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Principles of Design for High Performing Organizations

A Suggested Research Program

Appendixes

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13. ABSTRACT *(Maximum 200 words)*

This is the second report in a series of three to identify useful directions for future research on military organization design. The first established a baseline of what is known from the published literature. This report focuses on the areas that are "cutting edge," as identified by established and emerging scholars in this field. It provides in an extensive appendix the outline of research projects that, if conducted, would probably lead to a new technology of design for high performance organizations. It is based on a model that integrates consideration of the environment, the systems context, the structure, and emergent systems (leadership, learning, culture, and innovation, among others). Causal mechanisms include rationality, power/control dynamics, institutional processes, and individual enhancement needs. Six broad research areas are (1) design of high performing organizations in turbulent settings, (2) designs to implement strategy, (3) design robustness under changing systems contexts, (4) accommodation of apparently conflicting desired outcomes, (5) emergent systems, and (6) the effect of interpretations of design. The report makes a good case for the importance of accelerating research on

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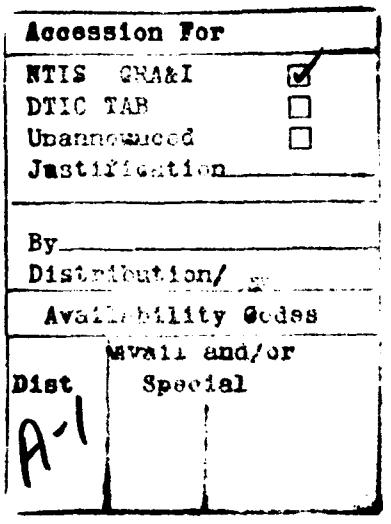
organizations, given the increasingly significant impact of information technology and globalization on organization performance requirements, both public and private.



FOREWORD

The rapid advance of information technology during the past 2 decades has produced a trend of unprecedented proportions toward private sector globalization. The combination of information technology advance and globalization has, in turn, strongly stimulated both the perception of need and the opportunity to experiment with new ways of organizing to do work. Lessons learned from experience with these new structures and processes would seem no less meaningful for military organizations than for organizations in the private sector.

This report is the second of a series designed to lay out both for military planners and for future research the state of the art on organization theory and design. The first dealt broadly with organizational research in academia and the private sector. It established a broad foundation for understanding both what is now known and where the field of organizational research is progressing. This report identifies unknowns and "cutting-edge" research that might be done to reduce the unknowns. The third report will identify, collate, and summarize the historical files on military divisional structure test and development. These reports should provide a useful starting point and logic for work on new organizational forms anticipated in the 1995-96 time frame.

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PRINCIPLES OF DESIGN FOR HIGH PERFORMING ORGANIZATIONS: A SUGGESTED RESEARCH PROGRAM: APPENDIXES

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INTRODUCTION, PURPOSE AND BACKGROUND

Introduction

The U.S. Army faces a series of potentially fundamental reorientations in the 1990s. Instead of focusing on a known enemy and being prepared to defend U.S. interests via high intensity combat against a concentrated foe with superior numbers, its role and mission appear no less important but more diffuse. The roles and missions of the Department of Defense and the society within which the Armed Forces is embedded are changing. These forces make essential a technology for organizational design/redesign to enhance effectiveness, readiness and reliability. Designers must also be prepared to develop organizational designs involving distributed leadership and decision making and be prepared for large- or small-scale high intensity combat.

Purpose

The purpose of the project underlying this report was to assess the current state of the art of purposeful organizational design, articulate key issues in this developing field and translate these issues into a program of theoretically and operationally relevant research. The Task I report titled, "Principles of Design for High Performing Organizations: An Assessment of the State of the Field of Organizational Design Research," reviews the literature and addresses key issues in the field.

This report presents a suggested integrated research program to address key issues. It also provides an approach for researchers to address the specific needs of designers within the same integrated theoretical framework used to develop the research program.

Each of the issues is addressed by a "research package." These packages are based on an integrated theoretical model that allows researchers to develop new themes and place the concerns of others into an integrated framework.

Contents of the Report

The report is organized into seven major sections. This section, in addition to presenting the purpose and organization of the report, also provides background information on the challenges to the designer and what is thought to be known and unknown in the area of organizational design. Section two discusses an integrative model of organizational design and methodological guidelines are treated in section three. These two sections provide a conceptual and methodological approach that can be applied to all research programs to help build a series of reinforcing findings on organizational design.

After section four lists the important resolvable research issues, section five discusses each in detail. Here the reader will find that each research package is introduced, individual research program areas are presented and the theme is then assessed. The relevance to the Army is then discussed (section six), and the final section of the report presents a summary and conclusion.

The Challenge Facing the Designer

Developing a technology for designing high performance organizations is complex simply because high performance organizations are complex. The goal is to provide a technology or way of designing that can be used in a wide variety of settings for a wide variety of units with a wide variety of missions. The modern designer does not apply a fixed recipe, simply move boxes on an organization chart or stamp out designs from a common cookie cutter. The modern designer is charged with establishing a pattern of relationships among units, individuals, and their settings that will facilitate performance.

Throughout the literature review, study after study showed the potential importance of organizational design and its elements for the development of high performing organizations. The science of design is, however, relatively new and much needs to be learned if designers are to establish enduring, predictable patterns that can be reconfigured to accomplish different missions. The field has progressed from listing job assignments on tables of organization to a science involved with the dynamics of design for performance, involving a balance among competing forces. The goal of the design research has shifted from explaining dominant hierarchical patterns in organizations to explaining, predicting, and intervening to improve performance of complex systems in dynamic environments.

The Task I report provides a systematic list of criteria for judging a proposed organizational design. Essentially, these criteria for assessment ask the designer to evaluate the technical, systems, and strategic capabilities of a proposed design. The report provides a sliding scale of confidence in defending specific design decisions ranging from support by executive fiat (worst) to support by a well designed and executed study (best).

This document provides a research program for designers so that better choices can be developed, implemented and revised. Since organizational design research is relatively new and must meet daunting challenges, it is no surprise that the field lacks a dominant, well tested theory of design. While the development of an integrated theoretical perspective will likely evolve from basic research, the projects listed below are intended to resolve, or move toward resolution, key issues that designers in the 1990s must address to develop high performing organizations.

What Is Thought to Be Known and Unknown

Using the existing literature, it is possible to list the major variables and causal mechanisms underlying high performance organizations at one point in time. For almost any variable listed in the proposed model, it is possible to find literature concerning its relationship to other variables for a limited number of systems using one causal mechanism. The literature review in the Task I report documents such linkages.

The next section outlines an integrative model based on the accumulated knowledge. While the proposed model and the interactive relationships among predictors are speculative, they are built upon a series of well documented research programs. It is also possible to outline general guidelines for research concerning organizational design. This is provided in the second major section of the report.

The analysis of organizational dynamics, particularly in settings where the environment and context (size and technology) is changing rapidly, is much more difficult to study. The field does not present well tested models, adequate approaches or replicated research results. A number of the proposed research themes, however, target specific aspects of organizational dynamics under turbulent settings for future research.

Derivation of the Research Projects

The research challenges facing the field for designers who wish to develop high performing organizations can be derived in a number of ways. One, it is possible to extend current thinking from the proposed integrative model. This approach, overall, provides a scheme for categorizing proposed projects by the variables studied, the causal mechanisms used, and the units of analyses studied.

Experienced designers and organizational researchers are also keenly aware of the new issues and problems facing organizations. Here, a poll was taken of the recognized organizational design researchers to identify key issues for the 1990s. Over 100 respondents provided valuable information (See the appendixes of the Task I report). These responses were then reviewed by a panel of experts, including the principal investigator.

Using a modified delphi technique (where experts independently listed the most important research topics after reviewing the suggested topics from the poll), each panelist provided the principal investigator with a list of the five most important research topics concerning organizational design. These were complied and the panel reviewed them for importance. They screened out lower priority issues to develop a revised list. The revised list was then discussed in a two day face-to-face meeting. This meeting yielded a common list of high priority projects.

This common list was then reviewed by the principal investigator to (1) match the themes with the proposed integrative model (which key variables, causal mechanisms, and units of analysis were the focus of a given proposed project) and (2) to screen out

topics that would naturally be researched without the aid of external funding. The result was a list of important research topics bundled into "research packages."

A PROPOSED INTEGRATED MODEL OF ORGANIZATIONAL DESIGN

Elements, Causal Mechanisms and Units of Analysis From the Proposed Model

The proposed model provides an overall integrative view of research concerning organizational design. It assumes the designer is primarily interested in explaining, predicting and improving organizational outcomes. It suggests that four key predictors (environment, systems context, structure and emergent processes) of organizational outcomes should be considered. It postulates that four causal mechanisms (rationality, power/control, institutionalization, and individual enhancement) are important for understanding organizations. It suggests, furthermore, that the designer should be concerned with interorganizational relationships, the organization as a whole and its components.

Each of the four variables, as well as the major components in a variable category, has been linked to organizational outcomes and is influenced by current and prior outcomes (See the Task I report for a listing of the components). The combined influence of all four variables needs to be considered but is not discussed here to reduce the complexity of the analysis and to avoid theoretical speculation.

The designer needs to consider the four causal mechanisms identified from the literature review in order to forecast more accurately how the design will evolve over time. The combined impact of all four causal mechanisms on the interrelationships among the variables is again not discussed to reduce the complexity of the analysis and avoid theoretical speculation.

It should be recognized that the interplay among variables and causal mechanisms has not been discussed systematically in the current literature. Most work in organizational design is confined to analysis of a few variables using one or perhaps two causal mechanisms for one major unit of analysis. Thus, theoretical integration must replace empirically grounded evidence when discussing multiple variable relationships involving multiple causal factors across multiple units of analysis. Unfortunately, the organizational designer implicitly or explicitly either recognizes the multiple requirements for organizational design or develops designs that become limited by factors not considered.

Important Elements in Designing High Performance Organizations

Based on the literature review, four key elements or variables need to be considered in developing an effective organizational design for high performance. As

noted in Figure 1, the goal is to explain, predict and improve organizational outcomes. The four key predictors are categories of similar conditions and processes that the designer should consider.

Four key types of variables were isolated from the review. One is the environment of the organization. Here, two major components were identified. The environment consists of the institutional setting and the task environment/industry setting. The institutional setting includes the historical, legal, political, economic, social, educational and cultural foundations where the systems operate. While the organization may not have predictable effects on the institutional setting, designers need to consider the demands, constraints and opportunities emanating from this sector. The task and industry setting are more amenable to adjustment by the organization. This is the set of other organizations that the focal organization chooses to interact with to accomplish its goals. Research suggests that changing the environment as well as changes in the environment alter the preferred organizational design for high performance.

The second type of variable is the systems context, or the size and technology of the system. Alterations in the size and technology of the organization have a profound effect on the needed structure for high performance. The third type of variable listed in Figure 1 is the structure of the organization. Here, the analyst is interested in the intended patterns of specialization up/down and across the organization as well as the mechanisms used for coordination and control. While these aspects of formal structure are often considered the key to developing an organizational design, more recent research suggests that they are but part of the picture.

The fourth type of variable listed in the proposed model is labeled "emergent processes." Here, the important role of individuals is recognized as the review suggested that strategy, learning, innovation, experienced structure and culture were among the list of important dynamic processes that could be influenced by the designer.

In this view, the design of the organization is the enduring pattern of relationships among the systems context, structure, and emergent processes operating within the environment of the organization.

Important Causal Mechanisms

As suggested in Figure 1, the environment, systems context, structure and emergent processes can alter the outcomes of the organization in a variety of ways. The literature review suggested that many, if not most, of the reasons organizations and their components act the way they do can be reduced to four causal mechanisms.

First, organizations may be seen as purposive, rational mechanisms for goal attainment. Thus, rationality is an important causal factor. The analyses of rationality may emphasize any of the four major elements expected to influence organizational

outcomes. For instance, one body of literature suggests that if organizations do not match their structures to environmental requirements, they will experience lower organizational outcomes. Another body of research suggests that a carefully developed strategy can be used to align environment with structure for higher performance. Of course, there is considerable literature suggesting that alterations in size and technology call for changes in structure if outcomes are to be maintained.

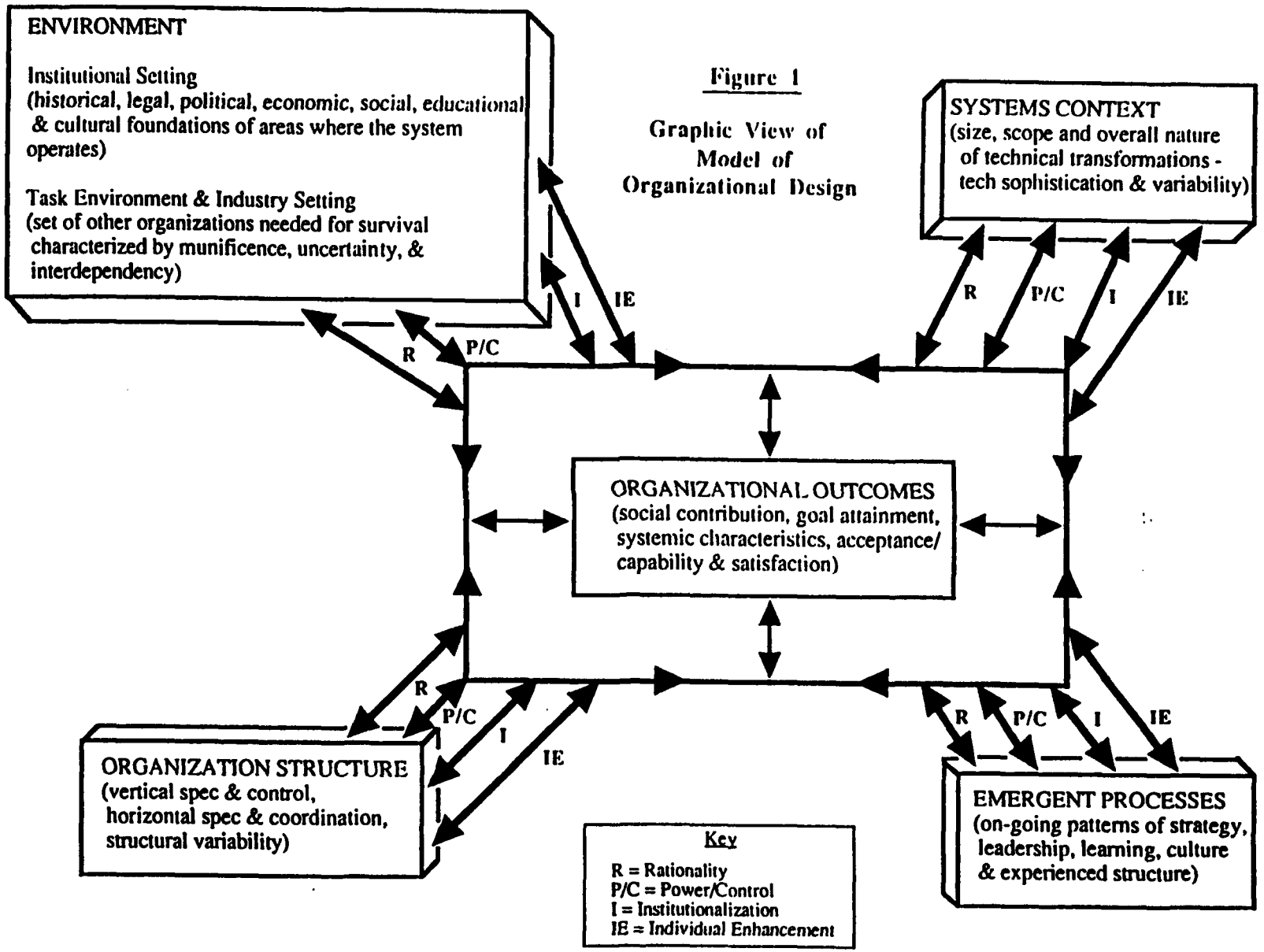

Figure 1

Graphic View of Model of Organizational Design

Second, organizations are hierarchical systems headed by individuals. Organizations are expected to drift and degenerate if left alone. Thus, the willingness and ability to use power and control, particularly by senior management, is important. And these power/control dynamics permeate throughout the organization. Again, the power/control mechanism may be used to link any of the variables to organizational outcomes. For instance, power/dependence literature links environmental conditions and outcomes directly by showing how executives will select members of their task environment. It also links environment to outcomes via structure by suggesting how structures will be used to protect the interests of senior managers and facilitate control internally.

Third, organizations are embedded in their environments, copy the successful practices of others and absorb solutions/expectations through their members. Thus, they are subject to, and may alter, powerful institutional forces. For instance, analyses of institutional forces suggest that the larger setting in which the organization is embedded has a profound effect on its capability to act and its ability to adopt some structures and emergent systems. Attempts to implement structures or emergent systems that are different from those of other organizations in their environment (or those that appear to violate societal expectations) have a high probability of failure. To continue the example, the Armed Forces has faced the difficult issue of women's roles in, around, and supporting combat troops as much on institutional grounds (will the society allow women certain roles) as on rational grounds (can they do the job).

Fourth, organizations are, in an important sense, collections of individuals. Individuals are not passive recipients but active participants. Thus, they create, define and alter the organization as they seek individual enhancement. To make sense of organizations and to allow organizations to learn, innovate, develop strategy and reach toward desirable outcomes, members must be able individually and collectively to understand the system, their positions in the system and how they can cope with it. While the analyses of individual enhancement may appear more a topic of organizational behavior, scholars studying organizational design recognize that to eliminate individuals from their work is to recommend designs that will not yield desired outcomes.

Units of Analysis

Organizations become high performing when they are successful in their environments, with high performing units headed and staffed by high performing individuals. In different terms, there are several different important units of analysis. The organization is an independent entity; it operates within a network of relationships. Thus, interorganizational relations and analyses describing the boundaries of the organization and its relationship with the environment are important. So, too, are analyses of the organization as a whole and its major components. For instance, how do various line and staff units fit their activities together? The designer that ignores the

interplay among individuals, groups and unit characteristics opens the door to developing an inappropriate, failed design.

Dynamics and the Proposed Model

As presented in Figure 1 and discussed in the Task I report, the proposed model attempts to picture an organization at a given point in time. It does not address the complex issues of organizational dynamics or organizational dynamics in highly turbulent settings. This is an important limitation, as research on dynamics is needed to help understand such issues as the ability to change designs quickly, the effectiveness of different designs in rapidly changing environments, and the ability of execu[illegible] to alter their collective vision of their organizations to match ever-changing situati[illegible]

Assessment and Summary

The proposed model is too complex to provide clear guides for research. It posits interaction effects among four predictors, using four causal mechanisms at multiple units of analysis. It also asks the designer to estimate reciprocal effects (from outcomes to predictors) as well as main effects. A singular project to test all these relationships at one time is simply not feasible.

However, the proposed integrative model may be quite useful in (1) identifying key variables, (2) enumerating the multiple causal factors operating within and characterizing organizations and (3) sorting out the importance of research at different units of analysis. It can be used to help categorize proposed projects, link them into themes and spot areas where research is unlikely unless prompted by external funding.

METHODOLOGY AND RESEARCH DESIGN GUIDELINES

While the precise research methodology and research design needs to be tailored to the purposes of the proposed project, the nature of the questions being asked and the sample to be investigated, there are some important features that should characterize research in high performing organizations.

Need for Longitudinal Analyses

Longitudinal research seems to be particularly well suited for linking contexts, content, and change processes in assessing how organizations develop over time. Sustained observation may not only reveal high performance configurations and patterned complexities, but may also uncover meaningful indicators of those configurations and patterns. Numerous variants of longitudinal research used in organizational studies are described by Kimberly (1976) and Miller and Friesen (1982).

Longitudinal research is often costly, requiring a significant investment by the

researcher and participating organizations. The multiple-methodology research designs suggested below often require considerable preparation in structuring data collection, coding, and analysis. The costs of such investment, often borne by the researcher, combined with the long time horizon in realizing payoffs for such research, tend to discourage longitudinal research methodologies. While several well-designed longitudinal studies have been conducted, the field will continue to be underserved in this area without significant support.

