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IMPACTS AND OUTCOMES OF CREATIVITY IN ORGANIZATIONAL SETTINGS

By

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Table 1

SPECIFIC OUTCOMES ORGANIZATIONS CAN EXPECT IF THEY INDUCE AND NURTURE CREATIVE ACTIVITY

ECONOMIC OUTCOMES

- Organizational Effectiveness
- Efficiency
  - Quantity
  - Quality
  - Cost
- Adaptability
  - New, Improved Goods & Services
  - New, Improved Methods
- Flexibility
  - Quick Reaction to Unexpected Problems and Opportunities
- Faster Project Completion Times
- Lower Turnover
- Lower Absenteeism
- Enhanced Functional Performance
- Matrix Teams and Adhocracy Successfully Implemented
- Clear Organizational Goals
- Organizational Structures Designed Appropriately to Situations

PEOPLE OUTCOMES

Cognitive

- New Higher Level Thinking Skills Associated with Adaptability
- Improved Strategic Thinking
  - Marketing Strategy Development
  - Product Development
  - Top Management Goal Setting
  - Interlocking Goal Setting
  - Interfunctional Cooperation
- Customer Satisfaction Focus
- More Rational Organizational Decision-making
- New Leadership Skills for Managers at all Levels
  - Coaching, Facilitating and Consulting Skills Replace Directive Approach
- Congruency Between Personal and Organizational Goals

Affective

- Motivation, Commitment and Involvement
- Job Satisfaction
- Teamwork
- Job Enrichment
- Trust
- Confidence and Initiative
- Personal Development
  - More accurate Hiring and Placement of People
  - Better Matching of Interests and Skills to Job and Career
- Better Performance Appraisal Procedures

IMPACTS AND OUTCOMES OF CREATIVITY IN ORGANIZATIONAL SETTINGS

Creativity can be developed, increased, and managed by organizations. Increased creativity can improve virtually every kind of organization. Specific results from organizational creativity can be identified including new products and methods, increased efficiency, greater motivation, job satisfaction, teamwork, focus on customer satisfaction, and more strategic thinking at all levels. Commitment is needed by senior management to do what is necessary to plan and implement increased creativity. The organization must determine the results it intends to achieve through creativity, and understand that success will not come overnight. A long term commitment must be made in order to develop creative behavior and reap the benefits that will result.

This paper will discuss the specific outcomes organizations can expect if they induce and nurture creative activity. These outcomes are organized into two categories: *economic* outcomes and *people* outcomes. Many of the outcomes do not fit exactly into either category and bounce back and forth between the two. Economic outcomes are those which provide economic benefits directly to the organization. People outcomes are those which provide changes to the ways that people in an organization think, feel, and do things. People outcomes are split into two kinds: cognitive and affective. Cognitive people outcomes reflect changes in mental and behavioral processes. Affective people outcomes reflect changes in attitudinal and emotional processes. Most of the cognitive and affective people outcomes are valuable end results in themselves. Most of them also lead to economic outcomes as well.

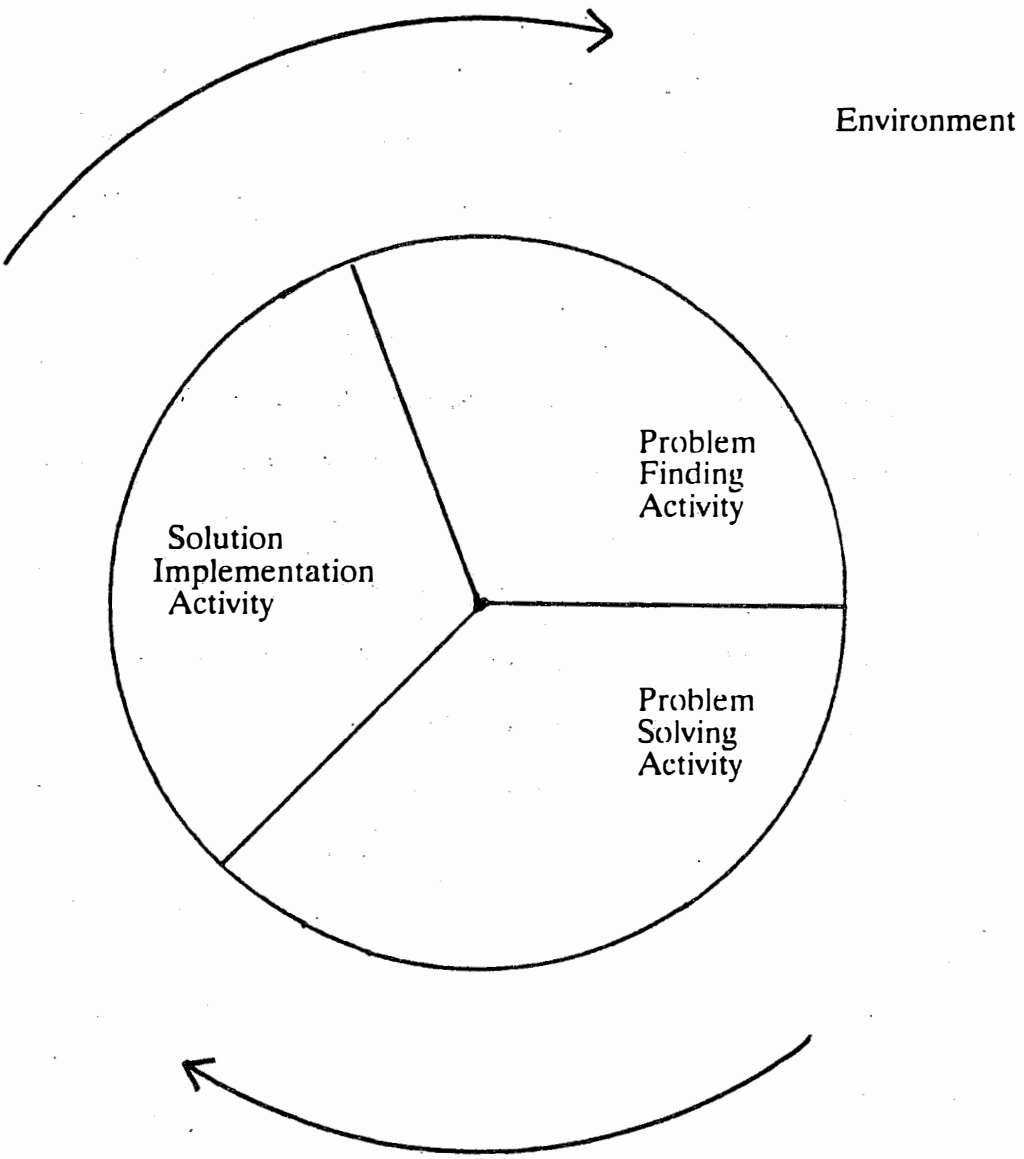
Economic outcomes include new and improved products and services; increased quantity and quality; lower costs; quicker reactions to unexpected events; reduced turnover and absenteeism; clearer corporate visions and goals; more appropriate and successful organizational designs; and faster project completion times.

Cognitive people outcomes include higher level thinking skills associated with organizational adaptability; improved strategic thinking and customer satisfaction focus throughout the organization; new managerial leadership skills based on coaching, facilitating, and consulting; greater personal and organizational goal congruency; more rational decision making; interlocking goal setting across departments and between hierarchical levels; and inter-functional co-operation. Affective people outcomes include increased job satisfaction; trust; motivation; commitment; involvement; group interaction; teamwork; job enrichment; personal development; initiative; confidence; more accurate selection and placement of people; better matching of interests and skills to jobs and career paths; and better performance appraisal procedures. Table 1 summarizes these expected outcomes of organizational creativity.

How the outcomes can be realized is easier understood by first defining the term, organizational creativity. Creativity in organizational settings can be defined as an ongoing process of problem finding, problem solving, and solution implementation activity (Basadur, in press, 1991). Problem *finding* means continuously finding new problems to work on. Problems can be current or future changes, trends, challenges, and opportunities, as well as things that are going wrong. Problem finding includes identifying new product or service opportunities by anticipating new customer needs. It also includes discovering opportunities for improving existing products, services, procedures and processes, and for improving the satisfaction and well-being of the organizational members. It also means redefining seemingly unsolvable problems in new ways that permit solutions from new insights. Problem *solving* activity means developing new and useful solutions to problems found. Solution *implemention* activity means making new solutions work successfully for the good of the organization and its members. Implementation usually leads to more new problem finding activity. New problems are created as the organization's environment reacts to the impact of each new implemented solution. Thus, simply put, creativity in organizations can be

Figure 1

CREATIVE ACTIVITY IN AN ORGANIZATION



conceptualized as a process of continuous improvement, a continuous finding and solving of problems and implementing the new solutions for the betterment of the organization and its members. Figure 1 depicts this circular ongoing process.

THE NECESSITY OF CREATIVITY FOR ORGANIZATIONAL EFFECTIVENESS

Creativity is a necessary requirement for organizational effectiveness (O.E.). Mott (1972) showed that effective organizations have two major but very different characteristics: *Efficiency and Adaptability*. Efficiency means optimizing, stabilizing, and polishing current methods (routines) to get highest quantity and quality at the lowest cost possible. Adaptability means changing current methods to make new levels of quantity, quality and cost possible. Both new methods and new products result from adaptability. High efficiency means excellent mastery of routine and high adaptability means high rate of positive change of routine. A routine is a standard method prescribed by which the main work of the organizational unit is carried on. Every organization (including every organizational sub-unit) turns out some kind of product (a needed good or service). Efficient organizations know their "customer" and their "product" and they master carrying out their routine. Efficient organizations also are flexible, that is, they have the ability to respond to sudden temporary changes or interruptions to the routine. They can deal with unexpected problems and opportunities which cause disruptions and get back to their normal routine quickly, without getting stuck in "red tape." Efficiency, including flexibility, is vital in the short run.

