to remove all types of cases possible from the courts. Examples, child support cases, noncriminal traffic cases.

Status: (1) - None Given

Massachusetts Idea #4

The court system must exercise its constitutional role as a valid, equal cobranch of government.

Status: (1) - None Given

Massachusetts Idea #31

As a part of publicizing the problems associated with limited funding, identify how normal, routine cases can not be handled either routinely nor within anticipated time frames.

Status: (1) - None Given

Massachusetts Idea #32

Solicit support from such organizations as Chambers of Commerce by explaining the real impact that reduced funding is having and will have in the future and how that relates and effects their interests in attracting new business, etc.

Status: (1) - None Given

Massachusetts Idea #33

Prioritize the needs of the courts relative to various programs and services provided by the courts.

Status: (1) - None Given

Massachusetts Idea #5

Identify all possible sources of taxation which would be less offensive to the public than a sales tax piggyback approach.

Status: (1) - None Given

Massachusetts Idea #35

Every presiding judge should (1) give his/her legislator support for a tax increase and (2) identify the needs of the courts which could only be funded by a portion of the tax increase.

Status: (1) - None Given

Massachusetts Idea #6

Explain to the public the reality of the existing budget crisis and how it will impact on the citizens.

Status: (1) - None Given

RHODE ISLAND

PARTICIPANTS

Frank G. Eldredge, Sr.,
Manager, Judicial Revenue

Gail Higgins Fogarty,
General Counsel

Joan M. Godfrey,
Assistant Administrator

Joseph P. Ippolito,
District Court Administrator

Robert Johnson,
Assistant Administrator

Alice M. Macintosh,
Chief Supervisory Clerk

Susan McCalmont,
Assistant Administrator

William Melone,
Assistant Administrator

Robert J. Melucci,
Judicial Planner

Anthony T. Panichas,
Deputy Administrator/Clerk

Edward J. Plunkett, Exec. Dir.
RI Judicial Systems & Sciences

James J. Roberts, Director,
Office of Public Information

AIM: IMPROVE THE PERCEPTION OF THE JUDICIARY

Rhode Island Idea #9

Encourage the Chief Justice to activate the Advisory Board on a regular basis to address the definition of court-wide priorities. Time-lines should be established for implementation.

Status: (9) - Implement
Importance Rating: 10 Effort Rating: 3 Score: 70

Rhode Island Idea #21

Encourage the Chief Justice to make a *State of the Judiciary* speech to the public each year. Attempt to have the local media do a live broadcast with analysis following the speech.

Status: (9) - Implement
Importance Rating: 10 Effort Rating: 7 Score: 30

Rhode Island Idea #15

Encourage the Chief Justice to appoint one or more judges to regularly contribute articles on judicial issues of interest to the public.

Status: (9) - Implement
Importance Rating: 6 Effort Rating: 6 Score: 24

Rhode Island Idea #10

The State Court Administrator's Office should provide data on which the Chief Justice and other judges make decisions, rather than their relying on hearsay which may be inaccurate or incomplete information.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 8 Score: 20

Rhode Island Idea #12

Encourage the Chief Justice to strongly support innovative change to improve the court system generally. As an example, each courtroom should have a data processing work station.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 9 Score: 1

Rhode Island Idea #17

Utilize schools and universities to help inculcate an understanding of the role of future lawyers and lay people i.e., to change their false perceptions of the real world which they have as a result of television shows about lawyers e.g., Perry Mason.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #6

Develop a centralized spokesperson to represent the judiciary in response to any and all controversial issues.

Status: (8) - Contingency

Importance Rating: 10 Effort Rating: 9 Score: 10

Rhode Island Idea #8

Involve the state and local bar in creating a more favorable perception of the judiciary. Establish an ongoing formal and informal dialogue on issues involving both which impact on the public perception of the court.

Status: (8) - Contingency

Importance Rating: 7 Effort Rating: 10 Score: 0

Rhode Island Idea #3

Improve public information about the courts and access to the courts to reinforce the fact that the public has access and equal treatment.

Status: (8) - Contingency

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #20

Develop special *focus* programs for television affiliates which would allow the judiciary to be *proactive* in explaining programs and approaches to the public which are designed to address particular problems. Efforts must be coordinated.

Status: (8) - Contingency

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #13

Establish a pilot project of having an automated workstation in a courtroom. Use to educate judges, clerks, etc. as to how their job can be enhanced with its use.