Qualitative and Quantitative Analytic Components

Qualitative studies, (often based on participant observation, case study, and interviews) typically offer the promise of richness, while quantitative analyses (often obtained through surveys, secondary-source data bases, experimental or quasi-experimental research) are presumed to offer replicability and objectivity. While qualitative studies and systematic data analysis are often seen as inimical, several recent publications (e.g., Osborn and Jackson, 1988) have demonstrated that researchers can design studies incorporating both qualitative research and systematic, explicit data collection and analysis. For instance, analyses of how organizational structures (based on questionnaire instruments) are altered by changes in technologies across organizations can be supplemented with observational and ethnographic accounts. These observational and ethnographic accounts can focus on the emergent social system dynamics accompanying technological change in a small portion of one or two organizations under investigation.

While rich, the translation of volumes of ethnographic reports of field observations into final conclusions is often not clearly articulated in published studies. As Van de Ven and Huber (1990) point out, most such research reports violate a basic canon of scientific reporting which demands presentation of the data as distinct from analyses and inferences drawn from those data. Methodologies for transforming raw data obtained from longitudinal field studies into a form useful for examining process theories have been presented by Van de Ven & Poole (1990). Conversely, sole reliance upon researcher-driven variables, may show statistically significant results that are meaningless to organizational members. Thus, both rigor and meaning need to be incorporated into the proposed research areas.

Multiple Sources of Data

The overall theoretical underpinning of the assessment of the current literature stressed the multiplicity of views of organizations and their components. Researchers, therefore, need to collect information from multiple sources (e.g., questionnaire data, case studies from participants, organizational records, and secondary data sources).

For analyses based on questionnaires and secondary data, developing multiple sources is not very difficult. For studies that stress emergent systems (e.g., the

interpretations of members and observations of organizational change processes over time), there are often limits on a researcher's capabilities to study more than a few cases at a time. This leads to concerns about generalizability and what kinds of inferences can be drawn, not only to a larger population, but also to a process theory being examined in the research.

A number of approaches have been developed to address such concerns, including a "case replication" (Leonard-Barton, 1990), "structured content analysis of cases" (Jauch, Osborn and Martin, 1985) and retrospective event histories (See Glick et al., 1990). These works address the need for strong linkages between description and documentation, and stress the importance of replication in qualitative studies.

Measurement of Key Variables

Whether or not environmental, contextual, design and effectiveness variables are a focus of a particular organizational study, information regarding such key variables should be provided. Ideally such variables should be assessed periodically during the course of the study in developing and testing generalizable explanations of organizational change and effectiveness.

Expectations of Sample Size and the Importance of Unique Organizations

Researchers accustomed to research on individuals and small groups have often adopted rules of thumb for sample sizes, appropriate ratios of variables to subjects, and the use of very sophisticated statistical techniques. In the analysis of organizations, rules of thumb developed to study individuals may not be appropriate. Much more care needs to be given to the selection of the organizations to study. The analysis of a unique organization may be more fruitful and meaningful to designers than studies of many small organizations.

In studies of organizational design, care needs to be taken to identify target organizations and units on the basis of the predictors to be studied. Researchers need to avoid the problems with selecting a priori apparently successful organizations (See Chapter II of the Task I report for a more complete discussion).

General Standards

Cook And Campbell (1979) have delineated several issues which need to be addressed in designing and implementing research studies. While these were originally developed for micro (individual and small group analyses), the behavioral and social sciences share many of the same standards. Deviations from common standards for organizational research are noted.

Internal Validity. Internal validity involves establishing a causal relationship

between variables which are known to covary. Because the dependent variables studied in organizational research are not insulated from outside influences (environmental changes, for example), threats to internal validity are quite real. Measurement and documentation of such contextual and environmental variables need to be incorporated in the research design. Multiple methodologies using multiple sources may be employed in testing alternative causal explanations for the observations obtained in any one study.

Construct Validity. A strong threat to construct validity is "mono-operation bias." That is, researchers may come to the conclusion that relationships are a function of particular abstraction (construct) without sufficiently assessing whether other methods of assessing the construct provide similar results. Multiple operationalizations of key variables, as suggested above, help to address this issue.

External Validity. External validity involves the ability to generalize a study's findings to other target organizations, settings, and times. The sampling procedures used by the researcher significantly affect the ability to apply knowledge gained to other settings. Reviewers of research proposals must assess whether the procedures employed either provide a sufficiently broad set of organizations to allow for such generalization or specifically target firms similar to those to which the research implications are to subsequently be applied.

This is a particularly difficult standard to meet in many macro studies of whole organizations and of unique organizations. In many macro studies, statistical linkages (e.g., statistical similarity between the sample population and the target population) are not a useful mechanism for assessing external validity. Instead, theoretical comparability needs to be assessed. The matches between the sample population and the target population (say a large multinational corporation and the U.S. Army) are likely to be imperfect. This difficulty with meeting the standards of external validity in large part stems from the development of these standards for micro analyses.

Statistical Conclusion Validity. Statistical conclusion validity concerns the extent to which the researcher can demonstrate that there is indeed a relationship between events in the study (they covary). Studies must be designed that are sufficiently sensitive to such covariance.

In micro analyses (analyses of groups and individuals) this sensitivity is a function of sample size and the reliability of the measures used in the study. A carefully designed macro study will address these issues and may use less sophisticated statistical techniques to isolate broad patterns of relationship rather than the detailed variable by variable relationships that can be isolated in micro studies. Qualitative information may be used to provide additional support for the statistical findings. Alternatively, qualitative accounts may be the main support suggesting significant relationships and these may be partially supported by analyses of indirect indicators or manifestations of the variables in question.

MAJOR RESEARCH ISSUES NOT LIKELY TO BE STUDIED WITHOUT EXTERNAL SUPPORT

While the Task I report reviews the existing literature and presents many different possible research issues confronting the field, this section stresses six overall issues that are not likely to be studied without external support, These six were drawn from the poll of scholars and extensive discussions with a panel of experts. They concern (1) effective responses to dramatically changing environments, (2) building strategic success and capability (3) capitalizing on technological changes as well as alterations in size and scope, (4) identifying and meeting multiple, partially conflicting dynamic performance expectations (5) understanding the important role of emergent processes in organizational design, and (6) recognizing the unique problems of designing very, large complex systems.

IMPORTANT RESEARCH PACKAGES

Six important research packages were developed consistent with these six issues. They are discussed below .

Package 1: The Design of High Performing Organizations in Highly Turbulent Settings

Introduction. Once, organizations could protect themselves from extreme environmental turbulence by confining their operations to a single country or a limited number of countries with a similar, stable institutional setting. For businesses, globalization has eliminated this possibility just as it has been eliminated for the Armed Forces with the dispersion of defense threats to an ever more fractionated series of entities. Under such turbulent settings, industries are reformulating and the task environments of organizations are becoming uncontrollable. With such dramatic alterations in institutional settings as well as the task and industry environments of organizations, designers need to know the reciprocal effects among organizational environments, organizational design, the evolution of organizational networks, and organizational outcomes.

Specific research packages in this area concern how to (l) match the design to an ever-changing environment, (2) structure organizational fields, (3) manage relationships among firms, (4) use strategic alliances in building new capabilities, (5) promote rapid organizational integration, (6) learn in highly turbulent settings and (6) use the existing design as a springboard to develop new, more effective ones.

Research in this area focuses on the development of organizational designs to cope with and partially shape environmental forces. The proposed areas of research listed below concern all four causal mechanisms. Organizations must respond or die (rationality). Senior managers may or may not be able to keep the organization moving

(power and control), and the organization may begin to drift and fractionate. The adaptive requirements for learning and innovating may simply be too complex and fast moving for participants (individual enhancement). And the institutional requirements may make developing a high performance organization virtually impossible simply because the organization has difficulty managing the clash of institutional expectations.

Package 1.1 Matching Designs to Ever-Changing Environments. Organizations are always out of date. Their environments move, the organizations learn of this, obtain consensus on actions and implement catch-up solutions. By the time implementation has taken place, the environment has shifted again and the mark has been missed. Assuming the general case, where organizational environments are at most only partially controllable and only minimally predictable, some questions arise. What alternative design features enable an organization most effectively to stay in sync with a fast-changing, only partially predictable environment? Under what circumstances are they most efficacious? What combinations of features are most internally congruent under highly dynamic conditions?

Package 1.2 The Structure of Organizational Fields. How do the understanding, beliefs, and rules underlying a set of related institutions shape the numbers, types, and characteristics of organizational fields and networks? How do these understandings and networks evolve over time and respond to new issues arising in their collective environments? How do different types of regime structures (vertical relations involving organizations either in different parts of the society such as government-to-business or in the same sector such as Department-of-Defense-to-the-Army) and different types of existing patterns of alliances respond to dramatic alterations in the collective environments? How do the understandings, beliefs and assumptions of senior managers heading organizations in different regime structures and alliances evolve?

Package 1.3 Managing Relationships Among Firms. Some U.S.-based multinationals are developing radical types of linkages and relationships among suppliers, government agencies, customers and even competitors. How are these networks structured to provide for the effective control of interorganizational relationships? What position or positions facilitate control and by what type of organizations (large versus small, technically sophisticated versus managerially astute)? And are these interorganizational relationships dramatically altering the internal designs of the participants?

Package 1.4 Role of Strategic Alliances in Building New Capabilities. While strategic alliances and network development are often observed in technology-based (high tech) industries, to what extent if any, do these arrangements build the collective capabilities of a set of organizations and/or particular organizational members? What capabilities are improved over time and do complementary capabilities among organizational members of a network systematically evolve over time? Is the process of building capabilities accelerated in highly turbulent environments?

Package 1.5 Rapid Organizational Integration. Current work suggests substantial difficulty with absorbing new organizations after a merger, while related work suggests that geographic diversification yields higher performance only up to a point. Beyond some point, performance declines, apparently due to the inability to manage complex interrelationships among members of a global network. What emergent organizational dynamics facilitate the implementation and management of diversification (across geographic and national boundaries, across organizational boundaries as with acquisitions joint ventures and strategic alliances) to enhance the capabilities of the system? How long does it take these emergent systems to operate and how is their influence on organizational outcomes altered by the strategy for integration developed by senior management? Is it possible to develop very rapid integrative mechanisms to link diverse units, each with its own unique pattern of emergent systems?

Package 1.6 Learning in a Turbulent Environment. With the extreme turbulence, what do organizations learn? How do organizations in these highly turbulent settings learn effectively and how do they sort random variations from emerging patterns? How is this information passed on to others inside the organization in such a way that it protects various technical cores while major corporate components increase their requisite variety to cope with the turbulence?

Package 1.7 Existing Designs as Facilitating, Constraining and Creating Opportunities for Adjustment. If organizations are being asked to alter their designs to meet environmental requirements, to what extent do different types of designs facilitate, constrain or create opportunities for adjustment? Do, for instance, machine bureaucracies (rigidly structured systems emphasizing rules, policies, procedures and controls) see change slowly but adjust more swiftly once the need for change is recognized, in comparison with their more flexibly-structured counterparts? What elements of organizational design provide the greatest constraining force? What elements are instrumental for the organization in creating radical new effective designs? What factors, strategies and logic can be used to speed the rate of effective change in organizations with different types of design?

Assessment. Much of the current work concerning organizational environments emphasizes corporate rationality (from work in population ecology and organizational economics) under the assumptions that inappropriately structured organizations will die or need only be told how to become more rational. The projects outlined above are focused on larger systems where death is not expected, much as it is not expected the Armed Forces will disappear. The proposed projects emphasize the longitudinal dynamics involved in complex organizations as they attempt to shape and cope with radically changing environments.

Larger business are confronting extreme environmental turbulence and experimenting with a number of mechanisms to improve organizational outcomes. Thus, field investigations of carefully selected organizations may provide valuable lessons and

alternatives to the development of an organizational design technology.

Package 2: Development of Designs to Implement Strategy Effectively

Introduction. While extreme environmental turbulence is facing many large businesses and governmental units, it is not the only factor altering the performance of organizations. For businesses, the development and implementation of an overall strategy was once considered a comparatively simple matter of selection among various economic advantages (cost emphasis, focus on an expanding market, or the development of new products). Now it is recognized that senior executives must not only orchestrate the development of an effective strategy but also assure its implementation throughout the organization and relevant portions of the organization's network of alliances. To further complicate the situation, there are often separate strategic development and implementation processes for the corporation as a whole (corporate-wide strategy), separate businesses (business level strategy), and specific products and processes (local strategy). These initiatives need to be meshed effectively so that each builds on the other. This difficult challenge is not unlike the challenge to match Department of Defense, U.S. Army, and Theater Operations strategies.

The research packages in this area deal with (1) enhancing the chances for effective corporate, business and local strategic implementation, (2) strategic restructuring and organizational performance, (3) implementing new strategies while maintaining high performance, (4) creating radical new strategies from current information, (5) strategies that build dynamic core competencies and capabilities for future high performance, and (6) engineering design elements from others to match multiple strategies.

Again, work in this area follows all four causal mechanisms underlying the proposed integrative model. Work on rational corporate strategies (mainly based on institutional economics) stresses competitive rivalry for economic gain against known competitors. However, work from a power/control perspective suggests that the dynamics within senior management groups to develop and implement a strategy is much more complex and the composition of the senior management group may dramatically alter the alternatives offered, how they are analyzed and which ones are selected. In contrast to the emphasis on strategic formulation, work stressing emergent systems and institutionalization logic stresses the importance of successful implementation.

Package 2.1 Enhancing the Chances of Effective Corporate, Business and Local Strategic Implementation. Successful strategy implementation is often difficult and the dysfunctional effects on organizational members can be catastrophic. Part of the problem is that strategies and strategic decision making approaches designed for whole multidivisional organizations (corporate level strategic choice analyses) may not be consistent with those applicable to divisions (business level strategies) and subdivisions (e.g. plant or product strategies). What combination of structures, emergent processes,

and systems contexts facilitate the development of complementary corporate, business and local strategies? How are successful experiments in strategy at the local and business level transferred up to the corporate level? Which ,if any, control and coordination mechanisms facilitate the rapid evolution and implementation of business level strategies to the corporation as a whole?

Package 2.2 Strategic Restructuring and Organizational Performance. The incidence of corporate strategic reconstitutions (buying, selling and developing businesses, and/or altering the firm's capital structure as via an executive buy out) is widespread. It can take many forms including refocusing a business portfolio or reconstituting the capital structure of the firm. What are the effects of corporate strategic reconstitution on the financial, systems, constituency, and social performance of the organization? Are there differential effects of different types of reconstitutions on different organizational outcomes and capabilities? How long do these fundamental reconstitutions of strategy take to work through the organization? How are the cascading effects down the organization handled by subordinate managers and organizational members? Can subordinate units better handle these reconstitutions if they are quick and decisive or slowly evolve over time?

Package 2.3 Implementing New Strategies While Maintaining High Performance. Experience suggests that implementation of a design to match a new strategy is extremely difficult. The old design cannot be discredited, because elements of it will occur in the new design. The organization cannot shut down, reorganize, experiment with the design, and then start again. And the implementation of the strategy must recognize that the organization may encounter unexpected conditions. It is as if the organization had to reconfigure a Boeing 747, while flying from New York to L.A., so that it could land on time without a runway. What types of paradoxical thinking (to pursue simultaneously two or more contradictory outcomes) are needed within the strategic management group? Can its members understand this paradoxical requirement and will their emergent systems adjust or simply become rigid? Do strategic choice developers, selectors and implementers possess sufficient cognitive complexity to deal with these issues? If some are, but others are not sufficiently complex, what alternative generation, evaluation, choice and implementation systems can be developed to overcome such limitations?

Package 2.4 Creating Radical New Strategies from Current Information. Strategic management groups gather, attend to and process information and they monitor existing structures, protocols and routines. They are also expected to be aware of larger societal trends and present a vision of the corporation to its members. How do senior management groups transcend the constrained information that is gathered for them (shaped to fit current operations, and adjusted to reflect favorably on the sender)? To what extent are the strategic alternatives derived by senior management constrained by their current frames of analysis and experience? To what extent do radical new strategies emerge from outside the mainstream of the organization? If they do, how are

key ideas from these strategies absorbed by senior management, legitimated, and transformed for successful implementation?

Package 2.5 Strategies That Build Dynamic Core Competencies and Capabilities for Future High Performance. Existing literature on the linkages among strategy, structure and performance suggests that strategic alterations to improve performance will call for a new structure. It is presumed that the skills, competencies and knowledge to operate the new structure will somehow be contained in the old one. With the recent movements toward downsizing, the creation of alliances where some skills are developed outside the organization, and the transfer of functions to contractors (hollowing of the corporation), many existing firms may not have the requisite core competencies to adopt a new structure. What types of core competencies need to be retained in the organization? Can the current design of the organization be developed to retain core competencies and still yield a high performing organization under the current strategy? How difficult is it to capture core competencies and how long does it take the organization to develop these? Is it possible to retain selected core competencies via organizational alliances, part time employees, quasi-affiliated units and other novel organizational arrangements?

Package 2.6 Engineering Design Elements From Others to Match Multiple Strategies. When operating in an extremely turbulent setting with unknown demands, constraints, and opportunities, it may not be possible for the designer to specify in detail the precise organizational designs needed in the future. The current elements of the design (the systems context, structure, and emergent processes) may need to be reconfigured quickly to meet unanticipated conditions. Is it possible to develop and institutionalize modular design elements that can be quickly configured and reconfigured as integrated wholes? Is it possible to develop and institutionalize learning protocols, information systems, command and control elements, and strategic implementation systems that will quickly provide a design yielding high performance? Is it possible to design these partially integrated wholes based on the designs that are currently popular in other organizations rather than developing unique patterns for the system?

Assessment. The projects outlined above address research issues that are not likely to be undertaken with the current trajectory of the strategy literature. Instead of focusing on corporate rationality, strategic formulation, or recommended strategies for corporations, these projects recognize that understanding emergent processes, control/power, and the capability to fit within the larger setting also help link strategy, systems context, structure, and environment for high performance organizations.

Package 3: Capitalizing on Alternatives in the Systems Context

Introduction. While environments and strategy are changing, so, too, are the scope and technologies of organizations. While much of the current literature emphasizes how organizations should respond to changes in size (e.g., downsizing), scope,

and technology, most of these analyses neglect the opportunity to view such changes as opportunities to develop high performance organizations.

The specific research packages in this area deal involve (1) future informational options and organizational design, (2) graphic depictions of organizational design, (3) the scope and scale of the high performing organization, (4) long-term effects of retrenchments, and (5) effects of large scale technological alterations on existing organizations

The topics discussed below emphasize a mix of the rational, power/control, institutionalization, and emergent systems causal linkages that are likely to be found in organizations. More of these projects emphasize rationality because they discuss the introduction of potentially new innovative administrative technologies. These technologies, themselves, are an important part of the development of a design technology for high performing organizations.

Package 3.1 Future Informational Options and Organizational Design. The designs and forms of organizations have always been constrained by the available communications technology. Any significant advance in information technology seems to lead eventually to recognition and implementation of new organizational design options that were not previously feasible, and perhaps not even envisioned. [Consider that within a decade or so, a large proportion of an organization's knowledge workers will be assessable to their coworkers in real (or very near) time]. What is likely to happen to organizational design as the exchange of messages, in any medium, becomes less and less constrained by time, space, cost and effort?

Package 3.2 Graphic Depictions of Organizational Designs. Our conceptualizations of organizational design are limited by current forms of graphical representation such as those found in most organization charts. These charts only hint at the rich interdependencies among design elements. Is it possible to (a) identify the essential elements of organizational design, (b) systematize this information into concepts, dimensions and interrelationships among dimensions (e.g. coordination mechanisms linking functionally separated units) and (c) develop appropriate computer graphics software to depict visually the rich interdependencies in potential organizational designs? Can graphic depiction of planned organizational designs avert implementation problems, identify areas of overload and facilitate quick redesign for unique operations?

Package 3.3 The Scope and Scale of the High Performing Organization. What is the scope and scale of the high performing organization? Does this scale and scope fundamentally differ by environmental and technological conditions? What organizational or suborganizational unit (division, department, the whole organization) do the members use to identify size and what are the perceived advantages/disadvantages of large/small organizational units? Here it is important to disentangle issues of scale from those of growth/decline. To what extent is it possible to

mitigate the dysfunctional effects of large scale via such mechanisms as decentralization, electronically enhanced communication, physical layout and the like?

