Delphi Survey of Organizational Futurists on Issues and Trends Affecting Organizational Appearance in 2000

Suzann M. Owings

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DELPHI SURVEY OF ORGANIZATIONAL FUTURISTS ON ISSUES AND TRENDS AFFECTING ORGANIZATIONAL APPEARANCE IN 2000

BY
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DISSERTATION
Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in American Studies in the Graduate School of The University of New Mexico Albuquerque, New Mexico May, 1978
ACKNOWLEDGEMENTS

Many, many people have contributed to the success of this research. I would like to take this opportunity to thank a few of them. First, I want to express my deepest gratitude to my family. Their support and encouragement have been inspiring and the everpresent foundation for all of my endeavors. In particular, I want to thank my father for his direction last summer and my mother for her ideas last fall. Without my parents, the progress made during the last year would not have been possible.

My professional family has also been wonderful. When looking for a university in which I could study the future using an interdisciplinary approach, only the University of New Mexico received such an idea with enthusiasm. Only Joel Jones was interested in providing space so someone could study the future. The director of American Studies, Charlie Biebel, continued to provide support when I finally arrived at U. N. M. This enthusiasm for my studies has never faltered at the University of New Mexico. The faculty has been wonderful from my first course with George
Huaco, through my method studies with Dan Slate, to my final methodology studies with Dick Tonigan.

I would also especially like to thank Howard Finston, my dissertation director, who has been teaching me since the first day we met. All of my committee members have been super, always there with plenty of support and precise criticism. I cannot imagine a better dissertation committee than Howard Finston, Dodd Bogart, Joe Champoux, Ferrel Heady, and Dick Lawrence. I have constantly been astounded by how exceptionally well they complement one another and how they always named the difficult spots that did not quite work. They have been a excellent example of the benefits of interdisciplinary study, such as provided in the U. N. M. American Studies program.

American Studies provided more than just space and opportunities. Helen Bannan has helped by furnishing the right advice at the right time. In keeping with an U. N. M.-American Studies tradition, current and former members of the department constantly furnished a terrifically supportive community environment. Three alumni of the program were especially helpful during this study: Paula Gunn Allen, John Cantwell, and Shelby Smith-Sanclaire. Not only have they been critical and made superb suggestions about "righting" the study,
but, as with my dissertation committee members, they have been "ever available" and ever ready to give a hand when needed.

Many, many other friends have helped ensure this study. Often during critical moments and critical deadlines, my friend Mike O'Neill stepped in and helped turn the tide. I would also like to thank my friends at U. C. H. S. who have been concerned and certain of my success.

There have been many other wonderful people along the way. The Anderson School of Business was most supportive and helpful during the development of this research. "Thank you" also goes to the people at the U. N. M. libraries and at Dataco who always had a smile, and helped me sanely research and produce this dissertation. Although not everyone can be mentioned, and there are so many who have been instrumental in the success of this project, they are all remembered with gratitude. Thank you, everyone.
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ABSTRACT OF DISSERTATION

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ABSTRACT

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Suzann M. Owings, Ph.D.
Department of American Studies
The University of New Mexico, 1978

Studying the future is a relatively recent academic phenomenon. Recognized as a distinct scholarly activity in the late 1960's, futures research has gained increasing popularity during the last 10 years. Concerned with information collection and policy formulation, the futures field describes alternative futures, provides an early warning system for signs of change, identifies possible and probable consequences to various choices and developments, determines the degree of knowledge or uncertainty existing about futures possibilities, and develops various policy options (Hahn and Little, 1976). Using the futures research methodology, increasingly futures researchers are joining specialists in other fields to study the futures of these specific fields.
Cognizant of the goals of the futures field, this study sought information about organizations in 2000 and the issues/trends seen as influencing their future. As in most contemporary studies, "organization" was defined in systems' terms as a generic classification. In this study, those who have published on the topic of organizations of the future are termed "organizational futurists."

The goals of this study were met by answering four questions:
1. Which trends/issues are seen as most significantly influencing organizations envisioned for 2000?
2. What is the consensual opinion of organizational futurists regarding the most probable organizational appearance in 2000?
3. Which people could be designated as "organizational futurists?"
4. Which organizational and futures literature is concerned with organizations of the future?

The first two questions were answered through a Delphi; the third through a literature search and peer nomination process; and the fourth question was answered through the literature search.

Through the Delphi survey, organizational futurists suggested a list of 12 issues/trends seen as being influential in the future of organizations during
the next 22 years. Of those, three issues/trends are perceived as "most significant" by the panel: increasing governmental regulation and surveillance, technology, and increasing scarcity. The Delphi panel also developed a bimodal description of the most probable organization of 2000. They describe it as either being very similar to the present, or as being a very adaptive design. Seven adaptive design possibilities were suggested.

This research also extensively reviews the organizational futures literature through three categories and six subsets:
People: Intersystem conflict
Organization populations
Knowledge: Influence of education on the organization
Knowledge explosion
Technology: Technology and images of the future
Technology and organization structure

The literature review also surveys the organization designs envisioned for organizational components and entire organizations in the future. Finally, organizational futures information from the literature is combined with the Delphi results to describe five options which may dominate organizational reality in 2000:
the participative, huge machine, authoritarian, "no change," and egalitarian models.

Helmer (1974) states that the futures research criteria requires three components for a responsible analysis of the future: a survey of the possible alternatives; an analysis of the preferences; and, a constructive policy analysis. As a futures study, this research surveys the possible alternatives for the future of organizations and the issues/trends which could significantly influence future options. The experts and the literature of the new organizational futures field are identified to facilitate further study in the area and to facilitate the completion of the remaining components necessary for a responsible analysis of the future of organizations.

Several suggestions are made as to further research needed in the field. These include additional objective analyses of influential issues and trends, and of the alternatives available to policymakers; the more frequent use of time and event "milestones;" and additional studies of the future of types of organizations. Such studies would provide the framework needed for forecasting and planning at the individual organization level and for larger system policy formulation.
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Chapter 1

INTRODUCTION

According to the classical traditionalists, organizations were seen as "correctly" functioning when operating according to certain socially-accepted and time-tested guidelines. Shocked by the nineteenth century industrial explosion, classicists such as Fayol and others attempted to summarize their time-tested organization principles and commit them to literary record. Carefully and meticulously, the traditional authors wrote of their intuitions and experiences regarding how "correct and efficient" organizations appear, function, and are managed (Filley and House, 1970).

Unlike the traditionalists who wanted to keep to the "tried and true," organizational theorists and practitioners during the first three-quarters of the twentieth century have participated in movements and plans for changing and improving organizations. Filley and House state that unlike the classicists, those who now study organizations know "too much to make rules
arbitrarily and too little to make them on the basis of evidence" (Filley and House, 1970:8). Perrow (1972) terms this period of change in organization theory as "From Survival of the Fittest to Cooperation in Sixty Years."

For traditionalists, when the future was considered a continuation of the past, it was vague, unmarked, and assured. Awareness followed rather than preceded events (Toffler, 1974). Today, the future is still vague; but that vagueness now brings apprehension and discomfort. Simple, unconscious adaptation is no longer considered adequate (Gerardin, 1973; Toffler, 1974).

When believing the future to be a continuation of the past, traditional researchers concerned themselves with studying the pasts of organizations and people. Slowly, the academic world is beginning to understand the importance of studying what lies ahead. The future is seen not simply as a continuation of the past, but as an "effect" of past and present "causes." Bell says that the world is coming to realize that "the world of the year 2000 has already arrived, for in the decisions we make now, . . . the future is committed. . . . The future . . . begins in the present" (Bell, 1974:258).

An important aspect of the present and future
is organizations. It has often been said that "[m]odern man is man in organizations" (Blau and Scott, 1962.ix). Organizations are everywhere; they fill every aspect of life (Bennis, 1970; Dror, 1969; Gross, 1973; March and Simon, 1958; Perrow, 1970; Scot, 1964; Toffler, 1970). Perhaps it is the omnipresence of organizations which leads Drucker to term them as "the proper study of mankind" (Drucker, 1962:263). Regardless of the reason for studying organizations, it seems universally agreed that their study is an important area for future inquiry (Hage and Aiken, 1970; Scott, 1964).

FUTURES RESEARCH

In the mid-fifties, a new era of openness to organizational alternatives began and accelerated greatly in the 1960's. At about the same time, futures research was developing from operations research (Helmer, 1975), planning activities, and the curiosity of social scientists. If any one feature is characteristic and essential to both futures research and this newest era of organizational study, it is nondeterminism (Gordon, 1974; Tugwell, 1973). The future has come to be seen as open to development.

Futures research and the study of alternatives attempt to remove apprehension and discomfort from the future. By exploring probable and desirable
options, futures researchers\(^2\) seek to learn how to anticipate and design the future (Coates, 1976; Toffler, 1974). This philosophical posture is a further change from the past and marks the beginning of a new era in scholarship.

Futures research meets another need in society. Policymakers especially need to optimize present actions so that their consequences will realize desired future outcomes (Coates, 1976; Gerardin, 1973). Conditioned by the traditionalist view of the future and overwhelmed by the rapid changes in society, organization members and their leadership usually assume a defensive stance where they react to the future rather than decide upon a plan for making their chosen, desirable future the most probable outcome (Gerardin, 1973; Nanus, 1975).

Developing an understanding of the possible alternatives and means of achieving the desirable future realities\(^3\) may help to change organizations from their defensive position to a creative, assured partnership position with the future (Coates, 1976; Polak, 1974). As a premise, the present study assumes the importance of such a positive and assertive futures orientation.\(^4\) As a goal, the present study surveys the issues and trends organization and futures experts see as significant and makes that information available to policymakers through their researchers in academia.
In reviewing some *Fortune* magazine forecasts, Farmer (1973) contrasts some of the differences between the older approach to developing forecasts and the newer, futures research method. He concludes that the new method is superior to the older approach:

The type of one-dimensional forecast that fails to consider the side-effects is still common. Most professional futurologists do not make such errors, but many of our political actions and programs are based on singularly-minded, one-dimensional predictions. As long as this is so, we can confidently forecast that many of our solutions will not work too well, since the side-effects may well be worse than the original problem (Farmer, 1973:27).

Farmer (1973) is correct in characterizing futures research as concerned with developing multi-dimensional and multi-faceted pictures of the future and future possibilities.

The goal of futures research is not to predict the direction of trends or the future the trends may describe (Hahn and Little, 1976). The goal of futures research is information collection and policy formulation (Enzer, 1973). Hahn and Little (1976) cite its objectives as to describe alternative futures, provide an early warning system for signs of change, identify possible and probable consequences to various choices and developments, determine the degree of knowledge or uncertainty existing about the future possibilities, and development of various policy options.

These futures research objectives complement
the components of a futures study outlined by Helmer (1974). According to Helmer (1974), the futures research criteria requires three components for a responsible analysis of the future: a survey of the possible alternatives; an analysis of the preferences; and a constructive policy analysis. The futures research objectives and components outlined by Helmer (1974) provide the foundation of this study.

THE SIGNIFICANCE OF THE STUDY

The present study of issues, trends, and the future appearance of organizations is significant for four reasons. First, this study is designed to make a survey of organizational trends available to research communities and through them to policymakers. One of the tasks of futures research is to deliver well-formulated information to policymakers (Enzer, 1973) who are frequently forced to develop policies with inadequate information. One means of routing information to policymakers is through their research community to whom this study will be readily available.

Second, the current study provides organizational experts with an opportunity to alter their previous projections of organizational evolution. Since the flurry of optimistic projections in the 1960's, relatively few new predictions about
organizations of the future have been published. This study's survey allows organization and futures experts to generate new information while correcting many errors or oversights they perceive in their earlier work.

Third, this study develops a list of "organizational futurists." As this community of specialists on the future of organizations emerges, a need arises to identify the experts in this new community and thereby facilitate communication and the exchange of information and insights about organizations of the future among the futures research community and those people involved in exploring the dynamics of organizations. Identifying the organizational futurist experts may also encourage members of this group to become even more expert within their new field. (See Appendix A and Bibliography for list of organizational futurists.)

Fourth, as with the organizational futurists, an organizational futures literature is emerging which when identified may assist in continuing study of the subject. Identification of the organizational futures literature may also facilitate the development of a more professional, futures research approach to the topic whereby prognostications are discussed as alternatives influenced by trends and issues. Such studies would be placed within frames of reference and stated in the conditional mode, as suggested by
Helmer (1966) and others. (See Bibliography for the list of organizational futures literature.)

THE PROBLEM

This research focuses on a Delphi survey of organizational futurists in the United States to determine the issues and trends seen as influencing organizational appearance in the year 2000. The Delphi technique is a method of surveying and achieving consensus among experts while providing them with an anonymous, non-threatening means of rendering their opinion (Enzer, 1973). The experts in this study are organizational futurists who are defined as people who have published in books and/or in professional journals on the topic of organizations of the future.

The primary goal of this study is two-fold: to develop a list of trends and issues which are seen by organizational futurists as influencing how organizations will look in 22 years; and, to develop a consensual profile and range of possibilities about the appearance of the most probable organizations of the year 2000. The secondary goal of this study is to produce a list of organizational futurists. The tertiary goal is the identification of materials which would be appropriate for inclusion in an organizational
futures literature. The primary goal is met through a Delphi; the secondary goal is met through a literature search and peer nomination process; and, the tertiary goal is met through the literature search.

More specifically, this investigation seeks to answer four questions:

1. Which trends and issues are seen as most significantly influencing organizations envisioned for 2000?
2. What is the consensual opinion of organizational futurists regarding how organizations will most probably appear in the year 2000?
3. Which people have demonstrated an interest in organizations of the future by having published on that topic.
4. Which articles and books have been written concerning organizations of the future?

It is assumed that answering the first two questions will reveal a range of possibly influential trends and likely alternative designs for organizations of the future; answering the third will reveal who is concerned with and involved in developing these designs; and, answering the fourth will provide a comprehensive list of literature on organizations of the future.
DESIGN OF THE STUDY

Design Review

The present investigation was divided into three phases: a literature search; a mailed survey of organizational futurists; and, also conducted by mail, a Delphi survey of organizational futurists. These three phases operated sequentially thus making the second phase contingent upon completion of the first phase, and the third phase contingent upon completion of the first two phases. The methods employed are discussed in detail in Chapter III, Methodologies and Procedures.

This research differs greatly from much dissertation research in that it is concerned primarily with that which is unknown and will remain unknowable for a quarter of a century. The present study asked organizational futurists to develop conjectures (de Jouvenel, 1967) of the future of organizations. The request was not for a simple projection. Based on what they know of organizations and what they perceive happening to organizations in the future, the organizational futurists were asked to creatively develop a future picture and to rationally support their perceptions. The development of imaginative conjectures at a
group level is a difficult task, but one for which the Delphi technique was specifically designed (Fulmer, 1975).

Essentially, this study was not designed to produce a forecast. It was designed as a heuristic device (Kahn, 1973) which would generate information about organizations and the trends and issues seen as influencing them in the future. As a learning tool, this research suggests those trends which experts perceive as influencing organizational appearance in the year 2000, 22 years from now.

Definitions and Limitations

Numerous terms and the boundaries of this study require further clarification. The term "organization" will be used in this study as a generic term which includes all organizational types (Kaufman, 1975; Mooney, 1947). As the philosophical basis for using the term "organization" as an inclusive generic classification, this study accepts systems definitions which focus on the process of the organization and define it as a dynamic, operational unit composed of many subsystems and as a system within other systems. This approach is adopted as the basis of most contemporary studies of organizations of the future (Argenti, 1972; Johnson, Kast, and Rosenzweig, 1967;
Kaufman, 1975; Lawrence and Lorsch, 1969; March and Simon, 1958; Pugh and Hickson, 1976).

This broad definition of "organization" allows for special interpretations of the literature and the Delphi responses which requires clarification. When an author or a Delphi panelist discusses characteristics of a type of organization which seem relevant to the study of the generic set, those observations will be cited even though the author may be referring primarily to a governmental, charitable, industrial, educational, or other type of organization. Although most literature on the topic assumes the systems definition of "organizations," many authors slant their writings to their readers in the public or business administration communities. Without including these special studies, there would be little information available on organizations of the future.

"Organization," "system," and "organizational system" will be used interchangeably in this study. When "system" is used, it is meant to be understood as "organizational system," unless otherwise noted. When meant to describe another kind of system, such as a communication or information system, the term will be so modified with a further descriptive term.

"Management" in this study refers to those aspects of the organizational system which direct,
supervise, and monitor the activities of the organization (Argenti, 1972). Although usually having a business connotation, "management" here does not refer to a specific type of organization. Similar confusion arises when using other terms often associated with industrial or public organizations.

Occasionally in this paper, references will be made to "work group," "employee," "corporation," and "firm." Again, these references to organizations which employ people are included in the discussion because the observation is pertinent to a discussion of organizational systems and the term is unavoidable without deleting the reference or losing the sense of it. Generally, however, these four terms are considered interchangeable with "organization member" or "organization."

"Structure" will be used synonymously and interchangeably with "design," "pattern," and "form." The design of an organization is that "through which the enterprise is administered" (Chandler, 1962:14). With a systems approach, the structure of an organization describes how that organization would appear were it frozen in time (Laszlo, 1974) and the organization's processes in a stable state (Argyris, 1969). The organization's structure is not simply how the system might appear on a table of organization.
The limits of this study are also important to cite. As noted, Helmer (1974) states that there are three components necessary for a responsible analysis of the future. This study is concerned only with the first component—determining possible futures. Further research is needed to develop the other two components necessary for a thorough study of organizations of the future.

CONCLUSION

In the 1960's a group of experts gathered to discuss the future. Headed by Daniel Bell, the Commission on the Year 2000 looked ahead to the literal and symbolic year of 2000. It was the contention of the Commission that the "problem of the future consists in defining one's priorities and making the necessary commitment" (Bell, 1974:263). Not mentioned was the underlying cause of that problem: the difficulty encountered in defining and making commitments while the future is seen as the "forbidden tense" (Flechtheim, 1974:267). But, the taboo on the future is fading while growing interest in studying, forecasting, and planning the future will serve to increase the quantity and quality of the information available to those defining priorities and making policy commitments.
The present study is part of the increasing information on organizations of the future available to organizational futurists and policymakers. As will be necessary in the future, this work first summarizes the writings which precede it, presents its new research, integrates the old work with the new, and presents an analysis of the conclusions arising from this new research and investigation. Presenting the organizational futures literature of the past in this manner and coupling it with the results of the new Delphi inquiry furnishes the academic community with a significant new information source.

All of the premises outlined in this chapter will be explored through a five chapter format. Chapter I and II introduce the study and survey the organizational futures literature. The Literature Review focuses on three areas and how they are expected to affect and be affected by organizations in the future. This discussion includes a review of the various designs envisioned for organizations in the future.

Chapter III is a review of the methodologies and procedures used in developing the study data. Chapter IV is a summary of the Delphi survey findings. In Chapter V, conclusions are drawn from the literature review and the Delphi survey. Chapter V also includes
a critique of study-related issues and a discussion of the possible ramifications and implications of the research.

NOTES

1 "Futures research" is also referred to as "futurology," "conjecture," "futuristics," and "prognostication" (Amara, 1974; de Jouvenel, 1967; Marien, 1975; Polak, 1972).

The term "futures" is synonymous with "future," but is often preferred by futurists as it indicates that there are many possible future alternatives to be investigated, not just a single, predestined future (Enzer, 1975). It is important to remember that futures research is not simply a matter of foretelling the winner of a "zero-sum" game.

2 Those engaged in studying futures research are frequently termed "futurists," "futurologists," and "futures researchers." These terms will be used interchangeably in this study.

3 Frequently used in this report are the terms "futures reality," "future reality," and "future realities." These terms describe a time or reality which has yet to occur, a possible alternative for the future.

4 Futures research is committed to responsible activism. Enzer says, "Futures research is directed toward the goal of providing greater insight into prospective developments and their interaction in a dynamic society" (Enzer, 1973:149). Futures research is not a passive discipline. It "assumes a multiplicity of possible futures and the necessity of choosing among them" (Enzer, 1973:149).

5 These components are further described as 1) estimates of a priori probabilities of the future alternatives; 2) analysis of the moral implications of the alternatives presented and their probability of occurrence; and, 3) analysis of the means of attaining or of raising the probable occurrence of the more preferred among the probable futures (Helmer, 1974).
Although the true community of organizational futurists is international, because of postal considerations, the Delphi was limited to organizational futurists who live in the United States.

"A forecast is an estimation of the probable state of something at a given time under the hypothesis that everything will remain as in the past" (Gerardin, 1973:278). This study neither assumes nor limits its panel experts to the assumption that all things will continue without surprises. Therefore, this study is not a forecast, but a learning exercise, a heuristic exercise.
Chapter 2

LITERATURE REVIEW

Organizational futurists most frequently discuss organizations of the future in three manners: the dominant organizational philosophies seen as directing future organizational changes; issues and trends; and, the possible appearance of organizations in the future. Although there are several other ways of approaching the topic, these are the primary interests of most organizational futurists in the literature. Reviewing the content of these three categories is the substance of this chapter.

ORGANIZATIONAL PHILOSOPHIES

Philosophies and belief systems influence organizational development by providing perceptual frameworks which prescribe behavior. By establishing an understanding of reality, a philosophical base directs courses of action for those subscribing consciously or unconsciously to it (Argyris, 1973a; Rogers and McCreery-Spencer, 1973). One of the ways
in which philosophical belief systems specifically impact upon organizational development is in determining whether or not organizational evolution will be planned or remain a mystery to be deciphered after the fact.

In both a general and specific manner, the dominant organizational philosophies manifest in belief systems, theories, and research, and direct the course of organizational development. The influence of these philosophies makes their identification an important initial step in identifying possible and probable futures. It is for this reason that an investigation of the dominant belief systems is included in a survey of possible influences and future realities.

When discussing the philosophical basis of future organizations, four theories are frequently cited: Maslow's hierarchy of needs, Herzberg's "motivators," Likert's Systems, and McGregor's Theories X and Y. To these has been recently added Foss' Theory Z or System 5. Often overlapping, these five approaches to motivation provide an important criterion for establishing priorities and for evaluating the alternative futures perceived for organizations.

Maslow's and Herzberg's well-known theories
attempt to identify variables which motivate or energize organizational behavior (see Figure 1). Whereas Maslow (1968) states that esteem and self-actualization motivate organizational members, Herzberg's (1967) motivators are far more organization-oriented and discuss achievement, responsibility, advancement, and growth. Motivational and organizational behavior have been a primary focus for numerous other theorists, but their work has most often studied the implications of Herzberg and Maslow rather than successfully refute or replace them (Atchison and Lefferts, 1972).

Likert's (1961, 1967) Systems 1 through 4 describe different kinds of organizations and the attitudes of members toward their organizations. McGregor's (1960) Theories X and Y similarly characterize organizations according to their management pattern and organizational behavior. As with Systems 1 and 2, the Theory X model is an authoritarian system of management which assumes that people dislike work and must be controlled, directed, and coerced toward the organization's goals. Theory X also assumes that most people prefer this treatment so they can avoid assuming responsibility. Theory Y is a more participative model, similar to Systems 3 and 4, which describes people as responding better to liberty, persuasion, and ideas than to supervision and fear and
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<th>Herzberg's Two-Factor Theory</th>
<th>Maslow's Hierarchy of Needs</th>
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<td>Intrinsic factors</td>
<td>Higher order needs</td>
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<th>Extrinsic factors</th>
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<td>Love and belongingness</td>
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<td>Technical supervision</td>
<td>Safety</td>
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<td>Working conditions</td>
<td>Physiological (food, water, shelter, sex, etc.)</td>
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<td>Interpersonal relations--supervisors</td>
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**Figure 1**

A Comparison of the Two-Factor Theory and the Hierarchy of Needs
(Wieland and Ullrich, 1976:142)
emphasizes the average person's intrinsic interest in work, desire to seek responsibility and be self-directing, and capacity to creatively solve problems (McGregor, 1960; Morse and Lorsch, 1970; Nunlist, 1967).

Theory Z (also referred to as System 5) assumes the importance of fulfilling both physical and psychological, or time-variant and culture-variant needs (Foss, 1973). Foss (1973) contends that past motivators operate differently in the present because of changing societal needs and goals. He contrasts plant or traditional organizational concerns with planet or societal concerns (Foss, 1973). Too frequently, Foss (1973) says, organizations perceive a static list of needs which must be met. In the future, organizations will come to realize that the list of organizational needs which is to be met will be continually changing, forcing the organization to be more flexible and more responsible to a wider range of demands (Ansoff, 1965; Ansoff and Brandenburg, 1969; Bass, 1972; Burack, 1975; Chapman and Cleaveland, 1973; Cleveland, 1972; Drucker, 1964; Foss, 1973; Galbraith, 1969; Gardner, 1976; Harman, 1976; Hellriegel and Slocum, 1974a; Kami, 1976; Kast and Rosenzweig, 1970; Kozmetsky, 1974; Mee, 1973; Merton, 1960; Pascarella, 1975; Ryterband and Bass, 1973; Sherwood, 1976; Simon, 1960; Whyte, 1973).
All of these theories make assumptions about the forces which motivate organization members and decision-makers and prescribe organizational behavior (Argyris, 1973a; Chandler, 1962; Jun and Storm, 1973; Shetty and Carlisle, 1975). For example, it appears that when people are seen as lazy, requiring prodding and watching, and are seen as having goals contrary to the organization's interests, the Theory X or System 1 or 2 is the inevitable managerial result and the decisions made reflect this belief about people's nature (Chandler, 1962; Foss, 1973; Jun and Storm, 1973; Pastore, 1975; Shetty and Carlisle, 1975). Such an organization is mechanistic and is often seen as only meeting the organization members' physical needs on the lower end of Maslow's scale (Burns and Stalker, 1961; Jun and Storm, 1973).

Those who subscribe to Theory Y and System 3 or 4 perceive organization members as capable of self-control and as seeking responsibility (Chandler, 1962; Foss, 1973; Jun and Storm, 1973; Shetty and Carlisle, 1975). This managerial perspective defines people as being capable of meeting their physical needs and requires organizations to be more organic and assist people in meeting their higher, more psychological needs. In both instances, the belief systems dictate the organization's behavior (Argyris, 1973a; Burns and

In terms of general futures, there appears to be a continuum which corresponds to beliefs about human nature, appropriate organizational settings, and the future which is expected to evolve. At one end of the continuum is predicted a participative future for organizations. Slater and Bennis capture much of this perspective in a 1964 article which describes the values they see dictating the words, decisions, and actions in future organizations. They foresee a future which includes improved interpersonal communication, consensual decision-making, a human (and humane) perception of organizations, organizational influence based on knowledge and technical competence, and an organizational atmosphere which permits and encourages emotional expression and task-oriented activities (Slater and Bennis, 1969).²

Organizational futures authors who foresee a marked change in the future usually anticipate a "dire" or paranoid future (Ericson, 1972) characterized by reinstating the System I or Theory X managerial formats to efficiently attain the physical necessities which have become scarce (Sorenson, 1971). At the opposite end of the continuum from the participative future are scenarios in which is predicted that either
through war, some huge catastrophe (Baraclough, 1976), or through the domination of computers (Ericson, 1972), participative policymaking will be superceded by an authoritarian format. The central issue in these scenarios questions people's basic needs and instincts. Whereas the participative model authors imply that people are essentially good and self-actualizing, these authors describe them negatively. These authors foresee cybernetic domination, wars, and general scarcity as emergency situations which will cause people to turn to an authoritarian model for guidance.

Citing the work of McClelland (1961, 1971) and Miner (1971) on the general decline in the motivation of organization members, Wieland and Ullrick (1976) conclude that basically people are selfish and negative toward others. Should something suddenly happen to release them from their societal restraints, people in the future would have a "'war of all against all'" (Wieland and Ullrick, 1976:551). They further conclude that only rigid organizational structures can protect people from "unbridled acts of self-interest" (Wieland and Ullrick, 1976:551). This view of human-kind and its motivating interests differs markedly from the views of most organizational futures writers who expect future organizations to be held together
by individual and group identification with organizational goals and systems, and by organizational awareness of human needs (Jun and Storm, 1973).

Many issues remain unsolved regarding the actual nature of humans and the evolution of organizations. Among the unresolved issues is whether or not there exists an evolutionary pattern from System 1 or Theory X and the meeting of members' physical needs to System 4 or Theory Y and meeting the personal, psychological needs of organization members. More relevant to this study is discerning if such an evolutionary pattern proceeds into a Theory Z future where the organization seeks to meet societal needs.

The issue focuses on whether or not these theories are part of a range of management perspectives or are stages in an evolutionary progression whereby System 4 and Theory Y/Z are "more highly evolved" than System 1 and Theory X. When coupled with Maslow and Herzberg, an evolutionary stance is definitely implied. This conclusion is further verified as System 4, Theory Y/Z seem to be the philosophical perspectives most organizational futurists expect to greatly influence future decision-making and "inevitably" produce a System 4, Theory Y/Z future.
ISSUES AND TRENDS AFFECTING ORGANIZATIONS IN THE FUTURE

The issues and trends seen as influencing organizations in the future can easily be presented in the People-Knowledge-Technology paradigm frequently used in discussing organizational change (Whisler, 1974). Within each of these categories are topics which organizational futurists use to discuss the larger category. Neither the categories nor the topics are mutually exclusive, but overlap. Without such overlapping, the categories would have to be so narrow as to not really serve their purpose which is to assist in relaying a great deal of information.

**People**

*Intersystem conflict*. The inevitability of conflict between the individual and the organization is a frequent theme in the literature. Some authors see much of the conflict resulting from the anticipated domination of organizations in the individual's life (Ansoff and Brandenburg, 1969; Argyris, 1973a; Kast and Rosenzweig, 1970; Kaufman, 1973; Pfiffner and Sherwood, 1960; Ramstrom, 1974). Argyris (1973a) projects a future in which lower level employees will create antagonistic activities, be limited in the abilities they will be allowed to use, and tend to be
dependent and submissive toward their superiors and non-responsible to and controlled by their organizations. This future is seen as fostering high absenteeism; turnovers; trade unions; market orientation; alienation; aggression toward the top; apathy-indifference-goldbricking; and increasing demands to relate compensation to tension, the degree of dissatisfaction, and stress experienced on the job (Argyris, 1973a).

