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Design: The Case for a
Feedback/Adaptation Model**

CEO Publication
G 84-13 (61)

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ASSESSING INNOVATIVE ORGANIZATIONAL DESIGNS:

THE CASE FOR A FEEDBACK/ADAPTATION MODEL

by

Thomas G. Cummings

and

Susan A. Mohrman

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ABSTRACT

Organizational change projects entail dynamic complex processes through which organizations and their members learn new ways to function. This paper assesses the appropriateness of traditional evaluation models for the assessment of these projects. An alternative model is proposed.

In the past decade, American organizations have increasingly attempted fundamental and often large-scale changes in their designs. Many of these changes involve alterations in structure, work design, management style, and human resource systems, which aim to counteract some of the deeply-rooted principles of bureaucratic organizations. Quality circles and other participative approaches blur the distinction between manager as "decider" and worker as "executer," and challenge the conception that responsibility for quality, productivity, and work methods lies with specialized groups. Increased emphasis on the use of teams as a central organizing principle, such as self-managing work groups which are designed according to socio-technical concepts, reverses the trend toward increasingly fractionated jobs and division of labor based on sophisticated specialization. Cooperative union-management efforts address problems in the workplace in a collaborative, as opposed to a strictly adversarial, manner.

These approaches both expand the arena of concerns of American organizations and underscore traditional business values. The quality of work life movement, for example, attempts to mobilize worker commitment to valued organizational outcomes, such as efficiency, productivity, and competitiveness. It also emphasizes human outcomes as legitimate and necessary organizational responsibility (e.g., Nadler and Lawler, 1982; Walton, 1973). In part a pragmatic response to the declining competitiveness of American organizations in a world-wide economy during the early '80s, current organizational innovations are also an attempt to address altered societal and workforce values and expectations (e.g., Yankelovich, 198 ; Mohrman and Lawler, 1984). What began as isolated workplace experiments (Cummings and Malloy, 1977) has

become a major questioning of the tenets and traditions of American organizational life (e.g., Ackoff, 1981; Ouchi, 1981; Reich, 1983). Organizations such as Motorola, Honeywell, General Motors, and Proctor and Gamble (e.g., Simpson, 1982; Organization Dynamics, 1983) have begun to embark on nothing short of a change of culture, implying fundamental alterations in behavior and values of organizational members, and transformation of organizational structures and systems.

This flurry of activity has rarely been the product of rigorous research about how to make organizations more effective. Rather, it has been stimulated more by a burgeoning popular press full of descriptive accounts of innovative approaches, with very little "rigorous" evaluation of results or in-depth analysis of the change process. Are these innovative approaches working? Are they making a difference in organizational performance? Are their benefits worth the substantial costs of implementing them? Managers who are deciding whether to try out some of these new approaches want answers to these questions. Those who have made the decision to innovate search for ways of thinking about the evaluation process.

This paper provides an approach to assessing innovative organizational designs, such as the introduction of participative approaches to management and work design. These change programs are "messy" in that the goals, the particular changes, and the implementation process are tailored to specific organizational situations. This tailoring process requires considerable learning about and modification of the change program during implementation. Traditional evaluation methods assume that the innovation is a discrete, describable set of components whose impact can be measured and assessed. They do not capture the reality of organizational change programs, and

discourage innovators from systematically evaluating their efforts. What is needed is a research and evaluation framework which stresses organizational learning and innovation rather than program assessment. Such a framework is developed in this paper.

Complex Organizational Changes

There is a tendency to conceptualize organizational-design innovations as relatively discrete, describable changes. Managers, who are accustomed to purchasing technological equipment and systems, often seek to purchase and install managerial and behavioral-change "packages" which are fully described, include specified implementation steps, and are well-documented as to the improvement in organizational performance which can be expected. MBO programs, supervisory training packages, work redesign projects, pay incentive systems, and quality circles are among the approaches to organizational improvement which have been "put in place" in many organizations. Even social-process approaches, such as team building, third-party conflict resolution, and process consultation, often tend to be viewed as packages which can be purchased to solve operational and management problems.

Reviews of some of these changes programs (e.g., Cummings and Molloy, 1977) suggest that in actuality, the implementation of these innovations is not as simple as the term "install" implies. In fact, implementation is a complicated and organization-specific process. Many innovations fail to affect organizational performance simply because they are never implemented successfully. The program often has to be altered and refined in order to fit the organizational context. Furthermore, one change, such as a new work design, often leads to others, such as extensive supervisory and employee training to

understand and be able to manage the changes. All of these issues make it difficult to assess the impact of these workplace innovations on organizational performance.