Package 3.4 Long-term Effects of Retrenchments. While studies of downsizing are numerous and many more are now being conducted, few if any discuss the long term societal implications. Given the large number of delayerings, what are the expected long term effects on members? Will organizations enjoy new design options or be constrained by a different set of societal expectations? In a society that has expected individuals to have a primary organizational work affiliation, will widespread downsizing yield a different series of expectations for work? For instance, will individuals alter their identity away from organizations and merely exchange effort for money? Is it possible for the society to retain a comparatively large number of skilled individuals that move from organization to organization? Will organizational design have to be less personal, flexible, and individualistic to accommodate the larger proportion of part time, temporary and new workers?

Package 3.5 Effects of Large Scale Technological Alterations on Existing Organizations. While there are numerous studies of the evolution of new organizations in rapidly evolving technical areas, and their efforts to grow and survive, much less is known about how the administrative infrastructure and overall design of existing corporations are adjusted to technological changes. Do existing firms sell technically weak divisions and buy others with the new technology? If they incorporate the new technology, how long and in what way do they adjust to the new administrative requirements? To what extent do the new technologies call for new administrative systems? Can existing administrative designs be reconfigured to new technological requirements? (One way of examining this question is to study the co-development of administrative and technological innovations in large scale organizations.)

Assessment. New information technologies and new graphic design capabilities might be used to open new alternatives for the design of very complex systems. Simultaneous examination of technological and administrative innovations under conditions of corporate downsizing might well reveal how some organizations proactively confront dramatic alterations in their context. Each of the technology-based projects deserves unique attention because they deal directly with the development of a design technology for high performing organizations.

Package 4: How Do Organizations Simultaneously Reach Apparently Conflicting Desired Conditions?

Introduction. The high performing organization is somewhat of a misnomer since no single organization can be rated as exemplary on every possible dimension of performance. In some circles of the business sector, a single dimension, such as high short-term returns to stockholders, may qualify an organization as high performing. A broader vision of organizations suggests that they will need to at least satisfy the

expectations of a number of different and partially conflicting internal and external constituencies.

The research packages in this area involve (1) searching for a dynamic equilibrium, (2) reconciling and achieving mutually exclusive goals, (3) productivity paradoxes, and (4) maintaining stability in the face of change.

The projects here deal almost exclusively with a rational approach to defining high performance. While it is possible to develop projects concerning specific dimensions of performance derived from power/control, institutionalization, or emergent processes, these may be partially subsumed under the rational perspective merely by suggesting that each is a viable organizational goal.

Package 4.1 Searching for a Dynamic Equilibrium. Very complex organizations such a multinational businesses are expected to survive in the short term. They appear to seek a moving equilibrium where satisfying performance is repeatable. How do organizations identify, maintain and alter their vision of this dynamic equilibrium? Is it possible for outstanding performance in one area to be transferred to another so that effective organizations, on one dimension, become more effective on others? To what extent is the effective organization able to mold the expectations of others and to keep searching for a dynamic equilibrium?

Package 4.2 Reconciling and Achieving Mutually Exclusive Goals. If organizations are continually adapting, they must also be designed to exploit previously acquired knowledge and existing resource capabilities. How can the continually adjusting organizational design also help maintain requisite efficiency, consistency and goal achievement?

Package 4.3 Productivity Paradoxes. While millions have been spent to improve productivity by installing computers, enhancing computerization, downsizing, and a whole host of "top down" initiatives, comparatively few organizations report a improvement in overall organizational productivity. Why do "top down" initiatives to increase productivity often fail? Why do many organizations appear to follow one or a series of "myths" while a few appear to develop effective strategies for improvement? What characteristics of organizations (their environments, contexts, and structures) and their participants are associated with specific patterns of success or failure on specific types of criteria?

Package 4.4 Maintaining Stability in the Face of Change. Throughout their history, older established institutions and organizations have faced one or a number of severe challenges to fundamentally alter what they do and how they perform their tasks. How have these organizations bent to such pressures and how has it changed their supporting constituencies and contributions to these constituencies? For instance, are there fundamental differences between the adaptive mechanisms of business firms and

governmental agencies?

Assessment. The topics enumerated separately in this theme, while important, may also be embodied in empirical analyses of the other themes. It is important to assess organizations on multiple performance grounds and more carefully examine the relationships among performance measures as a part of large scale longitudinal studies of organizational design.

Package 5: The Role of Emergent Systems in the Effective Design for High Performance

Introduction. A number of scholars responding to our inquiry regarding needed areas of study noted the importance of emergent processes stemming from the role of individuals in organizations. One way of looking at these research needs concerns how the organizational context affects individual behaviors. Research crossing the borders of organizational, group, and individual units of analysis could not only explore how individual behavior is shaped by the larger social system, but also how individual behavior may shape processes involved in strategic change. To limit the scope of inquiry, this report concentrated on a limited number of emergent processes that appear to be salient in developing designs for high performance organizations.

One way to examine these important emergent processes is to study leadership, innovation, culture, and knowledge use in organizations. Another approach is to attempt to understand each of these as a dynamic process, in part created by organizational participants. Thus leading, innovating, acculturating, and learning become important to understanding, since each process needs to function effectively in the high performing organization.

The specific research packages in this area concern (1) the composition of effective units, (2) innovating in upper echelons, (3) organizational acculturation and entrainment to support high performing organizations, and (4) the evolution of effective leadership networks.

As with the other topics, the research areas emphasized here cover all four causal mechanisms. They emphasize areas where research is lacking and current research programs are unlikely to provide viable answers to key issues. For instance, the U.S. Army is likely to experience downsizing. The literature review suggested that downsizing without considering strategy, new structures, and emergent processes is very likely to fail. There are a large number of projects currently underway concerning the direct short-term effects of downsizing on employee affective states, organizational productivity and the like. Most of these projects adopt rationality and individual enhancement as important causal mechanisms. They do not couple downsizing with innovating, learning, and leading or consider the longer-term effects of downsizing. These neglected aspects of downsizing should be studied and may need to be funded externally. The more typical studies will naturally occur and the literature should be monitored to incorporate

research findings into the knowledge base of the Army.

Package 5.1 The Composition of Effective Units. With large shifts in age distributions of the national population and a dramatic shift in the ethnic composition of the population, many organizations are finding the demographic characteristics of their work force significantly altered. These new demographic configurations will affect internal power struggles, career development, and blockage. Modeling demographic processes, including cohort clusters, resulting power distributions among cohorts, and the manner in which different cohort clusters create, define and manipulate organizational realities may prove quite useful in explaining the nature of many emergent processes such as organizational cultures, innovation, learning, and leadership. For instance, to what extent do different cohorts (by age, cultural upbringing and sex) desire different patterns of organizational learning, innovation and leadership? At what point does the society as a whole begin to shift its institutionalized expectations to expect a diversity of cohorts at different organizational levels? Can large institutions promote the development of diverse cohorts with minimal societal reaction?

Package 5.2 Innovating in Upper Echelons. Existing work on innovation and innovating in organizations stresses the structures, policies and roles that need to be developed to foster this important emergent process. The chances of successful technical innovation are enhanced by administrative innovation, and vice versa. In the applied literature senior managers are expected to foster innovation below them. However, with the dramatic changes in the environment and systems context (size and technology) facing organizations, little is known how to foster innovativeness in the upper echelons of organizations. For instance do such factors as the average length of service, the history of inter-functional relations, and the age profile of the senior management group alter the willingness of this group to change itself? Is it necessary for the top echelons to first alter the manner in which they do their work if the organization is to change its design? Are current designs for senior management robust enough to foster and facilitate large scale organizational redesign or are conventional designs for the governance of larger scale systems a limitation on systems redesign?

Package 5.3 Organizational Acculturation and Entrainment to Support High Performing Organizations. While the importance of organizational culture as an emergent process has been noted previously, comparatively little work currently published or underway concerns cultural processes for change and entrainment. Cultural processes (how individuals learn, absorb, internalize and collectively alter their culture in response to and in anticipation of very dramatic changes in the organization) remain an open issue in the literature. For instance, at what point in the rate of change do cultural processes break down and leave individuals adrift so that they must individually cope with change and goal accomplishment? Do the processes of entrainment (or the alignment of rhythms and forces) for a senior management cohort deteriorate in continually changing organizations to the point that there are systemic limits on developing an adaptable organizational design? Is it possible for the entrainment

preferences (desires for specific types of consistencies, logic and patterns of timing) of long term senior managers to become embedded in the organization?

Package 5.4 The Evolution of Effective Leadership Networks. Senior executives often establish enduring interaction patterns not only with cohorts inside the organization but also with cohorts who are leaders in other systems. Within these larger networks, the leader of a particular unit may see himself/herself as a follower, innovator, or change agent, among other roles. Further, these larger networks may be seen as extended power/control systems that provide members with access to legitimated solutions (cf Scott, 1991). To what extent is the evolution and development of an organizational design to cope with rapid change partially a function of the leader's access to, position in, or negotiation with members in an extended network of leaders? To what extent, if any, does such membership in or access to such networks allow a manager to experiment with his/her own roles and leadership initiatives? To what extent do these dynamics operate at lower levels within the organization and how do they influence organizational learning and innovativeness?

Assessment. The focus of these proposed projects is to more fully understand the potentially important role of selected emergent processes in developing designs for high performing organizations. Many of these projects focus on senior management simply because they are in the central position to identify, initiate, and orchestrate the development of new organizational designs. If the organization is likely to undergo rapid change, there is little doubt that analyses of the dynamics and capabilities for change at the top are important. Again, the emphasis is on change in larger scale organizations.

Each of these research packages calls for research that cuts across or integrates work at different units of analysis (individuals in organizations or individual interpretations of organizational processes). Most of the current work owes its history and traditions to psychology or sociology where the focus is on one unit of analysis (e.g., individual or organizations). Proposed theories and projects that integrate and cut across these boundaries are to be encouraged.

Package 6: Designs For Very Large Complex Systems

Introduction. The organizational design of extremely large, complex systems, as opposed to the design for its components or for a firm with a singular product line, is as much a political, interpretive, and mythological development process as it is an engineering exercise in creating and constructing relevant task environments, systems contexts, intended formal structures, and emergent systems.

The key problem for the designer is to recognize the potential importance of these potential influences on the overall design of very complex systems so that proposed designs meet larger societal expectations as well as specific mission, task, and systems

requirements.

The research packages here discuss how (1) interpretations by important supporters and key senior executives may alter the evolution of a design, (2) a vision of the organization that cuts across different causal mechanisms may be important to develop, (3) the design needs to promote the development of useful myths, and (4) the design of very large, complex organizations becomes a mechanism for social change.

These topics are rarely discussed in the literature simply because access for research purposes to the senior executives of very large, complex systems is comparatively rare. There are probably less than one hundred of these organizations in the U.S., but how they are designed can have profound effects on the larger society. The proposed research packages blend analyses of rational, power/control, institutionalization, and emergent systems causality to chart the next step in the evolution of organizational design research toward understanding the design, roles and influences of very large, complex systems.

Package 6.1 Interpretation of Organizational Issues. Very large complex systems directly confront emerging societal issues simply because they are such an important component of the larger society. How do very large complex organizations initially identify and subsequently respond to issues that are important to one or more constituencies? What process of legitimization are evoked to link the issue to existing goals, routines, or interests of the organization? How do organizations respond when these issues emanate from the outside rather than being defined by influential members? And, most important, how do different organizational designs allow for, prohibit and/or promote different patterns of issue identification and response? Included here are different expectations for very complex systems emanating from the legal/political, social/cultural, economic and educational sectors of the society.

Package 6.2 Interpretations of Basic Integrative Mechanisms. Different underlying implicit models of the organization are popular in the U.S. (e.g., economic greed under private ownership yields societal benefit through an invisible hand; rational goal seeking systems can be developed to meet national interests that are vitally important to each citizen; negotiated interests can be balanced to yield systems that generate and allocate power; value added synergies can be glued together by technology and information to provide bureaucracies to solve problems). Each yields a somewhat different guiding metaphor for linking the elements that form the organization and its boundaries. Very large complex organizations expand across a wide range of economic, rational, cultural and technological systems. What, if any, integrative visions hold the parts together? What are the implicit "social contracts" that the organization enters and uses to draw various elements together and draw boundaries of where its interests will be focused? In establishing and using these visions and expectations, how is the definition of performance altered? If its social legitimacy is predominantly based on one guiding metaphor, how does it use the others?

Package 6.3 The Evolution and Development of Useful Myths. Some organizations are simply too large and complex to describe succinctly, comprehensively, and accurately. Popular mythology implicitly presumes that all elements are integrated and controlled through a chain of command so that one or a few individuals can be held accountable. Popular mythology suggests that these very complex systems have a mission, a goal, or a common theme. Popular mythology also suggests that organizations are purposeful; higher level managers possess progressively more administrative skill, entrepreneurial imagination, and accountability to key constituencies; senior executives are neutral parties that place organizational needs above personal needs. What are the myths that are used to guide the design of very large complex organizations? To what extent, if any, are these myths characteristic of the system? What role do these myths play in maintaining the viability of these behemoths and their ability to initiate action? In highly turbulent environments with dramatic changes in size and technology, these myths are often challenged. During these threats to mythology, to what extent, if any, do attempts to increase the appearance of conforming to a myth actually reduce the potential for performance. To what extent does subscription to popular myths reduce the potential to develop new, innovative designs? To what extent, if any, do these very large and complex systems call for the evolution of governance systems (based on ideology, political reality and conformance to societal expectations) rather than management systems intended to reach specific targets? At what point in the hierarchy of these organizations do executives switch from managing a business to governing an institutional establishment? Is it possible to fundamentally change the design below the institutional establishment without altering the design at this highest level?

Package 6.4 The Design of Very Large Complex Organizations as a Mechanism for Social Change. Behemoths are important social actors that both conform to societal expectations and mold the futures for the society. The design adopted by these systems is likely to be copied, replicated, and modified whether it works as intended or not. To what extent, if any, must the designer recognize this potential for external influence? Does the possibility of being so visible limit the design options or does it liberate the designer from having to copy elements of the design from others? Is it reasonable for the designer to estimate the impacts of a proposed design on other key institutions in the society such as families, communities and/or the future competitiveness of businesses?

Assessment. The analysis of very large complex systems calls for innovative research designs based on very small sample sizes. To initiate research in this area it may be necessary to support predominantly qualitative projects that attempt to isolate the unique dynamics occurring in these unusual systems. While such studies may be quite controversial, they could add much to the literature and help show why, where, when and how the design of behemoths needs to consider a broader range of factors than the design of systems with one or a few major components. It may also be possible to dovetail these concerns for behemoths into some of the prior projects. Specifically, it may be possible to add a qualitative assessment of selected items from the above list to projects being conducted in large organizations.

Extensive discussion by the panel used to develop and select these high priority research projects focused on the tendency for both researchers and designers to package and repackage existing design elements as if even the largest organizations were but bigger versions of the smaller ones. The consensus was that designing behemoths was qualitatively different. The researches suggested that work based on the prior packages could be conducted in very large organization. But in addition to this work, some research should be devoted exclusively to the unique potential of redesigning major social institutions.

A Recapitulation of the Research Issues

The research packages represent important research issues in the design of organizations. In another light they form a series of questions that designers need to address to develop designs for high performing organizations.

Is the design able to help shape, respond to and capitalize on the environment of the organization (See Package #1)? Can it be used to identify and implement multiple strategies that also yield increased capacity for future performance (See Package #2)? Can it be used to exploit both new and existing technologies (both administrative and technical innovations should be considered) and does it recognize the dynamics of changes in size and scope (See Package #3)? Does it provide the capability to simultaneously reach apparently inconsistent goals, seek a dynamic equilibrium, resolve productivity paradoxes and maintain stability in the face of change (See Package #4)?

Even if the design can be built on a resolution of these issues, the design is far from finished since the emergent systems concerning innovating, acculturation, learning, and leading also need to be addressed along with the unique problems of designing very large complex organizations.

As these issues are more clearly defined and research results begin to accumulate, it will be possible to move toward a technology of organizational design for high performance systems. The technology will be less a cookie cutter for stamping out new organization charts and more of a guide to developing designs commensurate with the complexity of today's modern organization.

RELEVANCE OF THE RESEARCH ISSUES TO THE U.S. ARMY

It is beyond the scope of the current project to assess the relevance of these research issues to the potential challenges of organizational redesign in the U.S. Army. Thus, a final prioritization of the projects is not possible. It is possible, however, to outline how these projects might be prioritized for future sponsored research.

The projects identified here were developed through (1) a systematic poll of experienced researchers, (2) the use of a modified delphi technique to identify

potentially important projects and eliminate those where research is less interesting or pending, and (3) linking the proposed research topics with an integrated model of organizational design for high performing organizations. The model permitted the research team to organize the suggested themes and projects and note the causal linkages that were used to link variables together.

A conceptually similar process might be utilized with experienced Army officers and researchers familiar with the design needs of the Army to identify an independent list of research needs. This list could then be matched with the one provided in this report through the integrative model. The result of the comparison could yield a prioritized list of projects that are (a) highly relevant to Army needs, (b) unlikely to be undertaken without sponsorship, and (c) of sufficient interest in the academic community to solicit the interest of leading organizational scholars.

SUMMARY

After reviewing the challenges to organizational designers, this report provides an overview of a proposed integrative model to help understand the different types of research programs and projects now being conducted concerning organizational design. This model suggests that designers should consider the interplay of four classes of variables: (l) the environment of the organization, (2) the systems context (size and technological factors), (3) the structure and (4) emergent systems (leadership, learning, culture, innovation and the like). The design consists of patterns among elements of the context, structure and emergent processes. The model also suggests that rationality (goal directed actions), power/control dynamics, institutional processes and individual enhancement needs are four types of important causal mechanisms in organizations. These four organizational design variables may be linked with organizational performance using any one or all four of the causal mechanisms for several different units of analysis (units, divisions, organizations, interorganizational relationships).

The report also outlines methodological and research design guidelines for individual projects. This discussion recognizes that the social and behavioral sciences share some common standards for research design and methodology. The discussion also recognizes some of the unique problems in conducting organizational research.

The major portion of the report discusses six important "research packages." Each discusses a series of interrelated projects to address key issues in the design/redesign of organizations. These projects concern (1) effective responses to dramatically changing environments, (2) building strategic success and capability, (3) capitalizing on technological changes as well as alterations in size and scope, (4) identifying and meeting multiple, partially conflicting dynamic performance expectations, (5) understanding the important role of emergent processes in organizational design, and (6) recognizing the unique problems of designing very large complex systems.

The report also discusses how to prioritize these "research packages" for potential funding. While it is beyond the scope of this project to actually list a priority for all projects, each "research package" was (1) developed through a rigorous process involving an extensive literature review, a poll of over 100 scholars and extensive discussions by highly renowned organizational scholars, (2) crafted to highlight projects that would not be conducted without external intervention by a funding sponsor, and (3) linked together with a proposed integrative model for understanding and developing organizational design for high performing organizations.

As the issues identified in this report are more clearly defined and research results begin to accumulate, it is possible to move toward a technology of organizational design for high performance systems. The technology will be less a cookie cutter for stamping out new organization charts and more of a guide to developing designs commensurate with the complexity of today's modern organization.

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APPENDIX A
ANALYSIS OF RECOMMENDED RESEARCH THEMES PROVIDED BY LEADING SCHOLARS

Noted experts in the field of organization and organizational design were contacted, and asked to provide their suggestions regarding research needed to further understanding in the field. Ninety-nine suggestions were received from the forty-eight respondents. In examining the responses, three themes tended to be particularly prevalent: the need to study (1) organizational networks, (2) organizational adaptability and transformation, and (3) structures and processes facilitating organizational innovation. Each of these themes was reflected by between 13 to 15 suggestions--over 40% of the responses therefore fell into one of these three content areas.

ORGANIZATIONAL NETWORKS

Several researchers pointed to the importance and increasing use of inter-organizational relationships, including joint ventures and partnerships (Lyles), research consortia (Gerloff), "quasi-firms", inside contracting and sub-contracting systems (Leblebici), as well as organizational linkages to customers and suppliers (Bailyn, Melcher), including keiretsu-type relationships (Brittain). As Dr. Leblebici has noted, this activity involves the generation of alternative forms of organizations which may render obsolete (or at least require some modification of) such constructions and dimensions of organizational descriptors as formalization, centralization, and specialization.