Several authors see the strain lessened by increasing the organization member's personal involvement and potency within the organization and organizational affairs (Argyris, 1973a; Gross, 1973; Lippitt, 1971; Straus, 1964). Kirkpatrick on the Hollister (1967) panel predicts the possible development of a "constitution" establishing the rights of individuals and the limits to organizational power over the individual organization member. As would be expected, Likert's System 4 design includes a great deal of member involvement. Likert states that there is "impressive evidence to show that . . . a work group which uses effective group decision making can feed to its supervisors more information [than the older, System 1 or 2 management styles]" (Likert, 1961:162).

Increasing interpersonal communication is seen
as a means for attaining increased individual involvement and commitment to the organization and lessening strife (Argyris, 1973a; Garner, 1976). Also verifying the trend toward greater interpersonal communication in the future, Kast and Rosenzweig (1970) cite several innovations they say are currently being adopted by organizations to prevent clashes between the micro and macrosystems, between individuals and the organizations. Further projecting this trend, several authors anticipate that organizational participants at all levels will have greater influence in organizations (Argyris, 1973a; Burack, 1975; Chapman and Cleaveland, 1973; Kast and Rosenzweig, 1970). Pragmatically rationalizing such a call for interpersonal communications, Lippitt points out the practical worth of an open environment by reminding his readers that "[m]illions of good productive ideas have been lost in organizations where the climate does not allow for honest differences in judgments and opinions" (Lippitt, 1971:35). Lippitt also discusses what he calls realism in organizations and the need for a new reality, one in which "openness, candor, and frank feedback should not be equated with hostility or obstructionism" (Lippitt, 1971:35).

However, even with the successful management of the interpersonal difficulties, several authors
foresee increasing problems between organizations which will certainly affect organization members and require new means for effecting interorganizational coordina-
tion (Ferguson, 1974). Some of the interorganizational clashes are expected to result from the anticipated increase and changes in the size of organizations (Ansoff and Brandenburg, 1969; Argenti, 1972; Bennis, 1967; Dale, 1967; Haire, 1974; Kast and Rosenzweig, 1970; Lawrence and Lorsch, 1969). While many authors acknowledge the continued existence of the small organization, they generally see the middle-sized organization disappearing and larger organizations increasing tremendously in size (Argenti, 1972; Ramstrom, 1974). Many agree that the very viable, huge organizations they expect in the future will be similar to the present multi-national (or Toffler's [1975] transnational) organization (Dale, 1967; Perlmutter, 1975; Reeser, 1970). With this expected size increase, private and other organizations will be competing and dealing with government organizations as equals or, in some instances, as their inferiors (Kaufman, 1973; Perlmutter, 1975).

In reaction to the increased numbers of large organizations, a partnership is expected to develop between governmental and multi-national organizations. Organizational futurists see this as one aspect of a

Several other organizational changes are expected to result from this blurring of organizational distinctions. One example of the expected changes is greater opportunity for cross-collaboration between education, industry, and government. This cross-collaboration will in turn increase the interchange of personnel between various organizational types (Bennis, 1971; Galbraith, 1967; Kozmetsky, 1974; Lippitt, 1971; Ryteband and Bass, 1973; Walton, 1967).

Such linkages would correlate interorganizational transactions and create new roles for "interstitial

Those who foresee a positive, ever-improving future evolving from the past and present believe that management will be becoming more receptive to changing societal values and the changing needs of its organization members (Ansoff, 1965; Ansoff and Branden- burg, 1969; Bass, 1972; Burack, 1975; Chapman and Cleaveland, 1972; Cleveland, 1972; Drucker, 1964; Foss, 1973; Galbraith, 1969; Gardner, 1976; Harman, 1976; Hellriegel and Slocum, 1974a; Kami, 1976; Kast and Rosenzweig, 1970; Kozmetsky, 1974; Mee, 1973; Merton, 1960; Pascarella, 1975; Ryterband and Bass, 1973; Sherwood, 1976; Simon, 1960; Waldo, 1967; Whyte, 1973). Kast and Rosenzweig predict that "[i]ncreasingly, management will emphasize the importance of human resources and will recognize that maintaining a viable psychosocial system is one of its most vital tasks" (Kast and Rosenzweig, 1970:601) (Kaufman, 1973; Kozmetsky, 1974; Mee, 1973; Lawrence and Lorsch, 1969). Drucker concurs when describing a future in which management will be increasingly concerned "as much with the expression of basic beliefs and values as with the accomplishment of measurable results" and will "stand for the quality of life in society as much as its standard of living" (Drucker, 1969:54).
Regardless of why or at which level they strike, the conflicts between systems envisioned by organizational futures writers are bound to be complicated. The issues are further compounded by the way in which systems are so interconnected that changes in one system or system component precipitates changes in other systems which then ricochet and reverberate causing endless other changes in the future. In such a society, the fundamental view of the organization and society are in transition (Kast and Rosenzweig, 1970; Nanus, 1975; Rogers, 1975; Sethi, 1975). Despite the concern voiced by many organizational futurists, there is an underlying optimism summarized by Frederickson when saying that he is certain that organizations will come "to expect, understand, and work with conflict" (Frederickson, 1976:571).

**Organizational membership.** Some changes are expected to occur in organization populations thereby producing several radical organization changes. Staats (1967) predicts that by 2000, the gap between the "haves" and the "have nots" will have increased and that 90 percent of the projected 340 million Americans will be living in urban areas situated on less than two percent of the country's land, excluding Alaska. Basing his projections on 1960 statistics
which show 70 percent of the population living in
towns and cities on one percent of the land and 30
percent of the population living on the other 99
percent of the land, Staats (1967) predicts that
much of the country will be relatively open spaces
in 2000. Other writers project a larger number of
women, older people, youths, minority members, and
managers in organizations. Although speaking primarily
of organizations which employ people, these observations
cornern a general shift in the activities of society
and changing traditions which will affect all organiza-
tions.

Increasingly, women are seen as joining the
work force outside of the home and having greater
opportunities to attain more responsible positions
(Best, 1978; Kami, 1976; Reeser, 1973; Stull, 1974).
Several authors agree with Bass that "a very large
proportion of all . . . women now work [outside the
home], [yet] relatively few of them attain responsible
positions" (Bass, 1972:23) (Hellriegel and Slocum,
1974a). Although this situation has not changed
appreciably during the past 20 years, Bass sees it
changing in the future because of five changes in the
political-social environment:

1. Enforcement of legal sanctions against
discriminating against women;
2. Increasing need for middle-class wives to work to maintain a family's desired standard income;

3. Greater sexual and social freedom for women associated with a marked reduction in different expectations, standards and norms for women and men;

4. Increased amount of educational attainment for women; and,

5. More favorable attitudes toward women as colleagues and supervisors of men at work (Bass, 1972:23).

Bass' (1972) five reasons for changes in the employment of women have received considerable support in the literature, despite the slow changes occurring in organizations (Best, 1978; Hellriegel and Slocum, 1974).  

Changes in the older population of organizations are also expected. Many authors note that the average life expectancy is continuing to increase causing several modifications of existing conditions. First, more older organization members are expected to actively resist retirement (Best, 1978). Second, not only will there be a larger percentage of older workers in organizations, but the retiring members may more actively pursue second careers during their longer working life (Bass, 1972; Best, 1978; Drucker, 1968; Morrow, 1971; Nunlist, 1967; Ryterband and Bass, 1973). More time and energy is also seen being spent in leisure, developing the arts, and in cultiva-
ting the intellect and spirit (Best, 1978; Morrow, 1971; Nunlist, 1967). 4

As the relative number of middle-aged people and the reservoir of middle and top managers decreases through retirement, many authors anticipate increasing numbers of young people impacting more significantly on organizations (Bass, 1972; Burack, 1975; Ignazio and Shannon, 1971; Rogers, 1975; Ryterband and Bass, 1973). One of the anticipated changes is a widening generation gap among organization members--between young organization members and older, more traditional members--which is seen as producing a discontinuity in values (Burack, 1975; Hellriegel and Slocum, 1974a; Rogers, 1975). This problem of value congruence is expected to force organizations into reconsidering the viability of their formalistic ways of operating (Argyris, 1973a; Bass, 1972; Hellriegel and Slocum, 1974a; Rogers, 1975). The increased influence of young people is seen as resulting in greater automation to decrease the amount of repetitive, undemanding work, and less support for unionism (Bass, 1972; Ignazio and Shannon, 1971).

Several changes are also seen produced by the increasing numbers of minority members in organizations. Minority members are expected to "place stress on existing power structures, seats of authority, and
ways of doing things" which will result in problems of "attitude change, acceptance, [and] motivation" (Burack, 1975:516) (Kast and Rosenzweig, 1970; Reeser, 1973; van Dam, 1976). Although initiated by these groups, pressures on organizations to change are expected to affect and be applied by all organization members.

Most organizational futures authors agree that effective pressure in the future will not be applied just by members of special interest or racial groups and government regulatory agencies enforcing non-discrimination laws. All organization members will be demanding "a bigger piece of the action" (Argenti, 1972; Argyris, 1973a; Cleveland, 1972; Hellriegel and Slocum, 1974a; Hicks and Gullett, 1976; Kaufman, 1973; Lippitt, 1971; Ramstrom, 1974). Because an increasing number of groups inside and outside of the organization will feel that they have a stake in the decision-making process and demand to be heard, an increasing number of inputs will be considered necessary for what constitutes "good" decision-making (Argyris, 1973a; Cleveland, 1972; Hellriegel and Slocum, 1974a; Hicks and Gullett, 1976; Kast and Rosenzweig, 1970; Kaufman, 1973; Mee, 1973; Ramstrom, 1974).

"Manual, repetitive, undemanding, boring work" (Ignazio and Shannon, 1975:48) will become less
acceptable to future organization members. They will pressure management to automate, institute job enlargement programs, and, through additional capital investment, eliminate most of the unskilled jobs (Gardner, 1976; Hellriegel and Slocum, 1974a; Ignazio and Shannon, 1975; Rogers, 1975). According to this perspective, people will be seeking self-actualization and personal growth from their jobs (Argyris, 1973b; Best, 1978; Ericson, 1973; Ferguson, 1974; Fulmer, 1972; Gardner, 1976; Hellriegel and Slocum, 1974a; Hollister and others, 1967; Kast and Rosenzweig, 1970; Maslow, 1968; Morrow, 1971; Pfiffner and Sherwood, 1960; Ramstrom, 1974; van Dam, 1976).

While on Hollister's (1967) panel, Bass forecast a future in which all employees will be salaried and presented with challenging opportunities and more stimulating environments. In this future, Bass (Hollister and others, 1967) predicts that greater opportunities for more stimulating kinds of work will be used as rewards; and assignment to boring jobs will be considered punishment in the organization. Most authors apparently agree that the organization of the future will have to be conducive to change and innovation; for, as organization members become more educated, the organization atmosphere is expected to change to one of progressivism (Brown, 1970; Drucker, 1974;
McGuire, 1974; Richman, 1975).

In organizations of the future, managers are expected to change from what Nunlist (1967) calls a leadership of force to a leadership of persuasion that will truly implement McGregor's Theory Y reality. Increased demands for participatory management and policymaking, changes in the educational level of organization members, the increased number of professional members, and automation are seen as resulting in an increasing number of managers (Argenti, 1972; Argyris, 1973a; Hollister and others, 1967; Ryterband and Bass, 1973; Simon, 1960). In this instance, "more" is also expected to mean "younger and better" as Nunlist (1967) foresees future managers being considerably younger and superior to contemporary managers.

At the top levels of organizations, managers are expected to change incredibly. Ansoff and Brandenburg (1969) foresee general managers as employing many skills concurrently. The general manager will be a combination leader, administrative planner, extrapolative planner, entrepreneur, diplomat, and systems architect (Ansoff and Brandenburg, 1969; Hollister and others, 1967). Van Dam (1976) envisions the executive as a yogi and commissar, a generalist, philosopher, and a strong natural leader. Several
organizational futurists foresee the administrator of the future being less the issuer of orders and more the organization's moral leader, coordinator, and broker (Chapman and Cleaveland, 1973; Hollister and others, 1967).

Other authors predict replacing the "big boss" or chief coordinator with an executive team or plural executive (Ackoff, 1974; Argenti, 1972; Argyris, 1973b; Dale, 1967; Fulmer, 1972; Galbraith, 1967; Hellriegel and Slocum, 1974a; Hutchinson, 1976; Morrow, 1971; Pfiffner and Sherwood, 1960; Wesolowski, 1971).

Morrow's (1971) Delphi panel predicts a 45 percent probability of the use of an executive team or plural executive in most top-level decision-making in 1985 and 60 percent probability in the year 2000. Demands for social change and the increasing emphasis on public service and the social aspects of organizational activities are seen as requiring representation of several perspectives on a decision-making team which will evolve because of expected growth in organizational size and complexity (Morrow, 1971). Those disagreeing with these predictions state that group decision-making is unsuccessful, irresponsible, compromising, and timeconsuming (Morrow, 1971). This negativism about group decision-making is further verified by the negative response by Morrow's

Below the top levels, managers are also seen as changing in the future. They are portrayed as being superior managers who will be better educated, more experienced than those of the past, and will be combinations of technologist and psychologist, engineer and sociologist, and analytical and reflective, and active and deliberate (Ansoff and Brandenburg, 1969; Argyris, 1973a; Brown, 1970; Burack, 1975; Filley and House, 1970; Hollister and others, 1967; Ignazio and Shannon, 1975; McGuire, 1974; Reddin, 1974; Ryterband and Bass, 1973; Staats, 1967; Stull, 1974; Ways, 1966). This "superb leader and motivator" (Uris, 1974:295) will be well skilled in many areas including interpersonal relations and will need to deal with many levels of expertise within the organization (Ansoff, 1965; Burack, 1975; Ferguson, 1974; Filley and House, 1970; Johnson, Kast, and Rosenzweig, 1967; Kast and Rosenzweig, 1970; Lawrence and Lorsch, 1969; McGuire, 1974; Mee, 1973; Odiorne, 1965; Reddin, 1974). At the middle and lower levels of the organization, managers will be monitoring the activities of others and need to exercise good human relations skills (Argyris, 1973a; Filley and House, 1970; Kast and Rosenzweig, 1970). They will also need to understand the
differences in managing specialists and professionals, many of whom will be more expert in the work area than the managers supervising them (Argenti, 1972; Burack, 1975; Dale, 1967; Johnson, Kast, and Rosenzweig, 1967; Kozmetsky, 1974; Lawrence and Lorsch, 1969; Mee, 1967; Ryterband and Bass, 1973; Wesolowski, 1971).

Among the several changes facing future managers will be the higher educational levels of organization members which will result in greater demands (Argenti, 1972; Barnett, 1967; Burack, 1975; Galbraith, 1967; Ignazio and Shannon, 1971; Merton, 1960; Rogers, 1975). Increased organization size is seen as resulting in organizations which are more culturally diverse and therefore require the manager of the future to be familiar with many cultures and types of backgrounds (Hollister and others, 1967). Because of this range of duties and requirements, a greater breadth and intensity of knowledge, and a broader technical background will be included in the general preparation of managers in the future (Hollister and others, 1967; Kozmetsky, 1974; McGuire, 1974; Odiorne, 1965; Reddin, 1974; Simon, 1960; Staats, 1967; Stull, 1974).

Knowledge

Influence of education on the organization.
Several authors assume that people in the future will
be better educated than at present (Argenti, 1972; Barnett, 1967; Burack, 1975; Galbraith, 1967; Ignazio and Shannon, 1971; Merton, 1960; Rogers, 1975). In the future most Americans are expected to seek and receive some form of higher education beyond high school level which will occur with increasing frequency outside of colleges and universities (Barnett, 1967; Filley and House, 1970). To combat obsolescence, continuing education is also seen as increasing and being conducted on the campuses of educational institutions and through information-retrieval and learning centers located elsewhere (Barnett, 1967; Boetttinger and others, 1967; Cantwell, 1977).

While the university of the future is seen by some as the center for progress and innovation (Barnett, 1967; Drucker, 1969; Galbraith, 1967; Kast and Rosenzweig, 1970; Kozmetsky, 1974), others see some educational functions moving away from traditional educational organizations and patterns (Barnett, 1967; Best, 1978; Filley and House, 1970; Forrester, 1973). Dubin states that because "modern technology resides in the plant and office, not in the classroom, the schools cannot produce technically sophisticated workers in the vocational education programs as they exist today" (Dubin, 1973:62)
(Filley and House, 1970). Therefore, Dubin (1973) says, education organizations will either continue to provide work organizations with uneducated adults, thus making their irrelevance even more marked, or they will have to change. Another alternative suggested is for employment to begin earlier and be interspersed with released periods of continuing education (Best, 1978; Brown, 1970; Forrester, 1973).

Other expected changes are in how people will be educated in the future. Rather than attempting to prepare people for lifetime occupations, organizational futurists expect education to teach people how to learn, how to avoid obsolescence in their specialties, and prepare them for lifetimes of education (Bennis, 1967; Best, 1978; Brown, 1970; Chapman and Cleaveland, 1973; Filley and House, 1970; Forrester, 1973; Hollister and others, 1967; Jun and Storm, 1973; Kast and Rosenzweig, 1970; Koontz and O'Donnell, 1968; Kozmetsky, 1974; Lippitt, 1971; Ryterband and Bass, 1973). As people in the future more frequently change their fields through second careers and through changes in society's needs, they are expected to be increasingly specialized in their specific field, aware of developments in their broader fields of interest, and able to change with the times (Filley and House, 1970; Hollister and others, 1967; Kast and Rosenzweig, 1970;
Kozmetsky, 1974; Lippitt, 1971). Organizational futurists express the expectation that organization members will participate in long-range planning, will not continue to be victimized by change, but will be able to anticipate forthcoming changes in time to adjust to them (Bennis, 1967; Ferguson, 1974; Filley and House, 1970; Hollister and others, 1967; Ryterband and Bass, 1973).

Of increasing interest in the literature is the professional and specialist organization member who is seen as having a considerable impact on the organization of the future (Cleveland, 1972; Drucker, 1974; Galbraith, 1967; Gross, 1973; Hellriegel and Slocum, 1974a; Kast and Rosenzweig, 1970; McGuire, 1974; Pfiffner and Sherwood, 1960; Reeser, 1973; Shetty and Carlisle, 1975; Whisler, 1974). Bennis perceives the rise of a new organization personality, the "'professional man' ... holding advanced degrees in such abstruse sciences as cryogenics or computer logic as well as the more mundane business disciplines" (Bennis, 1973:25). The difference between the "organization man" and the "professional" lies in the source of their motivation. Professionals derive their "rewards from inward standards of excellence, from their professional societies, and from the intrinsic satisfaction of their task" (Bennis, 1973:25) (Bass,

Not committed to job, or bosses, or company, or routines, professionals are committed to challenging tasks and standards (Bass, 1972; Bennis, 1973; Kast and Rosenzweig, 1970). Because they have degrees, these professionals are expected to easily travel throughout the flexible, temporary society envisioned by Bennis (1973) and others. However, several other authors disagree as to the amount of freedom future professions will have saying that the number of independent professionals will decrease and be replaced by more in-house, salaried professionals who will remain with one organization while working on challenging tasks (Bennis, 1967; Kast and Rosenzweig, 1970; Lippitt, 1971). Regardless of how independent they will be, the future professional—the future lawyer, the scientist, engineer, and professional communicator—will be indispensable to organizations of the future (Cleveland, 1972; Dale, 1967; Drucker, 1974; Galbraith, 1969; Kast and Rosenzweig, 1970; McGuire, 1974; Whisler, 1974). The professional's influence on the quality of life in the predicted fluid society of the future is seen as being greater than that of any of the past "captains of industry" (Ways, 1966:150) (Drucker, 1974: Galbraith, 1967).
Knowledge explosion. The frequently discussed information explosion is expected to significantly impact upon organizations in terms of the volume of information necessary for organizations to meet their needs (Ansoff and Brandenburg, 1969; Argenti, 1972; Bennis, 1967; Galbraith, 1967; Kast and Rosenzweig, 1970; Ramstrom, 1974). In the future, diverse interests will influence organizational information needs and decision-making—interests of the organization members and the public, and the specific goals of the organization (Ansoff and Brandenburg, 1969). Although several authors foresee the knowledge explosion being accompanied by a technology which will allow organizations and organization members to keep pace with it (Bass, 1972; Hutchinson, 1960), not all authors are so optimistic.

Several authors predict that the information explosion will be coupled with a knowledge scarcity (Argenti, 1972; Bell, 1972; Kast and Rosenzweig, 1970). The scarcity of which Bell (1972) and others speak is not a scarcity of physical necessities, but of time and knowledge. Some of the problems associated with the impending knowledge explosion and scarcity are the tremendous amounts of information one will be expected to absorb; the cost of gathering relevant information; the intensive study required as information becomes
more technical and arcane; increasing needs for interpretation and translation of information and news; and, finally, the sheer limits to the amount of information one can absorb (Bell, 1972; Kozmetsky, 1974).

Bell is especially concerned with two areas: the "'exponential' growth of knowledge and the multiplication of fields and interests," and human limitations (Bell, 1972:468). He says that "the knowledge that any single individual can retain about the variety of events or the span of knowledge inevitably diminishes" (Bell, 1972:468). Finally, these authors reiterate and predict the adage that "[m]ore and more we know less and less" (Bell, 1972:468) (Kozmetsky, 1974).

The incompetence which Bell (1972) notes is said to strike those who are expected to be the organization's most competent--the professionals. Kahn and Weiner (1967) term this malady "educated incapacity." That is, the more specialists learn, the less flexible they are, the less able they are to incorporate information from related or diverse fields, and the less able they are to relate to common experiences and realities (Kahn and Wiener, 1967).

Bell (1972) concludes that as individuals become increasingly incompetent in dealing with the
times, so will their organizations. Boettinger and others (1967) also expect a great explosion of specialized disciplines before 2000 which may or may not add to the incompetence of those directing organizations. Most often, the knowledge and time scarcity are seen as successfully combated by cybernation and a worldview that acknowledges technology's importance (Boettinger and others, 1967; Ericson, 1972).

Technology

Technology and images of the future. Armed with improved technology and science, many organizational futurists foresee the future as a positive euphoric extrapolation (Ericson, 1972) where future professionals will be able to handle the effects of the imminent knowledge explosion and all other emergency realities (Jun and Storm, 1973). Kirkpatrick (Hollister and others, 1967) envisions a future by 2000 in which technology will alleviate poverty and deprivation, and rule out scarcity as a major problem for humanity. With increased automation, Bass (Hollister and others, 1967) predicts greater numbers of both boring and stimulating jobs with a trend toward both more simplicity and more complexity.

The computer is expected to be "the most
important scientific and management tool" of the future (Boettinger and others, 1967:77). It has been described as "the most significant new variable in organization and management" (Pfiffner and Sherwood, 1960:455) (Boettinger and others, 1967; Galbraith, 1967; Leavitt and Whisler, 1958). Future information systems and more advanced computers are thought to make possible a new, innovative basis for technology (Bell, 1976; Jun and Storm, 1973; Reeser, 1973) and through technology for society at large. To do this, several authors suggest establishing a partnership with "the machine" (Ansoff and Brandenburg, 1969; Ericson, 1972; Hollister and others, 1967; Kast and Rosenzweig, 1970; Simon, 1960).

Burack (1975) and others warn of the importance of integrating organizational systems with technology. Speaking of information systems as one subset of an overall communications network, Burack (1975) cautions that without such an integration, organizations will not be capable of meeting the demands of the times. Staats (1967) finds it imperative that managers of the future realize that science and technology will continue to penetrate every facet of management and policymaking requiring a closing of the gap which exists between the scientific and humanistic cultures. These authors stress the importance of human managers and specialists
continuing to establish the priorities and not 
relinquishing this task to the machine partner
(Boettinger and others, 1967; Burack, 1975; Fulmer, 
1972).

Although the amount of technology to be 
incorporated into society and organizational activity 
has yet to be determined, Simon (1960) predicts that 
by 1985 organizations will have the technical capability 
of substituting machines for all human functions. 
This capability may exist; however, few authors believe 
that it will be used extensively, despite the belief 
that it is through this linking together of technical 
systems and information technology which futures and 
organization authors foresee as leaving individuals 
freer to improve and manage the systems and enhance 
individual creativity while leaving routine tasks 
to machines (Ericson, 1972; Hutchins, 1960; Morrow, 
1971; Reeser, 1973; Simon, 1960). As part of this 
technologically-provided future, several authors 
foresee a time of increased pay, vacations, produc-
tivity, and medical and fringe benefits accompanied by 
decreased hours of work and more flexibility in 
arranging work times (Best, 1978; Boettinger and others, 
1967; Filley and House, 1970; Johnson, Kast, and 
Rosenzweig, 1967; Morrow, 1971).

As yet undecided is upon which segment of the
organization technology will have the most significant impact (Simon, 1960). Some authors predict that the machine will replace mainly lower level workers and managers who would be performing routine, repetitive duties (Galbraith, 1967; Hellriegel and Slocum, 1974a; Johnson, Kast, and Rosenzweig, 1967; Kast and Rosenzweig, 1970; Kozmetsky, 1974; Reeser, 1973; Rogers, 1975; Whisler, 1974). Others foresee the impact as being most severe on the non-routine worker and manager and thereby impacting greatly on middle and top management (Filley and House, 1970; Leavitt and Whisler, 1958; Whisler, 1974) and resulting primarily in middle management lay-offs (Fulmer, 1972; Gordon, 1965; Hollister and others, 1967; Kozmetsky, 1969; Pfiffner and Sherwood, 1960; Wesolowski, 1971).

Disputing the possibility of a drastically reduced middle management are those who state that middle management lay-offs are not a certainty and such decreases as may occur could be cancelled by the increased number of computer programmers and coordinators who will be retrained middle-level managers (Ansoff and Brandenburg, 1969; Burack, 1975; Kozmetsky, 1974; Leavitt and Whisler, 1958; Morrow, 1971; Stull, 1974; Wesolowski, 1971). Stating that middle managers will continue to be needed to provide motivation, communication, and control in future organizations,

One of the features which makes the computer technology so welcome is the control organizations will be able to have. With the computer technology of the future, more and better information will be able to be furnished to the division and plant manager and provide increasing input into the decision-making process (Hollister and others, 1967; Koontz and O'Donnell, 1968; Leavitt and Whisler, 1958; Staats, 1967; Stull, 1974; Reeser, 1973). An organization will be able to "grow in every direction without sacrificing that control which must be based on information" (Pfiffner and Sherwood, 1960:455) (Reeser, 1973).

Because of the efficiency with which data can be stored at the decision center, some authors perceive this technology as making possible the return to highly centralized decision-making (Fulmer, 1972;
Hollister and others, 1967; Leavitt and Whisler, 1958; Morrow, 1971; Reeser, 1973; Wesolowski, 1971). Others see it enabling greater decentralization of activities, functions, and decision-making since the technology will enable lower levels in the organization access to information (Frederickson, 1976; Fulmer, 1972; Gardner, 1976; Johnson, Kast, and Rosenzweig, 1969; Morrow, 1971; Pfiffner and Sherwood, 1960; Stull, 1974). Still other authors anticipate technology resulting in both increased centralization and decentralization in organizations with some functions being more centralized and other organization functions being more decentralized (Chapman and Cleaveland, 1973; Frederickson, 1976; Hoos, 1960; Morrow, 1971; Pfiffner and Sherwood, 1960; Ramstrom, 1974; Ways, 1966). Either way, technology is often seen as a boon to society.

Although many authors subscribe to the euphoric extrapolation, Ericson (1972) also provides a paranoid extrapolation or image of the future which describes the depersonalization possibly resulting from a computerized or highly technical society. Many of the authors writing about the dire future are concerned with the apparent inability of society, organizations, and individuals to cope with the symbolic ramifications of their interface with technology and change (Ericson,
1972; van Dam, 1976). These authors warn that unless society switches to a more humanitarian and adaptive mode of operation, an inevitable move to authoritarianism will occur (Argyris, 1973a; Ericson, 1972).

Apparently, postponing and/or ignoring the technological options and aspects of the future is seen as only increasing the distress experienced when society returns to those alternatives at a later time in the future (Ericson, 1972; Rogers, 1975). According to these authors, technology's impact on society cannot be avoided; rather, how that impact will be handled is the issue. Whether societies, organizations, and individuals actually accept the new technology seems to have little to do with preventing the clashes which seem so inevitable.

Michael's views on the impact of technology in the future complement Ericson's. Michael's (1962) projection for the 1980's is similar to those of several other authors when describing a future ruled by an elite of experts who "are in rapport with the advanced computer" (Michael, 1962:44) (Argyris, 1973a; Galbraith, 1967; Leavitt and Whisler, 1958; Scott, 1973; Snow, Morison, and Wiener, 1975; Wesolowski, 1971). A major portion of the population, Michael (1962) says, will be serving a welfare system which the government will not allow cybernated because of
the serious unemployment which would result. Snow's (1975) interests are quite similar to Michael's:

... the obvious and glaring danger is that the individual human judgment is going to take a part which will get smaller and smaller as the years go by. I am inclined to think that for a society which is really viable, and certainly for one which feels itself to be morally viable, there is no substitution for individual human judgment; and the wider it is spread, the healthier and more viable this society is likely to be (Snow, Morison, and Wiener, 1975:483).

Snow's (1975) concern results not so much from a fear of an elite armed with computers, as it is a concern for the rest of society which would feel that that which is of vital importance to them is incomprehensibly beyond their understanding.

Weiner (Snow, Morison, and Wiener, 1975) warns that people cannot truly expect to control technology once it has been set into motion. Machines which are programmed to learn, to be self-taught cannot be anticipated as can the more primitive calculating machines. Wiener reminds his reader that "[y]ou cannot make a perfectly safe learning machine" (Snow, Morison, and Wiener, 1975:485); with such a computer, an unsafe action may not show its danger to society until it is too late to be stopped (Snow, Morison, and Wiener, 1975).