A growing number of change projects are aimed at wide-ranging changes in organizational design. Quality of work life programs, for example, set in motion multi-group problem-solving. Structures are established to enable union and management to work cooperatively on matters of mutual concern. Lower-level employees are encouraged to generate solutions to their work-related problems. Many production systems are redesigned or designed from scratch to encourage involvement of workers in problem-solving and decision-making. Utilizing socio-technical principles, such organizations are designed jointly to optimize human and organizational outcomes, and by implication, to provide meaningful work. They often include innovative reward systems, such as gainsharing and profit-sharing plans.

There continues to be pressure from practitioners to package these changes as a sequence of identifiable steps and describable components. A large number of consulting firms promote "packages" and materials for implementing such "programs" as union-management projects, quality circles, and gainsharing experiments. Case studies of some programs, however, underscore the complexity, unpredictability, and difficulty of successful implementation (e.g., Goodman, 1979; Nadler, 1978). Organizations vary in their hospitality to these innovative approaches. What is appropriate in one setting might not fit with the people or the technology in another. Time and again, we have learned that what at first seems to be a change in one aspect of an organization, such as the reward system, actually sets in motion forces to alter other inter-

related aspects of the organization, such as the distribution of responsibility and authority, and the sharing of information (Mohrman and Lawler, 1984).

This has led to approaches to organizational design which contain multiple interventions designed to affect simultaneously related aspects of the organization. Organizations such as Motorola and Honeywell are recognizing that changes in their management culture can best be achieved by addressing structural issues, reward, promotion and selection issues, and development and training issues simultaneously. These conscious attempts to alter fundamentally organizational design often occur in parallel with technological advances such as automation in both the blue-and white-collar sectors of the organization.

In addition, many of these change programs occur in a turbulent economic environment, amidst layoffs and cut-backs. There is growing recognition that the pattern of staffing and promotion, and of increasing wages and benefits of the last three decades cannot be sustained in the future. This stimulates questions and experimentation concerning new structures and motivational practices in organizations. At the same time, many organizations are embarking on large-scale "programs" designed to improve quality and productivity, with interventions designed to increase teamwork and move decision-making downward in the organization hierarchy.

There is increasing realization that complex organizational change is not achieved through packaged approaches. Similarly, it is becoming apparent that there is no simple answer to the question: "Do these new organizational designs really make a difference?" Evaluation methods

must fit with five salient aspects of organizational-design innovations if they are to be effective.

1. Multiple, simultaneous interventions make it difficult to specify the change program or to isolate the aspects of it which are producing observed results. As we have seen above, some of the simultaneous interventions may be related to one another, as in the case of supervisory training to support employee-participation groups. At the same time, unrelated interventions, such as the introduction of automation, may also be introducing change into the organization. This phenomenon is described in the evaluation research literature as "multiple treatment interference" (Cook and Campbell, 1979; Wortman, 1983). It confounds the interpretation of conventional research results.

2. Interventions are tailored to the particular organizational context. Team-building, for instance, may be conducted quite differently in different organizational settings, depending on time, space, and technological constraints. Quality circles may be comprised of intact work groups in one organization, whereas in another organization volunteers from several work groups may constitute a circle. Furthermore, the goals of the same intervention may vary from location to location. Participation groups may be established in one company in order to foster two-way communication between management and workers. In another, the groups may be expected to generate cost savings and productivity improvements. Because change programs are adapted to the local setting, a quite different sequence of events may be described by the same generic term, such as "job enrichment," "participative management," or "quality circles". Furthermore,

generalization from the success of a program in one setting to its likelihood of success in another is difficult. Given the desirability of local adaptation, it is questionable whether general applicability is an important concern.

3. Effective implementation of organizational change is characterized by ongoing refinement of the intervention. Aspects of the initial intervention may change as the organization finds that its organizational systems are incompatible with some of the changes which were originally envisioned. An organization which sets out to create flexible production teams by cross-training individuals and giving them responsibility for scheduling work and monitoring its progress may discover that the work is too complex to permit effective cross training. The organization may continue to try to vest more responsibility in the team, but may abandon the hope for flexible use of team members. During implementation, the original intervention may set additional changes in motion. For example, an organization which is trying to implement a quality-improvement effort may find that it must develop better quality measurement and feedback systems, and must alter its reward systems to reinforce explicitly high-quality performance.

From the perspective of those who advocate rigorous statistical evaluation of innovative programs, the ongoing change and adaptation of the initial change program violates the "integrity" of the program being evaluated (Judd and Kenny, 1981; Wortman, 1983). Organizational members are motivated to avoid failure by quickly addressing unanticipated consequences, by eliminating elements of the change which do not appear to be working, and by providing support for promising, additional design features and implementation activities. Although these modifications

make perfect organizational sense, they provide a dilemma for the evaluation process, since it is unclear just what is being evaluated.