The researchers addressing this area maintained that research identifying fundamental building blocks of such networks could not only serve to develop an understanding of these emerging forms, but might also prove useful in designing novel organizations. As noted by Robbins, emerging organizational designs that reflect changes in technology and strategies often include flatter structures, computerization, decentralized decision making, centralized monitoring, and/or geographic separation. While such designs suggest network structures, we lack understanding regarding network development, design, and governance.

Research into the design features of organizational networks would incorporate both theoretical logic and descriptive material in addressing the origins and evolution of networks (Brittain) and the development of internal and network governance and control to manage network relations (Dess, Jauch, Melcher). Miles has added that the study of governance mechanisms in network structures also needs to include issues of dynamic networks where elements along the value chain are rapidly coupled and decoupled.

Delbecq suggested that research into linkages between business, government and education to "create a necessary macro-infrastructure" would facilitate the development of an effective industrial policy and partnership. Gerloff focused on technology development and transfer issues through consortia. While Brown has also echoed the importance of linkages across technological as well as international boundaries, Robey has pointed out the importance of enabling technologies supporting such linkages.

The utilization of such forms also raises specific questions about organization (and interorganizational) adaptability. Melcher notes the need to study the nature of interorganizational linkages over pressures for continuous improvement. What management processes, for example

need to be used and developed between customer and supplier organizations as products and process are continually evolving? Miles notes pressures for mechanisms combining adaptability and specialization.

ORGANIZATIONAL TRANSFORMATION

A second general theme involved the need to increase our understanding in developing flexible structures that can restructure rapidly as conditions change (Bettis). Several scholars noted that organizations will face continual rapid changes in markets, technology, and competitors, and therefore need to develop the ability to rapidly sense the need for change, to make strategic choices, and implement change (Ettlie, Huber, Terborg). Marguiles pointed out the need to improve our models of organizational transition, and to support such efforts with longitudinal, multi-firm research.

The need for change models delineating pressures for change and continuity was noted by Robey, while Schein called for research regarding management and culture change toward more collaborative organization. Alternative approaches to being flexible/adaptable and also efficient need to be delineated, and the circumstances under which these alternatives are appropriate and effective must be addressed (Huber).

Specific types of transitions were addressed by the researchers. Dess suggested the need to better understand the effects of delayering, and its implications for control mechanisms and de-integration. Similarly, Cameron listed a wide range of issues that could be addressed surrounding organizational downsizing. Beyer has suggested that organizational changes may be affecting organizations' levels of internal differentiation, altering the levels of specialization or complexity. Bartunek suggests that a fruitful line of inquiry involves the study of power, environment and stakeholder behavior during the course of organizational transition. Longitudinal field studies are recommended in this endeavor (Bartunek).

Melcher suggests that many firms are being compelled to move from an optimizing paradigm to a continuous improvement paradigm. The ability to make the transition between such organizing frameworks could be addressed. Lastly, Schein notes that we need to learn more about creating processes that support the structures we design. New structures may well be undermined by ineffective practices or processes (Schein).

ORGANIZATIONAL INNOVATION

Another major theme involved the need to advance our understanding of innovation and the technology development process. As firms are pushed to shorten product development cycles, more needs to be known about the importance of special roles, structural arrangements and communication processes (Gerloff). As Brown has noted, this involves organizational adaptation to perpetual innovation and technological change.

While many researchers (Bettis, Delbecq, Root) did not elaborate beyond noting the need to design organizations for technological innovation, more specific research needs were enumerated by Clark, who noted the need to address integration across functions in product/process development as well as product/process engineering in rapidly evolving environments. Organizational efficiency and effectiveness in the development of computer hardware and software,

and more toward computer integrated manufacturing systems was posited by Melcher to be a fruitful line of inquiry.

Issues in the adoption of administrative innovations were addressed as well. Ford has suggested the design of new management technologies that are based in accomplishment and results rather than activity, feelings, and cognitions. Pfeffer noted the need for organizations and management scholars to overcome fads, and to systematically implement and evaluate new administrative innovations. Further study could address why organizations don't adopt successful innovations on compensation, organizational design, or innovations in work structure more rapidly (Pfeffer)

GLOBALIZATION

Seven recommendations involved designing organizations for global competition. Several researchers provided general recommendations reflecting the importance of competing in a global economy, the development of a greater awareness of global issues, and a global workforce (Root, Schuler, Terborg). Behrman recommends research regarding the fit between organizational structure and national culture. Two scholars have suggested studies regarding the implications of increasing democratization and performance of business firms in emerging democracies (Lyles, Reimann).

INFORMATION PROCESSING/COMMUNICATION DEVELOPMENTS AND ORGANIZATION

As Huber noted, the designs and forms of organizations have always been constrained by the available communication technology. Significant advances in information technology lead eventually to the recognition and implementation of new organizational design options. The increasing availability of media allowing co-worker interaction in real time (FAX, picture phone, etc) reduce time and space constraints on the organization (Huber). Connolly, as well as Reinmann, suggests that the impact of the computer on organizations may require reevaluation of the extent to which extant coordination mechanisms are needed (also see Reimann). New forms may reflect the development of computer-based organizational structures (Connolly). Melcher also notes the potential for computers to affect organizational structures and calls for the development of a classification system for describing and classifying information systems. Four research themes involved the impact of communication/information processing technologies on subsequent organization.

ORGANIZATIONAL LEARNING

An additional four recommendations revolved around the extent to which different types of organizations receive, encode, and store information. Scott noted the need to know more about how organizations gather, attend to, and process information; how structures and routines constrain what is perceived; and how they are modified over time. Carroll suggests that future research could show how different types of organizations must have different learning mechanisms. As issues of organizational learning and strategy have utilized the construct of "core competence," Pfeffer notes the need to operationalize and evaluate conditions surrounding the development and application of core competencies. On a more macro scale, Bedeian notes needed input on reskilling the U.S. work force. Building on an information processing view of organizations, Scott recommends studies

regarding how various parts of the organization are shaped by information requirements (Scott).

QUALITY/CONTINUOUS IMPROVEMENT

Though issues concerning organizational designs and practices contributing to product/service quality were raised less frequently than many other topics, they may well be implied in the more general calls for research to increase our ability to compete on a global scale. Of the three recommendations noted here, Melcher does indicate the need for development of a theory that interrelates continuous improvement, total quality control, and just-in-time methods (Melcher). How do we design organizations for continuous improvement (Melcher) and high reliability (Cameron), and enhanced quality? (Kedia)

TOP MANAGEMENT TEAMS: COMPOSITION AND COMPENSATION

Three additional recommendations reflected interest in top-management teams. These included Habrick's recommendation to study the composition of top management teams, Hambrick and Bedeian's suggestion to study executive compensation and company performance, and Hambrick's focus on executive cognitions.

OTHERS

A number of additional suggestions were provided by the scholars. These included study of organizational structure and the large business enterprise (Chandler), organizational subcultures (Beyer), "slack/taut relationships" in organizations (Behrman), organizational designs facilitating acceptance of responsibility and accountability for organizational actions (Cummings), inter-unit trust and organizational effectiveness (Cummings), biases in management perceptions of organization and environmental characteristics (Starbuck), the empowerment process (Robbins), dispute resolution mechanisms other than negotiation (Bartunek), the impact of feedback received by leaders (Bass), organizational demography (Scott), personal value systems being brought into organizations in the U.S. (Connor), military-to-civilian transfer of occupational specialties (Bass), Chaos theory approaches (Jauch), power (Grimes), and new patterns of organization/individual work relationships, including subcontracting, franchises, work-family issues (Bailyn), the hierarchy problem in organization design (Ettlie), linkages among HRM activities and between those activities and organizational needs (Schuler), and uncovering mechanisms to prevent the built-in failures commonly associated with certain forms of organizational design (Miles).

METHODOLOGY

Whether in the context of other research proposals or as stand-alone recommendations, a number of researchers presented their ideas regarding methodologies that need to be brought to bear on organizational studies. The most frequent theme here was the call for longitudinal studies. Bartunek called for longitudinal field studies and Starbuck noted the need for parallel case studies involving detailed analyses of several organizations and situations over several months or year. Hellriegel and Marguiles also recommended longitudinal comparative approaches to organizational transitions and effectiveness.

As elaborated by Grimes, detailed, descriptive "real-time" studies of organizations and decision processes are required to reduce shortcomings associated with existing biases in

organizational studies. Of course, such studies require researcher commitment and resources. Concerned that the existing structures do not provide adequate resources for, nor reinforcement of, the type of research that is needed, Birnbaum-More suggests a change in the structures (including alternative funding and research presentation outlets) through which organizational research is carried out.

Hellriegel supports a move to configural approaches to organizations, and Melcher recommends the study of combinations of change (such as advanced technology and continuous improvement) and their effects on organization.

Noting that organizational charts are not capable of presenting adequate representations in designing and communicating new organizational structures, Leblebici suggests the development of new techniques in providing visual representations of organizations.

THEORY DEVELOPMENT

Recommendations regarding the study of the particular content areas discussed above were frequently accompanied by calls for theory development in those areas. Some more general theory-development issues are noted here. Salancik, for example, maintains that the field has a substantial need for the development of generative theories, specifying sets of elements (organizational activities) and rules (which define relationships among the activities). Salancik suggests that based on such an approach, 15 basic arrangements for manufacturing organizations can be delineated. Von Hipple develops a model and proposes new methodologies for tracking and shaping needs for new products and services.

Both Ford and Salancik suggest that our existing ideas of structure and re-structuring are archaic and need to be re-thought. Ford discusses issues in the design of communication, accountability, and performance structures, while Salancik calls for a language with which to discuss organizational design issues (including issues of uncertainty, transaction hazard, structure, and management practice).

Several researchers have recommended the development of categorization systems, including Van de Ven's categorizations of process (life cycle, teleology, dialectics, and evolution), and Melcher's recommendations for the development of general classification systems for organizations, information systems, and production systems.

LIST OF LEADING SCHOLARS WHO CONTRIBUTED RESEARCH THEMES

Anderson, Carl. *University of North Carolina at Chapel Hill.*
Bailyn, Lotte. *Massachusetts Institute of Technology.*
Bartunek, Jean. *Boston College.*
Bass, Bernard. *State University of New York at Binghamton.*
Bedeian, Art. *Louisiana State University.*
Behrman, Jack. *University of North Carolina at Chapel Hill.*
Bettis, Richard. *Southern Methodist University.*
Beyer, Jan. *University of Texas at Austin.*
Birnbaum-More, Phillip. *University of Southern California.*
Brittain, Jack. *University of Texas at Dallas.*
Brown, Warren. *University of Oregon.*
Cameron, Kim. *University of Michigan.*
Chandler, Alfred D., Jr. *Harvard University.*
Clark, Kim. *Harvard University.*
Connolly, Terry. *University of Arizona.*
Connor, Patrick. *Williamette University.*
Cummings, Larry. *University of Minnesota.*
Delbecq, Andre. *Santa Clara University.*
Dess, Gregory. *University of Texas at Arlington.*
Ettlie, John. *University of Michigan.*
Ford, Jeffrey. *Ohio State University.*
Gerloff, Edwin. *University of Texas at Arlington.*
Grimes, Andy. *University of Kentucky.*
Hambrick, Donald. *Columbia University.*
Hellriegel, Donald. *Texas A&M University.*
Jauch, Larry. *Northeast Louisiana University.*
Kedia, Banwari. *Memphis State University.*
Leblebici, Huseyin. *University of Illinois at Urbana-Champaign.*
Lyles, Marjorie. *Indiana University.*
Marguiles, Newton. *University of California at Irvine.*
Melcher, Arlyn. *Southern Illinois University.*
Miles, Raymond. *University of California at Berkeley.*
Pearce, John. *George Mason University.*
Pfeffer, Jeffrey. *Stanford University.*
Reinman, Bernie. *Cleveland State University.*
Robbins, Stephen. *San Diego State University.*
Robey, Dan. *Florida International University.*
Root, Franklin. *University of Pennsylvania, Wharton.*
Salancik, Gerald. *Carnegie-Mellon University.*
Schein, Ed. *Massachusetts Institute of Technology.*
Schuler, Randall. *New York University.*
Starbuck, William. *New York University.*
Terborg, James. *University of Oregon.*
Van De Ven, Andrew. *University of Minnesota.*
Von Hippel, Eric. *Massachusetts Institute of Technology.*

Zammuto, Ray. *Northwestern University.*

APPENDIX B

PROPOSALS SUBMITTED BY EMERGING SCHOLARS

Anderson, Phillip. *Cornell University*

Title: Quasi-Markets within Organizations: Toward an Institutional Framework for Organization Economics

A specter is haunting Europe - the Specter of Adam Smith. The contrast between mixed-market and centrally planned economic systems has perhaps never appeared so stark. The veil has been stripped from Eastern European communism, revealing a level of backwardness and inefficiency in non-military sectors to which few would have given credence. In contrast, examples of economic rebirth such as Chile and parts of southern China forcefully illustrate the vigor of markets and enterprise. What impresses is the power of the invisible hand, the ability of price signals and competition to weld innumerable individual decisions into a productive order that restlessly advances.

Yet we have ambivalent attitudes toward the invisible hand. Hong Kong is perhaps the only truly laissez-faire state; all other non-socialist nations operate mixed economies combining more-or-less regulated markets with some public ownership. Americans assessing Japan's startling growth (and to a lesser extent the rise of Taiwan, Korea, and Singapore) have been particularly impressed by the role of non-market coordination. It is clear that the Japanese have prospered not only through hard work and dedication to improvement, but also by playing the game of international trade in a unique way. The invisible hand gets plenty of direction through mechanisms such as MITI guidance of industry and keiretsu coordination of individual firms.

Closer examination suggests that the Japanese have not abandoned the invisible hand; rather they have harnessed its potency. Competition within Nippon is intense and ruthless. For instance, the structural contrast between Japan's fiercely competitive automobile industry and America's comfortable oligopoly may account at least partially for Japan's emergence as the world's largest auto maker. Similarly, life for companies in a keiretsu is anything but placid. Although the members of an industrial group buy from one another without frequent open bidding in the marketplace, it is common practice for large firms to split business among several suppliers, whose share of future contracts depends on the quality and price they deliver today. Inter-firm relationships are less closed and cozy than they appear to Western eyes; through constant benchmarking, all members of a keiretsu are subjected to the measure of the market and the sting of competition. The Japanese model combines fierce internal competition with a coordinated approach to the outside world.

Organizations (inside and outside Japan) frequently try to harness the invisible hand in a similar way. The complex organization is the most powerful tool yet devised

for coordinating and channeling work. We live in a world where organizations are the most powerful economic and political actors. Despite the efficiency of markets, individuals seldom contract directly with one another; far more often they provide inputs to and consume outputs from organizations. Organizing multiplies individual effectiveness, so much so that Weber (1968) depicted bureaucracy as the most efficient vehicle for collective action known to man.

Yet bureaucracies insulate most of their employees from market forces. For Downs (1967) as for many other students of bureaucratic dysfunction, the cancer at the heart of bureaucracy is precisely the fact that market discipline is removed from most of the organization's activities. Red tape proliferates because rules, not prices, signal what is to be done. Perception and decision biases persist because they are not limited by their impact on profitability. Bureaus become rigid because they do not need to adapt to signals such as price and profit.

In summary, organizing is powerful but without the invisible hand, organizations can develop internal inefficiencies quite similar to those characteristic of planned economies. As a consequence, many firms have been attracted to the organizational equivalent of the Japanese national economy: let an invisible hand provide internal discipline that the organization channels to the outside world. Bowing to Adam Smith's logic, they establish some form of internal quasi-market to weld innumerable individual decisions into a productive order within the firm. Examples of attempts to create and operate internal markets include but are not limited to the following:

* Conversion of traditional cost centers to profit centers, conducting transactions with the rest of the organization through transfer prices.

* "Tapered integration" (Harrigan, 1984) in which an activity is both carried out internally and contracted out, to subject the internal operation to market discipline.

* "Tin-cupping;" forcing centralized functions (e.g. R&D) to obtain part of their budget by soliciting funds from operating divisions, typically in the form of sponsored projects.

* Internal labor markets in which salaries are determined by managers bidding for employees, either periodically or on a project basis.

* Corporate ventures with capital structures (e.g. phantom stock) designed to simulate the incentives that venture markets offer to entrepreneurs.

Organizations that do not compete in a marketplace (e.g. the military) also attempt to set up and operate internal quasi-markets. Examples in logistics abound: consider self-service supply centers, or contracting functions to civilians that are also market tests. Via differentials for various Military Occupational Specialties, military

recruiting sets up a quasi-market designed to match individual preferences with the needs of the service. In some cases, central training operations receive part of their funds from budgets which combat and support units are free to spend elsewhere; consequently, training is partially allocated by matching supply and demand through transfer prices.

As the military faces the challenge of maintaining national security with a smaller, less costly, more flexible force, numerous quasi-market mechanisms that exploit the power of the invisible hand are likely to merit consideration. For example:

* Personnel are typically assigned to units by the Military Personnel Center; perhaps an efficient mechanism might provide units with a phantom personnel budget which might be used to bid for the top graduates of training schools according to each individual unit's most critical needs.

* Tactical innovations are typically developed at training schools and then transmitted as doctrine to all units. An alternative possibility would be allowing competing entities to develop innovative tactics and attempt to sell them to units, in essence letting many individual choices govern the direction in which tactics evolve.

* Units typically secure supplies through a single logistics chain. Perhaps a better solution would be to set up several competing supply chains and allow units to use those which provide better prices and service.

* Every supply sergeant and motor sergeant in the Army procures some parts and equipment through barter with his/her peers. There isn't one who does not keep an inventory for trading purposes. The military might be better off formalizing inter-unit barter, establishing a central clearinghouse to match up supply and demand.

Economists constantly devise clever ways in which some sort of market or contracting mechanism can maximize social welfare. The most vibrant branch of modern economics employs game theory to assess, for example, what optimal contracts would look like given rational behavior. In this enterprise, economists are guided by a number of theories which explain the forces under which laissez-faire will lead to sub-optimal solutions. Archetypically, the presence of an externality requires some form of regulatory intervention to restore a market's efficient operation. A large and growing literature on transaction costs (e.g., Williamson 1985) specifies the conditions under which markets are likely to fail, causing transactions to be internalized within the boundaries of an organization. Although the essence of Adam Smith's argument is that economic efficiency flows from the pursuit of self-interest, agency theorists have illuminated the ways in which the self-interest of individuals undermines that of the individuals who employ them. However, in these branches of economics the firm is viewed simplistically as a nexus of contracts.

We know a great deal about what can go wrong with a market per se. Yet we know very little about the actual operation of market-like mechanisms within firms. A reasonable framework exists for thinking about make-or-buy choices. There is a great deal of scholarship treating the way the economic environment affects organizations. But very little research has examined how the organizations as an environment influences pseudo-markets that operate within its boundaries. Managers have almost no policy guarantee telling them when a quasi-market might and might not be effective, what causes simulated markets inside firms to function effectively or to break down, or which elements of an internal market are crucial to its functioning.

Consider for example the idea of setting up competing supply chains among which military units can choose. It seems reasonable that such a quasi-market can exploit the benefits of competition and price signals to provide internal customers with better service at a lower cost. But we have no analytical framework that allows us to assess whether or not a quasi-market is workable in this case. The transaction cost framework provides a start, but it is designed to assess make-or-buy choices on a transaction-by-transaction basis, not to appraise whether the conditions exist that permit successful operation of a pseudo-market within a firm's boundaries. For instance, a critical difference between the proposed quasi-market and an actual market is free entry. Presumably, no entrepreneur can simply join the military and establish his/her own competing supply system. Would the restriction of market entry necessarily lead to monopolistic competition that ends up extracting unnecessary rents from captive customers?

Similarly, it is clear that "free" markets can break down. That is why there are antitrust laws -- the operation of market forces alone is not adequate to forestall collusion or the evolution of a monopoly through predatory pricing. It may well be that there are forces operating within firms -- which ultimately are authority systems -- that predictably cause internal markets to fail. Yet in establishing quasi-markets inside the firm, organizations often simply assume that the invisible hand will produce efficiency, because we have no framework for thinking about how organizational functioning can undermine market-like mechanisms. In our example, are there predictable ways in which multiple supply chains all functioning under one authority mechanism tend to converge into a cartel without some sort of intervention?

Finally, we do not understand which elements of a market are essential. For example, does the efficient operation of a quasi-market with competing supply chains require the existence of futures and options quasi-markets? What are the essential characteristics of a price analog in cases where actual prices cannot be used? Is it necessary for transactions to be conducted on a continuous basis -- how infrequently can the quasi-market operate and still achieve its ends?