Where Michael, Snow, Wiener, and other authors warn that technology may become uncontrolled and a
menace, Ellul (1964) definitely sees technology as the tyrant which will radically alter society by negating individual autonomy and permeating all human endeavors and every aspect of human behavior. Ellul (1964) anticipates technology standardizing all action, converting spontaneous, unreflected human behavior into deliberate, rationalized behavior, thus effectively ending human society. Originally designed as a technical means, according to Ellul (1964), technology has now become an object which will replace humanity, and humane organizations.

Seeing technology in terms similar to Ellul's (1964), Michael (1972) in a recent prediction reportedly traumatized those in attendance at a meeting of the National Industrial Conference Board (Ericson, 1972). In his prediction, Michael (1972) termed the next 20 years as the time during which technology will be immature as a system and the future can still be shaped. During the turbulent 20 years about which Michael speaks, society will be plagued by "'endemic distrust,'" overlapping and conflicting value systems, and a progressive obsolescence of governing organizations (Michael, 1972:438). Michael says that "[f]ew adults will have the requisite education to develop the personal skills needed for full and constructive use of the information technology" and those who do
will be distrusted by the rest of society (Michael, 1972:438).

The obsolescence of people, crippling distrust, elitism, social malaise, and incompetent organization forms are characteristic of the future image shared by those who foresee the paranoid extrapolation where the future is dominated by a Theory X or System 1 belief system. However, Ansoff and Brandenburg believe that "the current view of the firm of the future reverses earlier predictions that the age of technology will 'dehumanize' organizations (Ansoff and Brandenburg, 1969:67). They and others do not foresee automation causing the horrific dehumanization, centralized decision-making, and reduction in the number of human participants that many other authors foresee as possible (Ansoff and Brandenburg, 1969; Morrow, 1971; Simon, 1960).

The value in these extrapolations or images of the future is in the alternatives they present. Polak (1961) has introduced to futures research the concept of "images of the future" which describes the creative potential of people's imaginings about the future. Just as the euphoric extrapolation generates power to direct future events, so does the paranoid extrapolation. But their power of suggestion or creativity operates differently. Preferred future
realities attract people thus strengthening their likelihood of occurrence; undesirable future possibilities remind people of the dreadful alternatives also available to them and thereby may strengthen their resolve to realize the preferred options (Polak, 1961).

**Technology and organization structure.** A final issue to review is the suggested relationship between organization structure and technology. Sometimes used simply as an organizational taxonomy, the study of this relationship has other interpretations. At first, these studies revealed that there are various production technologies. However, upon further analysis, researchers conclude that organizations of a particular type appear to function most effectively when a particular organization structure is employed (Burns and Stalker, 1961; Emery and Trist, 1973; Lawrence and Lorsch, 1967; Morse and Lorsch, 1970; Woodward, 1965).

Kast and Rosenzweig (1970) have designed a continuum for organizations according to their technologies. This technology continuum describes the system's degree of mechanical and knowledge complexity and the organization's frequency of change (see Figure 2). Job complexity is defined as the degree of
<table>
<thead>
<tr>
<th>Craft</th>
<th>Machine Tending</th>
<th>Mass production assembly line</th>
<th>Continuous process</th>
<th>Advanced technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple technology</td>
<td>X</td>
<td>XX</td>
<td>XXX</td>
<td>XXXX</td>
</tr>
<tr>
<td>Stable, uniform technology</td>
<td>X</td>
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The simple-complex continuum relates to the degree of complexity of the technological system—both the mechanical and the knowledge aspects. Thus, craft technology is the simplest form and the technology in atomic energy and space exploration is the most complex.

*The stable-dynamic dimension refers to the frequency of change in the technology. Here again, craft technology is the most stable. The most dynamic is found in industries such as aerospace and electronics.

Figure 2

Technology Continuum
(Kast and Rosenzweig, 1970:187)
unpredictability associated with performing the required tasks, the individual's rights to exercise discretion in making job-related decisions, and the level of responsibility exercised in performing their work (Bell, 1967).

The least complex form is craft technology which is the most stable and has the least amount of change. At the other end of the continuum would be, for example, research and development laboratories, and aerospace and electronics firms. These are complex in both their knowledge and mechanical requirements and incur frequent changes (Kast and Rosenzweig, 1970).

The Kast and Rosenzweig (1970) continuum summarizes the work of several other organization theorists. The major researchers, Burns and Stalker (1961), Lawrence and Lorsch (1967), and Woodward (1961), have made several observations which could significantly impact upon the future of organizations. The landmark works in this area suggest that organization structure seems to result from the interaction of the external environment and the production technology.

As with a continuous-process organization, when there is stability or certainty of knowledge or information about the environment and events can be anticipated, the traditional bureaucracy appears to be the most appropriate organization structure (Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Shetty and
Carlisle, 1975; Woodward, 1965). Galbraith (1970) and others stress that this structure is least competent when it deals with a changing environment as it requires stability to be effective. The mechanistic (Burns and Stalker, 1961) form is seen as being most appropriate to another kind of stability—technological specificity—where one product, or a limited number of products, is produced repeatedly (Harvey, 1968).

The bureaucratic or highly mechanistic structure requires internal stability, as well as stability in its external environment. In order to provide the internal stability, management must be able to resolve many internal conflicts at the organization's upper levels (Lawrence and Lorsch, 1967). This mode of operation is particularly conducive to adopting computational decision-making technologies (Harvey, 1968).

With an unstable environment, problems and requirements cannot easily be broken down and distributed among specialized roles, as in a clearly defined hierarchy (Burns and Stalker, 1961; Emery and Trist, 1973; Lawrence and Lorsch, 1967; Woodward, 1965). In unit-production organizations where the product is customized and the environment unpredictable, a loose, less structured and more adaptive, organic organization structure appears to be most appropriate (Burns and
Stalker, 1961; Emery and Trist, 1973; Filley and House, 1970; Kast and Rosenzweig, 1970; Lawrence and Lorsch, 1967; Shetty and Carlisle, 1975; Woodward, 1965). Because in unit-production organizations there are fewer managers and supervisors in relation to subordinates, the organizations take on a "flat" appearance which seems optimal for innovation (Burns and Stalker, 1961; Emery and Trist, 1973; Shetty and Carlisle, 1975; Woodward, 1965).

With the organic organization's uncertain environment, jobs are continually being redefined by new interactions with other task participants and lose much of their formal definition in terms of duties, powers, and methods. Communication in this design runs both horizontally and vertically and is often consultative rather than command-oriented (Burns and Stalker, 1961; Lawrence and Lorsch, 1967). Because it requires a more innovative, personal, and judgmental decision-making process, this type of organization could not easily adopt computational decision-making technology (Harvey, 1968).

Studies on the relationship between technology and structure appear confined to organizations which have products or services which can be significantly influenced by their degree of technological development. However, recalling Ellul's (1964) *technique* and Harvey's
(1968) study of diffuse and specific technologies, it is possible to characterize the degree of routineness in work procedures as technology and thereby observe the impact of technology on the other types of organizations. This leap has been made and routineness has been found to be associated with role formalization (Perrow, 1967).

Recent studies by Morse and Lorsch (1970) have further complicated the process of determining appropriate organizational designs. They conclude that the fit between an organization structure and its technology must optimize the relationship between the task, organization structure, and the needs of the organization members by meeting organization members' competency needs. Rather than believing that all people experience the same needs at the same time, they see people as bringing varying individual patterns of motives and needs to their organizations. Fulfilling these needs is dependent upon providing feelings of competency and success. Morse and Lorsch (1970) stress that individual competency needs are most likely fulfilled when there is a tight fit between task and organization design.

Besides design implications, these studies of technology and organization structures have several future implications for organization members.
Woodward's (1965) study suggests that organization members, managers in particular, should be alert to the organizational ramifications of changing technological bases (Kast and Rosenzweig, 1970; Lawrence and Lorsch, 1967). Burns and Stalker (1965) further warn that managers need to anticipate the difficulties involved in changing from the mechanistic to the organic systems. The highly dynamic and "unstructured" nature of the organic system often creates anxiety and insecurity in those accustomed to structured, mechanistic organizations (Burns and Stalker, 1965).

These authors warn that organizational components may differ in structure. Therefore, managers should be aware of the special requirements involved in operating a multi-technology organization where various organizational components are utilizing different classes of technology which operate with varying degrees of complexity (Kast and Rosenzweig, 1970; Lawrence and Lorsch, 1967; Litwak, 1961). Lawrence and Lorsch (1967) state that it is very important to efficient organizational operation that people and structures within an organization be allowed to vary in the ways appropriate to completing their tasks.
SUMMARY

Most organizational futurists envision a future for organizations in which strife exists between various organizational components and between types of organizations. However, out of this strife is expected to come better interpersonal communications, a more participative decision-making process, increased organizational concern for societal interests, and a blurring of organizational distinctions. Larger organizations and smaller organizations are seen as continuing as very viable forms; but there is some doubt about the continuation of middle-sized organizations. Improved communications will be most important.

Of increasing importance will be the needs of the larger numbers of organization members who are women, older, youth, and minority members. They and all other organization members will be demanding a "bigger piece of the action" and increasing access to the decision-making process. Executive teams are thought to be a possible alternative for the "big boss" or chief coordinator. Managers are seen as becoming better skilled in interpersonal relations, receiving more technical training, and having a broader background in the future.

Education is expected to change from short-
term schooling to a lifetime occupation which will help future organization members to anticipate change and avoid their own obsolescence. All organization members are seen as being better educated in the future either through universities or the vocational schools organizations are expected to institute. Of increasing importance to organizations will be the professional.

A knowledge explosion is anticipated as being particularly disruptive to organizations. All people, and professionals in particular, will be crippled by an inability to keep up with the "exponential growth" of knowledge and information. Although several authors disagree, others expect technology to enable professionals to overcome the ill-effects of such an explosion.

Technology is generally seen as a boon to organizations in the future. Some changes are expected to occur in organization structure; but estimates as to which segments of organizations will be most significantly changed by technology are in dispute. Partnership with "the machine" is often projected as assisting humanity but is also seen as potentially leading to severe elitism, societal malaise, and the destruction of society.

After studying the relationship between
technology and organization structure, several organi-
zation theorists do not predict organizational
evolution, but conclude that a contingency approach
to organization structure is ideal for the future.
They find that organizations in stable environments,
repeatedly producing similar products, function best
with a traditional bureaucratic structure. Organiza-
tions in uncertain environments, developing a diffuse
range of specialized products are most efficient with
an innovative, organic operation mode. This analysis
of production technology has been successfully applied
to non-industrial organizations and suggests a
different approach to organization structures of the
future than has been used in the past.

Most organizational futurists implicitly or
explicitly premise their studies of the future on
beliefs that organizations will evolve to a System
4, Theory Y/Z reality. Very few perceive a contingency
or negative future as a realistic possibility, except
in the area of technology. Several organizational
futurists see technology as a potentially dangerous
influence which could send organizations into a
Theory X, System 1 or 2 reality. Other organizational
futurists see a diverse range of structures possible
in the Theory Y/Z or System 4 reality they assume to
be inevitable.
ALTERNATIVE ORGANIZATION STRUCTURES

Organizational futurists expect the issues and trends previously discussed to influence and alter the appearance of organizations in a number of ways. These authors most often discuss how entire organizations will look in the future. However, perhaps because of the expected continuation of the larger, multi-national organization, organizational futurists are more frequently discussing the structure of organizational components. This section first reviews the appearance of whole-organizations (see Figure 3) and then those designs which are spoken of as occurring primarily in components of organizations (see Figure 4).

Whole-organization Designs

Although a number of structures are suggested in the literature, there is little consensus concerning which format will be the most dominant at a particular time in the future. Few authors support the continued dominance of the pyramid or hierarchial model upon which the bureaucracy is based (Argyris, 1973c; Bennis, 1967; Fulmer, 1972; Kast and Rosenzweig, 1970). Frequently those who discuss the imminent demise of the hierarchy say that the bureaucratic pyramid succeeded in the past when a single, consistent design
was needed for universal application and that it is no longer appropriate (Bennis, 1967; Brown, 1970; Forrester, 1973; Toffler, 1970). These authors see organizations in the future moving away from authoritarian control and moving toward a more democratic and constitutional form (Forrester, 1973).

Critics state that the traditional pyramid-shaped organization appears to work best when the environment and technology are stable and predictable. Where the organization's services or products are customized and the environment unpredictable, a loose, non-hierarchial organization design appears to be more appropriate (Bennis, 1967; Kast and Rosenzweig, 1970; Rogers, 1975; Toffler, 1970). The future, several authors say, will differ from the past in that it will have "several rational but different forms" to meet the needs of the varied organizations of the future (Filley and House, 1970:14-15). Perhaps one of these designs will continue to be the pyramid.

The pyramid organization. The bureaucracy is characterized by a well-defined chain of command that channels formal interaction vertically; a system of rules and procedures for dealing with all organization contingencies; division of labor or activity based upon specialization by major processes or functions that
vertically fragment a work or activity flow; selection and promotion based on technical competence defined consistently with the previous points; and impersonal relations between organization members and between organization members and clients (Bennis, 1967; Cleland and King, 1969; Golembiewski, 1969; Weber, 1947). The concept of hierarchy puts emphasis on legitimacy and the organizationally defined leader (Bennis, 1967; Sherwood, 1976; Weber, 1947).

Despite the frequent assumption by many that the pyramid form is obsolete, it seems to be maintaining its dominant position. Several authors strongly support the continuance of this, the "principal organizing strategy to date" (Filley and House, 1970: 16) (Fulmer, 1972; Morrow, 1971; Scott, 1969; Wieland and Ullrick, 1976). Morrow's (1971) panel states that in 1985 and 2000, 75 percent of the organizations will be pyramid structured. Brown states that the principal reason for its popularity is its "effectiveness in maximizing efficiency in routine and repetitious kinds of operations" which managed to remain stable and predictable in exceedingly competitive environments (Brown, 1970:24).

This stability may be the reason for bureaucracy's eventual obsolescence (Brown, 1970; Ramstrom, 1974). The control and incentive systems of this
structure could inhibit more than encourage any initiative within the organization (Brown, 1970). Accelerated product obsolescence and other operation-related factors are likely to compel modification of this format into forms which can accommodate temporary or continuing task forces (Brown, 1970). Morrow's (1971) research, however, shows that organizational futurists do not anticipate these changes significantly occurring before 2000.

Another interesting perspective is provided by Meyer (1968) who states that although hierarchial pyramid organizations have appeared dominant in the past, interdependence with non-hierarchial forms has always existed within the process. In fact, March (1968) says that as interdependence increases, non-hierarchial forms of cooperation tend to emerge within the organization thus creating a mutation of its original organizational forms. A minority opinion sees bureaucracies providing the much needed basis for effective action, management, and control for organizations in the future (Coates, 1976). Wieland and Ullrich (1976) state that the increasing uncertainty of future times may very well ensure the continuance of the bureaucratic form which will protect the organization's technological core and rationality
from the otherwise chaotic environment.

The bulging pyramid organization. Although Reeser (1975) portrays this form more as a dome-shaped pyramid, others see it with a pointed top. The bulging pyramid represents an increase in the levels of management, a relative increase in the number of middle managers, and in the number of skilled (versus unskilled) workers (Ignazio and Shannon, 1971; McGuire, 1974). This structure assumes the accuracy of the trends reporting an increase in the educational levels of organization members and in the development of automation. Two other trends seen as supporting the realization of this model are the continuing trends toward increased organization size and complexity (Anshen, 1961; Ignazio and Shannon, 1971; Rogers, 1975). Other observers base their support of this structure's emergence on a projection of future organizations dominated by middle ranked systems specialists and technocrats (Filley and House, 1970).

The tall urn organization. Galbraith (1967) expects that the membership requirements of the industrial organization in the future will be similar in design to a tall urn. The initial widening at the top of the figure reflects the need for administrators, planners, and coordinators—that is, engineers,
scientists, sales executives, master computer programmers, and those talented in "other arts of persuasion" (Galbraith, 1967:238). After the initial flair, the design widens further illustrating the organization's need for white-collar people. Finally, near the base, the structure curves in sharply reflecting the limited demand foreseen for blue-collar people "qualified only for muscular and repetitive tasks and who are readily replaced by machines" (Balbraith, 1967:239). Galbraith (1967) expects the top of the urn-like structure to continue to expand in the future while the bottom remains the same or contracts.

The hourglass or football and bell organization.

Similar to an hourglass or a crystal ball on its stand is the format which Simon (1960) describes as a football on a bell. This design represents the evolution of organizations to a form having "a relative increase in the number of top managers, ... a relative decrease in the number of middle managers, and a relative increase in the number of skilled versus unskilled workers" (Ignazio and Shannon, 1971:46) (Bass, 1972; Filley and House, 1970; Hellriegel and Slocum, 1974a; Ryterband and Bass, 1973; Whisler, 1965). The design's most significant aspect is its clear attempt to separate the organiza-
tion into two distinct parts which look like two organizations housed under one label (Pfiffner and Sherwood, 1960). Rogers (1975) explains that this alteration of the basic pyramid form results from a loss of a substantial proportion of the middle management.

This model receives support from organizational futurists for a variety of reasons. Ryterband and Bass (1973) base their support on projections of statistics from 1967 when 1,200,000 new white-collar jobs and only 300,000 new blue-collar jobs were initiated. Other authors support the design's eventual rise because they see the increasing use of computers forcing a regrouping of activities at various levels of the organization and in various function divisions. They also predict that computers will be used increasingly to make and process routine management decisions. Assuming that a bulk of the middle managers' work consists of rather routine decision-making, this will cause the predicted reduction in the number of people in middle management positions (Ignazio and Shannon, 1971).

Similarly, some observers of technology and management perceive a strong resistance to the introduction of decision-making computers at the top level of management. This resistance is seen as inhibiting
funding of research and development projects for top management decision-making systems and an increase in funding for technology to replace middle managers and unskilled workers. Another reason for supporting the rise of the hourglass is the "shift to top management of a larger proportions of innovating, planning and creative functions" (Iganazio and Shannon, 1971:46) (Fulmer, 1972; Hellriegel and Slocum, 1974a), thus further centralizing the decision-making process (Ignazio and Shannon, 1971; Leavitt and Whisler, 1958; Pfiffner and Sherwood, 1960; Simon, 1961). This model reflects the expectations of several authors who predict the rise of top management as a tight little oligarchy of top managers, innovators, and programmers who alone will make the key decisions (Hellriegel and Slocum, 1974a; Leavitt and Whisler, 1958; Wesolowski, 1971).

The horizontal organization. In the horizontal or rectangular organizational structure, horizontal operations supersede vertical ones (Johnson, Kast, and Rosenzweig, 1967). There are fewer organization members at the structure's bottom and more planning, leading, organizing, controlling or managing positions in this structure than in the traditional pyramid (Stull, 1974). The organizational futurists who write
of this model see the small span of control receding as an important structural criterion, top level management expanding, and the hierarchy flattened (Leavitt and Whisler, 1958; Pfiffner and Sherwood, 1960; Stull, 1974). This model requires the breakdown of traditional organizational relationships which are based on separately performing function components and superior and subordinate relationships (Cleland and King, 1969; Dunnette, 1972; Johnson, Kast, and Rosenzweig, 1967; Lippitt, 1971; Read, 1969).

Growth in this model occurs "through cell division rather than by adding hierarchial levels, or by establishing titles, positions or bureaucratic lines of authority" (Dunnette, 1972:37) making it more appropriate for the fluid future organization which so many organizational futurists describe. The horizontal model assumes that organizations have great difficulty effectively and efficiently accomplishing more than one major project at a time when organized along totally vertical lines (Cleland and King, 1975). Brains, talent, and creativity are not distributed along vertical layers in this design, but are found and utilized throughout the organization as they are needed (Read, 1969). Van Dam (1976) suggests that the success of the flattened structure will be in permitting osmosis between the participants and the
stakeholders in an enterprise.

Worthy describes the flatter, less complex structure as having "a maximum of administrative decentralization," which tends "to create a potential for improved attitudes, more effective supervision and greater individual responsibility and initiative" among organization members (Worthy, 1950:179). Increases in member satisfaction are expected to be created through the development of individual self-expression and creativity (Worthy, 1950). However, because the structure is flattened and shows fewer organizational levels, one should not assume that the extent of delegation or decentralization is automatically revealed (Pfiffner and Sherwood, 1960). With contemporary technology, the flattened structure could give the manager or executive more effective control over the organization (Pfiffner and Sherwood, 1960).

The federalist organization. Drucker (1962), and Pfiffner and Sherwood (1960), and others use the term "federalism" to describe the model they suggest for coping with increasing organizational size. Functioning independently, the components of a federalist organization would operate independently while being members of a large amalgum of sub-organizations. Although a federation could be
arranged in any number of patterns, the circular design in Figure 3 stresses the equality of the components within the overall organization.

Filley and House (1970) suggest the development of these loose amalgamations of different organizations to ensure stability. Federalist organizations do not necessarily have to be connected by ownership, but can be connected by complementary needs. Connecting firms through reciprocity and technology, large federations may arise to cope with scarcity of materials or other instabilities (Filley and House, 1970).

Component Designs

Most organizational futurists describe whole-organization structures for the future. However, with increasing frequency organizational futurists are describing designs appropriate for components of the larger whole-organizations. Although most often used in describing the components, these designs may also be used as the structures for whole-organizations (see Figure 4).

The linking-pin design. Suggested by Likert, Bennis, and others, the linking pin structure is composed of people who are relative strangers temporarily joined together to solve a problem.
Linking pin
(Likert, 1967:165)

Matrix

Diamond-shaped Matrix

Multiple Hierarchy

Figure 4
Component Designs
requiring their collective skills. The group is formed around an administrator who acts as coordinator, program leader, or project manager. Also called a tactical structure, this form is thought to be ideal for producing highly technical products (Bennis, 1973; Filley and House, 1970; Likert, 1961, 1967).

Likert (1967) sees the linking pin structure as a device enabling organizations to develop into a System 4 reality. Existing within the traditional hierarchy, the linking pin structure could eventually transform the organization from a more traditional mode of operation into System 4. However, for this design to perform well, Likert (1967) requires that the entire organization employs multiple, overlapping group structure and each group skillfully uses group decision-making processes.

Similar to the linking pin, Gardner envisions an increase in the use of linked "interdependent, semi-autonomous groups" of no more than eleven people who are engaged in various organizational activities (Gardner, 1976:592). In his future structure, no group is superordinate or subordinate to any other (Gardner, 1976). These linked groups would have a temporary existence of not more than three years, or six years if unusually favorable conditions exist (Gardner, 1976). All transactions between work or
activity groups and the larger firm would be negotiated and contractually agreed upon thus making the group a legitimate, although temporary, organization in its own right (Gardner, 1976). The future executive in this organic model will be the coordinator or linking pin between various temporary groups or task forces (Bennis, 1969).

The matrix design. Based on highly functional departmentalization, the matrix or project form was originally suggested for projects with a finite lifetime, hence its alternative names (Argyris, 1973c; 1975). The matrix design has also been termed project management, task force management, program management, team management, satellite management, and matrix management (Cleland and King, 1975). Similar to the linking pin, it is a group or composed of several overlapping groups of people working on special projects within the organization (Hellriegel and Slocum, 1974a; McFarland, 1970; Redding, 1974). It is often seen by many as the best way to utilize professionals (McGuire, 1974).

The lines of communication within the matrix run horizontally between group members and between group members and members of other departments who would furnish the group with any special information it might require. The vertical lines establish
communication between the group and members of the whole-organization's administration. Thus, the matrix has a multiple command system with the manager often acting as a linking pin between various organizational components (Davis and Lawrence, 1977; Hellriegel and Slocum, 1974a).

In addition to the square by which it is frequently illustrated, a diamond-shaped matrix has also been proposed. The diamond-shaped matrix more fully illustrates the dual authority relationship where power and influence are dimensions within the organization (Davis and Lawrence, 1977). This design demonstrates how the power or authority is not divided, but is held simultaneously by both the manager of the group and the manager in the overall organization (Davis and Lawrence, 1977; Galbraith, 1974).

Created by the aerospace industry, the matrix was designed to enable aerospace companies to remain both project-oriented around their technical specialties and service-oriented toward the needs of their customers (Cleland and King, 1975; Mee, 1969; Toffler, 1970). The dual command structure of the matrix serves to facilitate simultaneous decision-making (Davis and Lawrence, 1977; Galbraith, 1974). The matrix also facilitates processing large quantities of information generated by the uncertainty, complexity, and
interdependence (Davis and Lawrence, 1977; Mee, 1969) which is typical of the changing and unpredictable times anticipated in the future (Kast and Rosenzweig, 1970). Shared resources are another reason for employing the matrix format as it allows organizations to quickly redeploy resources within an organization (Davis and Lawrence, 1977; Kozmetsky, 1974; Lippitt, 1971; Maher, 1975). Greiner (1972) sees organizations composed of a matrix of teams as the appropriate structure for mature, large, collaborative organizations.

The multiple hierarchy design. Several authors foresee organizations of the future increasingly using two or three hierarchies to ensure the organization's adaptiveness and flexibility (Hellriegel and Slocum, 1974a). Within each hierarchy, personnel advance along a pattern consistent with their abilities and skills in their sphere of expertise. Such structures are already found in some research and development divisions and are used in more general ways in Europe (Filley and House, 1970).

This structure differs from the matrix in that the hierarchies are traditional in their goals and operations whereas the matrix is not traditional and minimizes the role of any hierarchy in which it
is placed (Filley and House, 1972). In the case of a dual hierarchy, a distinction exists between the operation hierarchy and the technical hierarchy. The two units are exclusive, yet complementary. Standards and programs develop in the technical unit are fed to parallel operating units for implementation and performance (Filley and House, 1970).

The Non-organization--Networks

Another structure, or non-structure, is the non-organization or "network." Networks are characterized as having an absence of center (Sherwood, 1976) and as the "unorganizations of tomorrow" (Henderson, 1976:27). Ericson (1972) describes them as similar to Simon's (1960) heuristics in that they are extremely adaptive systems composed of flexible components. Henderson (1976) states that they are now mandatory in light of the fantastic changes occurring in society.

This "participatory, flexible, organic, and cybernetic design" (Henderson, 1976:27) is characterized as a free-wheeling group (Rogers, 1975). Rogers (1975) predicts that future organizations will join together temporarily for the solution of a problem and then quickly disband. While the group is together, status differentials disappear and the
group members function as peers (Rogers, 1975). All the organization's elements have "equal obligations to influence and be influenced" (Sherwood, 1976:589).

Henderson (1976) reports that networks do not have headquarters, leaders, or chains of commands. They appear to simply move from a less active state to a more active state, accomplish their task, and return to their less active association (Rogers, 1975). Foreshadowing Toffler's (1970) ad-hocracy, the non-organizations are free-form and self-organizing (Henderson, 1976).

According to Henderson (1976), network participants refer to themselves as "networkers" and are autonomous, self-actualizing individuals who share a common worldview and values. The chief product of networks is "information-processing, pattern recognition, and societal learning" (Henderson, 1976:28). Existing both nationally and transnationally, Henderson (1976) estimates that there are thousands of such networks in this country and many hundreds transnationally. Yet, she says, they are almost totally unknown to the scholarly world (Henderson, 1976). Apparently, the unorganizations evade study because they are "evanescent, ebbing and flowing around issues, ideas and knowledge" (Henderson, 1976:27).
The Contingency Approach

Any or all of the structures presented may be popular in the year 2000. Bogart (1973) states that there will be no single winner in the conflict between organizational types in the future. Rather, the major organization types are likely to exhibit functional strengths and weaknesses which will coexist while performing complementary functions (Bogart, 1973).

The studies of organizational structure and technology appear to support this suggestion. The pioneers in this field and those who have followed seem to agree that there is no single best way to organize, but see organizational design as conditional (Ramstrom, 1974; Zaltman, Duncan, and Holbek, 1973). Shetty and Carlisle (1975) state that the stress of organizing is the result of a number of variables: the managers' belief system, the organization's environment, technology, and the organization members.

Recent studies suggest that the most effective pattern of organizing is that which enables an organization to adjust best to its environment's requirements (Argyris, 1973a; Galbraith, 1970; Lawrence and Lorsch, 1967; Pastore, 1975; Shetty and Carlisle, 1975). This new way of viewing appropriateness is seen as superior to the older way where strategy is based on organization size and goals
(Burns and Stalker, 1961; Filley and House, 1970; Hicks and Gullet, 1976; Lawrence and Lorsch, 1967; Woodward, 1965). Basing the choice of organization structure on the organization's needs rather than on society's dominant form allows all designs to be viewed as acceptable, rather than remaining mutually exclusive, and allows organizations to choose from a range of possible patterns that design which best accommodates their needs (Filley and House, 1970; Frederickson, 1976; Reddin, 1974).

Supporting the work of Woodward (1965) and others, Greiner (1972) suggests that an organization may require different structures at different times in its development. Thus, choice of structures would be contingent also upon time or organizational age (Greiner, 1972; Reddin, 1974). The basic idea behind the contingency theory is that "what constitutes effective management varies with the organization's environment and makeup of the organizational subsystems" (Hicks and Gullett, 1976:557) (Sherwood, 1976).

CONCLUSION

As does this study, Bennis recently questioned whether or not organizations will "progress monotonically along the democratic continuum" (Bennis, 1971:16)
to the ideal reality envisioned by the authors who subscribe to the System 4/5 or Theory Y/Z belief systems. His reason for doubting what he once thought to be a certain occurrence is the failure of most organizational futurists to effectively deal with conflict between organizational components and their larger organization (Bennis, 1971). Such a significant oversight, Bennis (1971) says, is sufficient reason for doubting the evolution of organizations into a Theory Z reality.

Bennis' doubt and confusion about the evolution of organizations leads to two questions previously raised: Are organizations following an evolutionary path? If so, where does this path lead? Most European futurists do not believe that the future is programmed by any more than the present and the patterns and decisions which are initiated in those times (Gerardin, 1973).