Change, by its nature, is necessarily a dynamic process. One extensive investigation of organization innovation has found that it generally takes at least 14 months after conceptualization to get an innovation implemented, and upwards of three years for it to begin to bear fruit (Kanter, 1983). Many change processes are terminated before the fruit-bearing stage. It is difficult to determine an appropriate time period to observe and measure in order to declare the innovation a success or failure. In the rapidly-changing times in which we live, it is probable that major organizational disruptions will occur during implementation, introducing alternative explanations for the causes of whatever observed results do occur. In our own experience with implementing innovative organizational designs, we have found major disruptions, such as turnover of the top manager, introduction of new, centralized data systems, merger and divestiture, and major up- or down-sizing, to be the norm rather than the exception. This brings into question the plausibility of rigorous, controlled evaluation.

4. Successful implementation of organizational change involves considerable learning by organization members. New organizational designs can operate effectively only if people understand the design and what is expected of them in their re-defined roles. They must also develop the skills and acquire the information necessary to enact the new roles successfully. Implementing organizational designs frequently requires a questioning and alteration of basic assumptions regarding the exercise of authority, the appropriate initiation of ideas, and the motivation of people. This implies learning new behaviors.

Formal training programs can begin the learning process, but beyond that, much of it takes place by trial and error. Organizations are frequently traversing uncharted waters, with little possibility of imitating existing models. In fact, each implementation step becomes the content of the learning. Successful change depends on the creation of a "learning community" in which organizational members start with some ideas about a new way of doing things, and gradually refine their understanding of what it is they are trying to do, and how best to carry it out. The nature of the change as well as people's shared understanding of it are in an ongoing process of transformation. In our experience, those who advocate organizational change generally underestimate the amount of learning required to implement it effectively (Mohrman and Cummings, 1983).

Organizational learning during the implementation process is facilitated by the collection of information. In order to refine and tailor the change process, organizational members must be reflective, and examine evidence of how well the implementation is going and how well ^{the} new design is working. Thus, ongoing processes closely resembling evaluation procedures facilitate organizational learning. Indeed, data collected from any evaluation process are potentially useful for learning how to implement organizational designs.

5. Organizational change programs generally have multiple goals, and are guided by diverse values. Goals may include organizational outcomes such as profit or productivity, human outcomes such as satisfaction, growth and development, and organizational-process outcomes such as improved communication, problem-solving, and long-term environmental adaptation. Some of these goals may be stated, while

others may be implicit. Some are readily measurable and others are not. Some goals may be instrumental to the attainment of others; for example, improved problem-solving may contribute to increased productivity. In our experience, organizations frequently begin innovative approaches, such as quality circles or socio-technical redesigns, with improved productivity as a primary objective. They learn quickly, however, that employee growth and development are complementary objectives. In fact, failure to value and emphasize the latter often results in failure to implement successfully and institutionalize organizational-design innovations. Thus, goals develop and change over time, particularly when the organization learns that the values inherent in the change program conflict in important ways with the values underlying the current management philosophy. Thus, we have witnessed more than one organization begin simple experiments to improve quality or productivity, and gradually expand its goals to a more far-reaching alteration in "culture"--the patterns of behaviors and shared assumptions which characterize the way it does business.

Continual reshaping and clarifying of goals and values necessitates a rather fluid approach to the evaluation of change programs. The process is actually circular--as organizational members examine information about the implementation and functioning of the program, they develop more realistic expectations of what it is able to achieve, and simultaneously, a better understanding of the scope of change necessary to allow new practices and behaviors to be assimilated into the organization's normal functioning.

The five aspects of the change process described above have strong implications for assessing organizational-design programs. In the next

section of the paper, we contrast the assumptions and framework of traditional methods of evaluation with an approach which is more compatible with the realities and behavioral requirements of implementing innovative organizational designs.

Program Assessment: Two Views

Program assessment involves collecting information which enables evaluation of changes which organizational members carry out. Collection of data itself can be expected to affect the change situation through the reactions it evokes in the individuals being evaluated (Campbell and Stanley, 1966). The assessment process sets up predictable behavioral dynamics which have consequences for the validity and usefulness of the evaluation results. In the following pages, we will address the characteristics of two approaches to assessment, as well as their behavioral dynamics and consequences.

Traditional Program Assessment

Program assessment developed as a strong academic discipline at a time during the 1960's and 1970's when our society embarked on large numbers of social, educational, and medical programs aimed to improve the delivery of services in our country. The underlying principles and conceptualization of assessment were borrowed from experimental psychology (e.g., Campbell and Stanley, 1966; Riecken and Boruch, 1979; Cook and Campbell, 1979). Key tenets of evaluation research are rigorous experimental control, reliance on the power of statistical measurement, and emphasis on replicability of results. Although assessment techniques of a more qualitative nature were advocated by some researchers, mainly in the disciplines of cultural anthropology and

sociology, strong quantitative assessment formed the underpinnings of most empirical assessment work. Similarly, despite the cautions of some researchers (e.g., Suchman, 1967) that the "formative" evaluation of the stages of program definition and implementation was as important as the "summative" evaluation of overall program effects, most attention has been paid to the latter. Modification of the defined program and failure to implement it adequately were not treated as phenomena whose impact on program outcomes should be studied and understood; rather, they were considered to be "error" to be statistically controlled.