Answering these questions will require us to develop a new branch of organizational economics analogous to institutional economics. As institutional economics assesses the impact of social institutions on markets, this new area must assess

the impact of the organization as a social structure on its internal markets. Fortunately, we need not start in a vacuum -- the simplest assumption is that precisely the same mechanisms that cause market failures in general also cause market failures within firms. Thus the theory of externalities, transaction cost economics, agency theory, and standard institutional economics provide a starting place. However, economics must be married to organization theory, to what we know about how organizational structure and processes influence human behavior. Our interest is not merely in contracts or transactions, but in how a market operates within a specific social structure. An interesting start in this direction is Baker's (1984) research pointing toward a sociology of markets.

One cannot lay the groundwork for the systematic examination of internal markets by modelling alone. We are not interested merely in what rational actors would do in a stylized situation, but in understanding more deeply what makes actual internal markets work more or less well. A field study of a variety of internal markets is called for to develop a grounded theory. Investigations in this tradition do not start in a vacuum; one structures observations and the gathering of documentation with some conceptual apparatus that is subject to change over time. For instance, clearly one would wish to identify in quasi-markets the presence or absence of externalities, agency problems, and the two pairs of interacting conditions that lead to market failures. Transfer prices can be examined within a standard accounting framework. One would also want to establish how price, authority, and trust interact within the organization's control framework (Bradach and Eccles, 1989).

Space constraints preclude setting forth a detailed research design at this point. However, the basic path is clear: an investigator would draw a sample of organizations, some of which employ certain types of quasi-markets and some of which do not. The sample size, length of study, and number of quasi-market types examined would depend on available resources. Given that the Army is the client, it may be desirable to include some military units as research sites, though serious generalizability problems would result if the majority of the organizations studied were in the public sector. Through field observation, interviews, and the collection of archival material with each organization, the investigator would compare units with market-like mechanisms and those without them to assess how well the market mechanism performed its intended function, and what unintended consequences ensue from its use. Baker (1984) provides an example that demonstrates the utility of such an investigation.

The point of employing an organization theorist to examine in a rigorous way the workings of quasi markets inside firms is to begin developing a model of how pseudo-market mechanisms are affected by their location inside an organization. The aim is not to build on existing theories of markets vs. hierarchies, but to understand what if anything is unique about markets within a hierarchy. The reason a thick description based on field is required is that there is no existing theory of how an organizational context influences an internal market. There are theories stemming from organizational

sociology and economics that can guide observation, but we only have an inkling what we might find. In the tradition of seminal empirical studies such as Chandler (1977), our purpose is to induce an initial framework and provide a rich source of data to stimulate more rigorous and abstract modelling in the future.

What would the Army learn from this study? The balance between authority and initiative in the military is a delicate one; a single chain of command provides unity of direction but can also create bottlenecks. The combination of competition and some proxy for prices can allow individual, lower-level decisions to generate efficient outcomes without the constant intervention of the chain of command. If Downs is correct, that insulation from market discipline lies at the heart of bureaucratic dysfunctions, then organizations such as the military which have few market measures of performance should be especially interested in ways to exploit the power of the invisible hand by simulating market mechanisms inside a bureaucracy. What the Army needs to know as it shapes a less costly and more flexible force structure is how to think about when a pseudo-market is appropriate, what pieces are necessary, and what pitfalls to avoid. Providing this type of policy guidance is the aim of the investigation proposed here.

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Barton, Lawrence. *University of Nevada, Las Vegas.*

Title: Crisis Management: Decision Making in the Heat of Chaos.

Purpose

This proposal addresses the need for a comprehensive analysis of the theoretical and applied foundations of crisis management. For our purposes, the term crisis regards an unexpected, potentially negative event (either short or long-term) with implications involving injury to life or property. The issue of crisis management has assumed paramount importance in recent years due to unexpected geopolitical events (e.g, Persian Gulf War, collapse of Soviet government), rampant violence facing organizations (e.g., mass shootings in Killeen, Texas and five U.S. Post Offices in two years) and an acceleration of serious crises impacting large organizations (e.g., Perrier and Sudafed recalls, NASA Challenger disaster). Without question, the public is increasingly demanding that organizational managers possess a fundamental understanding of crisis management. We propose that the most effective means of testing this theory is by designing a series of simulations of crisis events. This will allow us to measure expected and unexpected reactions by managers, develop insight as to those factors that can mitigate a crisis, and allow us to create a series of mitigation. In this sense, crisis management is interdisciplinary, involving fundamental aspects of Organizational Behavior, Management Communications, International Relations, and Psychology.

Theory/Foundations

Crisis management emerged as an academic science in 1963 (Hermann). Since then, over 25 scholars have contributed to the study of the field with at least two journal articles or books each. Their works span the purely theoretical dimensions of decision making during chaos to more applied summations of the "proper" and "improper" decisions be managers in the government, business, and non-profit sectors. Specifically, theoretical research to date has included discussions of:

the basis for rapid decision making (Mitroff, 1986)
the myriad of actors involved in choosing decision options (Barton, 1991)
the implications, both short and long-term, of crisis decisions (Weinberger and Romeo, 1989)
the role of the public and the news media in interpreting their actions (Otway, 1990)
the need for effective post-decision evaluation (Fink, 1986)

It is virtually impossible to summarize the theoretical conclusions of these scholars and their colleagues in such short space. Yet an underlying theme woven throughout these works is: crises may not be avoidable, but organizations can and should plan for their occurrence. Organizations can engage in long term planning that anticipates what

kinds of disasters could occur; they can identify how to communicate with various audiences; they can develop contingency plans to ameliorate the problem from exacerbating; and, most importantly, they can engage in role-playing to test the effectiveness of their assumptions.

The decision by Shell Oil in early 1990 to prepare a scenario/role-playing session for their top management team that anticipated events of the Persian Gulf War significantly helped that multinational organization prepare for response in the event of such a calamity. (Business International) I propose that this type of scenario session should become an integral part of organizational crisis management and wish to develop a series of role-playing cases that will us to determine how managers from different types of organizations react to stress, decision making and instant planning in the midst of chaos.

Methods

Crises are inevitable. The efficient, effective handling of a crisis situation is often in the hands of internal and external experts - engineers, hazardous waste specialists, police, public information specialists and military personnel. Despite best intentions, managers often fail to contain the damage resulting from disaster. To study the theoretical foundations of decision making during a crisis, I would design a series of five cases that involve a detailed scenario. These case studies will be written and refined so that they reflect actual problems that managers are likely to encounter during their careers. I propose five cases because I am interested in focusing on one crisis that is potentially crippling to virtually any organization and then refining the case to the needs, culture/value systems and organizational dynamics of five kinds of organizations. We believe that representative of institutions where crisis management plays a particularly sensitive role include:

* a military department (preferably the U.S. Army)
* a mid-sized corporation (less than $5 million in annual sales)
* a large corporation (over $5 million in annual sales)
* a large non-profit hospital
* a multinational organization, with acumen on foreign national employees

This comparative analysis is unique and important. The underlying questions driving the methodology include:

What factors of rapid decision making in a crisis are unique to certain types of organizations?

Does the size of an organization impact the nature of decision making?

How do managers in different organizations measure the importance of publics, and in what prioritization? (press, regulators, competitors, employees, etc.)

When managers believe they have identified the 'right' decision in an organization crisis, what assumptions have they made?

After the five cases are written, we would invite a series of two sets of representatives from each of the categories to our new Crisis Management Center where they would read the case. Entire proceedings of the events will be videotaped for later analysis. As facilitator I will lead the case, introduce new facts and challenges, and include videotapes, faxes, phone calls and unexpected problems dictated by case content. Each person would be assigned a person/title to role play during a full-day crisis that parallels their actual job responsibilities.

Using Hypercard and an advanced crisis simulation program we have designed, we will then ask respondents to respond to the ongoing crisis, using a MacIntosh laptop computer. The case will unfold both during our meeting/scenario and on the computer; telephone calls and memos appear and decisions are demanded. Each reaction of respondents will generate another prompt (e.g., "The New York Times is calling. Do you take the call, or call back later?") Participant decisions and reactions would then be documented for later comparison, both with their colleagues in their own organizations and with those from organizations of the other categories. One of the more exciting prospects of the proposed research are findings that will emanate from the comparison of reactions by American foreign nationals who work for an American organization (preferably a US government agency). We would be happy to preview our prototype software program if the U.S. Army is interested in funding the study. Our prototype has already received significant attention, including site visits from organizations as distant as South Korea. Our Crisis Center opens January, 1991, and features an advanced MacIntosh laboratory with full video capabilities.

Benefits

There is a hearty debate over the similarity of managers who face a crisis situation such as a bomb threat, act of terrorism, industrial accident/chemical leak, sabotage, etc. Some evidence suggests that all managers are basically the same -- that inherent "gut" reactions dictate what managers believe to be their options, thus guiding decisions regarding people, assets and reputations. Others have argued that the size of an organization, its organizational culture, existing policies and procedure, and focus on detail are more significant contributors to how managers respond to disaster. The benefits of this research to the study of organizational behavior include:

* a detailed comparative analysis as to whether managers generally are the same, regardless of the nature and size of the organization, or whether their crisis response is indeed influenced by the factors listed above (and scores of others).

* a comparative discussion as to why differences may exist, if that is found to be the case.

* a new finding could emerge that will be of significant value in training managers for crisis preparedness; we would envision that such findings would be suitable for the Academy of Management Review, Industrial Crisis Quarterly or other esteemed outlet.

* obvious direct benefits for selected participants in the ten scenario sessions, including a post-evaluation discussion and written summary so that these managers can return to their organization with a tangible document to act upon for crisis planning and mitigation.

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Title: Competitive Collaboration: Building Competitive Advantage Through Inter-Firm Learning and Innovation

Purpose

Strategy theory and research has progressed through two dominant stages in the last 20 years. Initially, outside of collusion, firms were regarded as relatively lone players dealing primarily with oligopolistic rivals and bargaining with suppliers and buyers. Traditional strategy research has focused on this view. The purpose of this project is to extend the second and contemporary stage of strategy research which places interfirm collaboration and competence building alongside the traditional theory of competition.

Theory and empirical research on collaboration and other hybrid organizational arrangements have focused on either strategic behavior or transaction cost perspectives. These have involved the content of the strategic motives of the participants and efficient governance mechanisms, as well as the effectiveness of these strategies and structures (Koh and Venkatraman, 1991). Only recently has work begun to focus on the strategic processes necessary to support firms pursuing alliance strategies (Chambers, 1991; Hamel, 1991). Factors which have been identified as important for these management processes regard the strategic intent of each partner, their absorptive capacities, and respective firm level transparencies (Hamel, 1991).

This proposal presents a framework for research on the management processes underlying firms utilizing alliances for innovation and building competitive advantage. Initial empirical work has shown the important role of participative management systems in both strategy setting and operational decision making for these alliance strategies (Chambers, 1991). Firm-wide participation in strategy setting was shown by the author to contribute to the internalization of another partner's skills and resources by facilitating the identification of additional buyers, suppliers, or partners for the technologies relevant to an innovation. In operations, these decision-making processes allowed firms to more adeptly manage the uncertainty and ambiguity involved in organizing the relationship and fine tuning the tasks at hand. Similarly, these participative management processes were crucial in affecting the bargaining symmetry within an alliance in favor of the skill seeking firm. Most significantly, high levels of participative decision making in operations supported firms in alliances with complex technologies without their resorting to formal or equity based governance mechanisms. Management processes were found by the author to strongly affect both the effectiveness of the participant and the nature of the governance structure utilized.

This initial study was based on a stratified random sample of firms within the regional economy in Southeastern Michigan known as "Automation Alley." By being representative of a regional economy, however, it was biased toward small firms. The

purpose of this study, therefore, is to extend this research model to the dominant firm structure in society - the international corporation.

Theory/Foundations

In the 1970s and early 1980s students of strategy viewed the strategic challenge for a company as one of protecting its potential profits from erosion through either competition or bargaining (Porter, 1980). This strategic approach emphasized the defensive value of making other organizations dependent on it by capturing critical resources, building switching costs, and exploiting other vulnerabilities. By the late 1980s this view of strategy had significantly changed to one of competence building and leveraging resources across the corporation (Hamel and Prahalad, 1989).

For high-technology industries the shift resulted in an approach to strategy away from all-encompassing obsession with preempting competition to a broader view of both collaboration and competition. A variety of factors, including the need to gain fast access to new technologies or markets, to benefit from economies of scale in joint research and/or production, to tap into sources of know-how located outside of the firm, to share the risks for activities beyond their present scope or capability, and to contract for complementary skills, as well as the expanding importance of technology standard triggered this change (Powell, 1987). The need to pursue multiple sources of competitive advantage concurrently led to the need for building an interdependent and integrated network organization within the company, and for building collaborative relationships externally with governments, competitors, customers, suppliers, and a variety of other institutions. Such dramatic and parallel change forced managers to recognize that alone they may not have all the human, financial, or technological resource necessary to effectively compete in a global economy.

Learning to strategically expand the competencies of the corporation through alliances is now viewed as a key element of strategy (Chambers, 1991; Hamel, 1991; Hamel and Prahalad, 1989; Hamel, Doz, and Prahalad, 1989; Prahalad and Hamel, 1990). For such learning to occur, however, a company must be receptive to the knowledge and skills available from the partner and must have an organization able to diffuse and leverage such learning (Chambers, 1991).

Firms involved in alliances for innovation therefore will provide the research context of this proposal. This avoids inter-firm relations utilized only as a form of market access or outsourcing through technology transfer and licensing. Focusing on innovation-based alliances also highlights the role that these structures play as the modern means of economic development.

Neither Schumpeter's (1934, 1939, & 1942) view of the lone entrepreneur nor his view of centralized R & D laboratories can explain the nature of economic development in today's high technology and interdependent global economy. Evidence from the

author's "Automation Alley" study supports the contention that economic development, through employment growth and off-site firm expansion, occurs in technology-based environments predominantly through firms pursuing collaborative innovation strategies, as opposed to in-house innovation or no innovation at all (Chambers, 1992). It is important for reasons of public policy that organization theorists investigate the management processes and organizational structures conducive to building competitive advantage through these alliances that support the regionalized employment and capital expansion part-and-parcel to economic development. Thus, the "creative destruction" of capital through innovation and economic development constitutes the overall economic environment for this alliance activity which we propose to investigate.

Methods

The proposed research is to proceed in three phases. First, U.S. and international data on publicly held firms will be analyzed to estimate major trends in capital flow over the past 20 years. This will allow the design to encompass the dynamics between innovation, economic development, and capital flows subsumed under Schumpeter's theories of economic development. It is assumed that where there are major flows of capital, as reflected in the public equity markets, high performing firms will be pursuing innovation and management strategies which explain their effectiveness.

Emphasis will be placed on firms active in markets in which incumbents have significantly grown in total assets (debt and equity) over this time period (e.g., petroleum refining, motor vehicles, computer and office equipment, household audio and video equipment, or finance services), as well as those that have significantly decreased in their asset base (e.g, iron and steel foundries, electric housewares, or textile mill products). Additionally, firms will be isolated in newly emerging technologies and markets (e.g., cable television, waste management, biotechnology, cellular telephone, computers and software, semiconductors, or medical laboratories). High and low performers will be targeted based on multiple criteria such as total sales and employment growth, stock price returns, and reinvestment of retained earnings.

Major Capital Flows Used to Target Firms

	Capital Creation Emergent	Capital Accumulation Growth	Capital Destruction Decline
High Performance Firms	XXX	XXX	XXX
Low Performance Firms	XXX	XXX	XXX

Six firms will be identified for each of the capital flow categories, three high performers and three low performers, for a total of 18 companies. Secondary data will be collected on these firms over the past 20 years -- or the whole life of the firm if it is less than 20 years. These data will pertain to technology and skill-based activities important to the firm, including, but not limited to, patent applications, joint venture and other multi-firm agreements (equity deals, acquisitions, licensing, and other market of technology related transactions), R & D expenditures, recruitment patterns, and product introductions. Annual reports, Compustat data, LEXIS/NEXIS news services, high and low performers within competing markets or substitute products. This will result in 3 to 9 sets of companies, depending on data availability.

The first phase of this research will be completed over a one year period of time. It will result in sets of firms which, by design, differ in performance characteristics and environmental contexts (capital growth and decline, as well as emergent markets or technologies). These 18 firms will also be characterized by a relatively high degree of data availability. Propositions will be analyzed regarding the relationship between performance traits and technology and skill based activities, including, but not limited to, patent applications, joint venture and other collaborative agreements (equity deals, licensing, and other technology related transactions), R & D expenditures, and product introductions. The behavior of key competitors (domestic and international) will also be cataloged in relation to these technology and performance traits.

The second phase of research will involve contacting the targeted firms in order to gain access to executives involved in the technologies or products identified to be critical in understanding the performance traits already distinguished. Access to these executives will be secured by personal contacts through major academic institutions (e.g, Michigan, Wharton, Stanford, Northwestern, Harvard, Columbia, etc...) as well as by displaying in-depth knowledge of the corporations, their histories, and environments. The goal of this phase is to develop working relationships with executives from a number of firms in each of the 6 design categories.

Information will be sought to clarify the nature of competence building and management activities within the firm significant to various innovation projects (e.g., project formation, key personnel/management recruitment and transfer policies, formal and informal information systems, targeted incentive systems, conflict/power dynamics, global coordination, regional inducements, capital requirements and utilization, and management from design to commercialization) (Bartlett and Goshall, 1989). Emphasis will be balanced between projects which do and do not involve complementary relationships, i.e., alliances, with other firms. Focused interviews will be sought with all levels of management, including those within relevant partners.

Over a two year period, the result of this effort will be a series of detailed case studies on the management of innovation in growing, declining, and emerging industries. It is expected that instructional material, journal publications, and professional books will

be produced in the years following this phase of the research program. This stage will conclude with the development of a survey instrument addressing organizational, market, and technology issues identified through the research as well as the literature as important to the contemporary dynamics of innovation and economic development. This survey tool will be utilized in the final research phase.

The third and final phase will be the application of the survey to top executives in organizations identified by the participants in phase two as well as in trade and business publications as key or potential competitors in these technologies and markets. This will be aimed to be a complete coverage of firms in these areas from the smallest to the largest participants. The survey instrument will be configured to measure environmental (local and international), organizational, and management factors identified as important to the development of the technologies and skill bases as well as the performance of the organizations. As such, this phase of the research builds on the two previous phases, and will allow for rigorous quantitative testing of the frameworks which emerged. This phase of the research will also cover a two year period.

Program Timeline

Phase	Year 1	Year 2	Year 3	Year 4	Year 5
Phase one: targeting of 18 firms matched by environmental, technology, & performance traits	XX				
Phase two: focussed interviews and analyses of targeted firms and key partnerships; development of survey		XX	XX		
		XX	XX		
Phase three: large scale administration of survey instrument			XX	XX	
Publication & presentation of work		XX	XX	XX	XX

The program is estimated to average $50,000 in direct costs a year, for a total of $250,000.

Benefits

This research program seeks to address the contribution that competence building and skill development within firms makes to their performance outcomes. Strategy theory has progressed to include both issues of maintaining strategic fit within a competitive environment and leveraging resources across and between firms. The two perspectives are not seen as mutually exclusive, but they represent a significant difference in emphasis. In some respects the former is on short term performance while the latter perspective is on the long term.

Managing the tensions inherent between these two postures is crucial for firms in environments undergoing dramatic change. The skill based and competence building management theory of competitive advantage, which this work addresses, is only now being developed. We still don't have a good understanding about what competence is, how it develops, what management interventions affect it, and its implications for other aspects of organization such as structure and human resource policies and practices. It is also important that we better understand, systematically, how innovation and know-how can rapidly be diffused throughout an organization. Conducting this research by controlling for the environmental context of capital flow allowed analyses to be performed which will differentiate the various contributions made by management practices balancing strategies of maintaining fit and leveraging resources.

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Title: Issue Selling in an Organizational Context.

Research Purposes

The purpose of this research is to assess how the organizational context affects the initiation of issue selling, the way that issues are framed, the process employed to sell issues, and the success or failure of selling efforts.