If these futurists are correct and the future is an acting-out of past and present actions and decisions, then anticipating future alternatives and planning a desirable future reality is very possible. However, as yet, few American authors suggest anticipating and using change as a means of developing future realities. Rather, most American futurists propose adaptive structures as the means for
dealing with outside changes (Fulmer, 1975). As Gerardin (1973), an European futurist, points out, Americans still see themselves as unable to control or anticipate changes except through this passive-reactive posture.

Further criticizing the adaptive approach to the future, Gerardin (1973) says that such models are outdated and based on illogism because the adaptive system ignores the purpose of forecasting and the impact of decision-making. Nanus, an American futurist, also points up this short-coming in saying that "a future-oriented corporate concept begins with the assumption that the future is the most important resource available to any organization" (Nanus, 1975: 5). Nanus (1975) states that the authors of most American models ignore the future as a yet-to-be-created reality and forecasting as a means of combating change and conflict, and the contribution they both can make through policymaking to the life of organizations.

Supporting this kind of criticism, Bennis (1971) predicts some changes in the future and how organizations will be dealt with. First, he foresees the implementation of new ecological strategies which are capable of anticipating crisis rather than only responding to it (Bennis, 1971). Ryterband and Bass
(1973) see this change in attitude resulting from frustration and people seeking to reduce the uncertainties associated with change.

Second, Bennis (1971) says that organizations will be participants in change rather than mere recipients of it. In the future, he expects organizations to confront conflict rather than try to avoid or dampen it (Bennis, 1971). Finally, Bennis (1971) and others predict that organizations will work toward comprehensive measures and long-range planning horizons rather than specific measures and short-term planning horizons (Chapman and Cleaveland, 1973). 9

One of the most interesting facets of this altering attitude among Americans is the reason for it. Rather than seeking to participate in creating the future, American futurists seem to see forecasting and planning as a means of dealing with change. In the past, organizations dealt with the need for change as if it were a technological or scientific activity rather than realizing that it is an "eternal dynamic" which is primarily a political, economic, social, and managerial problem (Frederickson, 1976:567).

Rogers (1973) describes change as the greatest problem in the years to come. Just as the growth of knowledge and the world's population are changing,
organization change is foreseen as continuing at an exponential rate (Argenti, 1972; Best, 1978; Cleveland, 1972; Kami, 1976; Lippitt, 1971; Ryterband and Bass, 1973) and occurring both qualitatively and quantitatively in the future (Ansoff and Brandenburg, 1969; Toffler, 1972). Bennis states that the phrase "'the only constant is change'" has become a cliche (Bennis, 1970:167) to numbed and crippled organizations which were not prepared for it (Bennis, 1970; Koontz and O'Donnel, 1968). It is this threat which is forcing organizations to be future-oriented.

Through this literature review, the philosophies, issues and trends, and possible designs for organizations of the future have been surveyed and it is clear that there are numerous alternatives available. According to the futures research ideal, as outlined by Helmer (1974) and by Hahn and Little (1976), the probability of occurrence would be noted after surveying the alternatives, and then the desirability of the alternatives and the appropriate course of action would be developed for this to be a complete futures study. The present research, however, concerns itself only with the first step, leaving the subsequent steps to later studies.
Sisk (1969) proposes a Theory Z which is quite different from Foss' or McGregor's X and Y. It is a systems approach to organizations which promises prediction of organizational evolution and the anticipation of all developments (Sisk, 1969).

Morse and Lorsch (1970) believe that McGregor's Theory X and Theory Y should be followed by a contingency approach. Whereas McGregor (1960) defines Theory Y as more desirable than Theory X, Morse and Lorsch (1970) state that in some instances a Theory X managerial mode could be the more desirable and best fulfill the competence motivation needs of organization members. Rather than blanketly stating that one managerial style is superior to all others, Morse and Lorsch (1970) state that the one universal need among humans is to feel competent and that this need may be fulfilled in many ways. Morse and Lorsch (1970) describe the sense of competence as never really coming to rest and as being reinforced by successful performance. According to Morse and Lorsch (1970), this makes feelings of competence more reliable and consistent as a motivator than benefits and salary.

Jun and Storm (1973) stress this point even more strongly when describing human nature. These characteristics offer implicit stipulations for the use of people in organizations:

A. Human Needs and Values
Man requires the satisfaction of his survival needs.
Man strives for social satisfaction.
Human beings have a need for self-esteem.
Human beings insist that society should offer hope that their aspirations and potentials will be fulfilled.
Human beings require freedom to exercise choices.
Human beings seek a value system or system of beliefs to which they can commit themselves.

B. Possibility of Man's Development
Human beings continuously seek to enlarge and enrich the quality of their satisfaction.
Human beings are creatures of hope.
Human beings have the capacity to make changes and the desire to use this capacity.

C. Authentic Being
People want to experience a sense of their own worthiness.
The average human learns, under proper conditions,
not only to accept responsibility but also to seek responsibility.

D. Change
Man continuously tends to change his role relationships.
Man is not static, but continues to develop as he encounters new experiences.
Man is shaping the man of the future--consciously or not.
Man has a useful image of space and time.

E. Adaptation
Man is adaptable to change.
Under the proper climate, man is willing to adopt more innovative and risk-taking behavior (Jun and Storm, 1973:7).

Summarized from the works of Maslow, Cantril, and McGregor, this list reveals a set of assumptions about human beings and their roles in modern organizations. Humans are seen as separate entities capable of growth, fluidity, and tremendously innovative and constructive change. This "human relations" approach differs markedly from the more traditional approaches which define humans as doing only what is required to fulfill their social and economic needs (Jun and Storm, 1973).

3 Best (1978) sees these changes in women's work patterns impacting greatly on men's work patterns. Best (1978) notes that while in the past gender roles dictated that women had to be "housewives" and men had to be "breadwinners," increasing gender role flexibility is seen as expanding the opportunities for couple members to be more flexible and rotate roles. The increase in "working wives" is expected to enable "breadwinning husbands" to decrease their income-earning work time in favor of more non-work leisure (Best, 1978).

4 A dilemma Best (1978) points out for the year 2000 is the expected withdrawal of the World War II "baby boom" generation from the labor force. Since there are fewer numbers in the younger generations, there may be many positions left unfilled thus requiring older people to postpone retirement and younger people to be drawn out of school to fill the labor demand (Best, 1978).

5 Best (1978) expresses concern over other results of increased worker education. Looking specifically at "overeducation" as a source for feelings of political discontent and job dissatisfaction, Best (1978) anticipates widespread
suboptimization of human resources, and dampening occupational aspirations leading to poorer worker morale, decreased productivity, and counter productive activities. Best states that "feelings of overqualification are one of the strongest correlates of overall job dissatisfaction" (Best, 1978:10). However, Best (1978) also says that overqualified workers having the educational training to articulate their dissatisfaction could improve overall working conditions, and create more interesting jobs and greater amounts of organizational democracy.

6 Morrow (1971) notes surprise with such a conservative perspective by his panel of experts:
   The near denial by the panel members of the probability that there will be full automation in a portion of industrial production is possibly the most conservative attitude expressed in the study. Even though they recognized some of the major factors that would encourage full automation, they chose not to give much weight to them (Morrow, 1971:62).

7 Morrow's (1971) study shows that twice as many panel members see decentralization as dominant in the future as those who predict centralization.

8 Some interesting examples and exceptions exist illustrating this apparently American way of dealing with the future. They include the work of Chandler, Brannen, and Greiner. In Strategy and Structure (1962), Chandler hypothesizes a pattern of interaction between the outside market or environment and the organization's strategy and structure. The outside market is seen as determining the strategy which, in turn, determines the organization's structure.

   Brannen's (1973) study is an analysis of the rise and decline of societies. These societies can be seen as macro-organizations. Brannen (1973) hypothesizes that a society remains a cohesive unit while it has clear-cut goals. Upon attaining the goals, the society either enters into a period of decline or establishes new goals and engages in another period of cohesive growth. Elgin (1977) and Elgin and Bushnell (1977) make similar observations about organizational evolution.

   In "Evolutions and Revolution as Organizations Grow," Greiner (1972) proposes that relationships exist between the organization's size, age, and its growth rate. Greiner (1972) identifies five phases
of growth which are succinctly divided by periods of crisis or revolution. Greiner's (1972) premise is that management actions are narrowly prescribed, if growth is to occur. He concludes that by understanding the growth phases and being able to identify and anticipate the crisis periods, organizations may move onto the next predicted phase without the anxiety now incurred.

These views and others are concerned with strategy preceding structure (Hutchinson, 1976), but do not include any activity to determine where the organization may want to go or alternative ways of approaching the future and altering the outside forces. They seem to emphasize and support the belief that the future is predetermined, a belief which seems to be shared by most Americans.

Complementing the new quest by Americans to alter their attitudes toward the future, Kirkpatrick (Hollister and others, 1967) suggests five problem areas which will require attention before 2000. They are the utilization of leisure, population control and genetics information, a science of humanity, basic societal goals which would be alternatives to production and work, and a reformulated view of humanity's place in the universe. Biller (1973) augments this critique of the contemporary perspective when calling for policymaking procedures which can create policies and organizations that are supportive of sustained change rather than essentially patchwork and reformist as today's procedures are.
Chapter 3

METHODOLOGY AND PROCEDURES

As noted in Chapter 1, this study has four goals: to develop a list of trends and issues which organizational futurists see as influencing organizational appearance in 22 years; to determine the range of possible alternative organizations and the most probable organization in the year 2000; to produce a list of organizational futurists; and, to identify reading materials which would be appropriate for inclusion in an organizational futures literature. The objective of the study's methods and procedures was to meet these goals while conducting an empirical study. Included in this chapter are analyses of the choice of methods and the procedures employed to accomplish the study's goals in the prescribed manner, and a description of the methods employed.

METHODOLOGY

Method Selection

Ideally, all of the tasks could be accomplished
by a single methodology. However, since this was to be an empirical study, several methods were needed. In order to compile a list of the organizational futures literature, a literature search was employed. This method was supplemented by a peer nomination to establish the list of organizational futurists. Having identified the organizational futurists, they could now be polled to determine the range of possible organizations and the most probable organization of 2000.

**Delphi Technique**

*Selection rationale.* Several methods have been developed to obtain meaningful data from groups of experts (Cetron, 1969; Lanford, 1969). The selection of the specific method was facilitated by the second goal for which only the Delphi qualifies. Only the Delphi assists a panel in developing a consensual profile of a future reality, such as is required by the second goal of this study.

Helmer (1975b) states that Delphi lends itself particularly well to two areas of inquiry. First, in the social sciences where hard data are too costly to obtain or unavailable, the Delphi provides valuable judgmental input data (Helmer, 1975b). The Delphi also lends itself well to gathering expert opinions from what Helmer terms the "advice community" on which
nationwide policymakers frequently rely (Helmer, 1975: xx). Because this is a social science study which planned to solicit input from such a calibre of expert, the Delphi was the ideal methodological choice for this research.

Thus, the Delphi was selected as the method to survey the organizational futurists and produce their list of trends and issues, the consensual profile, and the range of possibilities about the appearance of the most probable organizations of the year 2000. Although the Delphi is most frequently used in developing forecasts, the flexibility of its design has allowed it to be used in other productive manners (Cetron and Ralph, 1971; Linstone and Turoff, 1975). Several researchers prefer that the Delphi be used as a heuristic device rather than as a forecasting tool (Sackman, 1975). The latter approach was ideal for meeting the needs of this study.

Employing the Delphi resulted in another benefit. One of the first steps in formulating a Delphi is determining its experts, in this case, its organizational futurists. A search of the literature supplemented by a peer nomination process were the procedures seen as reliably defining the expert group and excellently complemented the Delphi. The literature review required by these methods was also
necessary to fulfill the fourth goal. Thus, the methods required to determine the Delphi panel coincidentally fulfilled the third and fourth goals—development of lists of organizational futurists and of the organizational futures literature.

**The method.** Just as serious study of the future is a new addition to academic inquiry, so is the Delphi technique. Originated at Rand Corporation by Helmer and Dalkey in the 1950's, the Delphi technique is a method of developing rational decisions about unquantifiable problems (Linstone and Turoff, 1975; Richman and Farmer, 1975). The Delphi is designed to obtain consensus from experts through a panel method which does not include the coercion or emotional persuasion that often occurs in face-to-face encounters (Ayers, 1969; Bright, 1968; Darracott, 1967; Enzer, 1973; Helmer and Rescher, 1973; Prehoda, 1967).

Using an iterative process, the Delphi allows for anonymous presentation, feedback, and reevaluation of a set of judgments supplied by a group of experts (Amara, 1975; Ayres, 1969; Cetron and Monohan, 1968; Cetron and Ralph, 1971; Gewald, 1973; Hetman, 1973). The systematic collection of the individual judgments and their formulation into reasoned consensus allows the Delphi to be defined
as a rational method (Bright, 1968; Richman and Farmer, 1975). Utilizing the experts' subjective and intuitively derived judgments, this Delphi is a means of improving intuitive thinking (Helmer, 1968; Jantsch, 1968) and honing the group's collective wisdom (Bright, 1968). It provides assistance to the experts in sharpening their thinking while preventing (or protecting) them from exchanging opinions (Ayres, 1969; Cetron, 1969; Jantsch, 1972; Madanis, 1969).

Although traditionally used as a forecasting tool, the forecasting literature supports the alteration of the Delphi intended by this study (Linstone and Turoff, 1975; Sackman, 1975). Gewald notes that the information derived from a Delphi "is generally a much better aid to decision-making than the pure forecasting result" (Gewald, 1973:16). Increasingly, researchers are realizing that although used for forecasting, the Delphi is not just a rational forecasting technique, but is primarily a rational technique for obtaining consensual opinion and operating as a heuristic device (Bright, 1968; Cetron, 1969; Sackman, 1975).

Linstone and Turoff (1975) state that there are two kinds of Delphis. The conventional form is commonly referred to as the pencil-and-paper version, or the Delphi Exercise. This kind of Delphi uses
iterations of questionnaires which are designed and then summarized by a monitor or monitoring team. It is a combination of polling and conference procedures which places a bulk of the responsibility on the monitor (Linstone and Turoff, 1975).

The second type of Delphi is commonly referred to as a Delphi conference. It relies primarily on a computer rather than a monitoring team to compile the group results and formulate subsequent iterations according to a pre-arranged program. One of the advantages of the conventional Delphi is its flexibility; a disadvantage is in the loss of real-time communication which the conference Delphi provides (Linstone and Turoff, 1975). Because of the simplicity of its technology, the relative inexpense involved, and the additional flexibility, the conventional Delphi seemed more appropriate for an exploratory, heuristic investigation and was chosen as the mode for this study.

There are three definitive characteristics of the original Delphi method: anonymity between panel members, interaction with controlled feedback, and structured interrogation (Amara, 1975; Martino, 1972). Along with several other traditional characteristics, these features were maintained in the present Delphi design. Another of the original features maintained
in this study is the manner of formulating the first round questionnaire.

One of the most extensive analyses of the Delphi method was conducted by the U. S. Naval Supply Systems Command (NAVSUP) when devising its modified Delphi, the SEER (System for Event Evaluation Review) (Bernstein, 1969; Cetron, 1969; Leue, 1973). In Bernstein's (1969) study for NAVSUP, former Delphi panelists were surveyed. The researchers found that several participants had been uncomfortable with the original method of beginning the first round of the Delphi using the "blank piece of paper" technique (Bernstein, 1969; Cetron, 1969; Martino, 1972).

The literature shows considerable debate concerning the advantages and disadvantages of beginning a Delphi with the blank piece of paper approach. In the more contemporary Delphis, when seeking a panel's consensus for a forecast, dates and specific questions are usually formulated by the monitor before involving the panel (Linstone and Turoff, 1975; Martino, 1972). However, when exploring a field, a monitor can find it advantageous to begin with the blank sheet rather than a fixed spectrum to which the panel is asked to react (Martino, 1972). Despite the NAVSUP reservations, the additional flexibility provided by the blank page first round seemed a desirable feature
for an exploratory Delphi and was adopted by this design.

Another complaint of the Delphi panelists interviewed by the NAVSUP researchers also seemed more pertinent to a forecasting Delphi rather than an exploratory study. NAVSUP found that as the Delphis progressed, the experts on the panel felt that the focus moved outside of their areas of expertise (Bernstein, 1969; Cetron, 1969; Leue, 1973). As this inquiry was not expected to study highly technical or specialized areas within the field, there was little chance that the focus would wander outside of the experts' areas of knowledge.

Cognizant of the results of several studies on the conventional Delphi, this Delphi included modifications of the original scheme. In the original Delphis, the number of rounds varied greatly and were never established at the outset of the program. The first Delphis reportedly had at least six iterations and the panelists never knew for how long they were committing themselves when entering a panel (Bernstein, 1969; Cetron, 1969). Since that time, considerable effort has gone into refining the process and establishing the optimum number of iterations required for obtaining good information.

Martino (1972) has found that there is an
upper limit of four and a minimal number of two rounds for a Delphi. He states that "by the end of four rounds, the panel has reached as much agreement as it is ever going to reach" (Martino, 1972:27; Gewald, 1973). Martino's studies also show that "in many cases there is no advantage in going beyond two rounds" (Martino, 1972:27).

The findings of Bernstein (1969) and the other NAVSUP researchers concur with Martino's (1972) conclusions about the optimum number of iterations (Cetron, 1969). Therefore, the first modification in this Delphi's traditional design was to expect to conduct only two iterations, with provisions for a third round, should the panel not reach consensus in two. The organizational futures literature clearly indicates a strong inclination to consensus which was expected to be affirmed in the Delphi.

Unlike the earlier Delphis, in this Delphi, prospective panelists were informed of the number of possible iterations before they made their commitment to join the project. When invited to participate in the Delphi, potential panelists also received a copy of the first round questionnaire to further aid them in their decision to join. These procedures were seen as resulting in benefits other than participant comfort as they were expected to provide a stable panel
with very little attrition between rounds.

The usual Delphi problems of defining experts and expertise (Helmer, 1966; Linstone and Turoff, 1975) were lessened by having the study's goals establish the experts who were to be polled for the study. Some might believe the definition of expert used for this panel to be too broad, but there is support for using such a broad definition in a social research investigation. Turoff says that the increasing use of the Delphi accompanies a growing realization that most serious problems facing organizations and society "cut across the established compartmentalization of disciplines and organizations" (Turoff, 1971:246). As implied by Turoff, and is apparent from a review of the academic disciplines of organizational futurists, the study of organizations is not confined to any one specific academic department or type of scholar thereby making impossible such panel restrictions.

Furthermore, Turoff states that the Delphi makes its maximum contribution to studying present and future realities when it "allows individuals in separate endeavors to establish meaningful, constructive communication" (Turoff, 1971:246). Responding to those and similar observations, the panel of experts for this study was intentionally left open to members of any academic discipline, rather than restricting it
to members of any one academic department or type of employment. It was expected that the study's broad definition of expertise for panel participation would allow the Delphi to gather input from several types of organizational futures experts and enrich the learning aspect of the study.

The value of the Delphi, as the major method for this study, must be judged in light of the goals sought and in comparison to the alternatives available for achieving those goals (Amara, 1975; Cetron, 1969). The overall objective of this study is to gather for continued study the consensual opinion of what organizational futurists think organizations will look like in the future and the trends, issues, and alternative designs perceived as realistically influencing the future of organizations. This is a reasonable and appropriate task for the Delphi.

DATA-COLLECTION PROCEDURES

The data collection phase of this study occurred over a seven month period from July, 1977 to February, 1978. There were three sequential phases to the data-collection for this study: a literature search to develop lists of the organizational futures literature and of organizational futurist's names; a survey requesting peer nominations of organizational
futurists; and, the Delphi. These three phases were designed and implemented to preclude biased selection of the Delphi panel.¹

Phase I: The Literature Search

The literature search began with the Humanities and Social Science Index and the Business Periodicals Index dating from 1966-1967 through the most recent available 1977 issues. Preselected subject titles were cross-matched with a preselected group of terms.² Titles containing the appropriate terms were noted and searched. Where applicable, these articles' bibliographies, notes, references, and/or lists of suggested readings were also scanned using the lists of terms, and the names of authors of appropriately titled articles and books were noted.

The search for more titles containing the key terms continued through the bibliographies, notes, references, and/or lists of suggested reading of the second group of titles. When the lists of authors began making full circle, that is, frequently citing the original list, the search for titles through the indices was completed. It was followed by a search of the Dissertation and Theses Index, University card catalogue, and continued follow-up of the books and articles cited in the periodicals.
From these searches, lists of authors and of titles of books and/or articles were developed. Wherever possible, the names on the lists were cross-matched with addresses using various directories. This process was often hindered by incomplete citations where the authors' names were listed as a last name and first name initial similar to several other names in the professional directories. However, from the initial searches, addresses for 99 organizational futurists were developed and included in the peer nomination (see Appendix A).

Phase II: Peer Nomination

Martino states that "peer judgment is usually the best criterion for identifying an expert" for Delphi participation (Martino, 1972:53). This, therefore, was the rationale for choosing the peer nomination process to supplement and objectify the literature review's collection of organizational futurists for the Delphi panel. Mailed August 2, 1977, the explanatory letter and stamped, addressed postcard questionnaire were designed to be easy, quick, and quite simple for the nominators to complete (see Appendix B).

The cover letter briefly introduced the questionnaire as the means of developing a list of
organizational futurists. Each author was asked to note two kinds of information on the card: the nominator's name and address; and, the names of three organizational futurists who clearly came to mind as people interested in organizations of the future and had demonstrated this interest by having published on the topic. When the names submitted were illegible or could not be found in the references, the nominator was sent a letter requesting further information about the nominee in question. A stamped, addressed postcard was included to facilitate the nominator's response (see Appendix B).

Although August 15, 1977 was cited as the deadline for nominations, reminder postcards were mailed on August 16 to those who had not yet responded (see Appendix B). Because of the summer holidays, professional meetings, and academic schedules, a further follow-up mailing was sent September 15 to those who had not previously responded (see Appendix B). This reminder also included a second mail-in postcard questionnaire.

Of the 85 possible nominators, 50 responded suggesting 92 people as organizational futurists. Of the 92 nominated, 59 had not been among the original 99 nominators. Thirty-three people were on both of the lists, as nominators and nominees (see
Appendix A).

Nominators were not instructed to limit their nominations to the United States. However, because of the postal difficulties involved in conducting a survey by mail across international borders, those organizational futurists living outside of the United States were not included in the Delphi. Eight of those nominated live outside of the United States. For an analysis of the nominators according to their geographic areas and their return rate, see Figure 5 and Table 1.

**Phase III: The Delphi**

Of the 92 people nominated in the peer nomination, 17 received multiple votes and 75 people received single votes (see Appendix A). Apparently, there is little strong consensus regarding the identity of organizational futurists within that community. Were Martino's (1972) suggestion of defining experts as those who receive votes from at least two people used as the criterion for panel participation in this study, there would have been very few people participating in the Delphi. Because greater numbers than were nominated were needed on the panel, both groups of organizational futurists—those from the literature search and those from the peer nomination—were invited to join the Delphi.
Hawaii and Alaska are part of the West area; Washington, D. C. is considered part of the North.

Figure 5

Area Designation
(Map: Nystrom and Company)
**Survey Distribution**

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Questionnaires</th>
<th>Percentage of Total</th>
<th>Number Answered</th>
<th>Return Rate Percentage</th>
<th>Percent of Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. West</td>
<td>20</td>
<td>24%</td>
<td>13</td>
<td>65%</td>
<td>26%</td>
</tr>
<tr>
<td>B. Midwest</td>
<td>19</td>
<td>22%</td>
<td>11</td>
<td>58%</td>
<td>22%</td>
</tr>
<tr>
<td>C. South</td>
<td>12</td>
<td>14%</td>
<td>11</td>
<td>92%</td>
<td>22%</td>
</tr>
<tr>
<td>D. North*</td>
<td>34</td>
<td>40%</td>
<td>15</td>
<td>44%</td>
<td>30%</td>
</tr>
<tr>
<td>TOTALS</td>
<td>85**</td>
<td>100%</td>
<td>50 (59%)</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

* In two instances, questionnaires were sent to authors care/of their New York publishers. Therefore, regardless of whether or not the author actually resides in the North, that is the area into which the author was counted. In one instance, the questionnaire was sent to a publisher in Illinois, thus making that author part of the Midwest area.

** Although 99 questionnaires were originally mailed, 14 were returned for various reasons: incorrect addresses which could not be further corrected (4); the nominator's absence from the country or area (7); and, death of the nominator (3).

**Table 1**

Analysis of Peer Nomination Survey Returns According to Geographic Areas
To the 59 organizational futurists who had not been named in the original literature search but were named in the peer nomination process, an introductory letter was sent on October 3, 1977 notifying them of their nomination to the Delphi on organizations of the future (see Appendix B). On October 10, Round I was sent to the total group of 134 organizational futurists (see Appendix B). On October 17 and November 1, follow-up letters and copies of the questionnaires were sent to those who had not yet responded (see Appendix B).

Using the blank sheet technique for the first round questionnaire, the organizational futurists were requested to respond to three inquiries. First, they were asked to cite three issues and/or trends which they saw as having the greatest impact on how organizations would probably look in the year 2000. They also were asked to provide a rationale for their choices. Finally, the panelists were asked to describe how they thought organizations would most probably look in the year 2000 (see Appendix B).

Table 2 is a description of the people who did and did not respond to the Delphi invitation. Included among the respondents were those who declined the invitation, see Column A. Those who returned their answered Delphi inquiry are the positive responses
<table>
<thead>
<tr>
<th></th>
<th>A. Negative Response</th>
<th>B. Positive Response</th>
<th>C. Total Number of Responses</th>
<th>D. No Response</th>
<th>E. TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L+</td>
<td>6</td>
<td>11</td>
<td>17</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>L-</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>LP+</td>
<td>3</td>
<td>12</td>
<td>15</td>
<td>9</td>
<td>24</td>
</tr>
<tr>
<td>LP-</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>4</td>
<td>9</td>
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<tr>
<td>P</td>
<td>8</td>
<td>19</td>
<td>27</td>
<td>18</td>
<td>45</td>
</tr>
<tr>
<td>TOTALS</td>
<td>25</td>
<td>47</td>
<td>72</td>
<td>62</td>
<td>134</td>
</tr>
<tr>
<td>PERCENT TOTALS</td>
<td>19%</td>
<td>35%</td>
<td>54%</td>
<td>46%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Legend:

L = Organizational futurist named in the Literature Review.
P = Organizational futurist named in the Peer Nomination.
LP= Organizational futurist named in both inquiries.
+ = Responded to Nomination mailing.
- = Did not respond to Nomination Mailing.

Table 2

Analysis of Delphi Round I Returns According to Nomination Method
noted in Column B. The total number of respondents is noted in Column C; and, the non-respondents are noted in Column D. The organizational futurists are further categorized according to whether they entered into the survey processes with the literature review (L), through the peer nomination (P), or were cited in both processes (LP).

Fifty-four percent of the organizational futurists did respond to the Delphi invitation. Sixty-five percent of those responding joined the Delphi. Of the 134 to whom Delphis were sent, 46 percent did not respond. For the geographical analysis of Round I responses, see Table 3.

In order to devise Round II, the responses to the first two questions of Round I were grouped into 12 categories. The 10 most frequently mentioned trends and/or issues then were presented in a summarized version to the panel. The first question of Round II asked panelists to determine the three most significant and the three least significant of the 10 trends/issues and explain their six selections.

This round was primarily concerned with the trends and issues the organizational futurists saw as most significantly influencing organizations in the future. The panel was asked to note the three least significant trends/issues as a way of having the
### Survey Distribution

<table>
<thead>
<tr>
<th>AREA</th>
<th>Number of Questionnaires</th>
<th>Percentage of Total</th>
<th>Analysis of Area Returns</th>
<th>Number Answered</th>
<th>Return Rate Percentage</th>
<th>Percent of Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. West</td>
<td>35</td>
<td>26%</td>
<td></td>
<td>18</td>
<td>51%</td>
<td>25%</td>
</tr>
<tr>
<td>B. Midwest</td>
<td>24</td>
<td>18%</td>
<td></td>
<td>13</td>
<td>54%</td>
<td>18%</td>
</tr>
<tr>
<td>C. South</td>
<td>18</td>
<td>13%</td>
<td></td>
<td>11</td>
<td>61%</td>
<td>15%</td>
</tr>
<tr>
<td>D. North*</td>
<td>57</td>
<td>43%</td>
<td></td>
<td>30</td>
<td>53%</td>
<td>42%</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>134</strong></td>
<td><strong>100%</strong></td>
<td></td>
<td><strong>72 (54%)</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
</tbody>
</table>

* In two instances, questionnaires were sent to authors care/of their New York publishers. Therefore, regardless of whether or not the author resides in the North, that is the area into which the author was counted. In one instance, the questionnaire was sent to a publisher in Illinois, thus making that author part of the Midwest area.

** Although there were 158 organizational futurists, for various reasons, 24 people were excluded from possible panel participation: Of the 59 who entered the lists through peer nomination alone, eight reside outside of the United States, and correct addresses could not be found for nine others; of the 99 organizational futurists whose names came from the literature search, three are dead, and correct addresses could not be found for four others.

**Table 3**

Analysis of Delphi Round I Returns
According to Geographic Areas
panelists review for a second time their choices of the most significant trends/issues. By way of a third check on their choices, panelists were asked to include with their answers to the first question, a rationale for their choices.

The second question in Round II was rather unusual. Often overlooked in futures analyses are the unforeseen events which could influence the future of the study area. Several famed futurists develop "surprise-free" projections, yet the surprises are usually the future-formulating events. Therefore, the second question of Round II asked the organizational futurists to imagine the unimagined and suggest events which might surprisingly occur and greatly influence organizations before 2000.

Because Round II entered into the winter holidays, four mailings were sent (see Appendix B). The initial mailing was sent out on November 18, 1977. The follow-up letters, including additional copies of the second round questionnaire, were sent to those who had not yet responded on November 29 and December 9, 1977, and January 12, 1978. For the geographical analysis of Round II responses, see Table 4. Panelists were notified on January 30, 1978 that further rounds would not be necessary (see Appendix B).

