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CRITERIA FOR THE DESIGN OF NEW FORMS OF ORGANIZATION

by

Howard Vollmer

Joseph McPherson

Stanford Research Institute

Menlo Park, California

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Background and Objectives

"Organizational design" is a field in which interest has been growing, both in the United States and abroad. It seeks to draw on all that has gone before in organizational theory from a variety of sources--including the behavioral sciences, management sciences, industrial engineering, economics, political science, and general systems analysis. It is concerned with sifting through these various theoretical and pragmatic contributions to develop principles, guidelines, and methods of approach that can be used by top level corporate officers, planners, consultants, and all who are concerned with designing more effective government or private organizations.

The overall objective of the project described herein has been to develop research-derived criteria for the design of new forms of organization (or the planned change of existing organizations) in order to effectively accomplish different organizational goals.

The research has been conducted in three one-year phases. The objectives by phase have been:

1. To specify preliminary design criteria on the basis of an analysis of prior experiences in organizational design.
2. To test and further develop these criteria by applying them to case studies of ongoing organizational design activities.
3. To modify these criteria as a result of application to case studies, and to synthesize and report them in a form useful for managers in innovative forms of organization within government and private institutions.

Sources of Data

Case studies of recent or ongoing situations involving the design of new organizational entities, or the redesign of major segments of existing entities, were made in order to develop the general design criteria and related guidelines for management that have been produced in this project. These have included studies of the design or redesign of:

The Department of Transportation

The Manpower Administration of the Department of Labor

The Environmental Science Services Administration of the Department of Commerce

The National Bureau of Standards of the Department of Commerce

TRW Systems, Inc.

The Bell Telephone Laboratories

Modern Chemical Corporation (pseudonym)

The University Research Laboratories (pseudonym)

The Oregon Graduate Center

An Independent Research Organization

Major Findings

The major findings of this project are described in detail in the existing and forthcoming publications resulting from it. These findings are summarized herein under the following headings:

Principal Strategies of Organizational Design

Framework for Viewing an Organization

People in the System

The Internal Viewing Variables in Action

The External Viewing Variables in Action

Diagnosis of Organizational Goals and Problems

Planning Organizational Structure

Implementation of Organizational Design

Evaluation of Organizational Design

The Collaborative Approach to the Process of Organizational Design

Principal Strategies of Organizational Design. These include (1) the engineering strategy--the design of an organization from the outside; (2) the behavioral strategy--the design of an organization from the inside; and (3) the systems strategy--the design of an organization in a manner that takes into account "external viewing variables" and "internal viewing variables" in terms of their systematic interactions.

Planning, programming, and budgeting (PPB) principles developed under Secretary McNamara in the Department of Defense and later applied to a variety of government and private organizations are found to represent a highly refined application of the engineering strategy, and to be most applicable to more authoritarian, rational-bureaucratic organizational structures. Use of specialists in group dynamics and related behavioral techniques as "change agents" within existing organizations, or as persons who stimulate the creation of new organizational structures out of unstructured mass behavior situations, represent sophisticated examples of the behavioral strategy of organizational design. These methods appear to be most applicable to voluntary organizations, or to those that are oriented primarily toward satisfying the needs of members (or employees).

The systems strategy combines elements of both of the other strategies to design organizations in terms of simultaneous consideration of technological, structural, and interpersonal variables--stressing their interdependence and their common relations to the achievement of both corporate and individual goals. This is the overall approach that was taken in this project. While this strategy was found to be applicable to all kinds of organizations, it is especially appropriate for the design of changing, complex, high technology organizations in which highly professionalized personnel are employed on tasks that also require the application of advanced concepts and methods of modern technology.

Framework for Viewing an Organization. The systems strategy of organizational design calls the designer's attention to three main classes of organizational variables that interact with each other: (1) process variables, (2) external viewing variables, and (3) internal viewing variables. In considering the process variables, attention is drawn to the ways in which inputs of materials, energy, people, money, and information are brought into an organization. Processes performed on each of these inputs include ingesting, distributing, changing, producing, storing, and extruding. Internal viewing variables call attention to these processes in terms of history, charter, structure, adjustment, growth, steady state, crises, tasks, geography, relationships, power, and resources within the organization. External viewing variables call the designer's attention to the same items, but now from a perspective outside the organization. Taking both perspectives into account is essential in the systems strategy of organizational design.

People in the System. Organizations are a form of social system--a type of living system with the special problem of recruiting and motivating people (human systems) in order for the organization to remain viable. Therefore the relationship between people and organizations is a special problem calling for particular attention from organizational designers.

The systems strategy of organizational design gives special attention to relations between (1) the individual and the organization, (2) the group and the organization, and (3) the leader and the organization. Review of empirical research on these relationships has yielded 71 propositions that are useful to organizational designers. These propositions are presented and discussed in detail in the book on Design of Organizational Systems for the Pursuit of Human Values (see forthcoming publications listed at the end of this report).

The Internal Viewing Variables in Action. Attention to people-organizational interactions alone would be characteristic of the behavioral strategy of organizational design. In contrast, the systems strategy is concerned with designing an organization that takes both the internal and the external viewing variables into account, and attempts to maximize the way that an organization manages these variables or adjusts to them in attaining its goals. In this regard, 131 propositions have been derived from empirical studies that are useful to organizational designers and are presented in the book publication.

The External Viewing Variables in Action. The external viewing variables relate an organization to its external environment in the local community, the state or region, the nation, or possibly even supranational groupings. Relations between the internal and external environment can

be described in terms of "co-optation" or "representation." Twenty-four propositions have been derived from empirical studies relating to this topic and are also presented in the book in a form useful to organizational designers.