Research Relevance to Organizational Research

The process by which issues gain the attention of top management is complex and relatively understudied (Dutton & Ashford, 1992). Yet the issue of selling process is critical to explaining patterns of organizational action, and hence patterns and processes of strategic change. This assertion rests on several independent assumptions. First, we assume that the attention of top management is limited and thus not all issues will receive attentional investments of time and energy (March & Shapira, 1982). Second, we assume that multiple issues proposed by multiple issue sellers compete for these attentional resources. Thus, issues that are packaged in particular ways, and issue sellers who employ particular selling processes will be more successful than others in claiming the attention of top management. Third, we assume the question of which issues do receive attention is consequential for organizational action. The attention to some issues and the way that these issues are defined affects what decisions are considered, who will be involved in the decisions, and ultimately what decision outcomes will follow (Dutton, 1988; Dutton and Duncan, 1987a and 1987b; Weiss, 1989). This understanding of how issues are sold in an organization is an important gateway for understanding what and how decisions get made in organizations.

Theoretical Grounding

A focus on issue selling processes in organizations builds on several recent themes in strategy process research. First, it highlights the significant role of those outside of top management in creating and directing top managements' attention investment. As such, this view is consistent with the argument that middle-level managers play significant roles in strategy making (e.g., Bower, 1970; Burgelman, 1983; Guth and MacMillan, 1986; Nonaka, 1988; Schilit, 1987; Westley, 1990; Woolridge and Floyd, 1990). Second, an issue-selling focus emphasizes the emergent nature of strategy patterns as it explicates a different path by which a realized strategy may depart from an intended one (e.g, Burgelman, 1983; Mintzberg, 1978; Mintzberg & McHugh, 1985; Quinn, 1980). Issue selling describes one important process through which strategic agendas are built (Dutton, 1988). Third, it expands our understanding of how strategic agendas get built by detailing the role of impression management and upward influence processes in

explaining the initiation, form and probability of selling success. Finally, a focus on issue selling behaviors is consistent with an interpretive view of strategy making (Chaff, 1985) -- a perspective that highlights the role of social construction in explaining what events and developments become issues for organizations (Daft & Weick, 1984; Dutton & Duncan, 1987a; Smircich & Stubbart, 1985). The perspective underscores the interpersonal dynamics and social forces at work in creating, bounding and labeling issues in an organizational context. Although current work in the area of management cognition recognizes the critical role of interpretation processes in strategy formulation (e.g., Dutton, Walton & Abrahamson, 1989; Dutton & Jackson, 1987; Keisler & Sproull, 1982; Lyles & Mitroff, 1980; Thomas and McDaniels, 1990; Schwenk, 1988; Stubbart, 1989; Walsh, 1988), these treatments typically underplay the roles of interpersonal influence and impression management processes initiated by those outside of top management. In contrast, a focus on issue selling puts these processes at center stage in explaining organizational action.

The Importance of Organizational Context

The organizational context is critical to determining the initiation, form and outcomes of issue selling activities (Dutton & Ashford, 1992). This research will focus particularly on how characteristics of the organization's identity (shared beliefs about what is distinctive, central and enduring about the organization, Alpert & Whetten, 1985) affect the initiation, form and outcomes of issue selling. The hypotheses that will be tested build directly from Dutton & Penner (1992). In summary form, some of the hypotheses that will be tested include:

H1: The more that members perceive an issue as identity-relevant (e.g., as affecting the characteristics of the organization's identity) the greater the perceived legitimacy of the issue.

H2: The more that members perceive an issue is prompting actions that are inconsistent with the organization's identity, the more important the issue will be perceived to be.

H3: The more that members perceive that an issue will affect valued characteristics of the organization's identity, the more important the issue will be perceived to be.

H4: The more that members perceive an issue as identity-relevant, the more the issue will be seen as feasible to resolve.

H5: The more legitimate, important and feasible to resolve an issue is perceived, the greater will be the motivation to initiate issue selling.

H6: The more that members view an issue as consistent with attractive

components of the organization's identity, the greater the motivation to initiate issue selling.

H7: The more that members view an issue as prompting actions that revise unattractive components of the organization's identity, the greater the motivation will be to act on the issue.

Methods

The research methodology will combine experimental and field-based methods to study how organizational identity affects issue selling behaviors and outcomes. More specifically, we plan to select multiple organizations that vary in terms of the content of the identity (e.g., the degree to which the identity emphasizes utilitarian vs. normative characteristics (Thomas & Gioia, 1992)) and the strength of the identity (the perceived strength of member's beliefs about the attributes that apply to the organization's identity (e.g., Milliken, 1990)). In addition to locating a sample of organizations that vary in terms of the content and strength of the identity, we wish to create variance in the type of issues that are being sold. Depending on the context of the study, we will want to identify a range of issues that are potentially important to all of the sample organizations, yet where some are relevant to a utilitarian identity (e.g., changes in key inputs or outputs of the organization) vs. other issues that are more relevant to a normative organizational identity (e.g., the issue affects values and traditions in the organization). The unit of analysis for the study will be at the issue level, to allow for a testing of how issue characteristics and organizational identity separately, and interactively affect the initiation, framing and form of the issue selling process.

A sample of individuals from middle management in the organization will be furnished with multiple issue scenarios that describe an issue. They will be asked about how probable is it that they would initiate issue selling, how they would frame the issue, who they would involve, and what channels they would use to sell it. In addition, organizational-level measures of organizational identity, organization size (control variate), and slack (control variate) will also be used. Using this multiple issue-multiple organization design, we would be able to assess how organizational identity (content and strength) affects the initiation, framing, and form of issue selling. In addition, we would be able to assess how the nature of the issue and its interaction with identity content and strength affect our dependent variables.

Benefits of the Proposed Study

We believe that this study holds promise for addressing a major theoretical gap in the literature on strategy formulation. At a basic level, the study will provide greater understanding of how issues are sold in organizations, and how issue characteristics, the organization's identity, and the interaction of these two affect this vital micro-process.

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Title: The Role of Interpretive Processes in Organizational Learning: A Proposal for an Empirical Study.

Purpose

This project proposes a study of the role of interpretive processes in organizational learning. Because organizational learning requires the sharing and diffusion of information, examining how knowledge structures are formed in response to experience, and how they may be affected by organizational characteristics, such as structural design, hierarchical authority, or communication processes, is important in contributing to theories about organizational learning and design. In addition, because the study will empirically examine an important, but under-researched area of organizational theory, it is expected that new measures for operationalizing and researching organizational learning will be offered, as well as practical implications for organizational design.

Theory/Foundations

While hardly a new topic (Simon, 1953), organizational learning is gaining increasing attention as a theoretical construct in the organization sciences (e.g., Cohen & Levinthal, 1990; Fiol & Lyles, 1985; Lant & Mezias, 1990; Levitt & March, 1988) and the popular press (Kiechel, 1990). To date, however, there have been few empirical or theoretical studies of organizational learning; even many of these authors describe their studies as "incomplete" (Levinthal & March, 1981; Herriott, Levinthal & March, 1985; Lant & Mezias, 1990), "exploratory" (Cangelosi & Dill, 1965), and "preliminary" (Miles & Randolph, 1980). In general, the current state of research on organizational learning has been described as "fragmented" (Shrivastava, 1983: 9).

However, while research to date has been sparse, the need to understand organizational learning has been widely recognized (e.g, Cangelosi & Dill, 1965; Fiol & Lyles, 1985; Lant & Mezias, 1990; March & Olsen, 1976; Miles & Randolph, 1980; Nystrom & Starbuck, 1984). Bedeian (1986: 185) identifies organizational learning as an area where we need to improve our understanding, because "[a] high capacity for learning is a crucial requirement for the successful functioning of an organization."

Organizational learning involves the development of knowledge about the learning of cause-effect relationships in organizations. Duncan and Weiss (1979: 84) define organizational learning as "the process within the organization by which knowledge about action-outcome relationships and the effect of the environment on these relationships is developed." Similarly, Fiol and Lyles (1985: 811) define learning as "the development of insights, knowledge, and associations between past actions, the effectiveness of those actions, and future actions." Beyond knowledge development, of course, organizational

learning must be communicated and preserved in behaviors, routines, structures or systems. Simon (1953: 334) attends to this aspect in his description of organizational learning as a process "in which the growing insights and successful restructurings of the problem as it appears to the humans dealing with it reflect themselves in the structural elements of the organization itself." Simply put, organizational learning is the process whereby organizations understand and manage their experience (Glynn, Milliken & Lant, 1992). The components of organizational learning, e.g., goals, attention and search rules, routines, shared understandings, and organizational beliefs, are the same components we use to define organizational systems (Argyris & Schon, 1978; Cyert & March, 1963; March & Olsen, 1976; Weick, 1979). For the purposes of this proposal, organizational learning is viewed as a relatively permanent change in knowledge about cause-effect or action-outcome relationships that is communicated and preserved in the organization.

The focus of the proposed study will be on testing one of the critical linkages of the organizational learning process, that of interpreting organizational outcomes so as to learn from experience. A model of the organizational learning process recently developed (Glynn et al., 1992) is presented. This model divides organizational learning into four boxes -- 1) individual learning, 2) organizational learning, 3) organizational action, and 4) organizational outcomes - that are linked together in a counter-clockwise cycle by four processes: 1) Diffusion institutionalization, 2) Enactment, 3) Adaptation, and 4) Interpretation. Existing work on organizational learning has focused primarily on the boxes or outcomes; this research proposes to focus on learning processes by studying the interpretive mechanisms that link organizational outcomes to individual learning.

The link between what happened (organizational outcomes) and the understanding of why it happened (individual learning) is forged by interpretation. It seems to be a widely accepted truism that failure drives organizational learning more than success, in spite of the fact that the effects of success are not clear (Cangelosi & Dill, 1965) and that there are problems in specifying organizational "success" and "failure". In several models of adaptive learning (e.g., success and failure are typically defined relative to an organization's aspiration level: Performance above the target level is defined as success; performance below is defined as failure. However, this presumes that aspiration levels can be formulated in terms that are unambiguous, easily measured, fully specified in advance, and universally shared within the organization. Previous research indicates that aspiration level updating is problematic when uncertainty increases (e.g., Glynn, Lant & Mezias, 1991) and further, that a linear, sequential model of adjusting goals in response to performance information may not be appropriate (e.g, Sandelands, Glynn & Larson, 1991)).

Attaching meaning to performance is often difficult because organizational effectiveness is a multi-faceted construct, subject to varying interpretations. In developing causal explanations for organizational performance, decision makers may make attribution errors or even deceive themselves into believing that a given strategy is succeeding, contrary to the observed results. Such perceptual and interpretive biases

may lead managers to persist with past strategies that ultimately become dysfunctional. In this way, managerial interpretations of performance outcomes may have a critical influence on organizational learning processes.

To understand interpretive mechanisms, we can draw on the organizational and cognitive psychology literatures. Interpretation is a process of information assimilation and evaluation (O'Reilly, 1983), accomplished by "altering, exploring, and analyzing" information (Simon, 1959). Interpretations are dynamic. They are affected by the kind of information to which decision makers are exposed; for example, positive feedback elicits different interpretive responses than negative feedback (Staw & Ross, 1987) such that in the face of good news, information and interpretive processes tend to be more abbreviated (Wofford & Goodwin, 1990), "cognitively economical" (Mitchell & Beach, 1990), and characterized by reduced attention or mindlessness (Langer, 1989). In contrast, interpretive processes in response to negative feedback are characterized as more extensive in nature (Wofford & Goodwin, 1990) or "mindful," with a heightened sensitivity to multiple aspects of a situation (Langer, 1989). Moreover, feedback about organizational outcomes may be noisy, ambiguous, or even non-existent, thus hindering accurate interpretations of organizational experience. Thus, there is a clear need to understand how information about organizational outcomes is processed, understood and interpreted, and to assess the impact of these interpretive processes on learning in organizations.

Methods

A laboratory simulation will be used to examine how decision makers understand and interpret organizational outcomes and how this affects learning. Individual subjects will engage in a decision making task using personal computers. They will be asked to take the role of an organizational decision maker with information about recent organizational performance outcomes; the computer will enable an assessment of both the processes and outcomes of interpretation. The computer permits unobtrusive measurement of how subjects use information (e.g., by making choices of kind of information or order of information viewed from a menu), as well as the amount of time a subject spends with these different kinds of information, as in previous studies using a similar methodology to examine problem solving activity (e.g, Sandelands, Brocker & Glynn, 1988). Independent variables might include: 1) Nature of performance outcomes (i.e., positive vs. negative performance feedback), 2) Amount of performance information (high vs. low), and 3) Opportunities for additional information (e.g., structured as requests for different types of organizational, environmental information, etc. made to the computer); this latter variable, examining both the structure and flow of information seeking would assess some of the processes underlying their interpretations about cause and effect. In addition, characteristics about both the organizational context (e.g., nature of hierarchy, availability of information and communication systems, etc.) and the environmental context (e.g., high vs. low uncertainty or predictability) could also be varied across subjects. Dependent variables could include: 1) statements about their

cause-effect beliefs (i.e., why they made the decision they did), 2) attentional processes, including the number and type of informational factors that weighed in their decision, 3) resource commitments to their decided-upon strategy, and 4) aspiration levels for future performance as a result of their decision. It would also be possible to repeat the decision process for several cycles to more realistically simulate "real world" decision processes, in which learning occurs, feedback is received, and learning is further modified. In addition to collecting quantitative measures, some qualitative measures asking subjects to make statements about both the process and content of learning would be included.

Graduate students and/or executives enrolled in a management program would be ideal subjects for the study. If this is not feasible -- or perhaps as a complementary strategy -- the study might be conducted as a survey, by mailing paper-and-pencil scenarios to organizational executives. An additional variation on the research design might include whether or not a major change, such as an environmental jolt, leadership succession, or legal requirements, has occurred.

Benefits

The study would afford a more direct look at the processes of interpretation that affect organizational learning. As such, it would contribute to existing theories about organizational learning, by delineating a key mechanism underlying learning (see Figure 1). Further, it represents a new methodology in the field of organizational learning; earlier studies tended to employ either computer simulations of rules governing learning processes (e.g, Lant & Mezias, 1990; Levitt & March, 1988) or applied case studies (e.g, Argyris & Schon, 1978; Jelinek, 1979), both of which are limited in their generalizability. While a laboratory study is, of course, limited in its generalizablity to other contexts, it should nonetheless be revealing of basic human cognitive processes. Further, detailing the processes should offer some implications for organizational design by beginning to describe some of the decision situations and organizational conditions which facilitate accurate interpretations.

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Title: Gainsharing Theory: A Test of an Integrated Framework.

Gainsharing is an organization-wide approach to enhancing organizational effectiveness through a group level financial bonus and participation system. This requires two components: (1) a management-labor philosophy of participative management or cooperation operationalized by mechanisms such as suggestion systems, elected committees of workers, or less formal work group problem-solving activities; and (2) a group-based bonus formula based upon productivity gains. Today gainsharing is increasingly being adopted by healthy, effective organizations, as well as by troubled organizations, all of whom seek to operationalize the axiom of "high wages and low costs" by enhancing the link between employee pay and performance. Also, users of gainsharing often seek to develop or enhance a climate of trust, cooperation, and knowledge-sharing within their organizations.

Purpose

The research described in this proposal will be conducted as a step in scientifically developing and testing an integrated theoretical model of how gainsharing participation and allocation processes work together to provide positive economic and quality-of-work-life outcomes for employers and employees. This is significant organizational research because unfortunately, while its rate of implementation makes gainsharing the fastest growing non-traditional pay-for-performance reward system, scientific studies of gainsharing are scant and seriously flawed due to weak research designs, use of low-powered statistics, lack of longitudinal data, limited scope, and weak theory base (Hammer, 1988; Lawler, 1986, 1988; Schuster, 1984; White, 1979).

Ample empirical evidence that gainsharing does work has been accumulated (Bullock, 1989; Bullock & Lawler, 1984; Cummings & Malloy, 1977; Graham-Moore & Ross, 1983; Mohrman, Ledford & Demming, 1987; O'Dell, 1987; U.S. General Accounting Office, 1981). However so little attention has been given to the question of how gainsharing works that this issue is considered the most critical research question in the field (Hammer, 1988; Lawler, 1988). Existing studies tend not to be clearly theory-driven because a comprehensive theoretical framework of gainsharing has not been widely tested and accepted (Hammer, 1988; Hanlon, 1990; Lawler, 1988).

Theory

It is acknowledged that gainsharing is a complex combination of cognitive, behavioral, and attitudinal effects (Hammer, 1988; Lawler, 1988; Miller & Monge, 1987). Any complete theoretical explanation of gainsharing must include how a gainsharing plan, with all its components, influences employees' motivation to work and their ability to work (Hanlon & Taylor, 1991). Most existing gainsharing theories concentrate too

much on employee motivation instead of employee ability, and they overemphasize the role of the participation mechanism as an explanation of how gainsharing operates often to the exclusion of the bonus payment as an important explanatory factor.

These weaknesses can be addressed by integrating the gainsharing theoretical frameworks of Hammer (1988), Miller & Monge (1987), and earlier authors into the Integrated Model of Gainsharing (Hanlon, 1990; Hanlon & Taylor, 1991; Hanlon, Taylor & Babakus, 1989; Hanlon, Meyer & Taylor, 1991). In the Integrated Model, the bonus payment is included as an important part of the theoretical explanation of gainsharing following the lead of Hammer (1988). Also, the work of Miller & Monge (1987) is incorporated into the Integrated Model to address another weakness of many existing gainsharing theories, which is that often there is no differentiation of the types of effects of participation that occur during the process. When the cognitive, behavioral, and attitudinal effects of participation that occur during the gainsharing process (Miller & Monge, 1987) are considered in relation to the motivational effects of group bonus payments, a much richer and more meaningful explanation of how gainsharing works may result than has previously existed.

Methods

Generally, the hypotheses generated from the Integrated Model of Gainsharing should be tested in a quasi-experimental field study. The most appropriate and realistic design would a nonequivalent control group, pre-and-post test with repeated measures designed similar to that used in a previous gainsharing study (Hanlon & Taylor, 1991; Hanlon, Meyer & Taylor, 1991; Hanlon & Meyer, 1992). In a social experiment, the cognitive, behavioral, and attitudinal effects of a gainsharing participation mechanism should be operationalized and measured using a combination of methods well before subjects are assigned either to an experimental (with a gainsharing plan) or control group, six months after the first bonus check is received, one year after the first check, and every 9 to 12 months after that during the operation of the program. It would be ideal to conduct several experiments within different work environments which may vary according to the service vs. manufacturing nature of the unit and the degree of interdependency between individual workers.

Multiple means of assessing the dependent variables in the experiment(s) should be used. They may include: objective tests of job knowledge, organizational knowledge, and knowledge of basic gainsharing concepts; self-reports of ways in which subjects obtain their information about job-related topics and their beliefs about their work environment; self-reports of the activities subjects take part in to full the organization's commitments; self-reports of subjects' job-related attitudes; archival data on some of these same items as well as productivity improvement; and focus group discussions with subjects in regard to the dependent variables. The independent variable or treatment in the experiment(s) would of course be the design and implementation of gainsharing within a work group/unit ranging in size from 5 to 500 members. Testing of the data

collected would require the use of multivariate tests of differences previously employed by this author. Also, existing scales have been used by the author to measure the variables generally described in this proposal with very reliable results.

Benefits

The proposed social experiment(s) would provide an empirical basis for the development of useful and valid gainsharing theory. This research would help establish the extent to which cognitive, behavioral, and attitudinal effects of gainsharing occur and very importantly the timing or sequence of these effects. It has been proposed that cognitive and behavior effects will occur first during a gainsharing program (Hanlon & Taylor, 1991) and that attitudinal effects will occur during the latter stages of a program. This is important because it would provide insight for the leaders of organizations into what series and sequences of changes in employee behaviors and attitudes are most critical to the success of gainsharing programs. Knowledge gained from this study will also make it possible to "fix" ailing plans and to prepare organizational members better for participation in gainsharing programs.

In regard to the benefits of this study for the development of gainsharing theory, it is expected that the results would support a cognitive model of participation vs. an affective model as a valid theoretical basis for future gainsharing research. Overall, this research would bring us closer to understanding the hallmarks of gainsharing -- pay-for-performance, employee involvement, and cooperation -- which have become the central themes for gaining and maintaining a competitive edge in the world.

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Title: Can Leaders and Subordinates be Friends?