The primary goal of this approach to program evaluation is to provide useful, policy-relevant information (Wortman, 1983). It helps decision-makers answer the resource-allocation question: When faced with limited resources and many potential uses for them, what uses are likely to have maximum positive impact on desired objectives? Evaluation research answers this question at a macro level. It provides evidence as to the likelihood of positive effects for the population of cases (e.g., organizations, groups) as a whole, not for the individual case.

The key to good evaluation design is random assignment of cases, such as organizations or work groups, to receive the treatment or change program. Observed results in this "experimental group" are compared to the results in units which did not receive the treatment, which are generally referred to as the "control group" (see Figure 1). Random assignment assures that peculiarities of individual cases are distributed in the comparison groups by chance rather than by design, thus ruling out the alternative explanation that the treatment was effective because of the self-selection of groups who were in some way

unusual. Thus, in theory, a policy maker could feel more secure in answering the question: "In general, is this treatment (change program) likely to have a positive impact?" Moreover, because of the quantitative approach to measuring impact, a policy maker can compare the magnitude of the impact of one treatment with that of another.

As pointed out, this approach is largely concerned with broad questions of resource allocation among various priorities. Where should society place its limited service delivery dollars? For private-sector organizations, the analogous decisions might be made by the top executives of a large, multi-unit organization, who must decide which programs and approaches to encourage in the various units, and which resources to make available. A random group of organizational units would be encouraged to try out a new approach. Outcomes in this group would be compared to a control group which did not try the new program. On the basis of the results of this evaluation process, other units would be encouraged or discouraged from implementing the approach. This use of evaluation experiments in organizations has been suggested by various academics (e.g., Staw, 1977), and is employed by various large organizations with relatively sophisticated, in-house research capability. For, in general, program evaluation is carried out by neutral outsiders, who are believed to be objective observers and skilled measurers of change.

Traditional program assessment averages the impact of change programs across a group of experimental cases. Thus, in the experimental group, the treatment may positively affect outcomes in some units but not others. If a statistical comparison of change in outcomes shows more positive change in the experimental than in the control

group, the treatment is declared successful. More recently, the magnitude of positive impact is weighed against the costs of implementation to determine whether the treatment is both effective in an absolute sense and cost effective.

For the administrator or manager of an individual unit such as a plant, a small business unit, or a regional office, the results of such an analysis provide only general guidance in making resource decisions. Average results in the population of units studied do not give a probability of success for the individual unit. Furthermore, the focus on outcome measures does not provide a good understanding of the elements comprising the design of the program or of the implementation process. Unless there is substantial qualitative description of the change program as it unfolded in the most successful units, the administrator has little to go on in determining whether her/his situation is conducive to effective implementation. A considerable amount of subjective judgment is required to determine the likelihood of compatibility of the change program with a particular organizational context, the probable cost of implementation, and the likelihood that the treatment will "take" (be implemented successfully) in the setting.

This traditional evaluation model is best suited to a change program which is fully-developed and specifiable. It assumes, for instance, that all experimental units implement essentially the same program and utilize similar implementation procedures. To the extent that this is not the case, error is introduced into the evaluation results. This may not be a fatal error, however, if there are enough cases so that the idiosyncrasies of particular cases are washed out by the similarities across multiple cases. Nevertheless, even proponents

of this evaluation strategy caution against drawing conclusions about the efficacy of a change program when it is in developmental stages (Wortman, 1983; Cronbach et al., 1980). Once developed, however, there is a belief that evaluation research can provide "right" answers about the impact of a program.

Behavioral Dynamics of Traditional Evaluation. The underlying model of traditional program assessment is essentially that of an experiment. Organizational members who are implementing the change are very much in the role of subjects in the experimental design. The experiment is defined and executed by the researcher or evaluator, with the behavior of the individuals and the resultant impact on organizational functioning as the dependent variables. Subjects in psychological experiments often react to the experimental situation in ways which may result in erroneous learning (Orne, 1962; Wortman, 1983). "Evaluation apprehension," for example, is probably a major threat to validity, since the subjects in the experiment are unlikely to be able to differentiate between the impersonal evaluation of a treatment, and the evaluation of them as organizational implementers.