Diagnosis of Organizational Goals and Problems. As a designer begins to apply the above kinds of propositions to the design of a new organization, or the redesign of part or all of an existing one, he finds that his first major task is to make a satisfactory diagnostic analysis of (1) the goals (or "mission") toward which the organizational entity is expected to be oriented and (2) the major systemic problems that now affect, or will affect, the capability of the organization to move toward these goals. In making this diagnosis, consideration has to be given to the inter-relationship of personal goals with organizational goals and objectives, and to major integrating processes such as organizational socialization and leadership decision-making, as well as to problems of goal definition, goal conflict, and goal flexibility. Furthermore, it is evident that there is a need for distinguishing between symptoms, palliative remedies, systemic bases, and systemic remedies in diagnosing organizational problems.

The main steps in the diagnostic process include gaining entrée, collecting data, analysis and categorization, verification, feedback, and prescription. Major methods used for the collection of diagnostic data include interviews with leaders or other key informants, observation of critical activities or interactions, reviews of significant outputs (e.g., documents), and systematic questionnaire surveys.

Planning Organizational Structure. Organizational structure refers to the differentiation and integration of policies, functions, and roles established to attain organizational objectives. "Authority" is the essential bonding substance in organizational structure. Different kinds of organizational authority can be distinguished, including (1) administrative authority--differentiated into authority for staffing, policy-making, work assignment, work control, and arbitration, (2) functional authority--differentiated into functional policy authority and functional control authority, (3) initiating authority, and (4) project authority.

After making an adequate diagnosis of the goals to be accomplished and the main problems to be handled or overcome, a designer must plan an organizational structure that embodies and channels the kinds of authority appropriate to these goals and problems. In designing such authority patterns into an organizational structure, it is important to distinguish between the views of different kinds of participants in an organizational system with regard to various authority considerations--such as differences among top executives, middle-level executives, project managers, and customers. Where authority patterns are properly designed and accepted by various kinds of organizational participants, their roles, functions, and policies become incorporated into the "common group memory" of the organizational system.

Implementation of Organizational Design. Numerous examples demonstrate that it is not enough to design organizational entities well on paper; these designs also have to be implemented in the day-to-day behavior of the members and participants in organizational systems. There are two main types of approaches to organizational design: (1) directive approaches--those that

involve "top-down" initiative, and (2) nondirective approaches--those that consist mostly of "inside-out" group dynamics exercises. The major objective of each approach is to identify and resolve the human consequences of organizational design or redesign, including such things as perceived loss of organizational status, loss of organizational property, or loss of communications position.

Major steps in the implementation process include the identification of human effects of organizational design changes, determination of the approach to be taken to overcome these effects, assignment of responsibilities and resources, the actual conduct of implementation activities, and the monitoring of feedback.

Evaluation of Organizational Design. The final step in the organizational design process is to make an assessment of the effectiveness, efficiency, and timeliness of an organizational design effort. A complete evaluation of an organizational design effort includes the specification of performance objectives to be attained, the development of criteria for measurement of organizational performance in relation to specified objectives, the design of methodology to accomplish this measurement, the collection and interpretation of evaluative data, and the use of evaluative information to achieve further improvements in organizational design.

Methods for evaluative analysis include the one-shot case study model; the one-organization pre-test, post-test model; the static organizational comparison model; and the pre-test, post-test control group model. Although the latter model of evaluative design yields the most definitive information, constraints of organizational design in real-life situations usually necessitate the use of one of the other models.

The Collaborative Approach to the Process of Organizational Design. If a true systems strategy of organizational design is to be followed, rather than an engineering or a behavioral strategy, the design effort will involve collaboration between one or more insiders (members or employees of the organization) and one or more outsiders (consultants). The many variables involved in a complete design effort, and the need to view these variables from both internal and external points of view, can require complex relationships between consultants and managers, between consultants and other organizational members, between the consultant and the entire organization, and between one consultant specialist and another consultant specialist working together in an interdisciplinary design team. Guidelines for overcoming common problems in these relationships are given in the book, drawing upon the case study findings.

Publications Resulting From This Project

1. Vollmer, H. M. Organizational Design--an Exploratory Study (Menlo Park, Calif.: Stanford Research Institute, "R&D Studies Series," December 1967; available from the Clearinghouse for Federal Scientific and Technical Information, AD 662-634).

2. Vollmer, H. M. Organizational Design--Process and Concepts (Menlo Park, Calif.: Stanford Research Institute, "R&D Studies Series," December 1968; available from the Clearinghouse for Federal Scientific and Technical Information, AD 684-168).

3. Vollmer, H. M. and McPherson, J. H. Design of Organizational Systems for the Pursuit of Human Values (book manuscript being submitted for publication).

Other forthcoming publications are anticipated for technical and management journals.

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13. ABSTRACT

This research has developed criteria and guidelines for managers and consultants involved in the design of innovative kinds of organization in government or private settings, based upon case studies of major design efforts in a variety of federal government and private organizations. These criteria and guidelines are formulated in terms of a general systems approach to organizational design, rather than a more limited engineering or behavioral approach. The systems approach considers the interactions of a number of (1) process variables, (2) external viewing variables, and (3) internal viewing variables in organizational systems. Particular attention is given to the design of organizational entities that accommodate to the needs, values, and aspirations of individuals and groups involved in these entities. Seventy-one propositions have been derived from empirical studies to guide designers in taking account of process variables, 131 propositions related to internal viewing variables, and 24 propositions related to external viewing variables. Case studies are drawn upon to illustrate steps to be taken in the four major steps in the design process: (1) diagnosis of organizational goals and problems, (2) planning organizational structure, (3) implementation of organizational design, and (4) evaluation of organizational design.

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