Purpose of the Study

The issue to be addressed in the proposed study concerns the consequences of the maintenance of close interpersonal relationships (i.e., friendships) between organizational managers or leaders and their immediate work subordinates or followers. Specifically, are the behavioral and attitudinal results of such relationships largely positive or negative for the subordinates, managers, and even the organizations as a whole?

Classical management theories have long prescribed that relationships between leaders and followers should be formal, impersonal, and based largely upon rational authority. Traditional assumptions and possibly even common sense tell the leader that becoming too close, friendly or informal with subordinates will leave the leader open to accusations of favoritism, disparate treatment, or even sexual harassment. Considerable psychological and personal distance between organization members is explicitly called for in the Weberian model of bureaucracy. It requires individuals to perform their tasks "...without hatred or passion, and hence without affection or enthusiasm... The dominant norms are concepts of straight forward duty without regard to personal considerations..." (Hummel, 1982, p. 9)

The bureaucratic model fell into disfavor in the 70's and 80's and was justifiably attacked by the early organizational development theorists in favor of a more organic, flexible organizational prototype. Still the norm of formal, impersonal, hierarchical and bureaucratic leader-subordinate relationships persists in many contemporary organizations. The question for empirical examination is, "What are the organizational effects of the distant, formal and the close, personal and friendly relationships?"

The proposed study hypothesizes that close personal leader-subordinate relationships result in largely positive personal and organizational outcomes, in spite of the potential for certain dysfunctional behaviors noted above. These outcomes may take the form of more positive communication behaviors, the reduction of communication barriers, more positive leader attributions about subordinate performance, more positive perceptions of one another by both subordinate and leader, higher levels of commitment to both the organization and the manager by the subordinates, and higher levels of satisfaction with supervision and overall subordinate job satisfaction.

The proposed study will also assess how managers who do maintain close relationships with subordinates deal with the potential problem issues resulting from those relationships, i.e., accusations of favoritism, fairness in decision making, subordinate manipulation of the boss, discrimination and sexual harassment.

The question concerning the quality and closeness of leader-subordinate relationships has profound implications for organizational effectiveness. If the bureaucratic model ceases to have relevance for many organizations and a more organic model is trumpeted, then can the new model be functional without a more fundamental change in the way leaders and subordinates interact with one another? Can the demands for rapid change, organizational flexibility, employee involvement, and smooth unfettered information flow exist within the context of hierarchical, authority-oriented, leader-subordinate relationships? Or would these processes be facilitated by the maintenance of leadership-subordinate friendships? Should we encourage leaders to let down their facades of authority and, if so, how can we teach them to handle the inevitable problems that will arise? These are important questions that can be addressed through research and which can have a tremendous effect on present and future organizational functioning.

Theoretical and Research Foundations

A large body of research and numerous theories suggest that the nature of the leader-subordinate relationship will have a profound effect on various personal and organizational outcomes, although no theorist or researcher has maintained that leaders and subordinates should become friends. The theoretical work most closely related to the leader-subordinate friendship construct (LSF) is the Leader Member Exchange Theory (Graen, Novak, and Sommerkamp, 1982) which grew out of the earlier Vertical Dyad Linkage Model (Dansereau, Cashman and Graen, 1973). LMX Theory maintains that leaders differentiate among subordinates in terms of leader behavior, rather than enacting a "one best" average leadership style.

The model assumes that the behavior of leaders depends upon their relationships with subordinates and that various types of relationships exist within a given work group. The obvious extension for the proposed study is that friendship is one form that the relationship may take, with the resulting empirical question being the implications of that friendship on organizational functioning. Several researchers have studied the behaviors associated with what LMX theory calls "in-group" vs. "out-group" membership (Dienesch and Liden, 1986; Vechio, 1985; Vechio and Goldel, 1984).

Other theoretical orientations have also shed light on the nature of the leader-subordinate relationship with implications for LSF and have been summarized in recent work (Boyd, 1991; Boyd and Taylor, 1992; Taylor, Hanlon and Boyd, 1990). These approaches include social network analysis (Krackhardt and Kilduff, 1990; Krackhardt and Porter, 1985), social support theory (Beehr, King, and King, 1990; Fleming and Baum, 1986), mentoring (Kram, 1983; Burke, 1984), attribution theory (Fedor and Rowland, 1989), transformational leadership theory (Seltzer and Bass, 1990; Yukl, 1989; Avolio and Bass, 1987; Bass, 1985; Burns, 1978), and power theory (Yukl, 1989; Huston, 1983). Each of these approaches imply some benefit for the leader or subordinate or both with the maintenance of closer relationships.

Another body of literature and theory discusses the processes and implications of friendship formation. Wright (1989, 1985, 1978) developed the concept of self referent friendship relationships, as well as a questionnaire (Acquaintance Description Form) for measuring various aspects of friendship. Much of his work is grounded in writings related to communal friendship (Clark, 1981; Clark and Mills, 1979), reinforcement theory (Lott and Lott, 1974), attribution theory (Byrne, 1971), and social exchange theory (Perlman and Fehr, 1986; Altman and Taylor, 1973).

Important empirical works have found that the nature of the leader-subordinate relationship is related to subordinate performance ratings (Tsui and Barry, 1986; Kingstrom and Mainstone, 1985), both task and relationship oriented communications (Roberts and O'Reilly, 1979), work effort and motivation (Dansereau, Graen, and Haga, 1975), and turnover (Dansereau, Cashman and Graen, 1973).

Method

The study would consist of two phases, one largely a quantitative questionnaire approach, and the second a qualitative interviewing approach. Phase one will involve administration of a questionnaire packet to both managers and subordinates in various types of organizations following basically a procedure developed by Boyd and Taylor (1992). The target sample would be approximately 250 leader-subordinate dyads consisting of about 50-75 managers, each with from 3 to 5 subordinates. Each manager will complete the set of questionnaires designated below for each subordinate. Each subordinate would also complete a packet of instruments designed to measure organizational outcomes and processes from their perspective.

Questionnaire Scales and Who Completes Them:

(Leader = L, Subordinate = S)

Acquaintance Description Form (ADF) (Wright, 1985) (L and S)

Leader Member Exchange Scale LMES (Scandura and Graen, 1984) (L and S)

Leader Attribution of Subordinate Performance (Mitchell, Green, and Wood, 1981) (L)

Dennis Communication Climate Survey (Dennis, 1984) (S)

Communication Behavior Scale (Hawkins and Penley, 1978) (S)

Subordinate Work Motivation (S)

Subordinate Performance Questionnaire (L)

Index of Organizational Reaction (Smith, 1962) (S)

Organizational Commitment Questionnaire (Mowday, Steers, and Porter, 1979) (S)

Attitudes About Leader Subordinate Friendship Questionnaire (Taylor, Hanlon and Boyd, 1991) (L & S)

The qualitative aspect of the study would involve interviewing a sub-sample of leaders and subordinates about how to handle leader-subordinate friendships and problems that might ensue as a result.

Subjects would likely be a sample of managers and subordinates solicited through contacts with MBA, Executive MBA, and undergraduate students at three different universities: Memphis State University, University of Akron and University of North Texas. Thus, the study sample would consist of employees from a variety of types of businesses and government agencies from the three major metropolitan areas of Memphis, Tennessee, Akron, Ohio, and Dallas, Texas.

Benefits of Study

This study would provide insight into the effects of close relationships between leaders and subordinates. It would also provide yet another check of the validity of the Leader Member Exchange Theory utilizing a different type of measure of the leader-member relationship. If indeed there appears to be a positive relationship between LSF's and organizational outcomes, the qualitative data from the study will suggest ways in which LSF's can be maintained and potential problems be avoided.

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Title: The Impact of Socialization Tactics on Strategy Implementation: Implications for Organizational Redesign.

Purpose

The socialization process is argued to serve two major purposes in organizations: (1) to reduce the anxiety newcomers experience due to their lack of situational identity (Wanous, (1980), and (2) to reduce the amount of time it takes for newcomers to begin to focus on job performance (Katz, 1980). It has been suggested, however, that the ultimate goal of the socialization process is to build and maintain a corporate culture that is fully supportive of organizational strategy (Schwartz & Davis, 1981). The reasoning is that a strategy-supportive corporate culture (SS-CC) results in the successful implementation of organizational strategy (Pearce & Robinson, 1991).

To achieve the goal of building and maintaining a corporate culture that is fully supportive of organizational strategy, different socialization tactics are used to align the values, beliefs, attitudes, and behaviors of newcomers with those who shape and influence corporate culture -- e.g., organizational founders, top management, or those who comprise the existing SS-CC (Higgins, 1991). The mere existence of different socialization tactics raises the issue of whether one tactic is more or less effective than another for achieving this goal.

Theoretically, a highly effective tactic will result in a corporate culture which is fully supportive of organizational strategy, and a less effective tactic will result in a corporate culture which is not fully supportive of organizational strategy. The former is likely to result in a more successful implementation of organizational strategy, and the latter in a less successful implementation.

Research studies in the area of socialization have focused primarily on the outcomes of the process, situational determinants of those outcomes, and newcomer socialization rates. But the impact of different socialization tactics on the implementation of organizational strategy is an important, and largely overlooked, outcome variable in the socialization literature. This proposed study will seek to fill this gap found in earlier studies which have chose to make socialization its research focus.

Background Theory

A major premise of this proposed study is that a supportive corporate culture is necessary for the successful implementation of organizational strategy (Hopkins, 1987; Pearce et Al., 1991). One option an organization might select to ensure a supportive corporate culture is to adopt only those strategies that 'fit' its existing corporate culture. However, the problem with this option is that factors such as organization size,

technology, and environment may dictate which strategy is adopted. The dictated strategy may or may not "fit" the organization's existing corporate culture.

Another option is to build and maintain a corporate culture that is supportive of the strategies adopted by the organization. This might be accomplished by socializing newcomers into the organization, with the objective of aligning their values, beliefs, attitudes and behaviors with those shared by organizational members who are fully supportive of organizational strategies. Van Maanen and Schein (1979) identified two broad categories of socialization tactics which are routinely employed in organizations. It is argued in this proposed study that tactics comprising the two categories are more or less effective in maintaining a SS-CC.

Tactics comprising the first category (Institutionalized) are argued to reinforce a SS-CC. Institutionalized tactics include: (1) collective, (2) formal, (3) sequential, (4) fixed, (5) serial, (6) investiture. Tactics comprising the second category (Individualized) are argued to erode a SS-CC. Individualized tactics include: (1) individual, (2) informal, (3) random, (4) variable, (5) disjunctive, (6) divestiture. Tactics comprising both categories focus on the context in which organizations provide information to newcomers, the content of the information provided to newcomers, and the amount of social support newcomers receive once they enter the organization.

Theoretically, institutionalized tactics should be more effective in building and maintaining a SS-CC, resulting in a more successful implementation of organizational strategy. This is because their use will increase the propensity of newcomers to accept definitions of situations offered by significant others in their organizations. In turn, this increases the degree to which newcomers will share the values, beliefs, attitudes, and behaviors fostered by the existing SS-CC. Conversely, individualized tactics provide newcomers with great latitude to make differentiated responses to situations within the organization. Consequently, newcomers are more likely to interpret cues incorrectly, lessening the degree to which they share in the values, etc., fostered by the existing SS-CC.

Research Questions

Are institutionalized socialization tactics more effective than individualized socialization tactics in building and maintaining SS-CC, as indicated by the successful implementation of organizational strategy? Are some (or some combination) of institutionalized socialization tactics more effective than others? Are some individualized socialization tactics effective in building and maintaining SS-CCs? Is the effectiveness of certain types of socialization tactics dependent upon the type, size, structure, or design of organizations? In other words are some socialization tactics more effective in certain types of organizations that others?

Method

Jones (1986) developed and validated scales designed to measure the socialization tactics discussed in this proposed study. Packaged in the form of a survey instrument, these scales will be sent to a sample of employees from different types (e.g., size, structures, etc.) of organizations. Gaining access to these employees through the organizations' personnel directors, the sample will be composed of employees who have been with the organization 3-4 years. A sample of managers from the same organizations, who are directly responsible for implementing organizational strategy, will also be surveyed. The survey will be designed so that the managers will respond to inquiries about their perceptions (or actual experiences) of how successfully and efficiently organizational strategies have been implemented.

Strategy will be operationally defined as any large-scale program that an organization has implemented in the past 3-4 years, which was designed to achieve some major growth objective, and which also required a substantial expansion of the organizations' existing work force to complete the program.

Benefits

An obvious benefit of this proposed study will be greater insights into the relationship between the use of socialization tactics and the successful implementation of organizational strategy. The effectiveness of various tactics will also be assessed. Results of this proposed study should also be instrumental in helping to answer questions such as the following: How might organizations redesign existing structures, activities, and processes to accommodate socialization tactics they have never tried before, but may potentially help them implement their strategies more effectively?

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Title: Empirical Analysis of Informal Networks in Organizations.

Informal organizations are necessary to the operation of formal organizations as a means of communication, of cohesion, and of protecting the integrity of the Individual (Barnard, 1938,p.123).

It is relationships and not people that impose control in organizations (Weick, 1969, p.37).

Organizations are, in important respects, relational networks and need to be addressed and analyzed as such. (Pfeffer, 1982, p. 277).

Throughout the history of organizational theory, the concept of the informal organization -- the constellation of relationships extant among members of the organization -- has played a prominent role in scholars' thinking. It has been the common thread that has linked psychologists, sociologists and practitioners interested in better understanding how organizations become, operate, and change. Yet, while scholars uniformly admit to its importance, organizational research that directly incorporates firm measures of the informal organization is relatively rare.

The reasons for this lack of empirical attention to informal organizations has been three-fold, I believe. First, the data are difficult to obtain. Measuring one variable on a set of N individuals requires collecting N pieces of information. Measuring one non-symmetric relationship among N individuals requires collecting N(N-1) pieces of information. Further, such relationships are often in flux, making their assessment more difficult.

Second, once the data are collected, they are difficult to analyze. One cannot use standard statistical packages, such as SPSS or SAS, because such programs do not contain the routines needed to analyze networks nor even the capacity to store the raw data in its network form. While new PC software has recently been developed (e.g., UCINET and STRUCTURE), the use of these programs is not accessible to the user without a reasonable degree of specialized training in network analysis. Many of us who have done network analysis in the past have resorted to writing our own computer programs to do the analysis.

And third, perhaps because of the first two reasons, the theory in this area is underdeveloped. As Pfeffer (1982, p.276) states, "At the moment, social network analysis is more of a paradigm and framework than a theory, and more promise than fulfilled potential." That is, while there is universal recognition that informal organizations are important, theory has lagged from which specific testable hypotheses could be derived.

All three of these rationales for the lack of empirical research on informal organizations are beginning to fall. New methods for collecting and analyzing data are being developed and becoming well accepted (e.g., Burt and Minor, 1983; Brass, 1984; Granovetter, 1983; Krackhardt and Porter, 1985; 1986/ Krackhardt 1990; Krackhardt and Kilduff, 1990). Similarly, there has been theory and empirical support for the contention that organizations themselves are affected by their position in a larger system of informal relations with other organizations (e.g., Burt, 1983; Galaskiewicz, 1985).

In this rash of new theory, methods and research, a glaring hole exists. The original thinking among organizational theorists, such as Barnard (1939) and later Simon (1945; 1981) was that the structure of the informal organization would influence the behavior of the organization as a whole. Early laboratory work by Bavelas and his colleagues; (see Shaw, 1964) demonstrated that certain five-person communication structures were more effective at some kinds of tasks than other five-person structures. These studies used precise measures of both the informal structure (based in graph theory) and group effectiveness. To date, no one has replicated these interesting findings in the field. That is, it is not known whether different informal structures, precisely measured, predict organizational performance across a set of organizations.

Again the limitation for answering this question has been a lack of appropriate methods and theories. In the small group laboratory, it was easy to create stylized structures, like a star, wheel, Y-shape, and so on. In fact, most of the research compared a total of five distinct structures (Shaw, 1964). In large organizations, such stylized structures do not exist; rather, they are untold numbers of different structures that can emerge. The only reasonable way to deal with such complexity is not to categorize structures, as had been done in the laboratory, but rather to measure the structures on a continuous scale.

In an attempt to deal with both the measurement and theoretical complexities of this problem, I have proposed elsewhere (Krackhardt, 1989) that informal structures can be measured on four dimensions: 1) connectivity, 2) hierarchy, 3) graph efficiency, and 4) least-upper-boundedness. The starting point for these measures is that each is derived from a set of necessary and sufficient conditions for the existence of a "pure hierarchy," or "out-tree" in graph theory terms. This pure hierarchy mimics a formal organizational chart; All relations are "downward", and each "subordinate" in the hierarchy has one and only one 'superior,' except the one person at the top who has no 'superior.' An informal organization that had all of these characteristics would be rare. The central questions become, how deviant from this pure hierarchy is the informal organization? On what dimensions does it deviate from the pure hierarchy? What are the implications for organizational effectiveness for deviation on each dimension?

The Four Measures of Structure

Connectivity. If we represent an informal organization as a graph of points

connected by lines with arrows, we can discuss several properties of such structures. An informal structure is said to be connected if there is a path from each point to every other point, following the lines but ignoring the direction of the arrows on the lines. This path may be direct or indirect (going through other points before reaching its destination). An informal organization is less than fully connected (connectivity < 1.0) to the extent that one point cannot reach another. If no point can reach any other point, then connectivity is 0.

What does connectivity tell one about the organization? Disconnected parts of the informal structure indicate that the various parts are not communicating with other parts. Having less contact with each other, they are less able to influence each other or organize toward a common purpose. It may be that multiple cultures exist within the organization (Krackhardt and Kilduff, 1990), or at least that different groups have formed with different norms and values. Organizing and coordinating access with such differentiated groups may be more difficult than in a connected informal organization. Thus, connectivity would be expected to be positively related to the organization's ability to perform at maximum efficiency.

Graph Efficiency. Graph efficiency is the degree to which the graph is not burdened with more lines than necessary to keep it from being disconnected. If there are N points in a graph, then only N-1 lines are necessary to keep it from being disconnected. Any more lines than that are unnecessary. A perfectly sparse graph is one that has only N-1 lines. The most lines possible between N point is N(N-1)/2, which would constitute the least graph efficient condition (graph efficiency=0). If the graph is disconnected, then graph efficiency is assessed on each disconnected part of the graph separately.

Graph efficiency is the complement of density. There are advantages and disadvantages to a sparse (graph efficient) network. If a social network is too sparse, then it is fragile and easily broken into disconnected groups. There is no redundancy in the system to protect it from exogenous disturbances. On the other hand, a dense (graph inefficient) network may be an indication that people are mis-allocating their time. It is difficult to maintain relationships with everyone, and the time spent in attempting to do so may be better spent elsewhere. Thus, it is predicted that graph efficiency would have a curvilinear relationship to organizational performance: both high degrees and low degrees of graph efficiency are suboptimal for performance, and a moderate degree of graph efficiency will be associated with the highest organizational performance.

Hierarchy. An informal organization is hierarchical to the extent that the relationships are one-way in their structure. For example, an advice relationship may be hierarchical if one group of people goes to another for advice but the latter does not go to the former for advice. On the other hand, the advice structure may be non-hierarchical to the extent that both parties go to each other for advice.

The presence of hierarchy in an informal organization suggests that there is status differentiation. The more hierarchy there is, the more status is constraining the relationships in the structure. Whether this is healthy for the organization depends on the nature of the task and the type of relation depicted. As a general rule, though, hierarchy in informal relationships is thought of as a barrier to effective communication in an organization. As such, it is expected that informal hierarchy will inhibit the performance of an organization.

Least-Upper-Boundedness. The last dimension is the most abstract. It refers to the fact that any two people in the network have at least one other person to whom both can defer to resolve a conflict. In the formal organization, this principle is easy to see. Any two people within the same work group can appeal to their supervisor to resolve a conflict. Any two people in a department can appeal to the department head. Any two people in disparate parts of the organization can appeal to the CEO. By "appeal to" I mean that there is a chain of command that one can follow to reach someone else in the organization.

In an informal organization, we speak of informal deference rather than formal authority. For example, person i may trust person k for help and advice on sensitive matters. Person j, who does not talk to person i, may also trust person k. In the event that i and j are in disagreement on some issue, they may both appeal to person k in whom they both have a history of confiding. Thus, person k is in a strong position to prevent the disagreement between i and j from blowing up out of proportion.