Adaptability refers to continually and intentionally changing routines and to finding new, ongoing, better ways to do business. Adaptable organizations anticipate and seek out problems and opportunities, develop timely solutions ahead of time, and stay abreast of new methods and technologies available externally; organizational members readily accept good new ideas and make sure that new solutions and new techniques get installed and maintained; and acceptance of the new solutions and techniques is widespread and prevalent across all organizational sub-units.

Table 2

ORGANIZATIONAL ADAPTABILITY AND CREATIVITY

Organizational Adaptability	Organizational Creativity
• Anticipating problems before they occur (and developing timely solutions) • Staying abreast of new methods that may be applicable to the technology of the organization	Problem Finding and Problem Solving
• Prompt acceptance of new solutions • Prevalent acceptance of new solutions	Solution Implementation

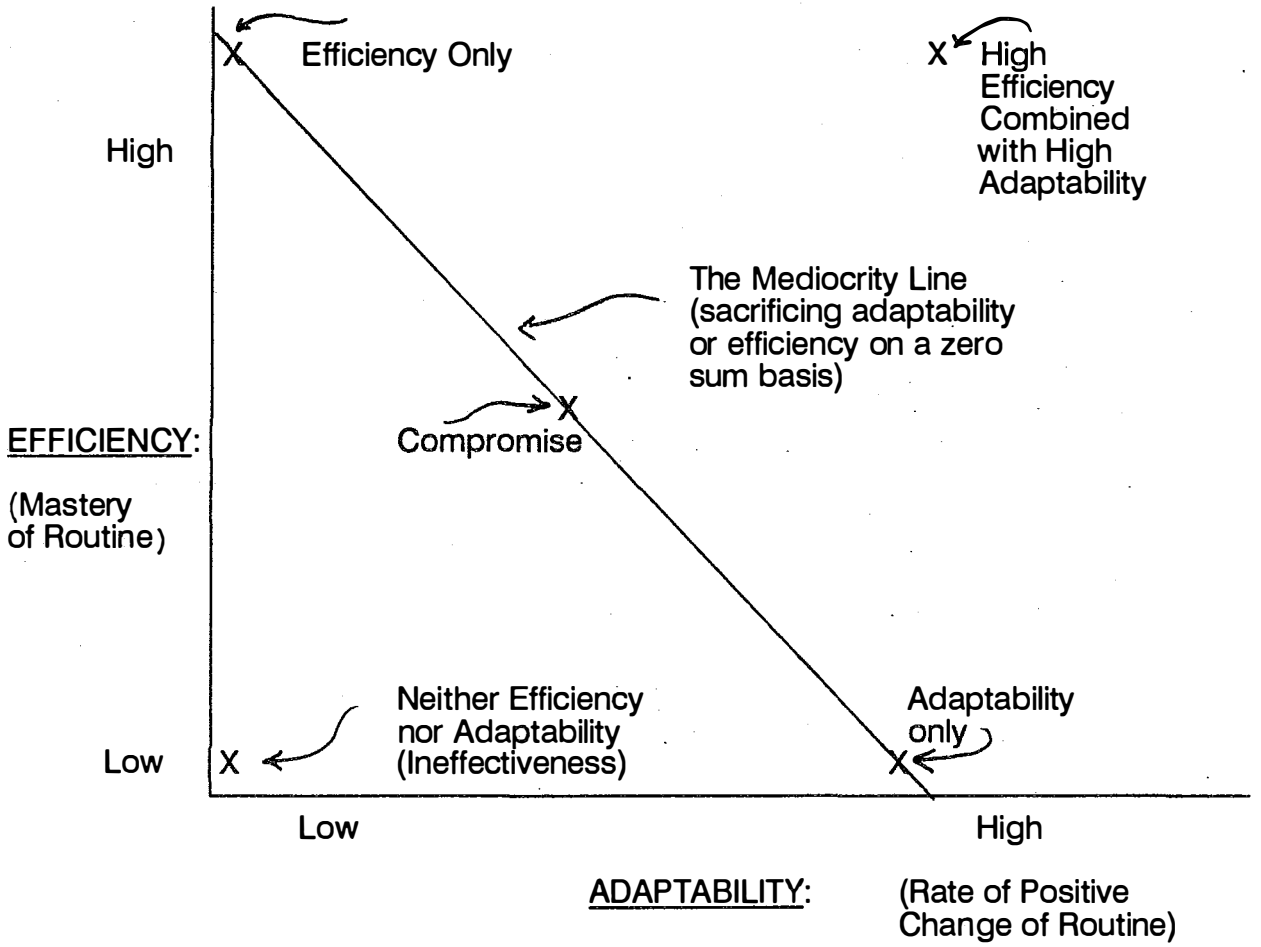
Mott's definition of organizational adaptability is interchangeable with organizational creativity. The first two components of adaptability represent problem finding and problem solving. These are (1) anticipating problems before they occur, and developing timely solutions and, (2) staying abreast of new methods that may be applicable to the technology of the organization, that is, being dissatisfied with the status quo and seeking out opportunities for improvement. The latter two components of adaptability, (3) prompt and (4) prevalent acceptance of new solutions, represent solution implementing. Table 2 provides a summary of these parallels. The terms creativity and adaptability will be used as virtual synonyms for organizational settings for the remainder of this chapter.

In the past, organizations could be effective by concentrating on only efficiency. Efficiency is needed when what needs to be done is well known and how to do it more perfectly is the issue. Said another way, the problems are well defined and getting the best solutions possible is the focus. The product or the method or both are well known; optimizing them is the challenge. Today, adaptability is equally important because of the rapidly accelerating rate of change with which we live (Toffler, 1970). Adaptability is needed when what needs to be done is not clear or is constantly changing. What to do is the issue; identifying the right problems for solving is the focus. The product or method or both are not well known. Discovering them is the challenge. Once they are defined, the challenge will evolve later into one of optimization. The most effective organizations are the ones which combine high efficiency with high adaptability. The least effective are low in both. Mediocre organizations unnecessarily compromise, trading off one for the other in a zero sum fashion as illustrated by the mix line in Figure 2.

Many organizations have developed a high efficiency, low adaptability mix because they became comfortable with being surrounded by predictable technology, markets, and other environmental factors. Many companies from the time of the

Figure 2

THE ORGANIZATIONAL EFFECTIVENESS GRID



industrial revolution through even as late as the 1970's were able to function this way. As Figure 2A shows, a moderate level of organizational effectiveness (represented by the shaded area) is sufficient under these stable conditions. In the past several years, with rapidly accelerating changes in technology and environment, organizations have been becoming aware of the need to achieve a better combination of adaptability and efficiency. In Figure 2B, the shaded area represents the enlarged area of organizational effectiveness available from achieving a high level of both factors.

To increase adaptability, many organizations are trying to find ways to change the way their employees think. They believe them to be overly "efficiency minded", focussing too much on achieving excellence in performing their routine work assignments daily. This same tough minded orientation toward optimizing the day-to-day routine tends to work against attempts to also be adaptability-minded, to find new opportunities, find new problems (called opportunistic surveillance by Simon, 1960), develop new routines and new products, and solve old persistent problems in new ways. People who are overly efficiency-minded tend to regard adaptability as less important and put total effort to ensure that their current approaches are as near to perfect as possible (Leavitt, 1975). They fear they must compromise efficiency to gain adaptability, believing the relationship is zero-sum. They worry they will suffer a sharp, immediate drop in efficiency if they attempt to increase adaptability. They assume that people cannot be creative and efficient simultaneously.

ORGANIZATIONAL CREATIVITY AS A PROCESS

Problem finding is a foreign concept to many people in organizations. People tend to wait for others to find problems for them to solve rather than taking the initiative to seek them out. Important problems that cross department lines are often avoided ("That's not our problem"). When confronted with problems and new situations, people tend to evaluate before investigating and to respond without thinking, precluding inquiry toward a fuller understanding of the situation. Premature assumptions and the inability