At the conclusion of the study, the participants
SURVEY DISTRIBUTION

<table>
<thead>
<tr>
<th>AREA</th>
<th>NUMBER OF QUESTIONNAIRES</th>
<th>PERCENTAGE OF TOTAL</th>
<th>ANALYSIS OF AREA RETURNS</th>
<th>NUMBER ANSWERED</th>
<th>RETURN RATE PERCENTAGE</th>
<th>PERCENT OF RETURN</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. West</td>
<td>13</td>
<td>28%</td>
<td></td>
<td>12</td>
<td>92%</td>
<td>27%</td>
</tr>
<tr>
<td>B. Midwest</td>
<td>11</td>
<td>23%</td>
<td></td>
<td>11</td>
<td>100%</td>
<td>24%</td>
</tr>
<tr>
<td>C. South</td>
<td>9</td>
<td>19%</td>
<td></td>
<td>9</td>
<td>100%</td>
<td>20%</td>
</tr>
<tr>
<td>D. North</td>
<td>14</td>
<td>30%</td>
<td></td>
<td>13</td>
<td>93%</td>
<td>29%</td>
</tr>
<tr>
<td>TOTALS</td>
<td>47</td>
<td>100%</td>
<td></td>
<td>45 (96%)</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4

Analysis of Delphi Round II Returns According to Geographic Areas
received a copy of the data as compensation for their involvement in the Delphi. As the objective of this study is to further research and the information available on organizations, of the future, the names and addresses of panelists were included in the data sent to each participant. Responses, however, were not attributed to the individual panelists by name in the transcripts the panel received. Thus, the project was opened up to further discussion without placing any of the panelists in the position of having to further rationalize statements made during the Delphi (see Appendix C).

CONCLUSION

The methodologies employed in this study are relatively simple to develop and implement and are available to anyone wishing to devise an exploratory futures study. Chosen for the wide variety of information which they would furnish, the three methods complemented and supplemented each other to provide excellent and wide-range information at relatively little cost to the monitor and panelists. These and other futures methods are particularly ept in developing data appropriate to the first component of a futures study, as well as to the forecasting and normative components so necessary in developing
future-oriented policies.

NOTES

1 The peer nomination and each round of the Delphi were pre-tested before actual use on the panel. Pre-testing was conducted using people who were professionally involved in studying and working with organizations, much as are the actual organizational futurists.

2 Within the indices, the following subjects or topics were searched:

Forecast Futures Organizational
Forecasting Organization Change, Environment
Forecasts Organizational Organizations
Future Organizational Behavior Prediction

Within these subjects or topics, titles were sought which were consistent with the study topic—organizations of the future and the trends and issues which may affect them. Which articles would be so oriented was predetermined by looking for titles which contained a combination of key terms or concepts.

For example, when looking under the subjects of "Forecasting" or "Future" or "Prediction," "Organizations" became a key term. Similarly, when reviewing the titles under the topic "Organization" or "Organizations," the term "organization" was not the key, but "future" or "visions" became important.

The ideal titles were those which contained a combination of two or more of the key terms. Other than the topic or subject phrase, the basic terms and concepts sought in the titles were as follows:

alternatives
exploration/exploring
the future (or any variation on that—1970's, 1980's, 2000)
new era/new form/new concept/new frontiers/new patterns/
new processes/redesigning
Post-Industrial, Post-Bureaucracy, Trans-Industrial Age
tomorrow
utopia
visions

These terms and combinations had to have been obviously referring to organizations of the future and trends and issues relevant to that theme.

3 The authors' addresses were sought in the most
recent available editions of the following references:
American Men and Women of Science: Physical and
   Biological Sciences;
American Men and Women of Science: Social and
   Behavioral Sciences;
Biographical Dictionaries Master Index;
Contemporary Authors;
Directory of Members--American Sociological Association;
National Faculty Directory;
Who's Who in America;
Who's Who in Consulting, Consultants and Consulting
   Organizations Directory; and,
Who's Who in Government.
Occasionally, reference was made to previous volumes
of the resource. In such instances, the older volume
was used.

4 This is a corrected figure. For further
information, see Table 1. Subsequent changes in
numbers are explained in accompanying tables or
figures.

5 It was arbitrarily decided that the panelists
in Round II would choose from the 10 most frequently
mentioned categories when selecting the three "most
significant" and three "least significant" issues/
trends.
Chapter 4

DELPHI RESULTS

Organizational futurists participating in this study's exploratory Delphi were asked to supply three kinds of information. First, they were asked to suggest and then examine the issues and trends they see as significantly influencing organizational forms during the next 22 years. Second, they were asked to describe the organizational form they anticipate as dominant in the year 2000. Finally, panelists were asked to suggest occurrences which seem unexpected and could alter their expectations for organizations in 2000. Analyzed in this chapter are the organizational futurists' responses to these three requests.

ISSUES, TRENDS, AND RATIONALE

Inquiry into organizational trends and issues seen as affecting organizations of the future was pursued to accomplish one of the study's objectives: the development of a list of issues and trends organizational futurists see as influencing the
appearance of organizations in 22 years. In the first round, the Delphi panelists suggested issues and trends which were placed into 12 categories (see Table 5). The 10 most frequently mentioned categories from Round I were returned to the panel in Round II for further scrutiny. From the 10 categories, panel members were asked to select and further explain their choices of 6 issues/trends categories: three seen as "most significant" and three seen as "least significant" in the future of organizations.

Delphi: Round I

Using an open-ended questionnaire, Delphi panelists in the first round were asked to suggest three trends and/or issues they expect will have the greatest impact on the most probable appearance of organizations in 2000. They were also asked to supply a rationale for these selections. However, rather than providing a rationale for their selections, panelists most often cited the expected results of the issue/trend. This innovation by the participants radically changed the expectations of the monitor and provided greater and different insights into the future than were expected.

Technology. The issue/trend most frequently noted by organizational futurists is the increasing
<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>25</td>
</tr>
<tr>
<td>Power Equalization</td>
<td>16</td>
</tr>
<tr>
<td>Government Regulation and Surveillance</td>
<td>15</td>
</tr>
<tr>
<td>Matrix Form</td>
<td>10</td>
</tr>
<tr>
<td>Organization Populations</td>
<td>10</td>
</tr>
<tr>
<td>Educational and Organization Development Activities</td>
<td>9</td>
</tr>
<tr>
<td>Scarcity</td>
<td>8</td>
</tr>
<tr>
<td>Bureaucratic Dominance</td>
<td>8</td>
</tr>
<tr>
<td>Blurring of Organizational Distinctions</td>
<td>8</td>
</tr>
<tr>
<td>Centralization and Decentralization</td>
<td>7</td>
</tr>
<tr>
<td>Alternative Organizational Patterns</td>
<td>6</td>
</tr>
<tr>
<td>Normative Changes</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><strong>127</strong>*</td>
</tr>
</tbody>
</table>

* 47 panelists participated in Round I, however, not all suggested three trends/issues. Responses are not weighted or ranked.

Table 5

Analysis of Delphi Round I Responses
12 Most Frequently Cited Categories
of Issues and Trends
influence of technology on organizations. Twenty-five times this item was noted by panelists. The rationale cited for selecting technology as an important organizational influence are the omnipresence of technology in current organizations and the increasing frequency with which it is mentioned in organizational journals and studies.

The anticipated impact of technology on organizations varies widely. One respondent expects technology to greatly influence the communication field, yet to have little or no influence on traditional fields, such as steel production. Others voice a concern about the increasing information flow resulting from the anticipated technological growth and rapid information dispersal. Anxiety seems to focus around the abilities of people and organizations to stay abreast of and adapt to the changes produced by an information explosion.

Directly or through changes in information processing, technological changes are expected to produce changes in organizational structure. One of these changes may include a leap into a post-electronic mode which blurs the distinctions between the organic and the inorganic. This may also result in an increased demand for highly trained personnel and a decreased demand for blue-collar employees,
a change from a labor intensive mode to a capital intensive mode of operation.

Several other changes are expected to result from increasing technology, but with no definite outcome. Among these possibilities, the increase in technology is seen as "shrinking" the world and increasing the number of multi-national corporations. Another panelist suggests that technology will allow organizations to operate through small components. A further result of the technological explosion could be the expansion of organizational domains to include broader considerations. This could occur because of an anticipated increase in governmental evaluation of organization performance and accountability or because of the expected blurring of the public and private sectors.

Power equalization. Power equalization is suggested as an important trend in 16 responses from Round I. "Power equalization" refers to the organizational trends toward greater openness, increasing demands for employee education and participation, and increasing concern and democratization between the manager and the managed. These trends are seen as altering organizations in several ways before the year 2000.
One result could be to replace the traditional bureaucratic structure with a more consultative, cooperative effort system which will make organizations appear more like communities than like machines. Panelists anticipate that organizations will be using increasing amounts of "flexi-time" making work times and non-work times meet organization members' individual needs. The attention to individual needs and Quality of Work (QOW) are seen as necessary for attracting and holding good employees in a future time when everyone will not need to work. Organizational futurists also suggest that feelings of lessening responsibility will reverse through increased participation in organizational decision-making and developing a sense of ownership among organization members.

**Governmental regulation and surveillance.** In 15 responses, panelists in Round I voice an expectation that governmental regulation and surveillance will have a major impact on organizations during the next 22 years. The rationale for this selection is based on the increasing role of the public and government in organization decision-making. Such public involvement seems to reflect increasing public demands that organizations demonstrate social
responsibility and humanistic values rather than self-interest. This trend is seen as indicative of a forthcoming "riskless" future society.

Some panelists perceive the closer relationship between business and government organizations resulting from the increasing interdependence among societal units and the need for government to assert regulatory and coordinating functions. One panelist believes that government will operate to develop segmented, polycentric organizations and technocratic networks to cope with the conflict between resource developers and mobilized citizens. Others see governmental regulation and surveillance as increasing organization costs, bureaucracy, and paperwork without providing comparable benefits. Governmental involvement is also expected to result in organizations hiring specialists whose sole function is to report to various agencies and act as liaison with the government. The legislative trend is seen as increasing government influence and serving as an effective technique for accelerating change, at times irrespective of management perceptions.

Matrix form. The 11 responses in this category cite three reasons for expecting increases in the use of the matrix form in organizations. First, a growing
need for innovative, adaptive, and flexible temporary systems and units is expected to be superimposed over or into traditional hierarchies. This alternative approach to organizing resources and emphasizing new roles is seen as superior to the dominant organizational form, the hierarchy, in handling increased organizational and environmental complexity, planned change, and allowing organizations to assume a proactive rather than reactive strategy.

Second, increased use of the matrix may occur because of the development of greater diversity among organizational designs which could evolve to cope with the era of the professional organization. In this future era, there could be a lessening reliance on the manufacturing sector and greater reliance on service production. This move to a service society could accelerate the pace toward fluid organizations; one of which may be the division of larger organizations into smaller units. Because of the temporary character of the smaller units, they can rise and fall according to public whim without loss to the organization which would absorb and redeploy the personnel and information from the disbanded units. Finally, the matrix is portrayed as a method for increasing organizational responsibility among organization members in non-defense industries.
Organization populations. In 10 instances, panelists remark on shifts in organization memberships and changes in the members themselves in the future. These changes include more older members, a changing proportion of older and younger members, and a greater proportion of women and racial minorities which could produce a more pluralistic and multicultural organization. A predicted population explosion with political repercussions leading to the destruction of Big Business seems supported by forecasts of increasing separatist and localist movements, and of a rural migration which could increase the number of small, geographically dispersed organizations.

Several panelists voiced a belief that the way in which disadvantaged people are treated will also change. For example, one panelist perceives a waning of the emphasis on organization practices oriented toward making-up for past injustices as minority groups become increasingly intolerant of poor performance and majority groups become increasingly defiant and militant. Another expects there to be an increasing difference between "haves" and "have nots." Another source of anxiety, noted by two participants, is an expected three-way clash of trends, between a slower growth environment, continued pressure
from those traditionally excluded from positions of power, and increasing use of the merit system in organizations.

Educational and organization development (O-D) activities. Some of the respondents reporting this trend hold the influx of young people responsible for the increasing use of organization development (O-D) and educational activities in the future organizations. The participative value system and higher educational levels are also seen as reasons for organization members' demands for more interesting jobs and increased opportunities for personal growth, vitality, and development. The changing and turbulent environment of the future is seen as possibly requiring constant renewal and reeducated workers, personal growth, and continually revised forms and patterns of education, training, and O-D. Continued development of social interventions may advance to the point where social institutions can be effectively designed.

Scarcity. The eight responses citing "scarcity" principally refer to the scarcity of energy resources. Several perceive the Western paradigm's assumption of abundance as handicapping the traditional model, preventing it from appropriately addressing the problem, and resulting in the collapse of the
system and a move to "Eastern" and "Southern" decision-making styles. Similarly, scarcity is seen as possibly resulting from the ever-increasing costs of organizational control which may also result in collapse of the control system.

**Bureaucratic dominance.** The continued dominance of the bureaucratic system is noted in eight responses. Declining use of committee decision-making and increasing need for individual responsibility are seen as reflecting a growing disenchantedment with self-motivational models and a growing need for superordinate national goals. The other principal reason for the continued dominance of bureaucracy is attributed to the strength of the existing power arrangement which will continue to maintain the established order.

**Blurring of organizational distinctions.** In eight instances, panelists voice expectation of a continued blurring of the distinctions between various kinds of organizations. Government and non-government organizations are seen as combining in intricate and novel fashions and increasing the similarities between organizations as interdependence and complexity grow. The traditional model is perceived as proving increasingly inadequate as the interface between organizations
continues. Further tension may develop, if greater numbers of coalitions between multinationals incur difficulty with other organizations and the growing geocentric processes, as expected.

**Centralization and decentralization.** Seven responses state that the increasing size of organizations could result in greater decentralization of many organizational functions and greater centralization of other functions. Although including more community and organizational input, the decision-making process is expected to remain quite centralized. Several panelists are looking to technological developments to allow more real participative decision-making.

**Alternative organizational patterns.** There is considerable diversity among the six responses suggesting alternative organizational patterns. One response suggests that small businesses will be as they are now—experiencing a high rate of failure. Another foresees federal assistance for small businesses and suggests that they will emerge as a popular career in the future.

A third panelist expresses an interest in alternative organizations, such as cooperatives and communes, which are seen as popularly combining with small businesses and alternative lifestyles in the
future. Blending transcendental and holistic concepts and experiences into holistic organizational models is suggested as the basis for other future organizations. Also expected are intense international economic and political competition and greater differentiation in the marketplace with briefer product and service lifespans.

**Normative changes.** Five responses cite an expectation of normative changes which will influence organizations in the future. The normative changes include the decline of the work ethic, lessening interest in work, loss of motivation, decreased loyalty and interest in the firm, increased turnover, and increased disarray in the value system of industrial society. The lessened interest in work is expected to result in shorter work times, greater employment fringe benefits, increased educational activities and job mobility, more consultative supervision, and the subdivision of tasks.

According to one panelist, the disarray in the normative order illustrates the mismatch between the Industrial model and the Post-Industrial service economy. One response describes a trend away from a sense of community toward a more individual "do your own thing" attitude. The role of dissent in future
organizations is seen as also gaining new respectability.

**Delphi: Round II**

Panelists in the second round were provided a list of the 10 categories from Round I and asked to select the three trends/issues they perceived to be the "most significant" and the three they think will be the "least significant" during the next 22 years. Although not primary to meeting the goals of this research, panelists were asked to select and provide explanations for those issues/trends they saw as "least significant" as a means of double-checking their "most significant" selections. For both the "most significant" and the "least significant" choices, panelists were asked to explain the reason for the designation. Again, as in Round I, participants most frequently noted the expected impact of the trend/issue, thus more fully augmenting the data collected in Round I. Responses were neither weighted nor ranked (see Table 6).

**Blurring of distinctions between types of organizations.** Among the 14 participants endorsing this issue as most significant, many state that such a blurring of the distinctions between organization types is inevitable. Panelists see the commonalities
<table>
<thead>
<tr>
<th>Voting Responses</th>
<th>Most Significant</th>
<th>Least Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Blurring of distinctions between types of organizations</td>
<td>13 1/2 *</td>
<td>16</td>
</tr>
<tr>
<td>B. Greater centralization of some functions and greater decentralization of other organization functions</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>C. Increase in educational and O-D activities within organizations</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>D. Increasing governmental regulation and surveillance of organizations</td>
<td>29</td>
<td>5</td>
</tr>
<tr>
<td>E. Increasing use of the matrix</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>F. Organizations will be forced to deal with scarcity</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>G. Organizations will continue to be dominated by bureaucracy</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>H. Populations in organizations will change</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>I. Power equalization among organization members</td>
<td>11 1/2 *</td>
<td>9</td>
</tr>
<tr>
<td>J. Technology will alter organizations appreciably</td>
<td>23</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Number of Votes**: 131*  131*

* One panelist split one "most significant" vote between two categories.
* There were 45 Round II respondents; two did not totally complete the inquiry.

Table 6

Analysis of Delphi Round II Responses
"Most" and "Least Significant" Choices of 10 Issues/Trends Categories
between organizations and the similarities of their goals as minimizing present distinctions to where all things will be found to be integrated. Also seen as encouraging this blurring trend is increasing openness which is thought to make organizations more susceptible to having their characteristics imitated. Complexity is also portrayed as causing the blurring in which organizations will interrelate and intertwine in very complicated and subtle ways. Management By Objectives (MBO) is believed to be causing a blurring between profit and non-profit organizations as both will now have discernable objectives.

Because of this blurring of distinctions, organizations are expected to alter their objectives. Future managers are expected to become more public-oriented and organizations will work for society-oriented objectives, increasingly consider multiple constituencies, and be cognizant of governmental requirements and resource utilization. Large businesses are seen as turning over specific functions to contract agencies and very large organizations, such as multinational corporations, will blur across international boundaries. One participant concludes that this blurring trend has always been in effect, but is now being recognized more clearly.

Those 16 voting for this category as one of
the least significant trends frequently cite the time-frame as the reason for their vote. One panelist states that 20 years is too brief of a period for such a drastic change of traditional industrial and inter-organizational patterns. This panelist also suggests that increases in interdependence and overlapping boundaries may be two very different trends. Competition and legal restraints are also seen as nullifying or retarding the trend.

One participant reports that the blurring has already occurred while three others state that the trend is not important. One of those believing the trend to be insignificant describes it as a continuing, but not too impactful process, except over the centuries. Another sees it as significant, but of limited impact. The third states that in the future, maintenance of particular forms will no longer be so important as organizational form will be seen in terms of instrumental rather than final value.

Greater centralization of some functions and greater decentralization of other organizational functions. Of the eight panelists describing this category as very significant, most portray it as having far-reaching effects and as continuing to be a major managerial device. This trend is expected to
continue to be felt, materially influence people's job life, and have a clear impact on stability, communications channels, and decision power distribution. Although it may appear that there is to be greater participation in the future, complex issues may make real participation unlikely. This category is seen as illustrating the ability of people rather than organizations to derive power yet is described as an essential form for multinational corporations of the future as they maintain their unique balance of centralization and decentralization.

Many of the 16 panelists who state that this trend is among the least significant do so because they see it as already having taken place and not likely to cause significant changes in the future. Technology is expected to increasingly impact on future organizations making distinctions between centralization and decentralization less significant and operating to bring satellites closer to headquarters and vice versa. Other panelists describe the problems of size as being different from the category's premise as stated on the questionnaire.

Organizational size is seen differently by these panelists. According to one participant, organizational size will be decreasing, not increasing, for large organizations. One panelist states that the
essential lessons of size have been encountered and coped with relatively well. Two other panelists seem to complement each other's beliefs as the first predicts the diffusion of power through continuing decentralization and the other predicts more individuals participating in decision-making because of higher educational and aspiration levels. Because this trend seems to speak of monolithic organizational growth, another participant sees contingency approaches to management diffusing much of the trend's potential impact.

Increase in educational and O-D activities within organizations. Six panelists perceive the predicted increase in educational and organization development (O-D) activities within organizations as most significant to future organizations. Educational and O-D activities are expected to be a firmly established and dynamic aspect of planning and evaluating goals, priorities, and programs. They are seen as a factor in the greater attention paid in the future to people and their aspirations, roles, and tasks. Although seen as changing greatly from their present forms, O-D and organizational education are expected to have an increasingly significant impact on organizations. A final participant perceives O-D to be
shapeless, but expects education to change behavior and grow substantially in the future.

Seventeen panelists believe this category to be one of the least significant trends. This trend is depicted as a current fad which does not promise much change. If there are changes, the impact is unclear or expected to be negligible. One panelist states that O-D is increasingly recognized as just another form of manipulation to have employees believe that their personal objectives coincide with organizational objectives. This panelist sees O-D as well past its high-watermark. Another panelist states that although 99 percent have not and will never use these techniques, those who do may increase their technical training but probably while reducing other forms because of the efficiency and scarcity demands.

Educational and O-D activities are described as the "first lost" under cost/profit pressures. Expecting a tremendous profit squeeze over the next 20 years, there seems to be no reason, in the view of some panelists, to expect the predicted increase in education and O-D activities. Production and profit are seen as more important than educational and O-D activities in a future that emphasizes objectives and where work will be more results-oriented than activities-oriented.
Future organization members are expected to be subjected to several forces from outside of the organization, including great educational impact. These will require better quality continuing education programs, not more of them, according to one panelist. The future is portrayed as a time when there will be less interest in dedication and commitment to the organization.

Increasing governmental regulation and surveillance of organizations. A couple of the 29 panelists who see this category as most significant state that regulation, surveillance, and monitoring are the nature of government. One draws a parallel between the past economic era's rising wealth and the rising egalitarianism which makes a monitoring government necessary. The rise of governmental intervention is attributed to its increasing public interest activities at a time when public interest groups are becoming power groups. The failure of self-regulation is also seen as causing increased governmental influence which is expected to "shrink" decision-making autonomy and make the economy increasingly subject to government management. This increase in government action is seen as producing no real benefits for the public but resulting in industry
becoming the reluctant junior partner in an evolving socio-politico-industrial complex.

Regulation is expected to grow at an increasing rate, affecting every aspect of organizational operations, changing the basic form of the economy, creating additional costs, and steadily reducing freedom of action and choice. Others characterize it as a major change factor touching all phases of organization activity with promise of increasing dominance. Another relates it to the blurring of organizational distinctions which may allow for the development of new organizations to help with the problem.

Although one panelist foresees government control significantly decreasing, most panelists who voted for this item seem to describe the trend as overwhelming and too strong to reverse with new local, state, and federal bureaucracies proliferating. The United States is described as being on the point of socialism, and facing increasing shortages and economic problems. Greater regulation is seen as the government's initial reaction to scarcity.

The three who describe this trend as least significant apparently do so for three reasons. First, one panelist predicts that the trend will not
change things too appreciable. Another states that since Watergate, the trend already has been reversed. And, third, it is suggested that the ideological objections to governmental or managerial authority will be reduced, thus lessening the significance and impact of the trend. In the future, government is seen as being accepted as a partner to the producer and the customer in collaborative policymaking and planning.

Increasing use of the matrix. Most of the seven panelists describing the matrix as most significant see it as optimum for specific kinds of organizations and situations, such as dealing with size, volume, and complexity when organizational relationships require a results-oriented matrix style. Described as a quagmire that is in conflict with conventional bureaucratic logic and power, the matrix is still needed. Such alternatives to hierarchial arrangements are seen as ideally suited to dynamic environments, professional personnel, and the needs of Galbraith's "techno structure." Such a form is described as corresponding to the need for change in the organization and for the freedom to reassign employees to new job assignments.

Primarily because of the resilience of the
bureaucratic form, 12 panelists describe the matrix category as among the least significant trends affecting organizations during the next 22 years. One panelist simply states that use of the matrix will not increase and another calls its increased use an unrealistic projection. Agreeing, other panelists state that the matrix is inappropriate for the routine functions which will be the major duty of organizations in 2000.

The bureaucratic form is expected to dominate 2000, but the matrix is seen as being successfully employed in research and development components of the prevailing bureaucracies. Continued or increased scarcity is expected to support the prevalence of the older, authoritarian model. However, one participant predicts that the matrix will be made obsolete by free-form multiple-node communication systems.

Organizations will be forced to deal with scarcity. Receiving 24 votes as a most significant trend/issue and 11 votes as a least significant trend/issue, this category has the greatest diversity of responses of any of the categories. Among those who described it as a most significant trend, some apparently assume that scarcity automatically refers to energy scarcity. However, others refer to other
natural resources reaching their limits and the
initiation of new conservation methods and new
procedures for utilizing new materials. Scarcity is
also seen as resulting from an unchecked population
and from a scarcity of trained good minds without
which the answers for other problems are said to remain
unsolved.

Several respondents see scarcity dwarfing all
other problems or crises. One panelist expects that
as affluence wanes, the force of the scarcity threat
will be comparable to the shaping force of the Great
Depression of the 1930's. Although scarcity is seen
as causing greater pressures on managers to centralize,
the slower growth economy predicted for the future may
result in greater emphasis on effectively utilizing
human resources. Management of demand is also described
as a real challenge in the future when scarcity is
expected to threaten the basic assumptions of business
planning. Other possible ramifications of scarcity
could include the separation of work from income and
the creation of an overall new reality in the future.

While scarcity may not be a significant trend
in itself, as organizations have always had to deal
with it, the constant discussion of the trend is seen
as making the topic significant. Confident that new
trend and/or substitutes will come from the current
feelings of scarcity, it is noted that historically, major technological and subsequent cultural changes follow scarcity and this is expected to continue. One panelist sees awareness of the threat to human survival of unlimited growth and exploitative practices leading to a collaborative alliance across national, manager-worker-consumer, and ethnic and racial boundaries.

Those 11 panelists who marked scarcity as one of their three least significant choices, usually based their opinion on scarcity not being a new element in the environment, but being a reality to which organizations have always adapted. They state that scarcity will not appreciably affect what organizations will look like as increasing efficiency and technology are seen as accommodating any necessary changes. The market is also expected to solve the scarcity problem through increased prices which will produce new supplies, new competing alternatives, or reduce demand. The existence of the resources crunch is seen by some as clear, but what it means for organizational form and style they say is still unclear.

Organizations will continue to be dominated by bureaucracy. Five panelists describe the continued
dominance of bureaucracy as a significant trend in the future of organizations. Three of them see bureaucracy as requisite for certain organizational function, such as routine activities, dealing with large size, and dealing with the increasing need for decision control and profit control. The matrix form is depicted as useful only where steady state efficiency can justifiably be traded for flexibility. Otherwise, bureaucracy is expected to persist because government is not going to "give up" and politicians are not going to go against the system. Agreeing that the bureaucratic system will remain dominant, one participant, however, predicts that it will be in decay.

Twenty-eight panelists perceive continued dominance of organizations by bureaucracy to be among the least significant for a variety of reasons. One participant simply does not agree that the statement is accurate. Two ask, "What other organizing forms are there?" and "True, but what else is new?" Other panelists state that this trend is not significant because it is the continuation of a theme which reflects the status quo and therefore does not mean change.

Power is described as always having to be distributed and thus making continued use of this
form insignificant. The bureaucratic form is said to endure because it works in many applications, can be flexed into new shapes when necessary, and will continue to be used where efficiency is needed. But again, this is not seen as being particularly important.

Several other panelists state that the inflexibility and unresponsiveness of most bureaucracies will lead to public demands for change. Bureaucracy is described as the dinosaur of the twentieth century, as "losing out," and as at its peak and heading for decline because it does not provide for human productivity and satisfaction. Bureaucracies are further described as inefficient, providing few of the required adaptive mechanisms, and too costly because of the expenses incurred paying for accompanying social benefits.

This category's premise is said to assume the continuing separation of science and humanism; yet the real trend to the future is said to be toward an integration requiring an organizational design other than bureaucracy which is described as having only been associated with modern science. Major modifications have already taken place in traditional bureaucratic form and these changes are
expected to continue and may lead to more adaptive-innovative organizations and greater organizational flexibility, perhaps through matrix type structures. One panelist describes the future as a time in which restraints will not be permitted and greater freedom of action will be needed in organizations; and as a time when bureaucracy will become a less powerful and influential form than segmented polycentric networks and task force organizations.

**Populations in organizations will change.**

Four panelists anticipate changes in organization populations to be sufficient to significantly influence future organizations. Although shifts in populations—women, blacks, hispanics, and others—may be less important than shifts in the population arising from basic cultural shifts originating in social institutions—such as the family, education, and recreation—the interjection of different value systems and lifestyles could lead to organizational change. Erosion is anticipated for most selection and promotion powers thus affecting productivity, motivation, leadership, and communication practices.

Fourteen panelists state that changes in organization populations will be among the least significant of the 10 trend/issues named. One
perceives no evidence of changes in organization populations while another foresees the trend reversing thereby bringing less mobility. However, others say that although this may be a major trend, the changes occurring will have little or no impact on organizations as a renewed quest for efficiency assumes predominance and, as the opportunities open-up to them, minorities adopt the organization's values and customs. Populations are expected to stabilize within 10 years and be "quite ordinary" by 2000. The minority issue is seen as not being important in 2000 and as a problem on its way to solution.

Power equalization among organization members. Spoken of in unusually superlative terms by its 12 supporters, the trend toward power equalization among organization members is described as an inevitable, obvious, long-term, and important trend that has been fundamental for decades and which is expected to continue and perhaps accelerate. It is seen as having great potential which, if realized, will increase the quality of work, human growth, and participation, and modify most bases of social interaction. Continuing democratization of organizations and growing proportions and promotions of women and racial minority members are described as operating to reduce future
organizations' external bargaining power while concurrently increasing the personal power of more individuals. Such organizations are characterized as having reduced internal cohesion and increased humanism.

Acceptance of participative modes of decision-making is seen as inescapable and leading to information sharing as a basis of sound decisions both within and across organizational lines. Predictions of government representatives on Boards of major industrial firms have come from extrapolations of Kodak, General Motors, European experiences with co-determinism, and government intervention activities for consumer protection. However, conflict is anticipated since power equalization is seen as in opposition to another trend, scarcity.