Friedell (1967) was the first to note that this structural characteristic of informal relations had implications for how the organization could deal with conflict. He argued that the extent to which the informal structure violated the least-upper-boundedness principle, then conflict would be difficult to manage: "Then the empirical prediction is that, insofar as an organization structure deviates from the ideal-type, 'strain' or some atypical solution to the relevant problems will manifest" (p. 48). Informal structures that have no violations of the least-upper-boundedness principle do not prevent conflict; but they suggest that conflicts that do arise can be managed and resolved through deference chains to "higher" third parties. The prediction arising from this principle is that violations of the least-upper-boundedness principle will lead to unmanaged conflicts that will hurt the organization's performance.

Method

To explore and test these predictions, I propose a study of informal organizations and their relationship to measures of organizational performance. Such a study would emanate from work I have already completed at a large national financial institution. The holding company has 900 branches, of which I was able to sample 24, all similar to each other in important ways (same economic climate, operating out of the same metropolitan area, moderately similar in size and type of client). I asked the employees

of each branch to fill out a network questionnaire indicating:

1) Who do you talk to virtually every day about work related matters? Who do you talk to at least once a week about work related matters?

2) Who do you go to for help and advice virtually every day about work related problems? Who comes to you virtually every day for help or advice about work related problems? (These questions were also repeated to ask who they go to at least once a week.)

Because of the support provided by the bank, 100% of the branches agreed to participate in the study, and 100% of the employees in each bank completed the questionnaire. Measures of connectivity, hierarchy, graph efficiency and least-upper-boundedness were calculated for both communication and advice relations based on the responses to these questionnaires.

Performance for the branches were assessed using the bank's internally generated measures of branch profit. These figures are used by the bank to evaluate the branch and its management.

The results from this preliminary study can be summarized as follows:

1. Controlling for branch size (the number of employees in the branch, a strong predictor of profit), hierarchy in the communication network was significantly and negatively related to profit. By itself, hierarchy explained about 25% of the variance in branch profitability.

2. Controlling for branch size, least-upper-boundedness and graph efficiency in the advice network both are significantly and positively related to branch profit. These two structural measures combine to explain about a third of the variance in branch profit.

That is, the hypotheses for hierarchy, graph efficiency and least-upper-boundedness were partially supported. The variance in connectivity was not sufficient in either relation to provide any support for dis-confirmation of its hypothesis.

These results leave open some interesting questions, however. Are these results stable over time? Do these informal structures represent characteristics of the branches themselves, independent of the management? Or do managers differentially encourage and reshape the informal structures as they transfer from one branch to another? If a manager manages to "improve" the informal structure of his/her branch, does the branch profit improve along with it?

These are questions I would like to pursue. The bank has already expressed an

interest in these follow-up questions, as well as expanding the database to include more branches in the study. I have the access. If I can get funding, I will be able to explore and test this theory of informal organizations further.

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Title: What Frameworks do Economic Development Offices Use in Making Resource Allocation Decisions?

Purpose

The purpose of this study is to systematically examine and evaluate the framework underlying the process used to make decisions regarding the allocation of the constrained resources in municipal, state, and Federal government economic development offices. Given the downsizing of the government and large industry, these offices are playing an increasingly key role in allocating resources to create jobs. By examining this process, we can answer the research question: What role does government see for itself in developing our economy to maximize social welfare? Two related questions can also be studied. What role should government play? And, how do other parties to this decision process see this role? The answers to these questions will help define what governmental agencies see as their responsibility to the citizenry.

Foundations

The government and many large companies have chosen to reduce the number of employees. This is resulting in severe structural unemployment where large numbers of people are seeking employment. Many of those people ask: What can the government do to help us? That they turn to the government for assistance, rather than large corporations, reflects a belief that it is the government's responsibility to promote the public welfare. When this trend is combined with the Federal government shifting many (public welfare) responsibilities to the states and cities, the result is that states and cities have become directly responsible in facilitating economic growth and monitoring the public welfare. This has been accomplished through the creation of economic development offices. States, counties, cities, regions, etc. have provided these offices with resources and the charge to create job opportunities. These offices face the challenge of allocating these resources among the various societal stakeholders in such a manner as to form a better social partnership. They form the link between business, government, and society.

There are three frameworks that can be utilized to allocate resources among competing stakeholders: economic, political, and moral. The economic model, using dollar-based cost/benefit analysis, can be framed as either short-term efficiency driven, or long-term synergy driven. A focus on the short run results in decisions based on how many jobs can be created for the fewest dollars and does not take into account how long the jobs will last or what the cumulative multiplier effect will be in future years. The long run focus involves forecasting how the expenditure will create jobs well into the future. It may also focus more on the multiplier effect. The political model results in decisions that provide the greatest political support. The allocation of resources here is

based upon their effect that the expenditure has on support for political agendas. Moral based allocation results in the greatest social welfare. This allocation is more socially responsible, in the long run, than either of the others. However, it is clearly possible for all three types to be, at times, complementary to one another.

The framework used by economic development offices can be examined using a forced choice questionnaire. The appendicized version can be easily modified to reflect choices driven by economic, political, or moral frameworks. The instrument displayed in the appendix is the one most widely used to assess social responsibility for empirical research.

Two factors are thought to moderate the usage of the economic framework as opposed to the political or moral framework. These are past involvement with highly organized, volatile citizen groups, and the strength of the normative belief that government should act to maximize social welfare, respectively. To examine the effect of the first, it would be necessary to poll the groups involved in the allocation decisions: successful companies, unsuccessful companies, and citizen groups. The more that the public becomes involved in attempting to impact resource allocation, the more likely that economic development offices will use a political framework to guide the allocation decision. The more that the officials believe that their charge is to promote the greatest social welfare, the more likely that they will use a moral framework to guide the allocation decision.

Method

A pretest of the investigation will involve interviews of Officers of Economic Development Programs at the State, county, regional, and municipal levels. This will help pinpoint the key aspects of the decision process. These aspects will drive the development of a forced choice questionnaire reflecting choices that are guided by economic, political, and moral factors. After further validation, the questionnaire will be sent to all states, all MSAs, and a national sampling of counties and smaller municipalities. Procedures will be used to ensure a high response rate. The responses will then be analyzed. An effort will be made to identify recent recipients/users/influencers of these offices. It is also possible to send a normative questionnaire to the Officers at a later date.

Benefits

This study will provide benefits in two areas. It will first provide insight into what guides the decision process of an increasingly important government entity. It will also provide guidance as to what factors are related to the use of each framework. These findings will provide policy makers with greater guidance as to how these important decision processes balance stakeholder interests. The study is not only concerned with what the moral, economic, and political orientation is, but what is believed it should be.

Also, if an agency is a point A, but wishes to be at point G, training strategies can be established to facilitate this.

NO BIBLIOGRAPHY SUBMITTED

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Title: Leader Facilitation of Teamwork

Purpose

The proposed research addresses the leadership and motivation of group performance. The focus is on how leaders may facilitate teamwork, which we define as the effective integration of the efforts of team members. The concept of teamwork has yet to become clearly established in the literature of leadership and motivation, but the contributions of several lines of research offer bases for the establishment of teamwork as a useful construct. Key ideas upon which our approach rests include the concepts of team building (Dyer, 1987: Liebowitz & DeMeuse, 1982), task group effectiveness (Goodman, Ravlin, & Schminke, 1987; Hackman, 1987; Shea & Guzzo, 1987), group efficacy (Bandura, 1982; Gist, 1987; Woodruff, Spiller, & Seers, 1992d), working relationship development (Gabarro, 1987), and exchange relationships between employees and other members of the peer work group (Seers, 1989).

We propose that leaders must facilitate both the ability and motivation of subordinates to coordinate their efforts in order to produce teamwork. We suggest that the ability of members to coordinate their efforts depends on their perception and recognition of the interdependent network of roles and relationships through which they are linked to other team members. We suggest that the motivation of members to coordinate their efforts depends on their perception and recognition of the instrumentality of reciprocal exchange among team members. Thus, teamwork can be produced when team members clearly understand their roles and how those roles are interdependent, and when mutually beneficial reciprocal exchanges characterize the working relationships among those members.

Theoretical Foundation

Recent work on employee role perceptions, e.g., McGee, Ferguson, & Seers, 1989; King & King, 1990, indicates that the commonly used measures of role perceptions, i.e., the Rizzo, House, and Lirtzman (1970) role ambiguity and role conflict scales, cannot adequately assess any more than a respondent's general sense of confusion about his or her organizational role. Subsequent work (Seers and McGee, 1989) indicates that measures can be developed that assess multiple aspects of an employee's role, including the respondent's recognition of interdependent role senders and how those interdependent others react to focal role behavior. The proposed research will include the investigation of how leaders can facilitate accurate subordinate role perceptions along the six dimensions identified by Seers and McGee (1989).

Seers (1989) and Seers, Petty, and Cashman (1991) investigated the establishment of mutually beneficial reciprocal exchange relationships between individual employees

and their interdependent peers on manufacturing teams. Seers and his colleagues identified the team member's perception of the reciprocal exchange quality of his or her relationship to other team members as an important predictor of both individual and group level outcomes. On the individual level of analysis, team-member exchange quality predicted variance in job attitudes beyond any attributable to leader-member exchange quality. Significant team-member exchange predictions of job performance were enhanced further by an interaction effect with the interpersonal motivation of employees. On the group level of analysis, increases in a team's average level of team-member exchange quality correlated at r = .90 with increases in team production efficiency.

The evidence thus far indicates that team-member exchange may be a useful new tool for understanding how the phenomenon we call teamwork may arise out of a collection of individuals who work in a group setting. The proposed study will help us further articulate and validate the team-member exchange quality construct, and will include investigation of how leaders may facilitate the development of such reciprocal exchange among subordinate team members.

The proposed research is therefore generally concerned with group dynamics, but specifically concerned only with the efforts that members put into their group roles and the advantageous combination of those efforts. These group dynamics are the only group dynamics that can directly influence a group's task effectiveness. The more commonly researched group dynamics such as cohesiveness, conflict, conformity, and communication openness are therefore seen more as consequences than as causes. They are all part of the psychological experience of groups, and may be related to the motivation of group members and the coordination of their efforts, but they do not directly reflect the process by which each member establishes his or her contribution to the combination of efforts. Paradoxically, studies of coordination, e.g., Argote (1982); Cheng (1983); and Van de Van, Delbecq, and Koenig (1976) have investigated it as a technological rather than a behavioral phenomenon.

By differentiating a social exchange theory approach to teamwork from other contemporary analyses of organizational teams and work group effectiveness, we can establish the unique theoretical significance of this approach. The Goodman et al. (1987) review of the literature on organizational work groups provides a critique of the most widely known models of group effectiveness. They concluded that "Current models of group effectiveness are specified in too general a fashion. Lists of loosely connected variables will not generate new insights into group functions. Most current models are not generated in a testable form." (Goodman et al., 1987,. p. 133).

Such group effectiveness models imply an assumption that all factors that might be related to group functioning should be enumerated. A team-member exchange analysis of teamwork differs in that we draw the boundaries of the system of interest around the development of relationships between interdependent roles. Our primary

focus will be restricted to the integration of effort across team members. Variables that are only indirectly related to how people do their work together and variables not under the control of team members, i.e., most of the variables usually listed in the box diagrams of group dynamics models, are thus placed in the environment of our system of interest.

For example, the variable of cohesiveness almost universally plays a central role in group dynamics models. Yet the nature of the cohesiveness achieved within a group and whether it helps or hinders group effectiveness depends on what behaviors members are expected to display within the group. A team-member exchange approach focuses directly on the reciprocal behavioral expectations among parties to working relationships. If the exchange of expectations produces generally effective working relationships within a group, then a beneficial form of cohesiveness should result.

One construct that is not typically found in models of group dynamics but is integral to ours is that of group efficacy. Bandura (1982) suggested that his work on self-efficacy be extended to collectives at the group, organization, and even national levels of analysis. Gist (1987) seconded Bandura's call and Earley (1991), in a study of individualism and collectivism, found that individual perceptions of group efficacy significantly affected individual level performance. Woodruff et al., (1992) articulated a model of group efficacy. Group efficacy was defined as incorporating three components: member role efficacies, efficacies for interdependent roles, and synergistic efficacy for the group's ability to work together as a team. Group efficacy is proposed as a key ingredient in the motivation of members toward the achievement of teamwork.

Some contemporary models of group dynamics do include concepts that are somewhat related to our notion of teamwork. For example, Hackman (1987) discussed group "synergy", but depicts it as an exogenous variable, whereas we would conceptualize synergistic teamwork as a major consequence of high exchange quality in working relationships. Also, Shea and Guzzo (1987) mention three types of member behaviors that should affect group task effectiveness: blocking, producing, and facilitating. Yet these are not shown as constructs in their model, which depicts task interdependence, outcome interdependence, and the collective beliefs of group members as antecedents of task effectiveness.

We should also differentiate an exchange theory approach to teamwork from team building (Dyer, 1987). Team building is an organization development technique wherein meetings are held to foster planning and open communication among people who work together. Reviews (Woodman & Sherwood, 1980) of team building research indicate that it focuses mainly on general feelings and attitudes. As noted by Hackman (1987) and Shea and Guzzo (1987), studies that examine the task performance consequences of the interaction among group members are lacking.

Methods

A field experiment will be conducted on the facilitation of employee teamwork by team leaders. There is existing evidence (Graen, Novak, & Sommerkamp, 1982) that training can improve the abilities of leaders to form more effective working relationships with individual subordinates. The proposed research would apply the approach used in the Graen et al. (1982) study to the training of group leaders for the facilitation of effective team working relationships. Data will be collected on the background of team members and on the responsibilities assigned to each member within the team, as well as on team effectiveness and member attitudes. Leaders of teams in the experimental group will be trained to facilitate subordinate role perceptions and reciprocal exchange relationships, while control group teams will proceed with their work as usual. After the implementation of the leader's team facilitation training, leaders will work with their subordinate teams over a six month period to enhance member role perceptions and team-member exchange relationships. Subsequently, team effectiveness and members'job attitudes will be assessed, and statistical comparisons of the data before and after the intervention will be conducted between the experimental and control groups. Negotiations are proceeding to establish a suitable setting for this research.

Benefits

A major practical benefit of increased knowledge about team-member exchanges is that training programs designed to enhance team-member exchange could significantly improve the coordination of effort within the working relationships across a group of individuals working as a unit.

A major theoretical benefit of the proposed research is that it should draw our attention to and increase our understanding of the day-to-day mechanics of how people can work together most effectively. It would give us an alternative foundation for building a model of task group effectiveness. Rather than sifting inward through those long lists of loosely connected variables for an elusive "key" to group functioning, we could work from a core model of how people learn to work together, and build outward to a fuller understanding of teams and groups at work. In sum, the proposed research will indicate whether we may begin to establish teamwork as a viable construct for organizational behavior research, rather than as a sports metaphor applied to work organizations in a colloquial manner.

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Title: Core Principles and Core Conditions: Organizational Antecedents to Renewal and Change.

Purpose

The purpose of this research is the examination of the organizational elements which permit "appropriate" organizational change such that the redesigned organization exhibits a state of equilibrium among strategy, structure and environment. The impetus of this inquiry is the continuing fundamental conflicts experienced by organizations as the momentum of the existing strategic direction and structure collides with the forces (both internal and external) which seek to change the strategy and structure. An organization may experience a number of negative results of this collision; i.e., the organization may be torn asunder as the forces for the status quo pull it in one direction and the forces for change pull it in another; the organization may be rendered obsolete if the forces for stability win out but the forces for change were correct in their assessment for needed redirection; or the organization may devolve into chaos if the forces for change win out but the direction for change is neither clearly indicated nor found. The conflict is not easily resolved. The forces for the status quo are strong. All of the organization's forward momentum -- their history and accumulated learning; the value structures of the core decision makers; the career paths of the successful members; the established routines, decision rules, guidelines and procedures; the information gathering and evaluation systems; along with the mythologies, ideologies and beliefs of all the stakeholders -- push the organization to continue to do what it has done in the past. Failing some compelling evidence to the contrary, the strategists will heed the advice of those sages who reinforce this view of the value of sticking to their strengths (e.g., Bourgeois, 1980; Galbraith & Nathanson, 1977; Porter, 1980; Schein, 1983).

However, the forces for change are also strong. All the changes in the environment -- the technological breakthroughs of the competition; the rule changes by the government; the reconfigurations of global trading blocs; the vagaries of consumer tastes; declining resources; and the changing areas of expertise of new organizational members -- combine to push the organization to regenerate and renew itself. Seeing compelling evidence for change all around them, the champions of change heed the advice of those who reinforce their view (e.g., Ansoff, 1976; Argyris, 1985; Dutton & Duncan, 1987; Mitroff & Emshoff, 1979; Shrivastava, 1983).

Since the conflict between the need for change and the desire for stability can have such devastating effects, it is imperative for organizational researchers to understand how organizations can be designed to accommodate needed change while taking advantage of all the accumulated value in the existing organization. Since some organizations have been able to do this, it seems reasonable to believe that there is a set of organizational characteristics which permit such change. Considerable work has been done exploring organizational change. It is the intent of this research to build on this

previous work and to integrate it in order to design a program for examining organizational phenomena which must be present as antecedents to change.

Theory/Foundations

This research is grounded in the traditional strategy literature. However, it also breaks away from the traditional in terms of how it views the processes of strategy and where it finds the elements to reside. In order to do this, the present research would integrate previous work on the process of strategy and its context.

The process of strategy would be examined in order to answer 3 questions:

1. What is strategy?
2. Who are the strategists?
3. How is strategy formulated and implemented?

Exploring these questions will help us to more clearly comprehend both the antecedents and the consequents of the strategy process in order to more clearly understand strategic change.

The context of strategy will be explored in order to answer 3 more questions:

4. Where does strategy exist?
5. What are the boundaries of the organization involved in the strategy process?
6. What are the characteristics of those organizations which can change?

Exploring these questions will allow us to more clearly comprehend the important unit of analysis for strategy making. Combining these two directions of inquiry will lead to consideration of the underlying question for this project:

Are there characteristics or elements in some organizations which permit regeneration of the organization when appropriate and in a way that the accumulated "good" is not lost and the new incarnation is by some definition "good"?

Some directions for answering those questions have already been established. Pursuing some of the answers in the literature helps us to design our research project. An example of how the literature review would guide the development of the research design is as follows: (Each question is followed by a possible answer developed from the literature.)

1. What is strategy? Strategy is a stream of decisions (Mintzberg, 1978).

2. Who are the strategists? Strategy is created by the visionaries (Snodgrass & Jauch, 1991)

3. How is strategy formulated and implemented? Strategy proceeds through the manipulation of decision premises (Snodgrass & Grant, 1986).

4. Where does strategy exist? In the mind of the strategist (Snodgrass & Jauch, 1991).

5. What are the boundaries of the organization? The organization is a web of relationships (Sekaran & Snodgrass, 1990).

6. What are the characteristics of firms which can change? Such firms have organizational slack, a tolerance for ambiguity and strong leadership (Burgelman, 1991).

By working through the literature in such a way, we will be able to identify the relevant variables for the research design. The answer to the final question, of course, is the intent of this research. Previous work indicates two directions for inquiry. The first is around the decision premises of the strategy formulators and implementors. Those decision premises which are the antecedents of the strategy process we call core principles. The second direction of inquiry is around the context in which this process takes place. In that organization there is a set of conditions which permit strategic change to occur. We call them core conditions. Our work will explore whether the ability to change and renew is a function of the individuals, the organization or both.

Methods

The methodology to be followed will require an in-depth exploration of the organization. Techniques borrowed from anthropology and sociology will be utilized. These techniques have found their way into the strategy arsenal. The techniques include (but are not limited to): content analysis, cognitive mapping, assumptions analysis, historical analysis (Burgelman, 1991; Eisenhardt, 1989; Huff, 1983; Jauch, Osborn & Martin, 1980; Mitroff & Emshoff, 1979; Ramaprasad & Poon, 1983). A final decision on the methodology would depend on the organization being studied.

Benefits

The benefits from this research would be to both theory building and practice. Theory building would benefit as some of the conflicts about the desirability of stability and change are resolved. In addition, this work would combine the previous work done on strategy process and context to bring a fuller understanding of both.

The benefit to practice will come in an understanding of how organizations can change and be renewed without chaos. As the antecedents to "good" change are explored, questions of how this information might be transferred to other organizations can be addressed.

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