Subjects in an experiment may also respond to the experimenter's expectations. They may deliberately bias their behavior or questionnaire responses to try to confirm or disconfirm the hypothesis which they believe underlies the experiment (Orne, 1962). Members of the control group, for instance, may be inclined to bias their own data because they feel left out of the change program. They may not see a benefit to their unit as a result of the data-collection efforts. Advocates and sponsors of the organizational change are likely to feel committed to it, and to have a strong interest in how the evaluation

turns out. They are likely to be the most threatened by the evaluation process, and to have reason to portray the innovation as a success. We have encountered numerous examples where program sponsors or managers who have been encouraged by their superiors to try out a program described the change program in glowing terms despite external evidence that little implementation had occurred and little positive results had emerged from the process (e.g., Mohrman and Novelli, 1984).

Administrators or managers who have publicly advocated the change process, and who feel personally responsible for its success or failure may anticipate repercussions on their own career if it fails. The "trapped administrator" (Campbell, 1969) may prefer to avoid the evaluation process altogether, to limit data collection, or to whitewash the results. During the early stages of implementing a change program, evaluation is often experienced by organizational members as an unnecessary and time-consuming intrusion. This is precisely the time when it is most important for managers to be collecting information about how the program is progressing and responding with sensitive implementation strategies. The "trapped administrator," on the other hand, may respond by escalating commitment to the change (Staw, 1976), increasing pressure on employees, and increasing resources and time applied to the change. This may be counterproductive, if rethinking and redirection--tailoring the change program--is required, rather than redoubling efforts in the same direction. Commitment should be to the process of improving the organization rather than to a particular program.

The assignment of the change program to units on a random basis, or even the soliciting of "willing" units to participate in the research

may set in motion another behavioral dynamic. Organizational units may agree to accept the treatment not because they are committed to its success or its goals, but because they may receive special benefits through participation (Wortman, 1983). For instance, we have experienced departments who are willing to try out "participative management" because the larger corporation will provide them with extensive management training if they do. Similarly, an organizational unit may see the evaluation research itself as valuable, because it needs a systematic organizational diagnosis. In both these cases, the "program" is merely the excuse for the real goal of the decision-makers, and is likely to be discarded as soon as the other benefits are derived.

Consequences of Traditional Program Assessment. Ideally, a rigorous experimental evaluation design results in valid data which are helpful to managers and administrators in deciding whether to commit resources to a change program. To the extent that the behavioral dynamics discussed above operate, the research may fall short of this goal. It may actually result in erroneous learning. The resources spent on such evaluation might be better utilized for developmental purposes.

The characteristics of organizational-design innovations described earlier make good experimental evaluation design unlikely. The existence of multiple, simultaneous interventions, tailoring the change program to the particular situation, and ongoing refinement and modification of the design during implementation all work against tight experimental control. Yet these are the characteristics which seem to be essential to the effective implementation of organizational change. Rigorous experimental evaluation actually works against successful change if it results in poor implementation because the organization

hesitates to "tamper with" the innovation. This may discourage the rich variations which naturally emerge in different organizational settings (Mohrman, Ledford, and Lawler, 1984), and may lead to homogeneity of change programs rather than to programs tailored to fit a specific situation.

The characteristics of traditional program assessment are summarized in Table 1, along with expected behavioral dynamics and their consequences. We will now describe an alternative approach to program assessment, which is more suited to assessing organizational-design innovations.

The Feedback/Adaptation Model of Organizational Assessment

The goal of this approach to assessment is to provide organizations with information helpful in tailoring and adjusting a change program to the situation. This model expressly fits the aspects of organizational change listed earlier in the paper. Change was depicted as: varying across locations; changing through time; requiring constant adaptation to a changing context and environment; having varied and changing goals; and requiring ongoing learning on the part of organizational members. Change does not exist as a program which has its own reality that retains an integrity across organizations. Rather, it exists only as enacted in various organizational settings.

The enactment of a change program is itself a dynamic process. A program will vary depending on how long it has been functioning. For example, we might examine the introduction of a gainsharing plan (Doyle, 1982) into a manufacturing plant. A gainsharing plan has two basic design elements: an economic formula for distributing part of the improvement on economic performance to employees, and mechanisms through

which employees can participate in improving performance. Many aspects of such plans might change over time. The design of the plan itself, including its economic formula, its participative mechanisms, or the frequency of pay-out, may be modified. During the first years, the pay-out may be too large, with insufficient retained earnings to permit capital improvements. This may lead to a modification in the economic formula for distribution of gain. Employee understanding of the plan will probably increase, including knowledge of the performance and of the areas in which the employee's own actions can have a favorable impact on the measures. At first, supervisors and managers may play a more central role in employee problem-solving processes than they do after employees have learned more about the business. Supervisors and managers may alter their ways of dealing with the workforce as they experience and come to expect responsible, results-oriented behavior from individuals at all levels. These are but a few of the dynamic aspects of such a change process. The key point is that there is not a simple answer to the question: Is a gainsharing plan an effective way to increase organizational performance? Even within the same organization with the same plan, effectiveness will vary over time, the plan will change, and the elements which are responsible for the results will differ in different time periods.