Status: (8) - Contingency

Importance Rating: 4 Effort Rating: 10 Score: 0

Rhode Island Idea #11

Judges need to be educated as to the capabilities available with automation. They should pursue all of the aspects of automation which would increase effectiveness and/or efficiency. Example, use electronic mail or fax machine.

Status: (8) - Contingency

Importance Rating: 5 Effort Rating: 10 Score: 0

Rhode Island Idea #4

Provide information packets about the court to prospective jurors.

Status: (7) - More Information Needed

Importance Rating: 9 Effort Rating: 10 Score: 0

Rhode Island Idea #1

Improve the "merit" system within the judicial branch by having affected personnel respond by referencing the problem based upon a rationale of semi-independence rather than being totally "political" in approaching problems.

Status: (6) - Muse

Importance Rating: 5 Effort Rating: 10 Score: 0

Rhode Island Idea #2

Provide for the public review of judges on a four or six-year basis i.e., "Should John Doe or Mary Smith be retained?"

Status: (5) - Infeasible

Importance Rating: 5 Effort Rating: 10 Score: 0

Rhode Island Idea #22

Encourage the Chief Justice to make a public speech with appropriate media coverage only on major issues and/or changes in the judiciary. The idea being that the Chief Justice would set the stage for a "proactive" judiciary.

Status: (5) - Infeasible

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #7

Develop a coordinated public relations program for all members (judges/staff) of the judiciary i.e., a scripted presentation. Judges should agree on an agenda of critical issues to be addressed and appropriate responses.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #18

The public should be made aware of the problems associated with complex cases and increasing caseloads and why they can not be processed quickly. Further, the "real" constraints on the judiciary e.g., more prisons will mean more taxes.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #19

The judiciary needs to be proactive in resolving issues confronting the system and the public needs to be made aware of what the courts are doing in response to existing problems.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #23

For the public relations effort to be most successful, professional, competent specialists need to be added to the staff.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #24

Existing judicial employees must be educated as to the advantages associated with positive public relations between the public and the court system e.g., telephone etiquette.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #25

The goals of the judiciary should be made clear and promulgated throughout the court system to all employees. The Chief Justice, Advisory Board and administrators should regularly identify and promulgate the "mission" of the judiciary to all employees and the public. *NOTE: Idea #25 and Idea #26 were combined.*

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #16

Judges *and* staff should regularly make appearances before groups of all kinds. Efforts should be made to initiate contacts with groups rather than waiting on requests.

Status: (3) - Successful

Importance Rating: 10 Effort Rating: 7 Score: 30

Rhode Island Idea #14

Establish the use of bar-coding of records on a pilot basis. This would allow faster and more accurate tracking of data.

Status: (1) - None Given

AIM: IMPROVE COMMUNICATION WITHIN THE JUDICIARY

Rhode Island Idea #2

Initiate an open communication process by frequent staff briefings, meetings i.e., intercourt and intracourt communication. The District Court is an example of good intracourt communication (frequent and regular meetings. In the absence of good cause, attendance at scheduled meetings should be required in order to communicate most efficiently. Interruptions e.g., telephone calls should not be allowed during meetings. *NOTE: Idea #2 and Idea #3 were combined.*

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 5 Score: 50

Rhode Island Idea #5

Key decision makers should meet on a regularly scheduled basis, if possible on a "retreat" basis to focus on a specific topic e.g., prioritizing limited resources, with the assistance of a facilitator to enable them to develop consensus building skills. Any special meetings should have an outside skilled facilitator. Such special meetings should also be held away from any office setting. *NOTE: Idea #5 and Idea #4 were combined.*

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 5 Score: 50

Rhode Island Idea #8

Agendas for regularly scheduled meetings should not be set until suggestions have been received (and encouraged) from all members of the staff by the individual holding the meeting.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 5 Score: 50

Rhode Island Idea #12

Activate existing (or form new) union/management committees for the specific purpose of improving communication between the parties.

Status: (9) - Implement

Importance Rating: 9 Effort Rating: 5 Score: 45

Rhode Island Idea #6

Communication can be enhanced y identifying unifying strategies on which each decision maker can act. Once the strategies are agreed upon, each actor can focus on how best to utilize individual strengths to sell the strategy.

Status: (9) - Implement

Importance Rating: 10 Effort Rating: 9 Score: 10

Rhode Island Idea #15

Individuals within a given level in the hierarchy should not be allowed to go outside the normal chain of command.