The nine panelists who see power equalization among organization members as a least significant trend do so primarily because they do not believe it is going anywhere, or because they see it as a fad which has run its course, or because they feel it is quite limited in its effects. A general swing to conservatism is expected to be accompanied by a leadership elite assuming responsibility. The explanation for this move is that there is not enough time at higher levels for the time-consuming
multiple meetings required by democratic decision-making and that power equalization is simply unrealistic wishful thinking. Others say that information and education are not sufficiently widespread for participation in significant decision-making where increased complexity of organizational processes and technologies make participation of questionable value except among those having appropriate expertise. Others see power equalization among organization members insignificant because of the ease with which general experiences in many professional industries may be transferred to new settings and the apparent ability of people rather than organizations to "derive power."

Technology will alter organizations appreciably. A principal concern among the 23 Round II panelists who see technology as significant is the impact of technology on organizational operations and structure. Technology is seen as offering new capabilities and opening up creative new organization design possibilities which will displace old and demand new support systems. At this point, organizations are seen as only scratching the surface of technology and the computer which could even be used to create integrative types of executive branch centers thus allowing
all organizations to compete with multinational corporations.

Not only is technology described as a prime determinant of the birth and death of organizations and their functions, but it is seen as radically altering most internal procedures and the nature of processes and interactions at all organizational interfaces. As technological innovation occurs, it will be decisive in determining the precise nature of organizations and their degree of responsiveness to external and internal force requirements. With the environment, technology is seen as remaining a key factor to organizational designs and managerial practices. Eventually, one panelist expects a total revolution to occur allowing made-to-order products to be produced on an assembly-line.

Altered patterns of future communication are seen as also resulting in altered structures and policies. One panelist describes society as computerized and expects it to be further "machinized" by rapid information retrieval and identification devices. At one level, technology is expected to assist in handling the information glut, but there are more sophisticated possibilities, such as the education of managers and technicians which is seen as being increasingly demanding with a greater
emphasis to be placed on quality continuing education.

Technology is also expected to provide the multidisciplinary information essential in developing the future socio-political-industrial complex of the new Society. On the other hand, one panelist notes that future effort will be to simplify, not convolute the processes, thereby reducing the need for technocrats and reallowing general labor. The lone expectation stated among the three panelists who see this category as insignificant is that forthcoming limits to resources will force organizations into more "primitive" forms of technology where there will be greater simplicity rather than complexity.

Comparison of Rounds I and II Issues/Trends Responses

Only four of the 10 categories from the first round received more "most significant" votes than "least significant" votes in the second round. Two of the three categories most frequently mentioned in the first round--technology and government regulation--were also seen as most significant in Round II. The other most frequently mentioned category of Round I--power equalization--dropped by a substantial margin to fourth place in Round II. (See Table 7.)

In both rounds, technology is seen as an important trend in the future of organizations. Being
<table>
<thead>
<tr>
<th>Number of Responses</th>
<th>Round I: Order of 10 Categories of Issues/Trends</th>
<th>Round II: Order of 10 Categories of Issues/Trends*</th>
<th>Number of Responses Most Significant/Significant</th>
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</thead>
<tbody>
<tr>
<td>25</td>
<td>Technology</td>
<td>D. Government Regulation and Surveillance 29</td>
<td>5</td>
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<tr>
<td>16</td>
<td>Power Equalization</td>
<td>J. Technology</td>
<td>23</td>
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<tr>
<td>15</td>
<td>Government Regulation and Surveillance</td>
<td>F. Scarcity</td>
<td>24</td>
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<td>10</td>
<td>Matrix Form</td>
<td>I. Power Equalization</td>
<td>11½</td>
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<td>10</td>
<td>Organization Populations</td>
<td>A. Blurring of Organizational Distinctions 13½</td>
<td>16</td>
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<td>9</td>
<td>Educational and O-D Activities</td>
<td>E. Matrix Form</td>
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<td>8</td>
<td>Scarcity</td>
<td>B. Centralization and Decentralization</td>
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<td>7</td>
<td>Centralization and Decentralization</td>
<td>G. Bureaucracy</td>
<td>5</td>
</tr>
</tbody>
</table>

Ordering of Round II categories is based on their overall number of "most" and "least" significant votes. That is, how they are ordered after subtracting the number of least significant votes from the number of most significant votes.

* 47 Organizational futurists participated in Round I. However, not all of them totally completed their questionnaires by naming 3 issues/trends they see as influencing organizations in the future.

+ 45 Organizational futurists participated in Round II. Two panelists did not totally complete their questionnaires. Another panelist divided a "most significant" vote between two categories.

Table 7

Comparison of Delphi Rounds I and II Responses
Ordering of 10 Categories of Issues and Trends
noted 25 times among first round Delphi respondents, it is by far the most frequently mentioned trend of the round. In the second round, the trend moved to third place receiving 23 votes as most significant and three as least significant.

Similar place changes occurred for another category, "power equalization," which was the second most frequently noted category in Round I and dropped to fourth place in Round II. The difference in most significant votes for the top three trends in Round II is not appreciable, but the category seen as fourth most significant received less than half as many most significant votes as any of the other trends expected to significantly impact upon the future of organizations. In the first round, 16 responses formed the category whereas in Round II "power equalization" received 11½ most and nine least significant endorsements.

Moving in the opposite direction was the "government regulation and surveillance" category which moved from third place in the first round to first place in the second round. Mentioned 15 times in Round I, this trend was seen as most significant by 29 panelists and as least significant by five others. This rise in response notation is similar to that of the "scarcity" category which moved from
seventh place to second place between rounds. Eight responses comprised the scarcity category after Round I, yet it received 24 most significant votes and 11 least significant votes from the same panel in Round II.

Changes in ordering such as these are expected when utilizing the blank-sheet technique to begin a Delphi (Linstone and Turoff, 1975). Often in such first rounds, panelists note the issues or trends with which they are currently dealing. Upon receiving input from the other panelists, they frequently alter their opinions in light of the second round information. As a consensual profile is not required for the issues and trends, the second round was conducted to further explore, allow panelists to refine their thinking, and gather more information about the 10 most frequently noted categories from the first round. Consensus on the three trends seen as most significantly influencing organizations in the future was an unexpected benefit of the second round.

ORGANIZATIONS IN 2000

The third question in Round I asked that panelists describe what they think organizations will probably look like in 22 years. Panelists responded in a clearly bimodal manner. Forty-two of the 47 panelists answered this question: 12 foresee little
or no change in organizations of the future; 30 expect organizations to undergo considerable adaptive changes. Among the "adaptive" proposals, there are several subsets describing various tactics for organizations adapting to the envisioned future (see Table 8).

**Little or No Change**

Most of the 12 panelists supporting this position see human behavior changing very slowly and see organizations as resistant to change. Two panelists state that there is not much difference between organizations of 1955 and 1977. Several panelists believe that organizations in 2000 will be as they are today, except for a few changes.

Some of the changes anticipated include increased use of production and market managers, increased tying of research and development organizations to marketing organizations, increased powers shifting to marketing positions, decentralization of computer services, and continued dominance of the pyramid—but with bureaucracy and control resulting in less responsiveness to the market. Still seeing organizations as fundamentally the same in 2000, some authors suggest other changes occurring during the next 22 years, such as increased centralization, increased use of project teams, increased responsive-
<table>
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<th>PREDICTED ORGANIZATIONAL DESIGNS</th>
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* Of the 47 Round I participants, five did not complete this section of their questionnaires.

Table 8

Analysis of Delphi Round I Responses
Most Probable Organizational Forms for 2000
ness to worker interests and social responsibility, and decreased emphasis on maximum profit, routine, and authoritarianism. One panelist sees a future where income is not tied to jobs. Another expects power plays among different external groups to involve organizational research systems.

Several proponents of the "little or no change" future project increasing governmental regulation. Decreasing freedom of action for organizations and more bureaucracy are seen as possibly resulting from the involvement of government and constituent groups. One panelist predicts that large corporations will become economic empires and will decentralize under heavy government control. This aligns with two other panelists' views that organizations will increasingly centralize while developing highly decentralized smaller components.

Several other design changes have been suggested by these panelists. One suggests the use of teams at the top of organizations while another predicts greater numbers of advanced positions. Another respondent expects small businesses to continue to be as poorly organized in the future as they are in the present. And, another participant foresees experimental forms, such as worker membership on Boards, existing only in token form in the
future. Essentially, many organizations are expected
to be more or less as they are while some others
become wholly "modern."

**Adaptive Forms**

Joined by a common theme, the subsets reflect
seven approaches to dealing with a changing environ-
ment. Looking for the most probable organization in
2000, all seven proposals are radical changes from
today's principal organizing form. The seven subsets
are presented in order of nomination frequency.

**Organic, participative designs.** Nine
panelists suggest that the most probable organiza-
tional design in 2000 will be organic and participative,
decentralized, flatter, smaller, and more flexible
than it is now. One panelist suggests that the
central office will be used for coordinating,
integrating, and reconciling discrepant plans and
employment. Another sees decision-making occurring
where and when nexus forms in the smaller organizations
or organizational components of the future.

Organizations of the future are seen as
also continuing to increase in size and being made
up of conglomerations or large groups of managers
and executives. These organizations may also be
formed into three simple hierarchical levels with
highly focused tasks to which people will be assigned on the basis of fit. There seems to be increasing interest in the "whole" person and a greater tendency for organizations of the future to be redesigned to fit individuals rather than individuals reworked to fit the organization.

According to panelists, evaluation of organizational performance could be difficult requiring the development of many new administrative techniques, especially for judging operational policies and practices which may require new multiple criteria where profitability will be only one criterion. Another participant foresees increased codification of jobs resulting in increasingly rigid formal structures offset by increasingly flexible informal structures. Also expected in the future is a more formalized meritocracy with decreased emphasis on rigid hierarchy.

One panelist anticipates an increase in the influence and number of salaried professionals and scientists within organizations and a decline in the proportion of independent professionals. Maintaining the specialist's expertise could continue to be difficult as the accumulation and utilization of knowledge is expected to be difficult and require stressing of intellectual activities. Instead of
rigid specialist departments, one panelist foresees integrating task forces in the future. Another predicts that organizations will operate primarily through a consensual model.

Several panelists anticipate the greater involvement and influence of more people in organizational decision-making. One panelist expects more structured participation by employees and consumers on Boards and in top management decision-making. Rather than continuing to play only a negative and critical role, public groups are expected to participate in developing policies and plans. Others agree, describing major policy shifts which will favor participation and equality in people handling. Adoption of a power diffusion rather than a power differentiation model would allow for greater emphasis on suggestion and persuasion rather than on coercion and authoritarian power as a means of coordinating organization activities, participants, and functions.

Included among the real design changes foreseen for organizations are the blurring of organizational and component distinctions, redefining organization boundaries which will lead to wider conceptions of open systems, and increasing division of organizations into "small" autonomous businesses
that can operate as independent subsidiary components moving from organization to organization as needs and appropriateness of fit change. In order to perpetuate organizational identification and maintain a sense of organizational community, members of organization components will continue to meet physically rather than communicate solely through electronic communication media. Panelists also suggest that the goals of complex organizations will continue to diversify emphasizing the need to satisfy a number of goals rather than maximize any one. This diversity and differentiation of activities are seen as causing more integration and coordination problems.

Problems of interface between organizations are also expected to increase requiring the development of new means for inter-organizational coordination. The government's role in regulating private business could gain greater importance. Social and technological forecasting and planned change could also assist in coordinating activities and adapting to the rapidly changing technology and the changes caused by increasing educational levels. Real-time planning may increase over less formal systems. Computerized information-decision systems and the widespread use of computers for planning and operations also are expected to have an increasing impact on organizations.
Demands for more interesting jobs may be met by automation, job enlargement, and a more democratic environment wherein dull and boring jobs could be divided equally among all organization members. More alternative career routes than just the managerial hierarchy may also be established. Future organizations are expected to adapt to an increasing diversity of cultural values in the social environment and to a greater diversity in values and lifestyles among people and groups in organizations. A mosaic psycho-social system is expected to be normal in the future.

One panelist who depicts a participative organizational model as dominant in 2000 describes it as usual for employees to take an active part in the organization, but not at the decision-making levels. This panelist foresees increasing use of specialists, qualitatively improved but not increased productivity, and problems with employee satisfaction. These participative organizations will intentionally extend their service commitments to employees and society by providing members with a greater range of services and increased public relations and publicity, monitoring organization activities for possible social consequences, and maintaining worldwide information databanks for accumulating and disseminating information.
Matrix forms. Seven panelists describe the matrix design as the most probable organization of the year 2000. As with several panelists who predict little or no change in organizations during the next 22 years, these seven see the matrix as a reasonable modification to the pyramid, one which would enable traditional organizations to tackle non-routine problems through the guidance of highly qualified specialists and professionals. The principal organizing structure envisioned will be decentralized teams which will be characterized by group effort and consultation rather than by hierarchy and chains of command.

This category shares several features with the first sub-set, organic, participative designs. For example, panelists endorsing the matrix also foresee increasing governmental control and public scrutiny with control passing from organization managers to the government. Also predicted are a reduction in the number of hours worked, increased emphasis on Quality of Life (QOL) and Quality of Work (QOW), and the possibility of organizations deliberately gravitating toward smaller size or functioning as independent organizational units within the larger corporate framework. Finally, decision-making is seen as becoming more centralized
with some sort of matrix adaptation used at decision-making levels and some sort of hierarchy used at implementation levels.

Greater variety of organizational forms. Most of the six panelists who suggest that greater organizational variety will dominate in 2000 see organizations moving toward increasing diversity and complexity where there will be a broader spectrum of organizational types than currently exists. Among these panelists, no one prototype is seen as dominating the future. Rather, the broader array of organizational types will include large multinational corporations; mini-organizations; a few type Z organizations; and the highly mechanistic organization which has high turnover at low levels and increasing alienation.

In describing this future, several panelists outline difficulties, successes, and alternative realities for future organizations. For two types of organizations, failure is expected: the "laissez-faire" organization; and, the rigid organization which neglects to negotiate flexible employee practices and accommodate constituent bodies. Among those organizations which are seen as succeeding are the small entrepreneurial forms, the highly automated organizations, organizations designed for specific
purposes, and benevolent autocracies with charismatic leadership. As with most of the panelists, group and organization skills are expected to increase. One panelist anticipates a blurring of organizational distinctions by 2000 when intentional, purposive changes could result from explicit, acknowledged specialization of large, complex organizations and standardized management and planning techniques.

**Bimodal structures.** Three panelists see organizations becoming both larger and smaller. One panelist states that these two diverse types of organizations generally may change to where they will be overseen by Quality of Life committees, have managers and officers who are elected for set terms, have a greater diversity of people, provide employees with individual schedules, increase planning activities, and more highly value human resources. Another portrays 2000 as dominated by giant corporations which will furnish automated, regularized services and Mom and Pop operations which will furnish personal services. The third panelist predicts the decay and decadence of huge public and private organizations while smaller organizations flourish and receive government assistance.

**Networks.** Three panelists predict the dominance
of networks by 2000 as organizations link together in networks to deal with common and similar problems. One panelist sees such interorganizational contacts resulting in increased scrutiny of internal organizational affairs. Another agrees, but feels that such scrutiny will assist in the growing dominance of the network as increasing social, energy, and environmental pressures result in government endorsed or mandated citizen participation in segmented, polycentric network organizations that will spell the end to centralized bureaucracies. The third panelist foresees the development of networks which have instant computer access to collaborators around the world and would form and reform according to need thereby making travel, headquarters, and hierarchies unnecessary and too expensive and inefficient for use. Similarly, bureaucratic mechanisms are seen as decreasing with the growth of localistic capabilities.

Others. The responses of two panelists describe adaptive systems which do not fit into any of the other categories. One author predicts organizations developing in one of two ways: either organizations will be primarily authoritarian because of heightened international conflict, or they will be globally egalitarian. The second panelist anticipates larger
organizations in the future where their tremendous size will be accompanied by declines in the number of entrepreneurs and in initiative, creativity, and innovative thinking. Various bureaucracies are seen as increasing in power and influence while democracy is replaced by more rigid and structured political style. This panelist also predicts the continuation of an aggressive minority which will seize and hold power and wealth.

UNEXPECTED OCCURRENCES

An exploratory investigation often benefits from inquiring about unusual or unexpected possible occurrences. In Round II, panelists were asked to guess at "at least one unforeseen significant outside event' which will occur to influence organizations by the year 2000." Although several panelists stated that they could not imagine the unimaginable, they usually proceeded to suggest some excellent possibilities.

Among the 33 Round II panelists who responded to this unusual request, employment is seen as a major problem which could provide several unexpected occurrences that would influence organizations in the future. Several panelists foresee intolerable unemployment levels resulting in lessening emphasis
on efficiency and greater emphasis on employing human resources and more widely utilizing part-time employment. This guessed-at future could result in a reversal of the current trend toward postponing retirement and instead encourage people to retire earlier. One panelist suggests that an employment crunch could result in adoption of an income maintenance plan to assure resource allocation to the population and to compensate for fewer employment opportunities. Another possible outcome of such an unexpected occurrence could be a taxpayer and social security contributor revolt which would rock governmental foundations and the organization of work and companies.

War was frequently cited as an unexpected occurrence. One panelist sees war being used as a threat by a minor, overpopulated country having an atomic bomb which could be used as blackmail to obtain employment opportunities for its people. Some panelists believe that war could erupt over resources. Several predict that nuclear war and other significant threats to national security could increase governmental control thereby resulting in very different types of organizations and organizational relationships in the future. A serious threat of international proportions is seen as possibly eroding
the traditional resistance to increasing governmental power such as exists in the United States.

On the other hand, a couple of panelists suggest that the unexpected occurrence may be world cooperation. One guesses that cooperation, coordination, regulation, and control of organizations at a supernational, worldwide level might replace national regulation and surveillance. The other panelist suggests that international cooperation might occur where war among nations, as a mode of conflict resolution, is renounced.

Others guess that industrial organizations may change from institutions which maximize jobs to join with governments in recognizing the need for providing greater assistance to the disadvantaged. Essentially, these and other panelists are suggesting that organizations may reexamine what constitutes the desired goals of organizations and organizational participation. Some panelists imagine that an entirely new kind of organization may appear and change everything. One panelist states that small businesses may encounter great changes predicting that they are on the brink of an entrepreneurial revolution.

Unexpected changes in technology could also result in organizational changes in the future. Work
patterns could be completely revolutionized by widespread communications and interaction via union of
cable television and computer technology or by a major
transportation revolution. The spontaneous emergence
of some archetypical universally-acknowledged symbol--
probably a spin-off or side-effect of a technological
innovation--could also radically change organizational
operations. Fueled by solar and nuclear energy and
using hydroponics, populated space stations and cities
orbiting Earth are seen as a possible technological
development having vast organizational implications.

Contact with extraterrestrials whose sophis-
tication dwarfs human endeavors, genetic breakthroughs,
and the development of an inexpensive energy source
are three other changes which could significantly
influence organizations. Although a couple of panel-
ists suggest possible extraterrestrial contact, one
other panelist suggests the possible occurrence of
a dramatic and visible event, such as afterlife
experiences or altered states of consciousness, which
would lead to transcendent behavior. Biological and
medical breakthroughs allowing genetic control could
provide new sources of food, species, and cures for
physical and mental ailments. One of the several
panelists discussing an energy breakthrough suggests
that it may come from discovering a process to extract
energy from the hydrogen atom.

Several changes may result from future energy technology. Should an easy, readily accessible, and inexpensive energy source be found, an age of plenty may reemerge and fulfill another panelist's guess. Without an energy breakthrough, the energy crisis may assume major proportions with severe consequences, according to panel members.

In a totally chaotic world, panelists predict that normal government and commerce would end and organizations, as they are now known, would cease to exist. Similar to this view is a guess that a general state of terrorism leading to political collapse and major war in parts of the world could result should a worldwide economic collapse occur. Another panelist suggests a possible change in world ordering making China the future pace-setter, the number one nation in the world community.

CONCLUSION

A shift occurred between the first and second round reordering the trends seen as most and least significant. Because the first round questionnaire utilized the blank-sheet technique, a shift in the Delphi response was expected. However, by receiving such a substantial percent of the panel's
attention, the Round II choices received sufficient endorsement as to preclude a third round. The study's goals require only that the organizational futurists provide a list of influential issues and trends.

Unlike the list of issues and trends, the study's objectives require both a range of possibilities and a consensual profile of the most probable organizations of the year 2000. From the literature, it was expected that the panel would unanimously endorse adaptive designs as the dominant organizing form for 2000. Instead, they responded bimodally, stating that the future would see the continued dominance of the bureaucratic form, or the development of more adaptive designs. Because the two viewpoints are so different and received such strong endorsements from their supporters, further Delphi rounds were not considered necessary.

The rationale for the study is the same as for developing the list of unexpected occurrences--exploration. As noted in the first chapter, this research is not intended as a complete futures study of organizations of the future. It is a learning instrument which, by fulfilling its four objectives, provides a good basis for further study of the topic. Similarly, although not required by the study's objectives, exploring some of the unexpected possibil-
ities which could occur in the future seems beneficial to the overall inquiry by supplying another source of information about possible future events which could influence the appearance of organizations in 2000.

NOTES

1 Transcriptions of these responses are available in Appendix C.

2 In Round I of the Delphi, panelists could note two or three issues/trends which could later appear in the same category. Therefore, reference is made to the number of responses in which the area was mentioned, rather than the number of panelists citing that particular category.

3 "Eastern" and "Southern" decision-making styles refer to Japanese and President Carter's Georgian decision-making styles. The panelist was telephoned for verification of this interpretation of the notation.

4 In Round II, panelists could vote only once for any specific category. Therefore, reference could be made to the number of panelists believing a particular category was either "most significant" or "least significant."

5 The questionnaire reads:
GREATER CENTRALIZATION OF SOME FUNCTIONS AND GREATER DECENTRALIZATION OF OTHER ORGANIZATIONAL FUNCTIONS.
Since many firms will grow larger, more decentralization will be required. At the same time, real control will be centralized.
Appendix B includes a copy of the questionnaire.
Chapter 5

CONCLUSIONS

In the organizational futures literature, authors usually describe the future as a time when organization members will be treated as either cogs in the organizational wheels or as the organization's focus. However, when the information from the literature is joined with the Delphi information, five major alternative patterns for future organizations become apparent. In this chapter, the five alternative organizational designs are described in the order in which organizational futurists seem to perceive as the likelihood of their dominance in 2000. This chapter also includes an analysis of those predictions, and a critical discussion of organizational futurism and some issues raised during this study. Also reviewed are some of the possible ramifications and implications of this study.

FIVE ORGANIZATIONAL DESIGN OPTIONS

Most organizational futurists in the literature
describe the future in either "euphoric" or "paranoid" terms. Rarely are ranges of possibilities discussed, and even more rarely are scenarios or projections acknowledged as being only one possibility out of a range of alternatives. During this study, the existence of such alternatives has been demonstrated in the Delphi survey where the absence of options was shown to be an erroneous portrait of the future. As further proof, by combining the information from both the literature review and the Delphi, five options arise which could possibly dominate organizations in 2000. Presented in the order of their apparent likelihood of occurrence, the five types of organizations seen as possibly dominating 2000 are participative, huge machine, authoritarian, "no change," and egalitarian. Their naming was suggested through the Delphi panel responses.

**Participative Organizations**

By far, the most well supported future reality for organizations of the future is the participative model. Rising educational and aspiration levels, and its success in diffusing organizational conflict are the principal rational reasons for its popularity. Similar to Bennis, Likert's System 4, McGregor's Theory Y, Foss' Theory Z, this model is described as
organic, participative, decentralized, flat, pluralistic, democratic, flexible, sensitive to human needs, and operating through relatively small components. Organization members would be excellent in communication, and the organization would be responsive to changing societal values and the changing needs of its membership. Technology is described as a partner to the organization member.

Of the whole-organization designs, the horizontal structure would be the most ideal for the participative organization. The federalist design allows for a joining together of equal components and at this level the components could be participative in a network decision-making process. However, the internal structures of the components which hypothetically could vary greatly would also have to be participative to be compatible with this model. Although the matrix is not necessarily an effective tool for increasing member participation in an organization, it is commonly so characterized by most organization theorists because of the double command structure which allows for potentially effective and efficient participation in group decision-making. The matrix would also be in keeping with this model's assumption that power in the future will be diffused, not centralized.
Huge Machine Organizations

Although not nearly as popular among organizational futurists as is the participative organization, nevertheless, the assumption exists in both the literature and the Delphi data that organizations will continue to expand in size and complexity. Modeled after the multinational corporations of the present, future huge organizations are expected to be increasingly diverse in their involvements and operational methods. Because of their organizational resources, huge machine organizations could respond quickly and efficiently to new public interests, and are expected to be able to quickly establish small, temporary components which can meet new public needs and then be reabsorbed into the huge machine organization when the public's interest in the new area is satisfied. Also because of their tremendous size and diversity, such organizations could utilize different management styles in different organization components while maintaining an overall stable and relatively inflexible organization structure. Although increasing social responsibility is considered important for their continued success and survival, both authoritarian huge machines and huge machine models employing diverse kinds of managerial techniques are possible in the future.
In these huge organizations, a delicate balance between centralization and decentralization is seen as necessary for dealing with various demands and increasing organization size and complexity. This balance, however, may be unnecessary as technology alleviates the distinctions between headquarters and satellite operations. Where tall, rigid, authoritarian models would be expected to have little variation within their structure, flexible large organizations could employ within the organization several or all of the designs outlined in chapter 2. The increased size, volume, and complexity of organizational relationships is expected by some to require the results-oriented style of the matrix which could also provide the needed alternaties for change and employee reassignment, as well as management of research and development, project areas, and professionals which particularly require the matrix approach. Others expect the pyramid form to continue with few changes, except in organizational size and complexity.

Authoritarian Organizations

Termed by Argyris (1973a) as the most likely extrapolation of contemporary conditions, lower level organization members would create antagonistic activities, be limited in the abilities they would be
allowed to use, and tend to be dependent and submissive
toward superiors while being controlled by and irrespon-
sible toward the organization. Few other organizational
futurists would probably agree that this is the most
likely outcome of current trends, but recalling
Michael's (1962, 1975) dreadful visions of the future,
authoritarian structures are seen as a very possible
response to tremendous stress and demands for guidance
by organization members who relinquish their personal
and organizational responsibilities and obligations
to a strong leadership—a single charismatic leader
or ruling elite. Because of some overriding threat
of disaster, this future leadership is expected to
be seen as necessary to organize a confused and
disoriented public or organizational membership.
Assuming control of all aspects of the organization or
society, the authoritarian figure would quell the
membership's anxieties and then draw on and play from
the authority needs of the members to maintain power.
Reminiscent of the visions of Technocracy, this scenario
is seen by some as part of an evolutionary pattern
made probable by the anticipated increase in the
complexity of organizational processes and technologies
which may alleviate decision-making participation by .
all except those with appropriate expertise.

Although technology is a tool which can be
used repressively or beneficially, in authoritarian organizations, technology could realize Ellul's (1964) vision by being used to control all organizational elements when fostering the control necessary for an effective authoritarian system by standardizing all human action and making spontaneous, unreflected human action into deliberate, rationalized, prescribed behavior. Implementation of this rationality would require a rational organized structure—such as the bureaucracy, dome-shaped pyramid, or the football and bell—which ideally would have a relatively small decision-making and policy-setting unit at the top of the organization. A bureaucracy would be excellent for maintaining rigidity and could inflexibly administer and adhere to organizational directives. The bulging pyramid would allow for a small elite to operate through an enlarged middle management and the traditional blue-collar segments. The football and bell best illustrates the kind of schism anticipated as occurring between the administrative and blue-collar united expected in an authoritarian design.

No Change Organizations

Whereas the authoritarian organization received very little attention from the Delphi panel but is frequently noted in the literature, the "no change"
model received considerable support from the Delphi panel and is almost never mentioned in the literature. A quarter of the organizational futurists surveyed by this study agree with Morrow's (1971) forecast of little or no change from the present in the organizations of the year 2000. Blamed on the inflexibility of organizations and their resistance to change, and on the strength of the status quo, this study's panel sees as very likely a future quite similar to the present. The modifications they suggest taking place on the dominant hierarchy form are varied, but are expected to produce few changes in the overall structure.

Egalitarian Organizations

Egalitarian organizations are seen by some organizational futurists as the inevitable result of the growing member participation they perceive occurring in contemporary and future organizations. Perhaps resulting from increasing consumer and governmental involvement in organizational operation and the collaboration seen as arising from future collective need, the egalitarian model may be characterized by the separation of income from employment; increased leisure; increasing humanism; omnipresent, benevolent, and omnipotent technology; or a radical return to a
simple technology. The egalitarian model closely resembles an anarchist, or "leaderless," organization, perhaps similar to network patterns which are spoken of as a promising method for meeting project goals and operating in a highly technological future. Vast computer and communication systems could allow networkers to remain geographically dispersed while collectively working on the problem they had joined to solve. This pattern allows for a universal approach while allowing participants to continue local involvements and identities.

Of the whole-organization designs, federalism, the horizontal, and possibly the tall urn structures appear to be the most easily adapted to the requirements of the egalitarian organization. Good communication and equal status among organization members would be the most important criteria for an egalitarian organization. Although the linking pin facilitates these criteria, the underlying assumptions of the hierarchy would be in conflict with an egalitarian belief system. The matrix could be among the best structures for the egalitarian organization, as long as the command personnel understood themselves to be facilitators for the group and not the leaders of it.
CRITIQUE

Predicting Dominant Organizational Patterns

As shown by this study's panel and Morrow's (1971), the participative model may not be the most probable organizational future, at least not by 2000. Several Delphi panelists describe organizations as entering into a new era of conservativism where profit and productivity will receive far more support than will participative activities. Despite these very strongly phrased predictions of increasing traditionalism, most organizational futurists endorse the participative model as the most likely organizing form for the future.