Figure 2A

PREDICTABLE TECHNOLOGY AND MARKETS

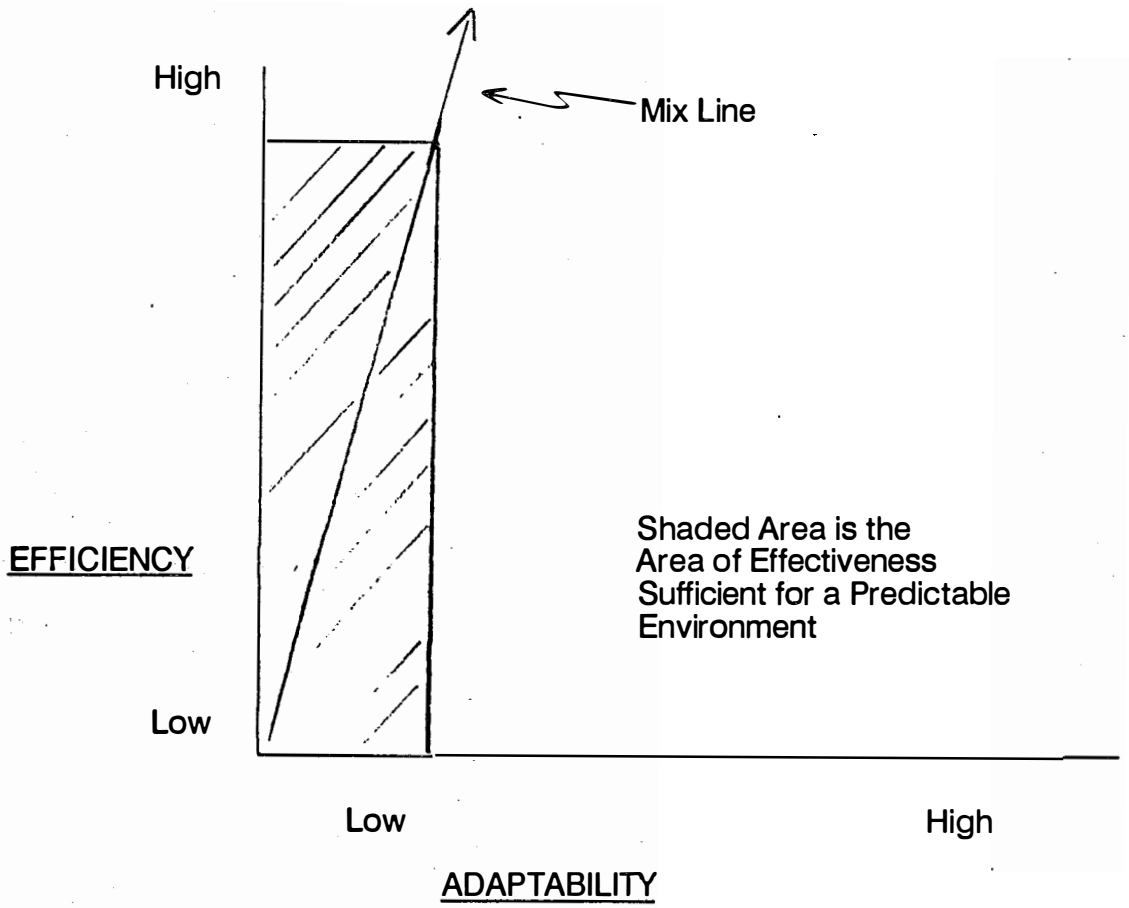
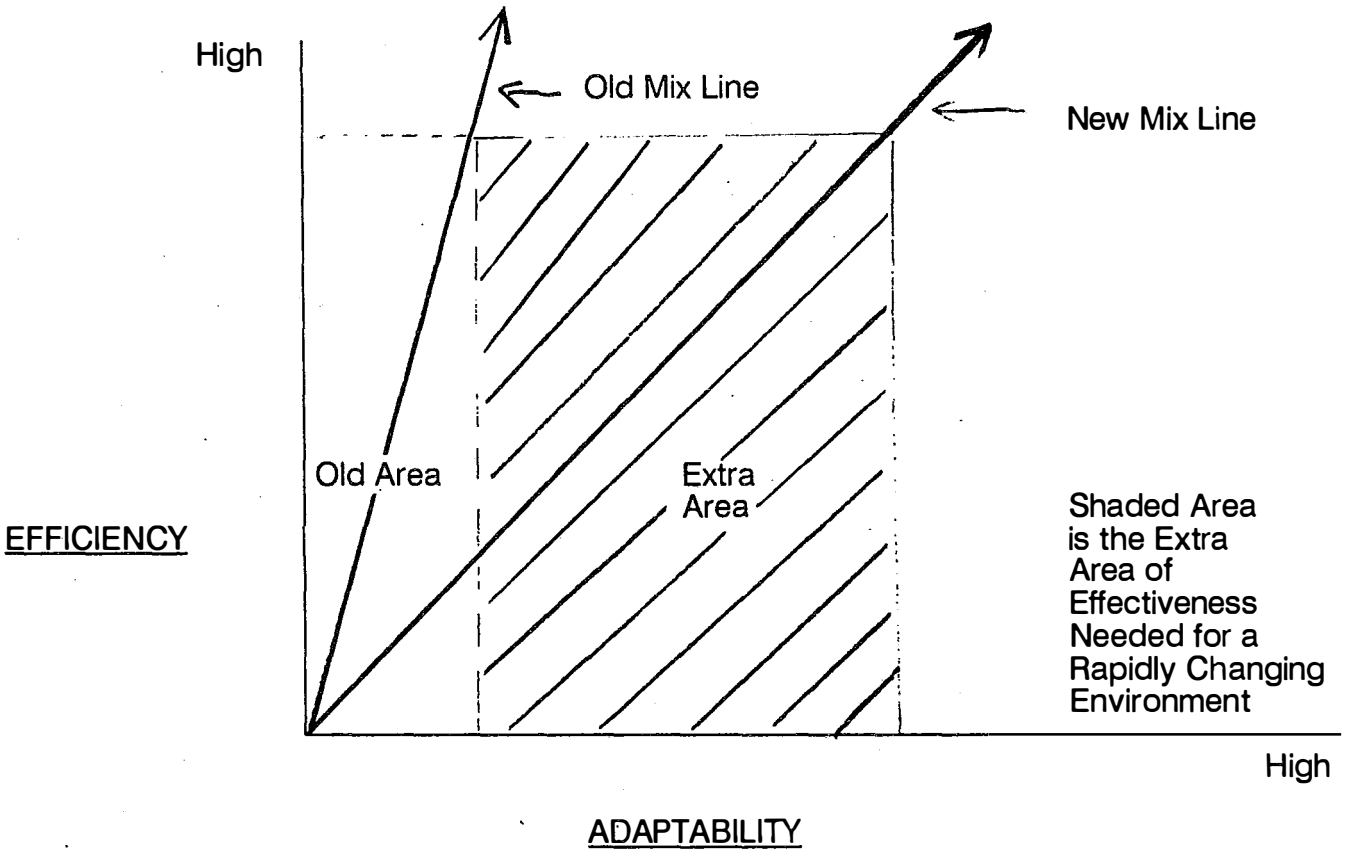


Figure 2B

RAPIDLY CHANGING TECHNOLOGY AND MARKETS



to understand that the same situation may give rise to diverse goals and motives for different people leads to an over emphasis on problem solutions rather than refreshing, new problem definitions. Too often people believe that they "already know what the problem is", assume facts about situations and people based on preconceived notions and hearsay, and fail to observe and investigate the obvious. Finding a balance between narrowing a problem too much (missing the "big picture") and broadening it too much (not breaking complex problems down into sufficiently smaller component sub-problems) is often difficult.

Even when problems have been found and defined, solving them creatively and imaginatively is a difficult task for many people. Individuals frequently believe there are certain ways of doing things that are unchangeable. When confronted with new ideas, they are often prematurely critical, which shuts down the flow of productive thinking. There is a desire to be perceived as practical and economical above all things, so that judgment comes into play too quickly. Ideas which have some merit but are imperfect are discarded rather than developed. Traditionally taught to be very logical, people often start thinking that every problem has only one right answer. They have difficulty in handling ambiguity, and, tending to believe that things are either right or wrong are unwilling to take detours to reach goals. Putting too much faith in past experience causes new ideas to be prematurely judged and not tried out. This is unfortunate, because even if the ideas do not work when tried, merely experimenting with them provides further learning and the potential for stumbling upon unexpected outcomes and opportunities. Decisions are directed toward a single goal, whereas many problems involve multiple goals that need simultaneous attention.

Implementing creative solutions to new unprogrammed problems is something most people in organizations are not very good at doing although they may be good at implementing routine solutions to routine problems. People who are viewed by the organization as proposing too many unusual ideas have great difficulty in getting their

ideas accepted and implemented (Kirton, 1987) because others feel uncomfortable, and mistrust such activity. It is easier to back off and not to try to implement new solutions even when the solutions are exciting and creative. People are often afraid to implement a creative solution because they fear the solution is not perfect and will be criticized. An overly strong desire to conform to accepted patterns, to not make mistakes, to learn the rules for career success, plus the fear of making a fool of oneself or being ridiculed leads organizational members not to be too inquisitive, nor to express ignorance or ask "Why?" about matters that seem to be accepted or "known" by everyone else. This leads to the "group think" phenomenon (Janis, 1971) in teams.

There are many reasons why team work is often uncreative. Group members are unable to communicate clearly in simple terms or to define terms well; they assume that "we all know what we mean." This fuzziness causes time-wasting frustration. Also, group members are unaware that individuals have different styles and methods of thinking and problem solving. Group problem solving is inefficient if people are unable to synchronize these differences. Groups jump into "solving the problem" without first considering how they will go about solving it, then flounder. Unaware of the concept of "process," and focussing only on "content," their meetings tend to be undisciplined discussions where facts, ideas, evaluations, action steps and new problems are interjected randomly. Interfunctional teams get mired by arguing about territorial issues rather than focusing on the problem at hand. Leaders of meetings do not know how to act as facilitators of group process. Rather than coaching the group toward innovative action, the leaders steer the group toward their own points of view. Rarely will groups critique their meeting process to examine how their future meetings might be improved. Groups sometimes are satisfied to just "hold" meetings; they are not cohesive and will not stick their necks out to develop bold, innovative solutions.

NEW THINKING SKILLS AND ATTITUDES ASSOCIATED WITH ADAPTABILITY

For all these reasons, and others, inducing the creative process of Figure 1 is not easy in many organizations. Many people do not think this way. There is a tendency toward a leave well enough alone attitude. Serious inadequacies in attitudes, thinking skills, and behaviors needed for organizational creativity can be identified within and among individuals and within and among groups including informal groups, functional work teams, task forces, and matrix teams. These inadequacies are common in organizations and ultimately block creativity within and among whole organizational units such as sections, departments, divisions, and corporations (Elbing, 1978; Basadur, in press, 1991). The inadequacies exist partly because our formal training has often ill-prepared us for the creativity needed in today's world of work.