Given such a changing, dynamic process, it would be difficult to try to identify a period when it is possible to say: "the change program has been successfully implemented, and it is time to evaluate whether it helps." Even if the time were to arrive when a program is relatively stable, it is clear that the organization needs to assess how

it is working long before then if it is to do the modifying and tailoring that are so often necessary during implementation.

The feedback/adaptation assessment model does not view organizational-design innovations as packages designed by experts and put in place in organizations. Rather, the true designers are the organizational members. They become aware of ideas and innovations from the behavioral-science and practitioner communities, and decide to try them out (Notz, Salipante and Waters, 1976). They must first put them in the context of their own values, goals, technology, and contextual constraints, and fashion an approach which makes sense to them. In short, they design the specific change program themselves.

Assessment is an ongoing process, whether formal or informal. As soon as organizational members begin to implement their changes, they collect data concerning how things are going. As they run into obstacles, they adapt the program to overcome them. Thus, there is a constant cycle of feedback and adaptation, which may ultimately result in the innovation looking much different than originally anticipated. Through such an adaptation process, the original change program may even be abandoned in favor of changes which embody quite different principles.

The hypothetical plant, which implemented the gainsharing plan referred to earlier, might serve as an example of this feedback and adaptation process. After several years, the plant may discover that it cannot, as currently designed, continue to improve productivity sufficiently for the plan to pay out to employees. Most of the major production problems have been solved, and the plant is functioning smoothly at a steadily-improving rate, but not quite well enough to yield enough gain to be shared. This may result in low morale and

disillusionment on the part of employees who liked the plan, enjoyed participating in productivity enhancement processes, and liked the financial pay-out. Rather than abandon gainsharing altogether, the plant may decide to automate parts of its production process, and utilize employee problem-solving skills to help with implementing and debugging the automated processes. It may also train operators in the technical skills necessary to maintain automated equipment, thus reducing the need to rely on contract maintenance. In the end, the plant may be substantially more productive than before because of the automation or the gainsharing plan, and the economic gains that are paid out may be substantial. Given such a scenario, it seems pointless to ask whether it was gainsharing or automation which resulted in the productivity improvement. Various changes combined to produce those results.

Although the feedback/adaptation model describes a process which happens naturally, it is frequently not done well. We see many examples of premature abandonment of change programs because of lack of results. Often a program is abandoned before successful implementation of the design components. In some cases, this reflects a judgment that successful implementation has too many costs associated with it; in others, managers appear unaware that effective implementation was not achieved. In yet others, organizational members do not develop a good understanding of the obstacles and problems which are encountered, and are unable to develop strategies for overcoming them. Often, key people are unaware that a change program is in trouble until it is already dead.

To establish an effective feedback/adaptation assessment process, it is necessary to design a system for collecting feedback data and for

tailoring the change program. At first, the implementation process must be carefully monitored to determine if the program components "take" --i.e., if they are successfully implemented. If not, additional implementation steps or altered designs might be instituted. In addition, organizational members should track performance indicators. They should monitor the short-term impact of the program on performance goals. In this way, they become aware of unanticipated consequences, and of performance decrements caused by utilization of resources during implementation. Corrective action can be taken before it is too late. In addition, long-term trend data are useful in making overall assessments of the approach. Such longer-term data might lead the organization to alter course significantly, or to add major design components to the change program. For example, because of long-term trend data, the gainsharing plant described above realized the necessity of making major alterations in its capital equipment and production processes in order to sustain productivity improvement.

The ongoing process of feedback and adaptation can be performed by a design team, working closely with other organizational members to sense both the successful and problematic aspects of the change program. This group must be trusted by the rest of the organization, have access to relevant information about the program and its effects, and have enough power to make necessary modifications. Ultimately, the organization as a whole must learn to manage change. This requires that organizational members learn together, and that they develop a shared definition of how things will be done differently. They must establish a "learning community" as a component of successful organizational change.

Behavioral Dynamics of the Feedback/Adaptation Process. This approach to assessment is relatively new, and there is not much literature or experience upon which to draw in describing the behavioral dynamics. We have worked with several organizations which are utilizing this approach, and will describe the dynamics which we have experienced in them.

The major behavioral manifestation of this assessment approach is a feeling of "ownership," and consequently, control of the change process. Organizational members decide what to do, assess it, modify it, and determine whether to continue. They do not simply implement something that someone else has designed or decided they should do. Because of this commitment, they experience a strong desire to make the change program work effectively. After all, they are to blame if it goes poorly. The process of collecting data, analyzing alternatives, and generating actions, is familiar to most managers. There is frequently an initial enthusiasm for the process. Because they are making decisions that they must live with, individuals engaged in this feedback/adaptation process are motivated to generate valid data about the change program, and to go through a careful examination of alternative courses of action.