Perhaps the reason for this support is more emotional than rational: Perhaps, we want the participative future to occur—we find it desirable. Deciding that one future alternative is preferable to another is extremely valuable in determining where we want to go and deciding upon the policy steps necessary for realizing that future. But deciding what is desirable is not the same activity as defining our options. This confusion between possibilities and desirabilities is evident in the ordering of the options surveyed.

Perhaps a more realistic ordering of options would describe a "no change" reality as dominant in 2000. With a few participative modifications to accommodate
organization members' rising education and aspiration levels, the reality would be basically bureaucratic with more adaptive and participative designs utilized in specialized areas. There has been little change in organizations since 1955 and there seems to be little reason for expecting drastic changes in organizing patterns during the next 22 years.

The huge machine alternative also seems to be a likely possible reality to dominate organization design in 2000. The assumption that large organizations get larger (Parkinson's law) seems justifiable and makes this option one of the more likely to prove true. A potential obstacle to realizing this alternative could be stringent governmental regulation resulting from intense public antagonism aimed at several large organizations. However, the public's anger would have to be focused simultaneously at more than one giant firm and the government would have to move efficiently and swiftly in developing regulations against the entire class of organizations. Neither action seems very probable.

Although seen as far less likely than described in the literature, the participative model may dominate organization form in 22 years. Increasing interpersonal conflict within organizations in the future is seen as a major problem which can be lessened through
increased member participation, but frequently forgotten are several other, alternative methods for dealing with interpersonal conflict—strong organizational goals and/or authoritarian techniques—which are less desirable than the participative model. Organizational participation is seen as very probable because it is expected to be demanded by society and the better educated generations of the future; however, it will be time-consuming and emotionally costly—two drawbacks frequently overlooked by organizational futurists. The participative organization which realistically could be most likely to dominate in 2000 is actually a modification of the present organizational condition along participative lines, not the euphoric hyperbole usually described in the literature.

More likely to occur than the utopian, participative model described in the literature, is the authoritarian model which may dominate organizational reality in 2000 as a reaction to scarcity or some overriding emergency or threat. Although possibly, and even likely, employed to deal with a crisis, such an alteration in organization patterns would most probably be short-term. The only really plausible exception seems to be the rise of an outstanding charismatic leader capable of reshaping basic cultural beliefs.
Finally, as with authoritarianism, egalitarianism seems very improbable as the dominant organizing pattern in 2000. Although one panelist portrays a very negative egalitarian future in which everyone globally has the same subsistance reality, most see it as the ultimate opportunity for individual expression and freedom from want or care. Such a utopian vision is very desirable, but such a radical change in only 22 years seems very improbable and there appears to be little real data to substantiate claims that the egalitarian model is highly probable.

An organizational future alternative which receives far too little attention is the contingency approach whereby the most appropriate organizational design is determined and used in organizing a group to perform a specific operation while meeting other normative criteria. As Morse and Lorsch (1970) point out, designs termed "most appropriate" vary greatly and would be so designated only after careful analysis of the operation's objectives, personnel needs, technology, and environment. By utilizing such a contingency approach in the future, organizations could better assume a proactive rather than reactive attitude toward interaction with their environment.

Although such an approach is often unconsciously used today, it is frequently not recognized as the
distinct methodology which it is. The proposed contingency reality is not the same as the "no change" projection for 2000 in which the hierarchy remains the basic format for organizations. There would be no universally "best" or "most applicable" organization design in a contingency reality.

Although the author's list ordering organizational realities according to their likelihood in dominating 2000 may be seen as even more conservative than that of the organizational futurists, it is possible that both may prove to be very conservative and shortsighted. Should that be true, their errors would be similar to most forecasts which are usually too conservative (Farmer, 1973). However, such orderings are greatly handicapped by being portrayed as fixed and unchangeable and benefit from frequent review and updating. These orderings of possible futures realities need to be very sensitive to the power of imaginings about desirable futures and be open to adapting to new possibilities as they occur. Updating and reviewing the older conclusions and methods are the reasons for this critique section.

Technical Problems in Organizational Futures Literature

Normativism. As noted in the previous section, one of the greatest difficulties in organizational
futures literature is its markedly normative character. Rarely using the methodology suggested by Helmer (1974) and others to differentiate between the objective and subjective components and requirements of a futures study, possible options are confused with preferable options. It is doubtful that true objectivity—free of subjective and normative statements—ever could be achieved and were it attained, it would probably be worth very little. And yet, our Western methodologies require that we use an objective foundation for our normative decision-making.

For a futures study, the "objective" component or base would be as complete a collection as possible of the data concerning an area of inquiry. Probabilities of occurrence and then desirability notations are determined. Finally, strategies are planned and implemented. Since these are such very different activities, several professionals could work together on each of the futures components; each contributing in the areas of greatest interest and capability.

Increasing numbers of policy formulators are admitting that they are concerned only or primarily with the normative aspects of a futures study—answering what is desirable and what could be done to achieve the desirable reality. This acknowledgement
is a tremendous stride for research. Traditionally, the same kinds of normative information were termed "rational," "pragmatic," and "objective" leaving the literature glutted with normative, "rational" discussions about the future. Just as a literature containing nothing but "objective" analyses would be shallow and incomplete, the heavily normative character of current organizational futures literature prevents it from being utilized to its fullest potential. Although it is very valuable for those who have studied and know about organizations to write how they would like organizations to be in the future, it would also be valuable for them to more frequently share those observations and experiences which have led them to their conclusions.

Imaginings about the future have always been an "in the head" activity, a personal activity. Futures research attempts to make future imaginings also a group or collective activity which is placed into the collective consciousness. This is greatly hindered by the lack of rational study done in the organizational futures field.

Time and event milestones. Another technical problem in the organizational futures literature is the lack of time or event "milestones" or "markers."
The frequent absence of timeframes and event markers is another inconvenience and disappointment encountered when working with the organizational futures literature. Timeframes are almost never noted in this literature; or, if they are, the reader is not certain if the date, such as 1984 or 2000, is real or symbolic. Projections and predictions are rarely supported or substantiated, leaving the reader to guess at their relationship to dates, times, and cultures.

Oftentimes planning and forecasting is actually more "event dependent" than "time dependent," but this is rarely acknowledged in the literature. The "five year" plans of the Soviet Union are excellent examples of unrealistic timeframes and wishful thinking which are not real activities or events. Perhaps more demanding and more realistic would be to develop event-related forecasts which could discuss event milestones in the future as triggers to contingency forecasts and plans.

These two mechanisms, timeframes and event milestones, ideally would complement each other. A general forecast of options could be set within a particular timeframe. The futures researcher could then establish particular event "markers" which would trigger the use of particular and relatively specific plans to ensure the continued progress of the organiza-
tion toward its desired goals. Triggers could also be activated should the organization fail to meet its intermediate objectives. Thus far, employment of such techniques has rarely been reported in the literature.

**Unanswered Questions**

During the course of this investigation several issues have been raised which warrant further discussion. One question frequently raised and which can only receive a subjective response concerns the nature of the future. We have asked about the future of organizations and whether that future is inflexibly predestined or if it is amenable to human design.

More specifically we have asked if the future is a predetermined evolutionary path; or if it is a range of management alternatives from which desirable options can be selected and then attained. If the future is predestined and simply a matter of unfolding the evolutionary path, then perhaps we could turn our attention to determining what that future holds and thereby alleviate some of the personal and collective anxiety so many feel concerning the future. However, if the future is a range of options, then our activities would be better geared toward determining the extent of our alternatives, their likelihood and desirability, and the best method for attaining the optimum reality
in the future. Such determinations could then be followed by a course of action which would realize the most desired future reality.

Obviously, this study assumes that the latter perspective is true. The conclusion then, or the premise, of this investigation is that the future holds many possibilities from which futures realities are chosen--consciously or unconsciously, intentionally or unintentionally. Further, this study assumes that it is preferable to consciously and intentionally make decisions about the future rather than to unconsciously and unintentionally arrive at the future.

This discussion of intentional and unintentional futures leads to questioning a statement made by several Delphi panelists. They describe as inevitable a conservative swing in organizations. The next 20 years are characterized as a time in which profit and productivity would be increasingly emphasized while humanism would receive far less attention.

However, after deciding that the future is accessible to change, the issue of desirabilities is once again raised. In this instance, we need to determine if we want a future of increased profit squeeze and decreased humanism in our organizations and, if not, which influences may be altered to make such a future as improbable as it is undesirable. By
taking such questions out of the "unconscious and unintentional realms," a new proactive attitude may develop in our individual and collective realities to alleviate our individual and collective discomfort with the unknown and previously unknowable future. Although the probability of such a change in cultural patterns has yet to be established, a change from passive-reactive to proactive-potency is both desirable and possible.

In the introduction to this study, it is noted that in Fayol's time, the belief system perceived there to be a single "correct" organizational pattern, an ideal that was somehow related to efficient operation of the bureaucratic model. Fayol and other early, traditional organization theorists dedicated themselves to defining the "correct" appearance, functions, and management modes in the efficient organization. Unfortunately, today we still tend to look for the one, ideal model which will correctly prescribe organizational behavior. Recently, with futures research and current developments in organization studies several "correct" models are seen as appropriate for organizations. Gradually, the concept of a single, best, universally-applicable method of operation is being questioned and refuted.
RAMIFICATIONS AND IMPLICATIONS

One of the tasks of futures research is to deliver well-formulated information to policymakers (Enzer, 1973). Geared toward policymakers and their research community, the current study makes available surveys of organizational issues and trends, organization designs, and the expectations of professionals regarding organizational development during the next 22 years. One way in which this information will be particularly useful to the policymaking community will be as a background for future forecasts and planning studies.

Although still experiencing technical difficulties, an extensive organizational futures literature is emerging and has been identified through this study. Such an identification can aid the organizational futures community in future research and when developing future projections. Similarly, organizational futurists have been identified both through the literature search and through a peer nomination process. The identification of the literature and the professionals of this field can greatly assist in the development of a knowledgeable and assertive scholarly community in this relatively new field.
Through the Delphi, this research has provided organizational futurists with an opportunity to update, amplify and refine their earlier predictions. Most panelists took advantage of this opportunity and collectively expanded the organizational alternatives usually perceived as likely in 2000 from the two categories usually mentioned in the literature—the euphoric, participative extrapolation and the paranoid, authoritarian extrapolation—to two different categories—the "no change" future and the adaptive options—which encompass eight possibilities.²

Although there is little consensus in the literature about the issues and trends which may significantly influence organizations during the next 22 years, 12 categories were suggested by this study's research panel.³ Three of the issues/trends are seen by the panel as being particularly significant in the future of organizations: increasing government regulation and surveillance, technology, and increasing scarcity. The panel also discussed a range of possible occurrences which could unexpectedly influence the development of organizations.⁴

Using three methodologies, this research has developed a large body of information from its Delphi panel, its organizational futurist peer nominators, and the literature search. Specifically, this study
looks at organizational trends, issues, and designs through both published materials and the Delphi panel results, and from the collected information suggests five future options. Its methods were designed to present the extensive futures literature and Delphi findings in a concise form to the academic and policy-making communities.

As this study is only the first component to a responsible organizational futures analysis, further research is needed for a complete discussion of organizational progress during the next 22 years. Once a general picture of options for organizations as a generic classification and some overall goals have been established, futures programs can be developed for classes of organizational types, and then for specific organizations. An interesting area which could be followed up is determining probable and desirable developmental routes for various types of organizations; for example, to see if educational and governmental, or governmental and industrial organizations find the same future realities desirable. The development of such forecasts and plans for the future would allow individuals, organizations, and society to then turn their primary energies from their present concern for survival to pursuing that and other goals in a more rewarding and desirable manner.
NOTES

1 The Critique section of this chapter is a personal analysis of the data, hence the change in the narrative voice to first person.

2 The eight options developed by the panel are: the little or no change prediction, and seven adaptive organization forms—organic, participative designs, matrix forms, a greater variety of forms, bimodal structures, networks, an either/or reality of heightened international conflict or global egalitarianism, and tremendously huge organizations operated by a small elite.

3 The twelve categories of issues/trends suggested by the panel are: technology, power equalization, government regulation and surveillance, matrix form, organization populations, educational and O-D activities, scarcity, bureaucratic dominance, blurring of organizational distinctions, centralization and decentralization.

4 The unexpected occurrences the panel suggests as able to significantly influence the future of organizations include: severe unemployment thwarting current retirement and humanitarian practices; a taxpayer and social security contributor revolt; war; world cooperation as the primary means of conflict resolution; an entrepreneurial revolution for small businesses; technological innovations; the spontaneous emergence of an archetypical universally-acknowledged symbol; space exploration; extraterrestrial contacts; genetic breakthroughs; development of a cheap energy source; afterlife experiences or altered states of consciousness which would lead to transcendent behavior; total world chaos; terrorist rule; political and economic collapse; and China emerging as the number one nation in the world community.
APPENDIX A

ORGANIZATIONAL FUTURISTS

Included in this appendix are three groupings of organizational futurists: those whose names came from the literature search and were used as the peer nominators in the initial survey of organizational futurists; those named during the peer nomination process; and, the combined lists of organizational futurists and their response to the Delphi invitation. Both names and addresses are given for the first two groupings of organizational futurists. The names of organizational futurists on these lists may be supplemented through the Bibliography.
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| 1. Russell Ackoff  
Management and Behavioral 
Science Center  
Wharton School  
University of Pennsylvania  
4025 Chestnut Street  
Philadelphia, Pa. 19104 | X | Corrected address: 
University of Pennsylvania  
414 Vance Hall  
3733 Spruce Street  
Philadelphia, Pa. 19174 |
| 2. Malvin Ansheen  
205 West End Avenue  
New York City, NY 10023 | X | Letter returned; No forwarding address available. |
| 3. H. Igor Ansoff  
Graduate School of Management  
Vanderbilt University  
Nashville, Tennessee 37203 | X | Letter returned; No forwarding address available. |
| 4. Chris Argyris  
58 Sylvan Lane  
Watson, Massachusetts 02193 | X | |
| 5. George Leland Bach  
Dean, School of Industrial Administration  
Carnegie Institute of Technology  
Pittsburgh, Pennsylvania | X | |
| 6. Bernard Bass  
School of Management  
SUNY Binghamton  
Binghamton, New York 13901 | X | Forwarded from: 
Management Research Center  
The University of Rochester  
Rochester, New York 14627 |
| 7. Daniel Bell  
Department of Sociology  
Harvard University  
Cambridge, Massachusetts 02138 | X | Mr. Bell was out of the country during the survey. |
| 8. Eugene Benge  
0-4 Crowfields Lane  
Asheville, N. C. 28803 | X | Forwarded from: 
550 So. Ocean Blvd., #1206  
Boca Raton, Florida 33432 |
| 9. Kenneth D. Benne  
Kilstryth Terrace  
Brookline, Massachusetts 02146 | X | Forwarded from: 
Human Relations Laboratory  
Boston University  
270 Boston State Road  
Boston, Massachusetts 02215 |
| 10. Warren G. Bennis  
Office of the President  
University of Cincinnati  
Cincinnati, Ohio 45221 | X | Mr. Bennis was out of the country during the survey. |
| 11. Peter Blau  
Department of Sociology  
422 Fayerweather Hall  
Columbia University  
New York City, NY 10027 | X | |
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| 12. Robert Boquialaw  
Department of Sociology and Anthropology  
Washington University  
Saint Louis, Mo. 63130 | X | | | |
| 13. William S. Boise  
Department of Public Admin.  
New York University  
4 Washington Square North  
New York City, NY 10003 | X | | | |
| 14. Elise Boulding  
Department of Sociology  
University of Colorado Boulder, Colorado 80302 | X | | | |
| 15. James Bright  
Graduate School of Business Administration  
University of Texas, Austin  
Austin, Texas 78712 | X | | | |
| 16. Courtney C. Brown  
Columbia Business School  
Columbia University  
New York City, NY 10027 | X | | | |
| 17. Elmer Burack  
c/o 2755 Mall Oak Drive  
Highland Park, Illinois 60033 | X | | | Forwarded from:  
Illinois Institute of Technology  
1115 and Dearborn Streets  
Chicago, Illinois 60616 |
| 18. Conrad Carroll  
Dean of Business Administration  
University of Central Arkansas  
Conway, Arkansas 72032 | X | | | Letter sent to J. Carroll at State College of  
Arkansas, Conway, Arkansas |
| 19. Robert Chin  
Boston University  
Boston, Massachusetts 02210 | X | | Faculty was noted on the envelope. |
| 20. Kenneth E. Corey  
Graduate Department of Community Planning #73  
University of Cincinnati  
Cincinnati, Ohio 45221 | X | | Mr. Corey supplied the department title. |
| 21. Ernest Dale  
15 East 55th Street  
New York City, NY 10022 | X | | Address corrected, sent to:  
Wharton School, Univ. Penn.  
Philadelphia, Pa. 19104 |
| 22. Raul Denney  
2957 Kailua Avenue  
Honolulu, Hawaii 96815 | X | | |
| 22. Peter F. Drucker  
636 Wellesley Drive  
Claremont, California 91711 | X | | Forwarded from:  
Center for the Study of  
Organizational Performance  
and Human Effectiveness  
University of Minnesota  
Minneapolis, Minnesota 55455 |
| 23. Marvin Dunnette  
501 So. Meadow Lane  
Golden Valley, Minnesota 55442 | X | | |
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<td>25. Richard F. Ericson</td>
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<td>26. Amitai Ptzioni</td>
<td>475 Riverside Drive</td>
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<td>29. Janet Freeman</td>
<td>Department of Management</td>
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<td>Department of Public Admin.</td>
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<td>Mr. Gardner was out of the</td>
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<td>32. Jack Gibb</td>
<td>8473 La Jolla Scenic Drive N</td>
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<td>La Jolla, California 92037</td>
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<td>33. Beia Gold</td>
<td>2901 Litchfield Road</td>
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<td>Shaker Heights, Ohio 44120</td>
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<td>Department of Political Science</td>
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<td>Bertram Gross Department of Urban Affairs Hunter College 790 Madison Avenue New York City, NY 10021</td>
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<td>Ray C. Guillett Management Department University of Arkansas at Little Rock Little Rock, Arkansas 72201</td>
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<td>Management Science Dept. 3674 Lindell</td>
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<td>Theo Haimann (faculty noted) Saint Louis University Saint Louis, Mo. 63108</td>
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<td>Michael Hamann Department of Sociology Stanford University Stanford, California 94305</td>
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<td>Willis Harman Social Policy Research Center Stanford Research Institute Menlo Park, California 94024</td>
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<td>Don Hallriegel Department of Management Texas A &amp; M University College Station, Texas 77843</td>
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<td>Herbert G. Hicks Management Department Louisiana State University Baton Rouge, Louisiana 70803</td>
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<td>Ida Hess Space Sciences Lab. #101 University of California Berkeley, California 94720</td>
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<td>Morris Janowitz Department of Sociology University of Chicago 5801 Ellis Avenue Chicago, Illinois 60637</td>
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<td>Herman Kahn, Hudson Institute Quaker Ridge Road Croton-on-Hudson, NY 10520</td>
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<td>Premont Kast, Graduate School of Business Administration, University of Washington Seattle, Washington 98195</td>
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<td>Robert L. Katz, 2725 Sand Hill Road #8109 Menlo Park, California 94025</td>
<td>X</td>
<td>Mr. Katz supplied the specific office number.</td>
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<td>Herbert Kaufman, The Brookings Institution 1775 Massachusetts Avenue NW Washington, D.C. 20036</td>
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<td>Edward Knop, Department of Sociology and Anthropology Colorado State University Fort Collins, Colorado 80521</td>
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<td>George Koszetsky, Graduate School of Business University of Texas at Austin Austin, Texas 78712</td>
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<td>Harold Lanwell, Department of Law Yale University New Haven, Connecticut 06520</td>
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<td>Paul R. Lawrence, Humphrey House Soldiers Field Boston, Massachusetts 02164</td>
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<td>Ervin Laszlo, Department of Philosophy State University of New York Geneseo, New York 14454</td>
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Graduate School of Business  
Stanford University  
Stanford, California 94305 | X |  |
| 62. Rensis Likert  
630 City Center Building  
Ann Arbor, Michigan 48108 | X |  |
| 63. Harold A. Linstead  
70 Wheatherstone Court  
Lake Oswego, Oregon 97034 | X | Forwarded from:  
Systems Science Doctoral Program  
Portland State University  
Portland, Oregon 97207 |
| 64. Gordon L. Lippitt  
3605 Lamar Road  
Washington, D. C. 20016 | X | Forwarded from:  
School of Government and Business Administration  
George Washington University  
Washington, D. C. 20006 |
| 65. Jay W. Lorsch  
Graduate School of Business Administration  
Harvard University  
Boston, Massachusetts 02163 | X |  |
| 66. Fred Luthans  
College of Business  
University of Nebraska  
Lincoln, Nebraska 68508 | X |  |
| 67. David C. McClelland  
Department of Psychology and Social Relations  
1530 William James Hall  
Harvard University  
Cambridge, Massachusetts 02138 | X |  |
| 68. Robert N. McHurry  
645 North Michigan Avenue  
Chicago, Illinois 60611 | X | McHurry Company  |
| 69. Margaret Mead  
American Museum of Natural History  
15 West 77th Street  
New York City, NY 10024 | X | Ms. Mead was out of the country during the survey. |
| 70. Donald N. Michael  
4081 Clark Road  
Ann Arbor, Michigan 48104 | X |  |
| 71. Burt Nanus  
Center for Futures Research  
Graduate School of Business Administration  
University of Southern California  
Los Angeles, California 90007 | X |  |
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<td>Public Administration University of Southern California Los Angeles, California 90007</td>
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<td>Mental Health Research Institute University of Michigan 205 Washtenaw Place Ann Arbor, Michigan 48104</td>
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<td>J. J. Powers</td>
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<tr>
<td>Department of Industrial Management Lawrence Institute of Technology 21000 West Ten Mile Road Southfield, Michigan 48075</td>
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<td>Nicholas Rascher</td>
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<td>Philosophy Department University of Pittsburgh Pittsburgh, Pennsylvania 15261</td>
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<td>Richard Rochberg</td>
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<tr>
<td>Box 1146 Washington University Saint Louis, Missouri 63130</td>
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<td>James E. Rosenweig</td>
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<td>School of Business Administration University of Washington Seattle, Washington 98195</td>
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<td>William G. Scott</td>
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<td>DJ-10 University of Washington Seattle, Washington 98195</td>
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<td>Robert Shannon</td>
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<tr>
<td>P. O. Box 1247 Industrial Systems Engineering University of Alabama in Huntsville Huntsville, Alabama 35808</td>
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| 81. Frank P. Sherwood  
Public Administration  
University of Southern California  
Los Angeles, California 90007 | X | Mr. Sherwood was out of the country during the survey. |
| 84. Herbert A. Simon  
5818 Northumberland Street  
Pittsburgh, Pennsylvania 15217 | X | |
| 85. Philip E. Slater  
Department of Sociology  
Brandeis University  
Waltham, Massachusetts 02154 | X | |
| 86. John W. Slocum, Jr.  
609 College of Business Administration  
The Pennsylvania State University  
University Park, Pa. 16802 | X | Mr. Slocum supplied the department title and number. |
| 87. George Strauss  
Institute of Industrial Relations  
University of California  
Berkeley, California 94720 | X | |
| 88. Julius Stulman, Sr.  
World Institute Council  
777 U. S. Plaza  
New York City, NY 10017 | X | |
| 90. James D. Thompson  
Department of Sociology and Anthropology  
Vanderbilt University  
Nashville, Tennessee 37235 | X | Letter returned as Mr. Thompson is deceased. |
| 91. Noel Tichy  
Graduate School of Business  
Columbia University  
New York City, NY 10027 | X | Forwards from:  
Project Associates, Inc.  
5605 Lamar Road  
Washington, D. C. 20016 |
| 92. Eric L. Trist  
Department of Social Systems Science  
University of Pennsylvania  
Philadelphia, Pa. 19104 | X | |
| 93. Robert A. Ullrich  
Graduate School of Management  
Vanderbilt University  
Nashville, Tennessee 37203 | X | |
| 94. Auran Urts  
Research Institute of America  
589 5th Avenue  
New York City, NY 10017 | X | |
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<td>Max Ways</td>
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| 120 East 81st Street  
New York City, NY 10029 |        |          |
| George F. Wieland  
Department of Management  
University of Michigan  
Ann Arbor, Michigan 48104 | X        | Letter returned and resent to publisher:  
Richard D. Irwin, Inc.  
Homewood, Illinois 60434 |
| Thomas L. Whisler  
Graduate School of Business  
University of Chicago  
Chicago, Illinois 60637 | X        |          |
| William F. Whyte  
Ives Hall  
New York State School of Industrial Labor Relations  
Cornell University  
Ithaca, New York 14850 | X        |          |
| Max S. Worthman  
University of Massachusetts  
Amherst, Massachusetts 01003 | X        |          |
### DELPHI NOMINEES

Addresses are noted only for those organizational futurists who live in the United States and are not noted on the list of Peer Nominators (L). The symbol "*" indicates an organizational futurist who received multiple nominations.

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<tr>
<td>2. Stafford Beer</td>
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<td>Lives in Great Britain.</td>
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<tr>
<td>3. Daniel Bell + (L)</td>
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<tr>
<td>4. Kenneth Bennis (L)</td>
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</tr>
<tr>
<td>5. Warren Bennis + (L) Corrected address: 240 Lake Avenue Aspen, Colorado 81611</td>
<td>X</td>
<td>Mr. Bennis was out of the country during the inquiry.</td>
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<tr>
<td>6. Edward Bellamy</td>
<td>X</td>
<td>No address was found.</td>
</tr>
<tr>
<td>7. Wayne Boucher + Futures Group Gastonbury, Conn. 06033</td>
<td>X</td>
<td>Letter returned: Although no forwarding address was offered, a co-worker offered to replace Mr. Boucher.</td>
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<tr>
<td>8. Elise Boulding + (L)</td>
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<tr>
<td>9. David G. Bowers</td>
<td>X</td>
<td>Department of Economics Case Western Reserve Univ. Cleveland, Ohio 44106</td>
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<tr>
<td>10. Elmer H. Burack (L)</td>
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<td>11. Leo Cherne</td>
<td>X</td>
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<tr>
<td>13. C. West Churchman</td>
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<tr>
<td>15. Kenneth Corey (L)</td>
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| 16. Jim Bator  
Dept. of Political Science  
University of Hawaii at Manoa  
Honolulu, Hawaii 96822 | X |    |         |
| 17. Keith Davis  
Department of Management  
College of Bus. Administration  
Arizona State University  
Tempe, Arizona 85281 | X |    |         |
| 18. Louis Davis  
Department of Management  
University of California  
405 Hilgard Avenue  
Los Angeles, Ca. 90024 | X |    |         |
| 19. Alfred de Grazia  
Department of Politics  
New York University  
Washington Square  
New York City, NY 10003 | X |    |         |
| 20. Andrea Delbecq  
Center for Evaluation Research  
Training and Program Development  
School of Social Work  
University of Wisconsin  
425 Henry Mall  
Madison, Wisconsin 53706 | X |    |         |
| 21. Peter Drucker * (L) | X |    |         |
| 22. Selwyn Enzer (L) | X |    |         |
| 23. Amato Etzioni (L) | X |    |         |
| 24. Roger Evered  
Dept. of Management Science  
Pennsylvania State University  
201 Old Main  
University Park, Pa. 16802 | X |    |         |
| 25. Alan C. Fillis | X |    |         |
| 26. Robert Fisher  
Department of Business  
University of Central Arkansas  
Conway, Arkansas 72032 | X |    |         |
| 27. Jay Forrester  
Room 24-454  
M. I. T.  
Cambridge, Mass. 02139 | X |    |         |
| 28. Wendall French  
Graduate School of Business  
Administration  
University of Washington  
Seattle, Wash. 98195 | X |    |         |
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<td>31. Luther Geisler</td>
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<td>32. Jack Gibb (L)</td>
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<td>34. Bertman Gross (L)</td>
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<td>37. Erich Jantsch (L)</td>
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<td>54. John F. Nee + Dean, General-Technical Studies Indiana University Bloomington, Indiana 47401</td>
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<td>55. Donald Michael (L)</td>
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<td>56. Donald B. Miller 14600 Wild Oak Way Saratoga, Ca. 95070</td>
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<td>60. Peter Nash</td>
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<td>61. George Odiorne 315 Lincoln Avenue Amherst, Mass. 01002</td>
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<td>62. James O'Toole Department of Management University of Southern Calif Los Angeles, Ca. 90007</td>
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<td>63. Charles Parnow Department of Sociology State University of New York Stony Brook, NY 11790</td>
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<td>64. Henry R. Roberts Connecticut General Life Insurance Company Hartford, Conn. 06152</td>
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<td>73. Leonard Sayles Department of Business Columbia University New York City, NY 10027</td>
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<tr>
<td>76. Herbet Shepard 489 Haviland Road Stamford, Conn. 06903</td>
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<td>81. Victor Thompson Dept. of Political Science University of Florida Gainesville, Florida 32601</td>
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RESPONDENTS TO DELPHI INVITATION

NEGATIVE RESPONSES

Ackoff, Russell L-
Argyris, Chris LP-
Bass, Bernard L-
Bell, Daniel LP-
Bennis, Warren LP-
Gordon, Theodore LP-
Gross, Bertram LP-
Hoos, Ida L-
Jantsch, Erich LP-
Kaufman, Herbert L+
Konecci, Eugene P
Litwak, Eugene P
Lorsch, Jay L-
Luthans, Fred L+
McClelland, David L-
Mead, Margaret L-
O’Toole, James P
Rogers, Carl P
Rowe, Lloyd P
Sayles, Leonard P
Simon, Herbert LP-
Thompson, Victor P
Toffler, Alvin P
Trist, Eric LP+
Whyte, William L+

Gibb, Jack LP+
Greiner, Larry L-
Gullette, Ray L-
Hall, Richard P
Herbert, Theodore L+
Kast, Fremont L+
Koontz, Harold LP+
Levinson, Harry P
Linstone, Harold LP+
Lippitt, Gordon LP+
McMurry, Robert L+
Mee, John P
Miller, Donald P
Odierna, George P
Perlmutter, Howard L-
Rochberg, Richard L-
Rosenzweig, James L+
Rourke, Francis P
Ruefli, Timothy P
Saxberg, Borje P
Shannon, Robert LP+
Steiner, George P
Stulman, Julius L+
Thayer, Frederick P
This, Leslie L+
Tichy, Noel L+
Ullrich, Robert L+
Uris, Auren LP+
Waldo, Dwight P
White, Orion P

POSITIVE RESPONSES

Benge, Eugene L+
Benne, Kenneth LP+
Boise, William L+
Boulding, Elise LP+
Bowars, David P
Bright, James L+
Burack, Elmer LP+
Corey, Kenneth LP+
Dator, Jim P
Davis, Keith P
Dalbecq, Andre P
Farmer, Richard L-
Filley, Alan LP+
Fisher, Robert P
French, Wendell P
Fulmer LP+
Gerlach, Luther P

L = Named in Literature Search
P = Named in Peer Nomination Survey
LP= Named in both the Literature Search and in the Peer Nomination Survey
+ = Responded to Nominating Request
- = Did not respond to Nominating Request
NON-RESPONDENTS TO DELPHI INVITATION

Anshen, Melvin L-
Blau, Peter L+
Boguslaw, Robert L-
Brown, Courtney L+
Carroll, Conrad L+
Cherne, Leo P
Chin, Robert L-
Christensen, Roland P
Cherchman, Wess P
Dale, Ernest L+
Davis, Louis P
deGrazia, Alfred P
Denney, Reuel L-
Drucker, Peter LP+
Dunnette, Marvin L+
Enzer, Selwyn LP+
Ericson, Richard L-
Etzioni, Amitai LP-
Evered, Roger P
Forrester, Jay P
Galbraith, Jay P
Gold, Bela L-
Golembiewski, Robert L+
Haimann, Theo L+
Hannan, Michael L-
Harman, Willis LP+
Hellriegel, Don L+
Hicks, Herbert L-
Janowitz, Morris P
Johnson, Richard L-
Jones, Reginald P
Kahn, Herman LP-
Katz, Robert LP+
Knop, Edward L-
Kozmetsky, George LP+
Landau, Martin P
Laswell, Harold L-
Laszlo, Ervin L-
Lawrence, Paul LP+
Leavitt, Harold LP+
Likert, Rensis LP+
Michael, Donald LP-
Nanus, Burt LP+
Perrow, Charles P
Platt, John L-
Rescher, Nicholas L-
Roberts, Henry P
Saunders, Homer P
Schoeman, Milton L+
Scott, William LP+
Shepard, Herbert P
Slater, Philip L-
Slocum, John L+
Strauss, George L-
Vaill, Peter P
Ways, Max L-
Weick, Karl P
Weiland, George L-
Weiner, Anthony P
Whisler, Thomas LP-
Wortman, Max L-

L = Named in the Literature Search
P = Named in Peer Nomination Survey
LP= Named in both the Literature Search
and in the Peer Nomination Survey
+" = Responded to Nominating Request
- = Did not respond to Nominating Request
APPENDIX B

SURVEY CORRESPONDENCE

Included in this appendix are reproductions of the correspondence used in conducting the Peer Nomination survey and the Delphi inquiry. In several instances, the correspondence and questionnaires have been reduced in size to accommodate the requirements of the dissertation. Originally, each Delphi questionnaire was printed on both sides of a single page of legal-sized (8½" x 13") paper. The transcription from Round I which accompanied the second round questionnaire was also printed on both sides of legal-sized paper. Other reduced correspondence originally was printed on 8½" x 11" paper, and usually included typed addresses for the panelists and typed salutations.
Attached below is a stamped, addressed postcard which I would like you to complete and mail to me.