The problems people encounter in business, industry, and other organizations, can be placed between two polar opposites (Simon, 1960). One pole is characterized by problems of a more "programmed" nature. Solutions to these problems are based upon applying rules learned during former experience on the job (what's worked before?) or in school. A knowledge of sequential, linear procedures pre-designed to handle similar situations and good judgment and logic are needed for these problems. Solutions are of a "select the right formula" nature. The second pole is characterized by problems of a more "non-programmed" nature. Solutions require additional skills such as problem sensing and anticipating, environment scanning, opportunity discovery, fact finding, problem defining, creating and selecting from diverse options, and figuring out how to gain acceptance for and get new ideas implemented successfully. They require the use of imagination as well as sound judgment and logic. These problems often have never been encountered and have no pre-set rules to guide their handling and are sometimes caused by changing circumstances. Typically less structured and more unpredictable, often the main job in handling these problems is a more strategic one, to

discover and define the right question. Sensing, anticipating, and defining the problem is often more difficult than solving it.

Traditional formal training primarily addresses the more programmed kind of problems. Individuals tend to learn formulas, problem types, and rules and procedures in high school, university, and in bureaucratic organizations. Business and engineering schools stress this kind of thinking which actually is dysfunctional for the non-programmed of problems for which higher levels of initiative, imagination and tolerance of ambiguity are vital. It is difficult for people to do strategic thinking at any level of the organization if all they have been taught and rewarded for is applying set procedures to set problems. For most individuals working in organizations, there is a general tendency for programmed activities to overshadow non-programmed activities. If a person has a series of problems to deal with, those that are more routine and repetitive will tend to be dealt with before those that are unique and require creative thought. This is called Gresham's Law of Planning (Simon, 1977).

Until recent times, many organizations have stressed programmed thinking skills for problem solving to maximize efficiency on routine processes and procedures. Organizational members have been rewarded for learning and applying repetitive business principles and solutions that have proven successful over the years. It is becoming increasingly important, however, for people to be skilled in solving both kinds of problems. The rapid changes in markets, technologies, customers, and environmental demands and the increasingly global nature of competition are making the skill of finding out what needs to be done very important.

To do the creative process in Figure 1 and achieve the outcomes in Table 1 requires a change in how the people in organizations think, feel, and behave, both as individuals and as members of groups. Organizations that want to be creative must take deliberate steps to overcome shortcomings such as group think, focus on content instead of process, and lack of acknowledgment of individual style. Fortunately,

Table 3

SUMMARY OF ORGANIZATIONAL INTERVENTION METHODS

(Structured Activities to Induce and Reinforce New Behaviors)

TYPES

DIAGNOSTIC INTERVENTIONS	PROCESS INTERVENTIONS	STRUCTURAL INTERVENTIONS	INDIVIDUAL INTERVENTIONS
Designed to Gather Data and Create a Setting for Feed-back and Diagnosis for Improvement.	Designed to Impact Organizational Processes and Behaviors. Members Examine and Improve Behaviors and Relationships	New Organizational Structures and Designs to Cope with Changes in People and Environment.	Designed to Change People to Increase Their Effectiveness.

EXAMPLES

1. Survey Feedback	1. Meeting Process Skills Development	1. Matrix Designs Designs	1. Counselling & Coaching
2. Open Systems Planning	2. Team Building	2. Job Redesign	2. Training & Development
3. Problem Definition Mapping	3. Intergroup Meetings	3. Reward Systems	3. Replacement & Termination Practices
4. Confrontation Meetings	4. Conflict Management	4. Performance Management & Performance Appraisal Systems	4. Recruitment & Selection Practices
		5. Control & Accounting Systems	5. Career Planning
			6. Life Planning

Reference: Beer, 1980

research shows that attitudes, behaviors, and thinking skills essential for on the job creative activity can be taught and learned successfullly (Basadur, Graen and Green, 1982). To get them used every day, permanently, various organizational, group and individual factors must be managed (Basadur, in press, 1991). Achieving positive permanent change is a major field of study in industrial and organizational psychology called Organizational Development (O.D.). Beer (1980) identifies four types of O.D. interventions: diagnostic, process, individual, and structural (see Table 3). Diagnostic interventions are problem finding in nature and serve to unfreeze organizational members, that is, get them ready for change. Process interventions and individual interventions provide new attitudes, behaviors, skills, and processes to groups and individuals and cause unfreezing and changing. Structural interventions are often designed to refreeze changes. They make sure new appropriate behaviors are solidified rather than "fade-out." Structural interventions include changing appraisal and reward systems, jobs (e.g., job enrichment), and organizational designs (e.g., moving from functional design to matrix management or adhocracy).

Organizations can expect the specific outcomes outlined in Table 1 is they systematically tailor and manage an O.D. process anchored by training in creative thinking for unfreezing and changing. Additional interventions must be integrated for refreezing. One important outcome is an organization full of people equipped with new, higher level, creative thinking skills which are critical to organizational adaptability. Mastery of the new adaptability skills can help a company accelerate corporate problem finding, problem solving and innovation. Accelerating problem finding means more problem anticipation, problem identification, and new project initiation. It also means people tackling problems which are difficult to classify as belonging to one specific department or another. Usually people let such problems fall between the cracks. ("It's not <u>our</u> job".) Accelerated problem finding also includes improved fact finding, more creative and more accurate problem defining, and increased *catalyzing*. Catalyzing

means influencing others to participate in finding and solving problems that affect the business. It also means generating optimism and pragmatism about finding ways around roadblocks and installing new ideas. Inducing creativity develops people into superior problem solvers, communicators, and team players. A person with high adaptability thinking skills does the following seven things.

1. Keeps an open mind; separates divergent thinking from convergent thinking. This means he or she:
    - avoids making premature negative judgments (both when working alone and with others).
    - tends not to jump prematurely to a conclusion as to what the "real problem" is.
    - visibly values and welcomes other points of view as opportunities to strengthen a solution, rather than as a threat to one's ego.
    - displays a low tendency to prematurely criticize a fledgling idea.
    - is visibly open minded to new ideas and approaches.
    - often pauses deliberately to try an unusual or creative approach to solve a problem instead of automatically relying on an old approach.
    - reacts positively to new ideas.
2. Thinks divergently. This means he or she:
    - thinks up many novel options and ideas.
    - searches out many facts and different points of view.
    - defines problems in multiple and novel ways to get a variety of angles on them.
    - creates unusual, thought provoking ideas.
    - extends effort deliberately to get more options and ideas when it seems that all the options and ideas have already been exhausted.

3. Thinks convergently. This means he or she:
    - open-mindedly develops and uses unbiased criteria for selecting from among options, rather than letting preconceptions or hidden motives sway the decision.
    - makes wise choices from among problem definition options in terms of "broadness" vs "narrowness" of focus.
    - does not wait for the "perfect" answer; instead takes reasonable risks within time limits.
    - pins down implementation plans clearly, simply and specifically.
    - follows up on implementation; does whatever it takes to insure successful installation of the chosen solution.
4. Differentiates between defining and solving problems. This means he or she:
    - patiently finds specific, relevant facts before attempting to define the problem.
    - turns premature, negative evaluations of ideas by others into positive challenges and keeps the creative process flowing; changes negative "We can't because ... " statements into positive "How might we? ... " statements.
    - questions assumptions for degree of validity.
    - skillfully clarifies and breaks problems down into smaller, more specific sub-problems or opens them up into broader, less limiting objectives as needed.
5. Places higher priority on the process of good, long-term decision-making than on getting a short-term result. This means he or she:
    - will sacrifice optimizing a short-term outcome if a suboptimal approach or even making a mistake will provide an important learning which will be reapplied many times over the long run.

- realizes that some problems require a long time to solve and does not expect immediate results.

6. Places overall organizational objectives first when defining problems or getting solutions. This means he or she:
   - is not concerned over another function getting credit or more resources as a result of a team solution that was clearly the best one for the organization as a whole.
   - shares information and ideas freely with other functions hoping to advance the organizations' overall business.
   - does not go into meetings determined to block any ideas involving change to his or her own function or department.
   - gets teams to develop problem definitions and solutions which transcend individual and functional considerations.
7. Values and exhibits attitudes associated with effective problem solving. This means he or she:
   - is willing to tackle problems and infuses an optimistic "can-do" atmosphere around him or her.
   - shares bad news as quickly as good news to aid problem solving.
   - shows leadership in pinpointing problems and opportunities for improvement throughout the organization.
   - convinces others to join up and form teams to meet new challenges.