Enthusiasm depends on the credibility of the assessment process. In organizations where managers have not experienced autonomy in the past and where they find the context to be unpredictable and demanding, there may be a reluctance to assume the responsibility inherent in the feedback/adaptation process. In this climate, establishing a learning community will be much slower and more difficult. Creating a culture

for the open exchange of information and joint problem-solving is time-consuming even in healthy organizations.

Initial enthusiasm can be dampened when the amount of time involved in establishing and carrying out this assessment process becomes apparent. Managers become discouraged by the time they must spend both in collecting and reflecting on data. This time, which is essential to the process of guiding the change process, is seen at first as unproductive, particularly when it leads to additional implementation procedures which also consume time. Ironically, time is either the cure for this impatience, or impatience kills the change program. Once confronted by the problems and unanticipated consequences set in motion by the changes, management may either become motivated to spend the time to work them through, or may decide to abandon the change process altogether.

A design team which has made the commitment actively to assess and steer the change process faces the task of learning how to do this effectively. In addition to learning basic organizational-design concepts and becoming familiar with various approaches to data collection and assessment, the group must become effective problem-solvers. Even experienced managers are generally surprised to learn how ineffective they are at learning as a group (Argyris and Schon, 1978). When a process-consultant facilitates and trains the group, the group must overcome the tendency to turn the change program over to the consultant, and thus lose ownership over the outcomes.

Consequences of the Feedback/Adaptation Assessment Model. Although difficult to establish, this approach contributes to effective change in organizations. Local ownership of the design, as well as ongoing

refinement and modification of it, are characteristics of successful behavioral change. The change may not resemble what was envisioned early in the process. But through ongoing modification and refinement, congruence can be established between the changes and other aspects of the organizational context. This congruence is necessary if the change program is to become integrated into the organization's normal functioning.

Another consequence of this assessment method is organizational learning. As design teams work through the issues of change and assessment, their understanding of the organization increases, as does their ability to work effectively as a team. One secondary consequence of this learning is that organizational members utilize their knowledge, skill, and understanding in making decisions and designing approaches which fit their specific operating needs.

Conducting the assessment process at the local level, with refinement and modification of goals, results in a greater heterogeneity of innovative organizational approaches. Overall, it should also result in greater resource efficiency as both evaluation and implementation resources are expended on innovations which fit more closely with the contextual realities of organizations.

The characteristics, behavioral dynamics, and consequences of the feedback/adaptation assessment model are summarized in Table 2.

Summary

Two approaches to assessing organizational change have been described in this paper. The first, a traditional program approach, stresses rigorous quantitative measurement using an experimental

paradigm. Such an approach is designed to provide an answer to the question: "In general, is this an effective treatment?" Emphasis is placed on replicability of a program, and on tight control of the experimental design and, by implication, of the implementation process. We have argued that this approach is not suited to complex organizational change. Successful implementation of change programs precludes the kind of external control and tight specification of treatment that are required for experimental rigor. Furthermore, the conditions of experimentation may set in motion behavioral patterns, such as evaluation apprehension, which distort findings and result in erroneous learning.