Status: (8) - Contingency

Importance Rating: 10 Effort Rating: 1 Score: 90

Rhode Island Idea #10

The *Full Court Press* (newsletter) should be utilized in at least two additional ways: (1) to explain what communication is and is not and (2) to regularly provide helpful hints to improve the communication process throughout the system.

Status: (8) - Contingency

Importance Rating: 10 Effort Rating: 8 Score: 20

Rhode Island Idea #11

Improved communication should be given a high priority throughout the judiciary. Example would include statements from decision makers encouraging greater communication among and between the four courts.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 4 Score: 60

Rhode Island Idea #13

To the extent possible, each manager/supervisor should meet "one-on-one" to (1) resolve problems and (2) encourage support for initiatives.

Status: (4) - Goal

Importance Rating: 5 Effort Rating: 3 Score: 35

Rhode Island Idea #9

Continuous analysis of operations should require regular input i.e., identification of problems and proposed solutions from throughout the organization.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 8 Score: 20

Rhode Island Idea #7

Issues must be depersonalized in order for effective communication to take place i.e., the receiver should be objective in evaluating what is being said by the sender who should also express him/herself objectively.

Status: (4) - Goal

Importance Rating: 10 Effort Rating: 10 Score: 0

Rhode Island Idea #1

Open the communication process by providing a clearinghouse to verify fact from rumor.

Status: (4) - Goal

Importance Rating: 7 Effort Rating: 10 Score: 0

Rhode Island Idea #16

Utilize "peer pressure" to limit inappropriate i.e., inaccurate communication (information).

Status: (4) - Goal

Importance Rating: 4 Effort Rating: 10 Score: 0

Rhode Island Idea #17

The State Court Administrator should have regularly scheduled closed door, uninterrupted meetings (away from phones, in a private conference room) with key staff.

Status: (3) - Successful

Importance Rating: 10 Effort Rating: 5 Score: 50

Rhode Island Idea #14

An "open-door" policy should be established and acted upon by supervisors/managers to improve communication. Success can only be achieved with this policy if it is perceived as being credible and not a sham.

Status: (1) - None Given

Appendix D. First SJI Project Evaluation

Sid Snellenburg's
State Justice Institute Grant
EVALUATION

I found the session held in Atlanta to have been:

_____ Extremely worthwhile
_____ Worthwhile
_____ Somewhat beneficial
_____ Of little value
_____ Worthless

Of the 8 ideas generated on August 25, 1989, which were found to be worthy of implementation:

_____ Have been implemented already
_____ Are in the process of being implemented
_____ Implementation pending
_____ Remain under serious consideration
_____ Being studied further
_____ Implementation not currently planned

Of the 11 ideas generated on August 25, 1989, which were found to be worthy of further consideration:

_____ Have been implemented already
_____ Are in the process of being implemented
_____ Implementation pending
_____ Remain under serious consideration

_____ Being studied further
_____ Implementation not currently planned

Additional Comments:

Appendix E. Survey Instrument

SESSION EVALUATION
Sid Snellenburg's
State Justice Grant

I found today's session with TIM to have been:

_____ Extremely worthwhile
_____ Worthwhile
_____ Somewhat beneficial
_____ Of little value
_____ Worthless

I believe the most beneficial aspect of today's session was:

I believe the least beneficial aspect of today's session was:

I believe the session could be improved by:

Other Comments:

Have you previously been involved in an *informal group problem solving* session?

( ) Yes ( ) No

If yes, how would you compare TIM with your *informal group problem solving* experience in terms of the three characteristics below?

TIM is in terms of	Superior	Better	Comparable	Worse	Inferior
Communication	( )	( )	( )	( )	( )
Solutions	( )	( )	( )	( )	( )
Structure	( )	( )	( )	( )	( )

Have you ever participated in a *formal committee* assigned to address/resolve a problem(s)?

( ) Yes ( ) No

If yes, how would you compare TIM with your *formal committee* experience in terms of the three characteristics below?

TIM is in terms of	Superior	Better	Comparable	Worse	Inferior
Communication	( )	( )	( )	( )	( )
Solutions	( )	( )	( )	( )	( )
Structure	( )	( )	( )	( )	( )

Have you ever engaged in a *nominal group techniques* session as a method of problem solving?

( ) Yes ( ) No

If yes, how would you compare TIM with your *nominal group techniques* experience in terms of the three characteristics below?

TIM is in terms of	Superior	Better	Comparable	Worse	Inferior
Communication	( )	( )	( )	( )	( )
Solutions	( )	( )	( )	( )	( )
Structure	( )	( )	( )	( )	( )

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