FOSTERING CREATIVITY TO INCREASE PEOPLE AND ECONOMIC OUTCOMES

Major corporations are slowly but surely beginning to become aware of the need for widespread competence in higher level thinking skills and are beginning the complex job of learning how to induce and integrate them into day to day organizational life. These new thinking skills help increase the organization's adaptability, that is, to

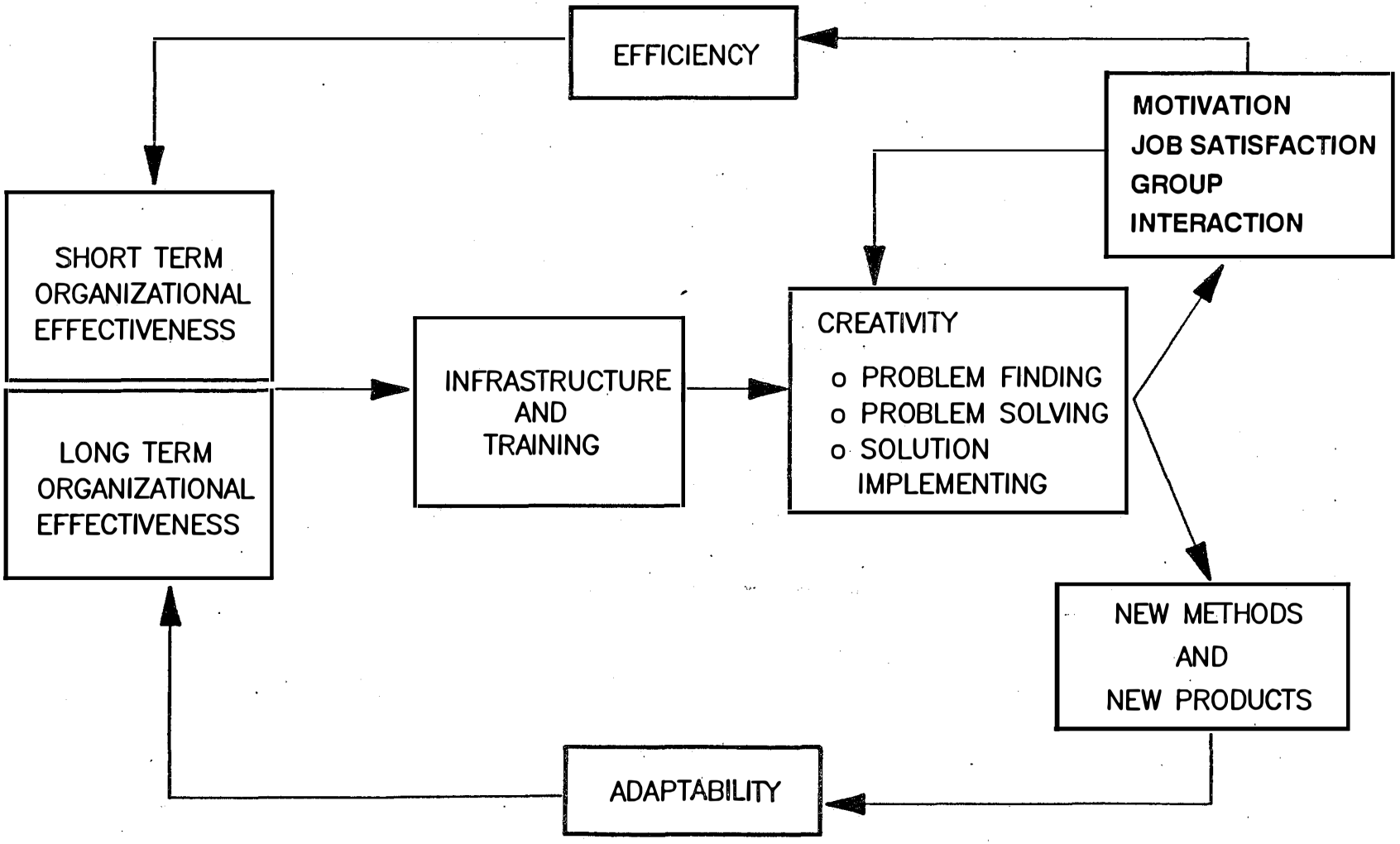
intentionally change its routines to find new, ongoing, better ways to do its business. Adaptable organizations anticipate problems and develop timely solutions. They stay abreast of new methods and technologies externally that are applicable to the activities inside the organization. Their employees accept good new ideas promptly and make sure that new methods get installed and institutionalized. Acceptance is prevalent across all the organizational sub-units. Adaptability means making deliberate improvements ongoing basis.

The concepts of efficiency and adaptability provide a basis for modeling the mechanism by which creativity provides people and economic outcomes which lead to both long and short term effectiveness. Research shows that creativity skills can be taught. Organizational members can learn how to be more skilled at problem finding, problem solving and solution implementing through training. The application of these new skills can be induced in the work setting if appropriate additional organizational interventions are made. Each organization needs to create its own unique combination of interventions (see Table 3). Structural interventions work particularly well to refreeze new creativity skills learned. For example, setting up an infrastructure of formal creative problem solving teams with clear, measurable goals which are important to the organization's strategy works well. It works even better if the performance appraisal process is changed to include rewarding application of the skills learned. Setting up an employee suggestion system infrastructure with rewards tied to usage of the creative skills learned also works well. The top employee suggestion systems in the world, many found in Japan, are set up exactly this way.

Providing the right training and creating the right infrastructure to obtain continuous problem finding, problem solving, and solution implementation activity (see Figure 1) leads to several outcomes. First, it leads directly to new and improved products and methods for doing work which are economic outcomes associated with adaptability. Second, it leads to increased motivation and job satisfaction. These are

Figure 3

FOSTERING CREATIVITY TO INCREASE MOTIVATION, JOB SATISFACTION, TEAMWORK, AND ORGANIZATIONAL EFFECTIVENESS



people outcomes which serve as intermediate steps leading to economic outcomes associated with efficiency. Motivated people work harder at all aspects of their jobs. Not only do they put even more effort into creating new methods, goods and services, they also put more effort into their routine work. They produce a higher quantity and quality of current goods and services at lower cost. Costs are further decreased because job satisfied people result in lower absenteeism and less turnover. Third, group interaction and teamwork are increased. People find themselves interested in problems identified by their colleagues and begin working together. The solutions they develop provide economic benefits in turn. Importantly then, people outcomes such as motivation, job satisfaction and group interaction are the key outcomes because they serve as the vital intermediate step in achieving economic benefits. Figure 3 models how the variables discussed above relate to one another and how an organization can achieve increased long and short term effectiveness by deliberately fostering increased creativity.

CREATIVITY AS A MEANS FOR MOTIVATION

Creativity as a means for motivation is an important idea. In industrial and organizational psychology, the *need* theories (Campbell and Pritchard, 1976) comprise one major category of motivation research. Two important motivational need sets identified in this category are the need for competence (White, 1959) as well as for curiosity, activity, and exploration (Berlyne, 1967). These two needs and related motives provide the most direct explanation of creativity as a means for motivation. People show a desire to master their environment and such mastery is intrinsically pleasurable and independent of outside rewards. This need for competence is aroused when people are faced with new challenging situations and dissipates after repeated mastery of the task. Intrinsic motivation is also consistent with early animal research and in later studies on humans showing that curiosity, activity, and exploration are enjoyed by organisms for their own sake. People develop negative attitudes toward

repetitive tasks and experience fatigue and boredom. Berlyne suggests that people want to take action to maintain appropriate levels of stimulation through new activity. The implication is similar to Herzberg's (1959) research suggesting that challenging jobs are motivating in themselves. Herzberg proposes that the way to motivate most people is by redesigning and enriching their jobs so that the work itself provides the opportunity for personal growth, challenge, stimulation, learning, and recognition. Herzberg's research on job satisfaction suggested a dual factor theory: satisfaction and motivation can be achieved only by factors intrinsic to the work itself, such as challenge and opportunity for growth and achievement; extrinsic factors can only remove dissatisfaction about hygiene conditions such as adequacy of salary, security and working conditions. A comprehensive review of intrinsic motivation is provided in Deci and Ryan, (1985).

Other motivation theories in the management literature are consistent with the model in Figure 3. The need for achievement as a primary driving force for motivating organizational members has been convincingly advanced by McClelland (1951, 1961). High need for achievement is characterized by a strong desire to assume personal responsibility for finding solutions to problems, a tendency to set moderately difficult achievement goals and take calculated risks, a strong desire for concrete feedback on task performance, and a single-minded preoccupation with task and task accomplishment. Routine or unchallenging work does not usually activate the achievement motive; non-routine, challenging work usually does. Enriching an employee's job by providing opportunities for variety, autonomy, and responsibility enhances the motivation of people who have a sufficient need for achievement. McClelland has also demonstrated that the need for achievement can be increased by stimulating people to set challenging work goals for themselves. By giving employees the encouragement and opportunity to find and solve their own challenging problems,

and implement their own solutions, the process modelled in Figure 3 taps into both the need for achievement and intrinsically rewarding work as forces for motivation.

Problem finding activity is the key to another theory of motivation called the goal setting theory. Locke and Latham (1990) have shown that when people are given a chance to choose their own goals (the problem anticipating and problem sensing aspect of problem finding), and the more specifically they state those goals (the problem definition aspect of problem finding), the more motivated they become to achieve those goals. A goal is defined in terms of a challenge which the individual has consciously decided to pursue. Psycho-cybernetics research (Maltz, 1961) identifies a "hidden mechanism" within people which automatically propels them toward achieving a goal successfully once a clear, specific vision of that goal (problem) has been pictured (defined) in the mind.

According to Maslow's theory of motivation (1954), offering people at work the opportunity to satisfy their higher level needs for self-esteem and for self-actualization through work accomplishment is the best way to motivate them. Maslow discourages attempts to motivate people through lower level, economic based needs such as security and salary. Esteem needs represent an individual's need for self-respect, the respect of others, and a stable, positive self-evaluation. An individual's need to self-actualize includes the need to realize one's potential and one's uniqueness. Encouraging organizational members to use their creativity to seek out work related challenges of their own (problem finding) and achieve them successfully (problem solving and solution implementation) helps satisfy both needs.

The vast majority of North American business and industry is still organized and managed on the simplistic, so-called "scientific management" concept made popular by Frederick Taylor (1967) which states that people at work are motivated by one dominant factor: money. This is the concept of "economic man." In spite of much research to the contrary showing that most people at work are multi-motivated (money does play a role

but in a complex way), most managers ignore it and continue to manage by simplistic, economic formulae. Fortunately, using creativity as a formula for motivation can be almost as simple as using money. There are many straightforward ways to design an infrastructure and provide training which will induce creativity for motivation and ignite the process modelled in Figure 3. The next section elaborates on this idea.