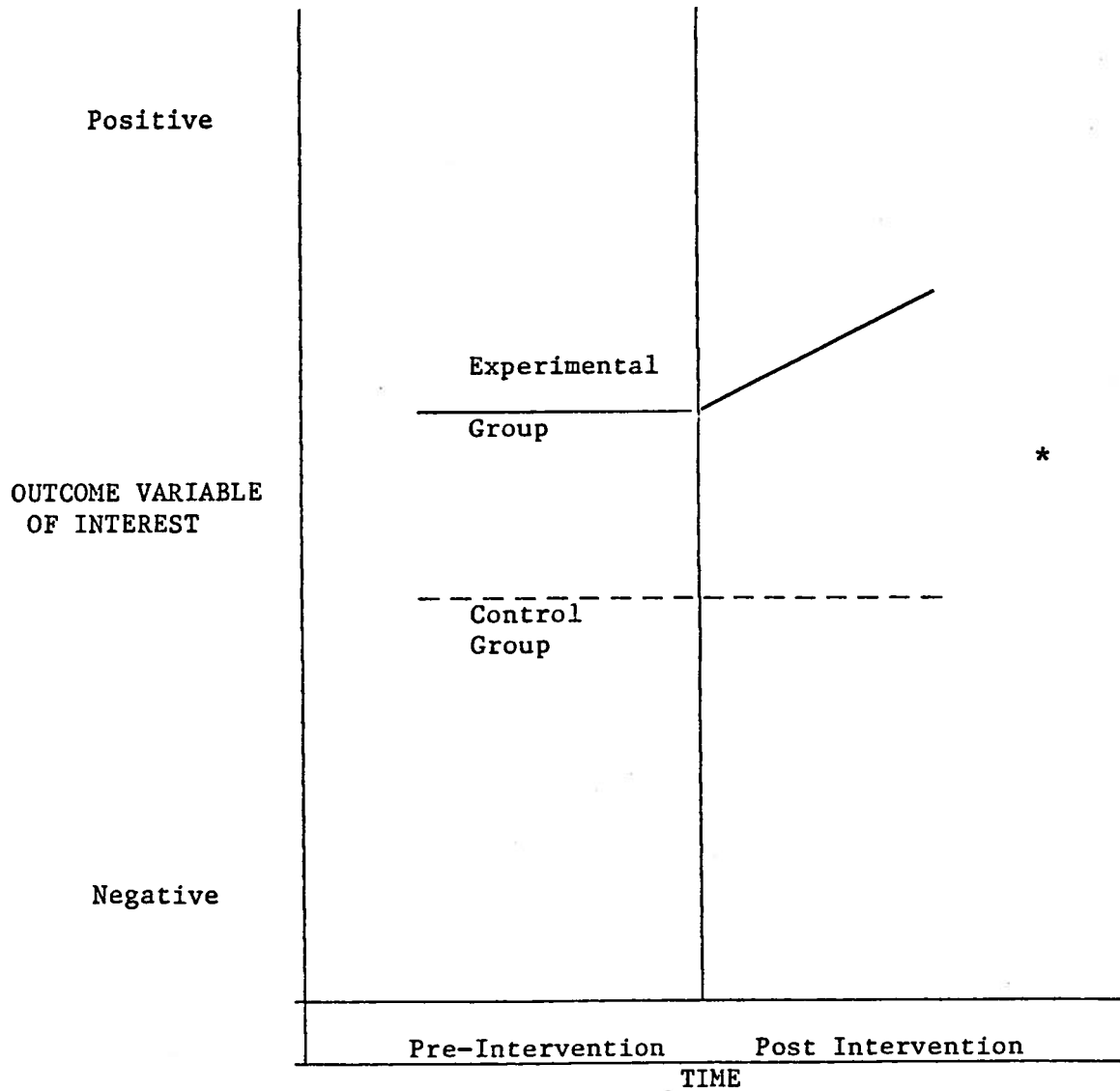
The second model of assessing organizational change aims to provide feedback to the organization that is helpful in guiding its own change process. Both quantitative and qualitative data are collected by the organizational members themselves, in order to learn about the short-term and long-term effects of the change program. This information is used to make modifications in the program, including the implementations procedures. In order to effectively conduct this kind of internal assessment, a feedback and learning system must be established to guide the implementation process. The product of this second kind of assessment is a more effective system for organizational innovation and learning. If documented, the results of this assessment process can provide rich and detailed case studies which can serve as examples for organizations contemplating such changes.

When organizations are searching for better ways to do things it is imperative that they become skilled at implementing and learning from new approaches. Developing an effective feedback and adaptation system

can remove some of the risk of innovation by assessing how changes are progressing and by making necessary modifications. Qualitative descriptions of this adaptation process can be of great help to organizations contemplating change. They can provide a much richer description of the nature of organizational change than traditional program assessment methods.

FIGURE 1

TRADITIONAL EVALUATION DESIGN:
Comparison of Experimental and Control Groups



*Evaluation Question: Is there a significant post-intervention improvement in performance of the experimental group as compared to the control group?

Table 1

TRADITIONAL PROGRAM ASSESSMENT

<u>CHARACTERISTICS</u>	<u>BEHAVIORAL DYNAMICS</u>	<u>CONSEQUENCES</u>
Goal:	Resource Allocation and Policy Decisions	"Trapped Administrator" Resource Inefficiency
For Whom?	Societal and Institutional-Level Decision Makers	Escalation of Commitment To Treatment Incomplete or Poor Implementation of Designs Evaluation Apprehension
What?	Fully-Developed Programs	Erroneous Learning Distortion of Data
Who?	Outside Neutral Party Objective Observer	Homogeneity of Change Programs
How?	Experimental Design Random Assignment	
Measures:	Goals/Outcomes Largely Quantitative	
Assumptions:	Objective Real World Static Right Answers	

Table 2

FEEDBACK/ADAPTATION ASSESSMENT MODEL

<u>CHARACTERISTICS</u>	<u>BEHAVIORAL DYNAMICS</u>	<u>CONSEQUENCES</u>
Goal:	Tailor and Adjust the Design Seeking Valid, Reliable Data	Learning
For Whom?	Members of Experimenting Organization Motivated To Succeed	Design Adaptation/ Implementation
What?	The Process of Change Self-Design Generate Alternatives	Resource Efficiency
Who?	The Design Team Impatience with Time	Heterogeneity of Change Designs
How?	Ongoing Assessment Detailed Case Analyses	
Measures:	Quantitative Short and Long Term Qualitative Implementation	
Assumptions:	Change is Dynamic Differs across organizations Alternative Answers	

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