Experience proves that there is no real reason why increases in efficiency and adaptability cannot occur simultaneously. A good example is the Japanese manufacturing experience of the past 30 years. Japanese products were of such poor quality in the 1960's that they were the subject of derision around the world. The phrase "Made in Japan" aroused visions of cheap, poorly made junk. These same Japanese products are now world renowned for their high quality. This change is no accident. Japanese companies made gradual, deliberate, major changes to their management practices. In manufacturing, they began to develop systems of quality circles (Q.C.C.), statistical process controls (S.P.C.), and employee suggestion systems (E.S.S.), to get employees involved in identifying and solving problems of quality. They set goals of "zero defects" and made continuous progress toward such goals. By recognizing a major problem and beginning to deliberately change their routine, they increased their adaptability. By increasing their adaptability, they improved efficiency. They not only improved the quality of goods produced, but they also reduced costs. They developed a new manufacturing paradigm called "do it right the first time" and taught workers to take the responsibility for quality themselves. Although this appears to slow down production time, it actually speeds things up and reduces costs since fewer quality inspectors are required and customer complaint investigations and service calls are minimized. Therefore, installing the new routine went hand-in-hand with higher efficiency.

PEOPLE OUTCOMES

Some of the creativity outcomes in Table 1 are directly economically oriented and others are not. Importantly, as Figure 3 indicates, the secret to obtaining the economic outcomes lies in obtaining the non-economic, people outcomes first. The rest of this paper will attempt to identify these key people outcomes first then later describe the economic outcomes. The Japanese Employee Suggestion System (E.S.S.) infrastructure and training is one specific example of how the model in Figure 3 can be readily implemented. Fully described in Basadur (1990), this example will be used to identify several outcomes achievable by creativity in any organization. The practical success and theoretical consistency of the Japanese employee suggestion system infrastructure and training demonstrates that important, people-oriented, organizational outcomes such as teamwork, motivation, commitment, employee involvement, and job satisfaction can be achieved through creativity. Such people outcomes can, in turn, be associated with direct economic outcomes such as new and improved products, methods, and greater efficiency.

When the top managers of these leading companies were asked what the primary objective of their employee suggestion system was, none of them mentioned new products or new methods. Furthermore, none of them mentioned lower costs, or higher profits. In fact, none of them mentioned any direct economic outcomes. All of them emphatically said that motivated people was the primary objective; most added some combination of job satisfaction, group interaction, and commitment. They all said that they have found when people are given the opportunity to engage in creative activity, that is to find their own problems, solve them and implement their own solutions, they become very motivated. When their solutions are accepted and recognized, they want to participate even more in such creative activity (see Figure 3). More important, they are motivated to work harder on doing their routine work better as well. They are eager to turn out more quality, more quantity, and lower cost, that is, to

increase organizational efficiency. When asked how they had learned to concentrate on motivation first, and let economic outcomes fall into place afterwards, the Japanese managers replied, "Why, in your North American text books on management."

It is not uncommon for each employee in top Japanese companies to devise and implement as many as 100 new suggestions per year. Employees are trained from the first day on the job that research and development (R&D) is *everybody's* business. For example, in one company of 9,000 employees, 660,000 employee suggestions were implemented in one year. Of these, 6,000 were new products or product improvements. The remainder were new methods (e.g., simplifying jobs, accelerating procedures and work flow). Creative activity is deliberately induced on the job in these companies. The first day hired, employees are trained that problems (discontents) are "golden eggs." One should be constructively discontented with one's job and with the company products and seek out ways to improve them. Employees are encouraged to publicly post problems that they sense and anticipate in their work. They are then encouraged to interact with their co-workers to solve such problems and demonstrate that their solutions are implementable. When all three phases are completed (problem found, problem solved, solution implemented), a suggestion can be submitted and is automatically accepted. Monetary awards are provided for each such implemented suggestion and shared by the participating members. Larger awards are given for suggestions of greater scope, but the vast majority of the suggestions get small rewards. The real rewards, as far as the employees are concerned, are intrinsic to the creative activity itself.

This entire systematic approach of using E.S.S. to induce creativity to foster motivationas an intermediate step to achieving short and long term organizational effectiveness follows the model in Figure 3. In contrast to this intrinsically based approach, participation in most North American employee suggestion systems is rewarded extrinsically, and there is no intermediate step. Usually, a few employees

suggest a few big ideas that save the company large sums of money and win major cash awards for themselves. The top Japanese employee suggestion systems emphasize large numbers of small ideas with everyone participating. While small monetary awards are given for every implementable suggestion and larger awards are given for ideas of greater scope, the vast majority of suggestions win only small awards. The more important rewards are the feelings of accomplishment, recognition, and growth, not the money. The motivation induced is recognized as the indispensable intermediate step to efficiency and adaptability.

The model in Figure 3 serves to point out that there are deliberate means that organizations can develop to induce creative activity on the job. The Japanese employee suggestion system is merely one way to do so. Its practical success and theoretical soundness demonstrates that outcomes such as teamwork, motivation, commitment, employee involvement, and job satisfaction can be achieved through creativity. These people outcomes in turn help achieve direct economic outcomes including new and improved products and methods as well as greater efficiency in current products and methods.

Strategic Thinking

Japanese managers in these successful companies are trained to help their employees to think more strategically as they find, solve, and implement problems and solutions. Both managers' and employees' performance appraisals are tied to their suggestion performance, that is, to their creativity. Company goals are clearly articulated and specific objectives and subgoals are communicated downward to guide individuals and teams. Thus, their selection of problems is in alignment with strategic corporate needs. While Quality Circle group activity (Q.C.C.) is carefully managed to be a concentrated attack on major theme problems identified by upper management, it also provides a regular forum for spontaneous discussion of many other off theme problems. In this way, Quality Circles serve as a deliberate, structural reservoir for new

problem finding to fuel the Employee Suggestion System program. They are part of the infrastructure used to induce creativity on the job as an every day routine.

Focus on the Customer

Another aspect of strategic thinking is focussing one's efforts on customer satisfaction. Understanding that pleasing one's customers is the central purpose of any organization or job is a creative skill. A simple example of deliberately inducing the creative process to increase customer focus is the practice of some top Japanese companies of starting newly hired research and development (R & D) scientists and engineers in the sales department, then gradually pulling them back into the R & D department over a two year period. They serve intermediate stints in other departments along the way including manufacturing and quality control. The purpose is to start new hires interacting with customers. Developing a sensitivity to customer's needs and wants is seen as the most fundamental principle for everyone in the company, and especially for those people whose primary job is to develop new products and services to sell. Sales is as close to the customer as one can get, and new R & D people begin their careers at the problem finding stage - learning the customer's problems and needs. These problems and needs then serve as opportunities for new and improved products and services as solutions. Throughout any organization, the more that creative problem finding skills are honed and used, the greater the focus that the employees place on satisfying their customers. Everyone working in an organization has customers. Some of these customers are external to the organization; other customers are internal. External customers include those purchasing and consuming the goods and services outputted. For example, the external customers of a consumer packaged goods company include supermarkets who purchase the goods and shoppers who consume them. Internal customers include members and departments or groups who need goods or services from other departments or groups in order to do their jobs. The shipping department would be a customer of the production

department. Employees of successful organizations continually try to anticipate and identify their customers' problems even before their customers are aware of them so they can have solutions ready ahead of time. They lead their customers into valuable changes and don't wait to be asked.

Job Enrichment

Proactive creative activity induced by training and the E.S.S. and Q.C.C. infrastructures leads to a continous flow of new methods and new products and provides organizational adaptability. Not only are new problems deliberately anticipated and solved, but acceptance of the new solutions by employees is assured because they have high ownership of the solutions. They are finding and solving their own problems and implementing the changes themselves. In effect, they are redesigning their own jobs which is consistent with a well documented axiom of social psychology: people don't resist change; they do resist being changed, (Coch and French, 1948). Many North American companies have tried to redesign employee jobs along the idea of making the work itself more intrinsically rewarding but have gotten inconsistent results. This is likely because in most cases employees have not been asked to participate in the redesign. Often management decides the new design and imposes it on the employee. The Japanese approach to employee suggestion systems goes one step further - it lets employees be creative and make changes to their own jobs through their suggestions. They enrich their own jobs by being creative. Perhaps this is the missing link for North American companies who have tried elaborate approaches to job redesign and job enrichment and come up dry.

Trust and Clarity of Goals

Two additional outcomes to be expected by organizations which achieve a high level of creativity are trust and clarity of goals. Mott's (1972) comparitive study found that in adaptable, creative organizations, a rational-trust relationship exists . This means that members lower in the hierarchy perceive the leaders above them as fair,

Table 4

ORGANIZATIONAL CHARACTERISTICS AND ADAPTABILITY

RATIONAL-TRUST RELATIONSHIP

- EXTENT TO WHICH INTERMEDIATE LEADERS ARE PERCEIVED AS FOLLOWING THEIR OWN RULES.
- EXTENT TO WHICH INTERMEDIATE LEADERS ARE PERCEIVED AS UNDERSTANDING WORKERS' NEEDS, PROBLEMS, AND POINTS OF VIEW.
- EXTENT TO WHICH TOP MANAGEMENT IS PERCEIVED AS FAIR AND REASONABLE.

CLARITY OF GOALS

- CLARITY OF OBJECTIVES TOWARD WHICH TO WORK
- CLARITY OF RULES, POLICIES, AND GUIDELINES

Reference: Mott, 1972

reasonable, and understanding of their needs, problems, and points of view. They also perceive them as "practicing what they preach." That is, they follow their own rules. They model, coach and nurture creative leadership behaviors. As Table 4 indicates, a second condition that exists in adaptable organizations is clear objectives, goals, rules, policies and guidelines which help guide employees to pick good goals to achieve and good problems to solve. In times of uncertainty and change, setting and communicating clear goals and visions of the future is an especially difficult task. The more ambiguous the circumstances, however, the more vital the task, because as top management goals are set, they guide department goal setting.

Deciding what goals to pursue and how to interlock and align with other departments' goals, and with the external environment, is an important activity in every organizational unit. These same skills in problem seeking and identification are vital in goal setting performance. Units must continually ask, "Are we working on the right things or just working?" Marketing and product development planning activities require strong problem finding and creativity skills. Decisions are future oriented and the data are ambiguous. Goal setting and planning cannot be done adequately by simply extrapolating past data. Many organizations are set up bureaucratically and are interfunctional barriers to creative thinking on complex strategic issues and projects requiring co-ordination. Communication is done by agonizingly slow memo-writing. Teamwork is required for today's fast changing environments, but matrix teams and other new organizational designs such as team based adhocracy are hampered by non-creative attitudes, behaviors and procedures. The traditional, non-creative, linear approach of making sequential decisions as one department "hands off" its part of the project to the next is a very slow and inefficient process. It is further slowed by territorial boundary issues and position taking by departments protecting themselves from being blamed for mistakes or not reaching internal, functional goals. Situations are overly

analyzed for fear of making an overly risky decision. This has been called "paralysis by analysis."

New Creative Leadership Skills for Managers

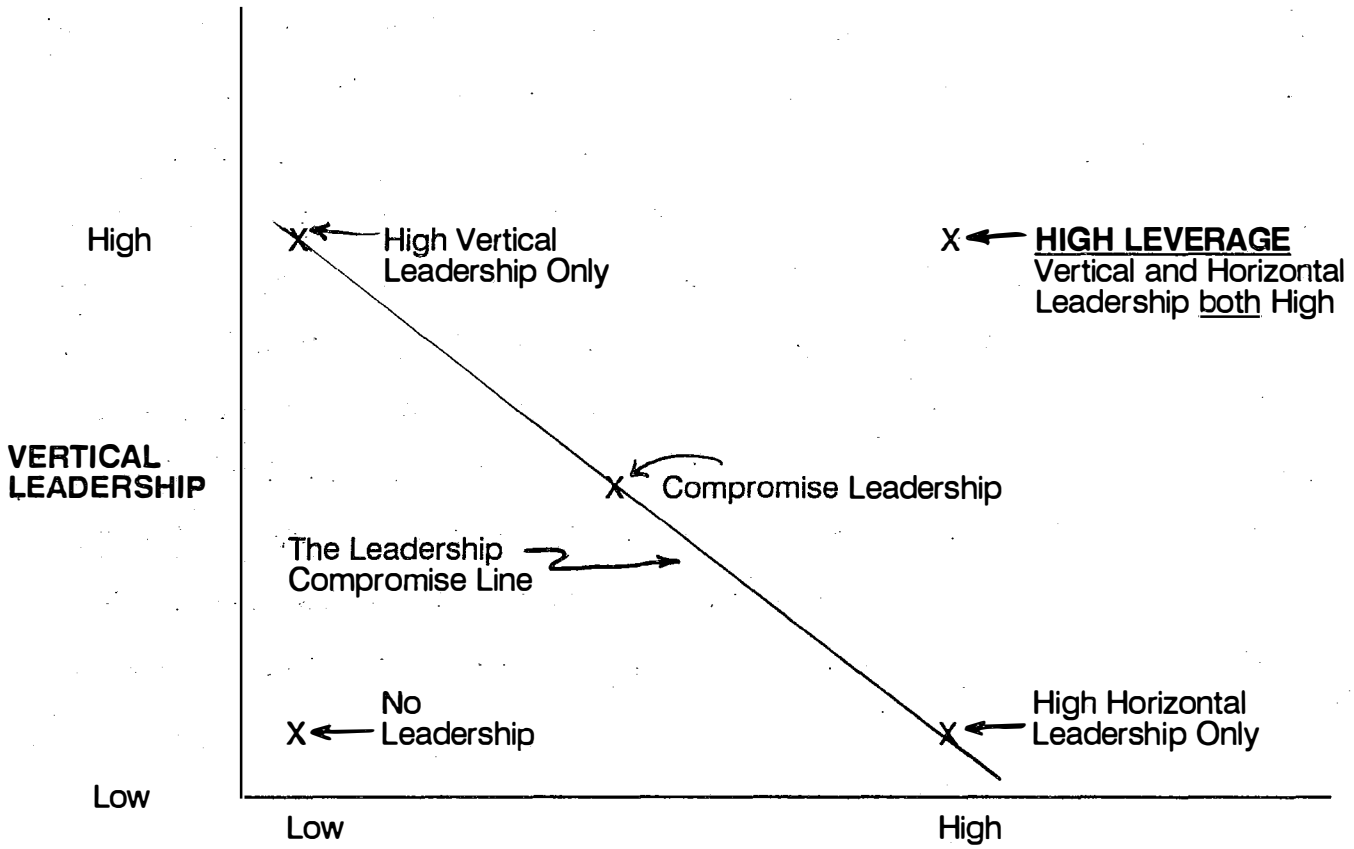
To be successful in our new age of global competition and accelerating change, managers must learn how to lead creatively. Creative leadership skills include inducing others to initiate problem solving, providing consultation, sharing problems with others to enlist their help and transferring problem ownership to them. How to get others to take ownership of problems, and create and implement new solutions can be taught and learned. Functional leaders must learn to *lead* rather than to administrate, to become facilitators and coaches rather than order givers. Instead of telling them what to do and how to do it, they must learn to ask their subordinates, "how might I use my power and experience to help you achieve your goals?" These skills are the reverse to the old-fashioned individual directive approaches to management which still dominate. The management literature is full of references calling for the new skills, but few offer any remedies. Inducing organizational creativity is such a remedy (Basadur et al, 1982), however, and one specific outcome is a set of managers and supervisors who possess the new skills.

Improved Interfunctional Teamwork

For organizations to remain strong in today's accelerated complex, and competitive arena requires an interdisciplinary approach. It is vital to get the knowledge and views of all functions represented and synthesized to manage the business. In interfunctional team work, good problem definition performance, that is, determining the right questions is the key. The subsequent solutions and actions appear obvious once the right questions have been determined. If the focus is put on problem definition first, before solutions are considered, co-operation can almost always be achieved, no matter how diverse the team. If solutions are prematurely introduced, different team members will find fault because they feel their functional positions are threatened. Once

Figure 4

LEVERAGING FUNCTIONAL PERFORMANCE



HORIZONTAL LEADERSHIP

a creative problem definition that cuts to the real goal is agreed, new solutions satisfying everyone can be found in a relaxed, trustful atmosphere. Co-operation is needed when one function's idea may cause another function to have an additional headache, yet the net result is positive for the company as a whole. This is especially important when interfunctional teams work on strategic issues which affect the work of many people, because work gets focussed on the most significant company challenges.

Creative leadership skills are necessary to achieve a synergy of what could be called horizontal and vertical performance. This is especially true in companies which value functional excellence. If highly competent functions learn to work creatively together, the synergy results in a leveraging effect. Vertical leadership emphasizes technical excellence in one's field of work. Horizontal leadership emphasizes excellence in team play, creative problem definition, and long term thinking. It discourages zero-sum thinking which limits solutions to compromises and adversarial bargaining.

The leveraging of functional performance is diagrammed in Figure 4. The vertical axis depicts the degree of vertical performance which means performance within one's function on functional problems. Such performance is largely individual in nature, meets functional goals, and relies on the functional hierarchy to get things done. The horizontal axis depicts the degree of horizontal performance which means performance across as many functions as necessary to solve organizational problems. Solutions usually affect more than one function and may require what appears at first to be sacrifices by some functions. Ingenuity often leads to new solutions requiring no sacrifices at all. Horizontal leadership is largely team-oriented in nature. It meets organizational goals and relies on informal networking to get things done rather than on hierarchial approval. It involves influencing people and developing "big picture" understanding. The best leadership is that which combines high skills in both horizontal and vertical leadership. In Figure 4, this is the point of high leverage and contrasts with low leverage points on and below the compromise line.

The creative, horizontal leadership skills discussed here have also been used successfully for specific applications as diverse as improving union-management bargaining and supplier-customer working relationships (Basadur 1988a, b). Unfortunately, horizontal leadership is sadly lacking in many organizations. Matrix teams soon discover that functional and individual priorities dominate over interfunctional team priorities. The reward system often emphasizes individual effort toward functional goals rather than work devoted to overall organizational goals. The few skilled horizontal leaders available often make enemies as they try to cut through functional boundaries. They get discouraged in the long run and often are slow to be promoted in spite of their good work. Effective organizations find ways to develop and reward proficiency in both vertical and horizontal leadership skill.

Increased Initiative, Confidence, and Rationality

The creative process makes participation in problem solving safe and fun. People don't fear advancing fledgling points of view and don't feel they must be constantly on guard. Fostering creativity encourages people to explore new territory, to find new ideas and to continually bring new energies to problem solving. New breakthroughs are more likely to occur when different points of view are encouraged. People search for new opportunities and new problems, and take a positive attitude that problems can be solved. They value interfunctional problem solving, different points of view, and identifying the right problems to solve. As a result, organizational decision-making becomes more rational. The problems selected are more likely to be aligned with company objectives and defined clearly. Company objectives are more likely to be clearly stated and communicated widely in an atmosphere of trust. Fewer problems are likely to be selected and fewer solutions developed that are based on whims or the power and control needs of individuals or groups. Organizational designs can be more fluid and changed more easily as new technologies and environmental needs arise and

strategies developed. Focus is put on good organizational decision-making toward good goals, not toward maintaining the status quo or other non-rational processes.

Job Satisfaction, Personal Development and Individual Differences

Job satisfaction is one creativity outcome that is both people and economically oriented. This paper has demonstrated how creativity can lead directly to job satisfaction which is an important end product in itself. When job satisfaction is increased, moreover, costs are reduced because there is less turnover and absenteeism. Other outcomes which are both people and economically oriented include better selection, placement, career planning, and personal development for organizational members. For example, if we understand peoples' unique individual thinking and creative problem solving styles better, we can match them with jobs better. Among others, Kirton (1987) and Basadur, Wakabayashi and Graen (1990) provide instruments to identify how styles of creativity vary. Smart organizations can increase personal satisfaction, and development, and synchronize individual differences by using these and other creativity instruments to select, place, and train individuals and to form more effective teams. Managers can give people assignments that match their styles and skills and harmonize individual differences.

The important organizational process of performance appraisal can also be improved by creativity. The process should serve both judgmental and developmental purposes. On the judgmental side, a person's past contribution to the organization needs to be assessed so that rewards can be equitably provided. On the developmental side, his or her strengths and weaknesses need to be identified so they can be built upon and improved. Progressive organizations stress both. Managers who do performance appraisals in this dual, creative manner perform the role of not only judge, but also the role of facilitator and coach. Performance appraisers need to have the creative leadership skill to help the appraisee develop a vision of the future and create opportunities and plans for personal development. Similarly, those being

appraised must be creative and open to change. They must be able to view their deficiencies as opportunities for improvement and be willing to implement changes. All these behaviors and attitudes represent creative process skills of problem finding, solving, and implementation.

ECONOMIC OUTCOMES

Turnover and Absenteeism

The link between inducing creativity on the job and increasing job satisfaction and commitment is important not only from the perspective of having happier and more motivated people at work but in other ways as well. Some of these ways are directly economic. The earlier section dealing with creativity for organizational effectiveness has already shown the direct link to new products and methods. Industrial and organizational psychology research also has found substantial correlations between job satisfaction and commitment and direct economic variables such as lower turnover and lower absenteeism (Organ, 1987; Locke and Latham, 1990). The costs to North American industry of turnover and absenteeism are staggering: billions of dollars annually. Reducing these costs by increasing organizational creativity contributes to higher efficiency in a very concrete, measurable way.

Faster Moving Projects

Creative leadership causes projects to be completed more quickly. Projects move faster, including new ideas for patentable products, cost improvement, meeting test market and national expansion deadlines, and generating new marketing ideas and brand strategies. Thinking is synchronized and the work of different departments is done simultaneously, not sequentially. When project teams operate with the new adaptability skills outlined earlier in this paper, they get more out of problem solving than is possible with traditional methods. Team members share information they might normally hide because they feel they are now among allies. The tendency of group members to see the same problem from differing viewpoints increases each person's

individual understanding and grasp of the situation. Unwarranted assumptions are more likely to be questioned and, as a result, more imaginative and risky ideas flow forth. Individuals are more willing to share problems with others in order to get help and spark new ideas rather than submerge them.

Improved Functional Performance

The work performed within every corporate function can be improved by increased creative skill. Not only can every day functional work be done better by the informal use of creative thinking skills on one's job and in teams, but so can special work on major, targetted problems in formal creative application sessions. Application opportunities range widely. Product Development department opportunities for creative problem solving range from creating small enhancements to existing products to give the marketing and sales departments new advertising ammunition, to inventing totally new products for new customer needs. Marketing problems range from new idea generation for brand promotion and new brand names to complex strategy formulation. Personnel problems may range from "how to make the company reward system more effective" to "what to do with a 20-year employee who no longer seems to be productive" or "is no longer seen as fitting in with new organizational directions." Engineering problems may range from complex technical challenges such as figuring out how to automate a high speed manufacturing operation formerly done manually to mapping out a strategy for a staff engineering group to help a manufacturing plant improve its cost improvement program. The manufacturing function can apply creative thinking to find ways to increase employee involvement and to make new approaches such as "Just in Time" and "Statistical Process Controls" become successful realities rather than philosophical concepts. The purchasing department can use creativity to find ways to reduce the cost of raw materials and to harness the thinking power of suppliers. Sharing important marketing and technical problems openly with suppliers and training and leading them in using the new creative thinking skills opens the door

for teamwork. Suppliers are able to add new knowledge and imagination from their own unique points of view to company problems. This leads to better solutions for both the supplier and the company and mutually rewarding long term relationships. The finance and accounting functions can find more helpful ways to prevent cost, revenue, and profit figures to managers to increase the quality and speed of decision making. Justification of capital investments can be made on more sound bases than just over-simplified short terms "marginal revenue" versus "marginal cost" payout calculations. Often major improvements to customer service, employee motivation, and flexibility and speed of operations are turned down because decision makers are unable to deal with the complexity of quantifying the benefits of such obviously important capital investments. Rather than use creativity to tackle the measurement of the benefits, most financial managers prefer to reject the requests. In short, they lack the creative skill and motivation to develop critical long term improvement justifications.

Increased creativity can accelerate the identification and solution of similar problems and opportunities in every function and department of any organization. Individual work and teamwork are both improved. For most teams, the problem sensing and redefinition process is the most powerful aspect of creativity. Investing creative effort in fact finding and in problem definition often pays off in saving time by finding superior solutions which can be implemented more quickly.

SUMMARY AND CONCLUSIONS

Creativity is an important tool which organizations can use to increase their effectiveness, competitiveness, and long term survival. This paper identifies many specific positive impacts and outcomes that are attainable by organizations willing to take deliberate steps to increase creativity in their day-to-day work. This paper also shows how increasing creativity in organizational settings can be accomplished. Probably most important, this paper attempts to describe and model the mechanism by which the impacts and outcomes are achieved by creativity.

To understand the impacts and outcomes of creativity in organizational settings requires an understanding of the term "organizational creativity." Organizational creativity can be depicted as a process of continuous improvement with three stages: Problem finding, problem solving and solution implementing. To induce this process in an organization is not an easy task, and new thinking skills need to be taught and learned by all organizational members. Infrastructures must be created to get the new skills into every day usage on the job.

Organizational creativity is necessary for organizational effectiveness. It provides organizational adaptability and contributes to organizational efficiency as well. Both adaptability and efficiency are necessary for organizational effectiveness.

The specific outcomes available from increased creativity in organizations can be divided into two kinds: economic outcomes and people outcomes. Economic outcomes are those which provide economic benefits directly to the organization. People outcomes include cognitive and affective processes which change the ways that people in an organization think, feel, and do things. Although some of the economic outcomes result *directly* from creative activity, the majority are valuable by-products of placing priority on achieving people outcomes first.

People outcomes are split into two kinds: cognitive and affective. Cognitive people outcomes reflect changes in mental and behavioral processes. Affective people outcomes reflect changes in attitudinal and emotional processes. The cognitive and affective people outcomes are valuable end results in themselves and most of them also lead to economic outcomes as well. Creativity leads directly to a continous supply of new and improved products and methods for the organization. These are direct economic outcomes which represent adaptability. It also leads to intrinsically motivated, committed and job satisfied people who enjoy getting involved and teaming up with others. These are affective people outcomes which are valuable in themselves but importantly, they lead to vital economic outcomes as well. More motivated people work

harder to increase the quality and quantity of their work and to reduce cost. This represents efficiency. Increased job satisfaction is correlated with reduced absenteeism and turnover, which means lower costs and higher efficiency. Team work results in better problem solving.

Cognitive people outcomes of inducing creativity in the organization include people with new higher level thinking skills which in turn lead to positive economic outcomes. People can be gaught and learn to take the initiative and have more confidence in finding opportunities to improve and enrich their own jobs and increase their focus on customer satisfaction. They are able to seek out and define unstructured, unprogrammed situations and problems better and create and implement new solutions. Improved strategic thinking and rational decision making at all levels result from these new thinking skills as people put long term goals of the organization as a whole ahead of narrow personal or short term functional interests.

The new thinking skills also extend to the new brand of combined vertical and horizontal leadership required in today's world of matrix design, adhocracy, and interfunctional cooperation. These leadership skills include coaching, facilitating and consulting rather than directing. Both functional and interfunctional projects get completed faster and with more ingenuity because of these new skills. People react quicker to unexpected problems and opportunities, increasing organizational flexibility and preserving efficiency.

Organizations which induce creativity also have been found to have higher trust levels and more clarity of organizational goals. This permits people to develop greater congruency between personal and organizational goals. A knowledge of creativity also permits an organization to develop its people to higher levels of their capacity. More accurate hiring, selection, performance apprisal procedures and matching of interests and skills to jobs and careers results from understanding individual differences in creative style.

Improved organizations are eminently possible through creativity, and virtually every kind of organization can benefit. Commitment is needed, however, by senior management to do what it takes to carefully plan, create, and implement an approach to increasing creativity that makes sense uniquely for its organization. This means both a prior identification of the precise results expected and a trust that this effort will succeed but not overnight. It also requires structural changes to ensure new creative skills will be solidified and nurtured. Creative behavior must become mainstreamed and institutionalized over the long term in order to make the outcomes identified in this paper permanent realities.

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