I am developing a list of organizational futurists for a survey on what organizations will look like in the year 2000. The organizational futurists you suggest should be people who have demonstrated an interest in the future of organizations by having published on that topic.

You may include yourself on the list, if you care to. The amount of time required by the survey will be determined by the individual participants.

This survey is the data-collection phase of a dissertation and so it is quite important that I have your input. The deadline for receiving the postcards is August 15, 1977.

Thank you for your time and assistance.

Sincerely,

Suzann M. Owings

August 15, 1977 IS THE POSTCARD DEADLINE.

<table>
<thead>
<tr>
<th>Name</th>
<th>Last</th>
<th>First</th>
<th>Preferred title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
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</tr>
<tr>
<td>ZIP Code</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Using the given criterion, please select the three people who most clearly come to mind as organizational futurists:

1.
2.
3.
August 15, 1977

About two weeks ago you received a letter and an enclosed postcard requesting that you nominate three people you feel qualify as organizational futurists.

I realize that this is the summer and vacations and other plans happen, but this survey is very important to me and I would greatly appreciate your assistance in completing this phase of my dissertation.

Please, take a moment and dig out that letter, complete the postcard, and mail it back to me.

Thank you so much for your help.

Suzann M. Owings

106 Columbia Drive, S.E., No. 2
Albuquerque, New Mexico 87106
Now that vacation and most of the professional meetings are over, perhaps you could take a moment to complete and mail the attached stamped postcard.

This survey is the same one you received last month and which is probably buried in your stack of summer mail. This second copy has been sent since you are one of the few who has not responded to my earlier request and I would like to remedy that significant omission. Could you help?

The task is quite simple. I am developing a list of organizational futurists and would like you to nominate three people who you see as being in that group. The people you suggest should have demonstrated an interest in organizations of the future by having published on the topic. You may include yourself, if you wish.

I see you as being an important organizational futurist and would very much value your suggestions. This survey is part of the data-collection phase of my dissertation and so it is very important that I receive input from the more famous and respected organizational futurists. The deadline for receiving your card is September 30, 1977.

Thank you for your time and assistance.

Sincerely,

Suzann M. Owings
Thank you so much for participating in this pre-test for my dissertation.

Included are the Delphi questions and the letter requesting the organizational futurists' participation.

I would appreciate it very much if you would look over the letter, respond to the Delphi inquiry, and give me your criticism of both. I am looking for ambiguities and any difficult wording or confusions you may encounter. Also, please note at the top of the questionnaire how long it took you to complete the inquiry.

When you have completed your reactions, please give me a call and I will come over and pick it up. I want very much to have this pre-testing completed by October 5, this Wednesday. I know that sounds soon, but it's a quickie.

Thank you again for your help.
October 7, 1977

Shortly, you will be receiving an invitation to join a Delphi survey of organizational futurists.

Should you join us, you will be receiving information from other Delphi panelists. The Delphi will be a matter of responding to two, possibly three, rounds of inquiry.

The organizational futurists being invited are people identified as having demonstrated an interest in organizations of the future by having published on the topic. You were selected as a member of this group through a literature search and/or a poll of some of your peers.

I do hope that you will join us. Further information will be forthcoming.

Suzann M. Owings
I would like to invite you to join a panel of your colleagues in a Delphi survey about organizations of the future.

The Delphi process will be conducted through the mail. Using the group's collective information, gathered in the mailings, panelists will maintain their anonymity while "conversing" with other participants and developing some interesting conjectures.

The Delphi is expected to be two, possibly three, rounds. The first round is included and is extremely important as it will serve as the basis for the subsequent rounds.

As you can see, the questions are open-ended and allow you to determine the amount of time you want to spend on them. Should you join us, for your time and effort, I will send you a complete summary of the Delphi.

Enclosed for your convenience is a stamped, addressed envelope for returning the completed form. Wherever feasible, I would appreciate typed responses to enhance communication and lessen the chance of misinterpreting your ideas to the panel and in my dissertation.

Please return your response by October 24, 1977. I will be looking forward to hearing from you. Thank you for your consideration.

Sincerely,

Suzann M. Owings
Thank you for responding to my request for nominations of organizational futurists. That was the first step in developing a Delphi panel on organizations of the future to which you are invited. You too were identified as an organizational futurist either through the literature search and/or the poll in which you participated.

The Delphi process will be conducted through mailed surveys. Using the groups' collective information, gathered in the mailings, panelists will maintain their anonymity while "conversing" with other participants and developing some interesting conjectures.

The Delphi is expected to be two, possibly three, rounds. The first round is included and is extremely important as it will serve as the basis for the subsequent rounds.

As you can see, the questions are open-ended and allow you to determine the amount of time you want to spend on them. Should you join us, for your time and effort, I will send you a complete summary of the Delphi.

Enclosed for your convenience is a stamped, addressed envelope for returning the completed form. Whenever feasible, I would appreciate typed responses to enhance communication and lessen the chance of misinterpreting your ideas to the panel and in my dissertation.

Please return your response by October 24, 1977. I will be looking forward to hearing from you. Thank you for your consideration.

Sincerely,

Suzann M. Owings
DELPHI INQUIRY INSTRUCTIONS

1. These questions ask that you describe what you "objectively" think will be happening in the future. When discussing probability, we are asking about the most probable, typical, or likely occurrence.

2. Please remember that these questions are set within a definite timeframe. They are asking about the next twenty-two years, not about the unlimited future.

3. This study deals with "organizations" as a generic term. The study is concerned with what organizations of the future will look like and which trends and/or issues will affect how they will look in the year 2000.

4. Please, be concise in answering the questions and, if at all possible, have your responses typed.

IF YOU HAVE ANY QUESTIONS, I CAN BE REACHED AT (505) 265-0664.

PLEASE RETURN THIS INQUIRY BY NOVEMBER 14, 1977.

_________________________
Suzann M. Owings 106 Columbia Drive, SE #2
(505) 265-0664  Albuquerque, New Mexico 87106
ORGANIZATIONAL TRENDS AND APPEARANCE IN THE FUTURE
(First Round Delphi Inquiry)

TRENDS OR ISSUES which will affect future organizations
1. Citing no more than three, which trends and/or issues do you see as having the greatest impact on how organizations will probably look in the year 2000?

   1. ____________________________________________________________

   2. ____________________________________________________________

   3. ____________________________________________________________

RATIONALE
11. Please give your reasons for citing the previously noted trends and/or issues.

   for 1. _________________________________________________________

   for 2. _________________________________________________________

   for 3. _________________________________________________________

Suzann M. Owings 106 Columbia Drive, SE #2
(505) 265-0664 Albuquerque, New Mexico 87106

PLEASE SEE OVER
Hello:

Last week you received an invitation to a Delphi survey on organizations of the future. If your response is already in the mail to me, thank you. If not, I would appreciate you taking a few minutes to think once again about the project.

Dealing with "organizations" as a generic term, the study is concerned with what organizations of the future will look like and which trends and/or issues will affect how they will look in the year 2000. For example, just as bureaucracies may represent how organizations typically appear today, this survey concerns itself with how organizations will most probably appear in twenty-two years.

Enclosed is a second copy of the first round of the Delphi. Wherever possible, I would appreciate typed responses to enhance communication and lessen the chance of misinterpreting your ideas to the panel and in my dissertation.

I do hope that you will join us. I will be looking forward to hearing from you. Thank you for your assistance.

Sincerely,

[Signature]

Suzann M. Owings

NOTE:

Should the address to which this correspondence was sent be incorrect, please note the correct address on the return envelope. Similarly, if the title used was incorrect, please correct it on the return envelope.
Hello:

While compiling the second round of the Delphi on organizations of the future, I received several telephone calls and letters from panelists suggesting that two weeks was not sufficient time for busy professionals to respond to the Delphi invitation.

These communications and the large response I have had since the official deadline of October 24 have convinced me that they are right. Therefore, I am extending the Delphi deadline to November 14, 1977 and hope that this extension will prove more convenient for you.

Enclosed is another copy of the first round of the Delphi. Wherever possible, I would appreciate typed responses to enhance communication and lessen the chance of misinterpreting your ideas to the panel and in my dissertation.

Thank you for your time and I will be looking forward to hearing from you in the future.

Sincerely,

[Signature]

Suzann M. Owings
November 18, 1977

Welcome to the Delphi on organizations of the future. From the telephone calls and letters I received, I am pleased to find that the first round was enjoyable. I had hoped this Delphi would be a fun exercise.

Included is the second round which should also be quick and enjoyable. There is, however, a possibility that you will do more work than is needed, so please read the directions carefully. I need only six reactions to the list of ten trends and issues.

Again, let me remind you that this study deals with what organizations will look like in twenty-two years. We have a definite timeframe. Also, please be concise and, if at all possible, have your responses typed--it helps tremendously.

This may be the final round of our Delphi. If so, upon receiving all the responses and collating them, I will send you a complete copy of the Delphi. In the meantime, included is a copy of the panel's responses to the questions about issues and trends in the first round. The responses areunedited and direct transcriptions of what was sent to me. Because they have been fitted into the "top ten" framework, some responses have not been included. I very much enjoyed reading your questionnaire and want to congratulate you on the richness of your information.

Our deadline this time is December 6, 1977. Please have your responses to me by then. If you have any questions, I can be reached at (505) 265-0664.

Thank you again for your cooperation and time. I am looking forward to hearing from you soon.

Sincerely,

Suzann M. Owings
ORGANIZATIONAL TRENDS AND APPEARANCE IN THE FUTURE
(Second Round Delphi Inquiry)

SECTION I. ORGANIZATIONAL ISSUES AND TRENDS
Summarized below are the ten issues or trends most frequently identified by the Delphi panel in the first round. They are not ranked, but placed in alphabetical order.

Using "MS" and "LS," note the three Most Significant and the three Least Significant of the following ten and then provide the explanations of each of your six choices.

A. BLURRING OF DISTINCTIONS BETWEEN TYPES OF ORGANIZATIONS
The boundaries between organizations will become increasingly vague and the cross collaboration between organizations will lead to a mingling of characteristics.

B. GREATER CENTRALIZATION OF SOME FUNCTIONS AND GREATER DECENTRALIZATION OF OTHER ORGANIZATIONAL FUNCTIONS
Since many firms will grow larger, more decentralization will be required. At the same time, real control will be centralized.

C. INCREASE IN EDUCATIONAL AND 0-0 ACTIVITIES WITHIN ORGANIZATIONS
These activities will assist organization members to communicate better and to stay abreast with new technologies.

D. INCREASING GOVERNMENTAL REGULATIONS AND SURVEILLANCE OF ORGANIZATIONS
Governmental interest in regulation and coordination of organizations—private and public—will parallel rises in consumer interest in organizations.

E. INCREASING USE OF THE MATRIX FORM
The advent of the "professional" organization will lead to the matrix or project form of organizing.

F. ORGANIZATIONS WILL BE FORCED TO DEAL WITH SCARCITY.
We will have reached the limits of our natural resources causing us to be more efficient in using them.

Suzann M. Swings 106 Columbia Drive, SE 72
(505) 265-0664 Albuquerque, New Mexico 87106
G. ORGANIZATIONS WILL CONTINUE TO BE DOMINATED BY BUREAUCRACY.
Bureaucracy will remain the dominant organizing form.

H. POPULATIONS IN ORGANIZATIONS WILL CHANGE.
Organizations will have to deal with shifts in their minority populations, and increasing mobility of their membership.

I. POWER EQUALIZATION AMONG ORGANIZATION MEMBERS
Involvement of more organization people in participative decisions about the goals, methods, and criteria which will guide their work.

J. TECHNOLOGY WILL ALTER ORGANIZATIONS APPRECIABLY.
Information, communication, automation, and computer technology employed by organizations will be increasingly complex and sophisticated.

SECTION II. UNFORESEEN CIRCUMSTANCES
This section affords the panelist an opportunity to dip more deeply into the realms of imagining. As stated by one panelist, there will be "at least one unforeseen significant outside event" which will occur to influence organizations by the year 2000. What would you guess that to be?

Please be certain that you have completed both sides of this inquiry. Thank you.
Suzann M. Dwyer 108 Columbia Drive, SE #2
(505) 265-0664  Albuquerque, New Mexico 87106
PLEASE RETURN BY DECEMBER 5, 1977.
ORGANIZATIONAL TRENDS AND APPEARANCE IN THE FUTURE
Second Round Delphi, Issues and Trends

A. BLURRING OF DISTINCTIONS BETWEEN TYPES OF ORGANIZATIONS

The boundaries between organizations will become increasingly vague and the cross collaboration between organizations will lead to a mingling of characteristics.

Increasing complexity and interdependence—The traditional model of organizations presumes minimal interdependence, hence we do not know how to manage it.

There will be increasing interdependence among organizations in using resources and making decisions—The autonomy of organizations is decreasing and effective inter-organizational relations become imperative for survival.

The "withering away of the state."—I use this ironically or paradoxically to refer to the increasingly "powerlessness" of government at the same time that its functions and size increase. As it expands, its boundaries become more vague, more permeable. Related and characteristic: the growth of "gray area" in almost all sectors in which government and "non-government" are combined in intricate and often novel fashion.

There will be increasing similarities among different types of future organizations—Uniformity, standardization and similarity between different forms and types of organizational entities will increase; the bureaucracy and its associated techniques (PQB, MBO, etc.) will infiltrate all organizational aspects of the future society.

Required interface between Government and the organization—There is increased interface between government with other private and public institutions.

Opportunities for cross collaboration between organizations and government will be required. Interchanging personnel across these organizational systems will increase. More interdependence will emerge as a regular way of operating organizations.

Increasing need for interorganizational coordination—Increased organization of all human activities. Problems of economic and social integration.

The appearance of coalitions between firms in rich, poor, and ideologically different countries in global industrial system constellations (GISCs).

The introduction of geocentrization processes in nations and unions which will react on the multinational corporation's desire for viability and legitimacy.

B. GREATER CENTRALIZATION OF SOME FUNCTIONS AND GREATER DECENTRALIZATION OF OTHER ORGANIZATIONAL FUNCTIONS

Since many firms will grow larger, more decentralization will be required. At the same time, real control will be centralize.

More decentralization of decision making accompanied by definite and clearly defined centralization in the pattern of General Motors—Because (1) many firms will grow larger and some much larger, requiring more decentralization; and (2) since more people have learned the dangers of too much decentralization, enterprises will give attention to holding control in major matters at the top.

Greater centralization of some organizations—Highly centralized control possible by [telecommunications and further improvements in information handling and communications].

Greater decentralization of other organizations—Participation from many remote locations suggest participative decision making feasible.

There will be more decentralization of large corporations into profit center divisions—The large size will require divisions into smaller and more manageable units, more General managers, more MBO, more delegation to lower levels. The use of micro-computers will expedite the decentralization move.

Corporations will be larger and more concentration of ownership—The trend has continued since 1920 and no serious impact of either anti trust nor other influences have stemmed this concentration.

Increasing geographic decentralization—Communication technology making location in limited number of urban centers unnecessary.
ORGANIZATIONAL TRENDS AND APPEARANCE IN THE FUTURE
Second Round Delphi, Issues and Trends. page 2

Increasing planning (both organizational and community) will be more important in future organizations—As future organizations become more complex, larger and more centralized, it is highly probable that planning, both within the organization and between the organization and its outside environment, will become more important and more in demand—as an approach to making order out of complexity.

C. INCREASE IN EDUCATIONAL AND O-D ACTIVITIES WITHIN ORGANIZATIONS

These activities will assist organization members to communicate better and to stay abreast with new technologies.

Greater psychological understanding—There is growing knowledge among younger people in management about issues having to do with motivation. This contrasts significantly with the psychological blindness of many senior executives. When such people find themselves in positions of greater responsibility, we can expect more radical change in organization structure and processes than we are presently seeing.

Increasing demands for jobs in organizations to be interesting and provide opportunities for the growth and development of members—Once again, education has played a major role. As organizations now exist, there are many dull and boring jobs that must be performed. The more highly educated and/or trained, the less willing people are to perform dull jobs.

Shift to more emphasis on Quality of Work life at all levels of the organization—Societal shifts reflected in more individualistic and at time hedonistic outlooks on the part of younger people.

Continual organizational development and educational activities for all personnel, both to foster personal growth and organizational adaptability to turbulent and changing environments—Changing and turbulent environments require renewed and reeducated workers and renewed and continually revised forms and patterns of education, training and organizational development. Opportunity to grow and learn also helps to meet the motivational problem.

Increased need for continuing education and training—Management at all levels must keep up with the accelerating change. Organizations could well end up with employees spending 50% of their time doing their job and 50% of their time training to keep up with the changing environment.

A considerably greater percent of total work will be organized and designed with the understanding that work must contribute to human growth and vitality. This will result from both individual and social redesign of work and movements like industrial democracy and quality of work life programs—New recruits are demanding more meaningful and psychologically rewarding work. In Europe employee representation on boards of directors is increasing. Despite current slowness of progress and the absence of a U.S. ground swell for QWL improvements pressures for increased productivity to face international competition will bring large improvements in the design of work.

Behavioral science knowledge and experience about groups and organizational improvement—Rapid growth and interest in "organization development" (OD).

D. INCREASING GOVERNMENTAL REGULATIONS AND SURVEILLANCE OF ORGANIZATIONS

Governmental interest in regulation and coordination of organizations—private and public—will parallel rises in consumer interest in organizations.

Organizations will be increasingly open to public scrutiny in their decision-making processes—Secrecy and confidentiality will be less acceptable in the eyes of the public as groups such as Common Cause exerts vigorous pressure toward a culture of disclosure.

Increasing federal regulation of private organizations—Increasing interdependence among units in society prompts governmental interest in regulatory and coordinating units. Also—societal demand that humanistic values (e.g., quality in employment opportunity) be imposed on organizations operating according to self-interest prompts further government regulation.
Government influence on business and growing web of legislation—legislation represents an increasingly effective technique for accelerating change in the work conditions, employment policies, product techniques and other key aspects of organizational functioning—at times irrespective of what management sees as economic or desirable.

Growing government control that burdens organizations with more costs than benefits—Costs greater than benefits—both economic and social. Massive increase in bureaucracy as required by various governmental programs, such as racial, ethnic, and countless other quotas for employment. Substantial increase in company costs, less within-company employee freedoms, substantial declines in market flexibility to meet human needs efficiently.

Government legislation—Obviously growing, Raw material shortages.

Government Regulation will require addition of many specialists to deal with various agencies. The organization will have to add a substantial number of people basically doing nothing but reporting and liaison to government—The very evident trend to more restraints and standards, as well as reports of tests and conformance.

Increased governmental surveillance and regulation, probably in pursuit of a consumer bill-of-rights—Exacerbation of consumerism movements and the trend to a "riskless" society. Increased governmental role, with especial regard to creating a countervailing agency for consumers. Governmental re-organization may make the federal bureaucracy actually able to develop the capability to develop standards and audit methods for the paperwork flow currently required for "regulation".

Increased government regulation will increase need for top corporate staff—Government regulation is obvious—increased staff of specialists is logical response to need.

Governmental Control—Increasing information requirements of governmental regulatory agencies will make reporting to the government a major organizational function.

The growing power of government over industry and commerce—Laws, administrative regulations and Executive Orders restrict management as to commerce, labor relations, production, ecology, products and social relationships. These obligations in turn affect policies, organization relationships, methods, location of plants, marketing practices, pricing of products, wage rates, etc.—all of them ultimately being reflected in the kind of organization structure evolved to adapt for survival. Additionally, they will increasingly foster closer relationships between business and government, including leaves of absence of executives to serve in government posts.

Federal intervention in the decision making processes of corporations—There has been an extraordinary thrust in government intervention in decision making processes (e.g., automobile companies) and this will continue. Government is likely to increase its interference in managerial functions ranging from boards of directors to accounting practices.

Affirmative action requirements—Accelerating governmental intervention

Pressure to make organizations more responsive to their publics—Constituent groups will continue to press for a series of important issues, whether it be better defense capability, better environmental protection, or whatever. At the same time, state and federal political pressures will include increasing numbers of regulations pertaining to the interests of constituent groups.

Government develops segmented, polycentric organization, and then networks to cope with conflict between resource developers and citizens mobilized—technocratic networks develop. Citizens mobilize in social movements, which are segmented, polycentric and networked. Action and interaction of all of the above is already underway. This in fact spells the end of centralized bureaucracies. But prevailing ideology will still act as if there is centralization on the one side, and disorganization on the other. Reality is what I have described in various publications both old and forthcoming as segmentary, polycentric and networked organization as main organizational type. For next 20 years or so.
ORGANIZATIONAL TRENDS AND APPEARANCE IN THE FUTURE
Second Round Delphi, Issues and Trends, page 4

E. INCREASING USE OF THE MATRIX FORM

The advent of the "professional" organization will lead to the matrix or project form of organizing.

Increased use of matrix organization in non-defense industries—Although managing by objectives has not succeeded as it should, companies will use MBO or other emphasis on objectives. With inability organizationally to make individual positions responsible for every major objective, must resort more to grid/matrix organizations.

Matrix forms of organization—Traditional hierarchy will persevere because of inherent status consciousness functionality in many situations.

Focus on projects, programs, etc. will require superimposing alternative approaches to organizing resources and emphasizing new roles that are not in the traditional hierarchy. Therefore, a flexible matrix structure will be required to cope.

Matrix Organizations will be required because of complexity of problems—Organizations will require new structures to cope with needed flexibility. Organizations of the future will become increasingly complex in terms of size, financial resources, manpower utilization, and service diversification. Traditional structures will not be adequate. Organizations will need to use "temporary systems." Task forces, project groups, and other such strategies will be required to help an institution adapt and react to its environment. To permit an organization to be proactive rather than reactive, matrix organization concepts will emerge.

The trend away from a sense of community and toward more individual action (doing your own thing)—Loss of motivation and community of interest in the firm; increased turnover; decreased loyalty to the firm or allegiance to its objectives. More difficult motivational problems and coordinative problems.

Increasing use of Matrix Structures—Increasing difficulty of functional bureaucratic designs to encompass project demands and innovations.

Advent of the era of the "professional" organizations, providing professional service and consultation—Lessened economic reliance on manufacturing sector in the U.S. economy, partly from international competition, plant obsolescence, restricted capital formation, and a larger service-economy orientation.

Post-Industrial Economy—The trend towards more service organizations and away from material goods production will continue at an accelerated pace leading to more fluid organizations.

Growing diversity of organizational designs—Recognition of the need for alternative designs in response to environmental and technological factors. Movement from traditional hierarchical structures to alternative designs. Necessity to develop adaptive, innovative organizations.

Organizations will be composed of more temporary systems and units to increase their ability to adapt to change—The task force and the audit team are already features of high technology industry. Pressures for rapid adaptation will make the classic hierarchical structure with its fixed boxes of responsibility and authority obsolete.

Planned change—Less emphasis on maintenance and preserving the status quo; More emphasis on adaptation and innovation; Built in change processes that continually identify problems and opportunities for change.

The need for rapid and flexible response—Larger organizations are already positioning themselves in the form of smaller units which may rise and fall as products presently rise and fall leaving human resources and financial resources, as well as a knowledge base, the core of what constitutes the large organization, to be deployed in amounts and forms as may be necessary.

F. ORGANIZATIONS WILL BE FORCED TO DEAL WITH SCARCITY.

We will have reached the limits of our natural resources causing us to be more efficient in using them.

Increasing scarcity—The energy crisis, population, and precariousness (vulnerability to nature) or our food production system demand a non-growth model for organizations.
Energy shortages—Solar, wind resources won't develop fast enough, nuclear not technologically feasible, so normal-style operation of western-based organizations will be handicapped.

Depletion of present energy sources and degradation of physical/social environment—Energy shortage and effects of pollution fairly well-defined. Technological break-throughs (e.g., laser controlled fusion) probably will follow 50-year implementation pattern—Thus should not find widespread applications within a period as short as 20 years.

Finite limits to resources—Every theory we use, and every operational model for decision-making has a set of underlying premises that resources are abundant, and continuous economic growth is desirable, necessary, and possible. This means that we face a paradigmatic anomaly—in Thomas Kuhn's terms. The problem we face cannot be addressed within the dominant social/organizational paradigm.

Pressures to be more efficient in use of resources—natural, economic, personnel—The use of energy issue is already with us. This will be coupled with an increased interest in lowering costs of both private and public organizations. This will be coupled with a continuing concern with utilizing a wider variety of people in non-traditional ways—the elderly, women, minorities.

Large scale, (extensive), intensive development of key energy, water and food producing resources understood and interacting with concept of system generates some pressure for what I have called a segmented, polycentric, network organization. Coping with impact on them of this, citizens develop formal and government endorsed or mandated citizen participation networks.

Shift of political power and cultural momentum away from the US and the West generally and increasingly towards various parts of the Third World (only the beginning of a longer-term trend, but significant)—I believe this to be a major factor behind what is presently called "the energy crisis," and it will increase, rather than diminish. Though there will be more multinational corporations (and more globalism generally), the present imperialistic management practices of Western-based organizations will be increasingly difficult to sustain. "Eastern" and "Southern" decision-making styles will increase in appeal, partly as romantic adaptations by Westerners and partly because non-Westerner's influence will increase.

G. ORGANIZATIONS WILL CONTINUE TO BE DOMINATED BY BUREAUCRACY.

Bureaucracy will remain the dominant organizing form.

Less use of committees for decision making—As the need for more individualized personal responsibility is recognized.

Retention and emphasis on bureaucratic structure but with constant reflecting the times—Participation and involvement exist as sheltered experiments protected through power politics—structure needed to allow for flexibility in employment and defined path to goals and objectives.

Persistence of organizational forms—This has been the over-riding trend of the last 25 years, with new organizations copying old. To this is added the fact that the existing power arrangement will continue to press for the maintenance of the established order.

Motivational issue—There is increasing disenchantment with self-motivational models. This will increase. The country will feel the need for a superordinate national goal to secure motivation in work places.

Increasing politicization of large organizations, public and private, leading to increasing stagnation of both output and ideas. Reason: Modern trends requiring de facto or de jure senility or tenure; no one gets fired for anything. Joint and ground up decision making, leading to endless political discussion of any move.

Costs of control of organizations, particularly large private ones, approaches infinity, which really means control systems collapse. Reason: Rapidly growing legal controls on everything, from pollution to manpower to antitrust and on and on. When everything is illegal, or subject to endless litigation to find out what is legal, everything becomes legal.
I. POWER EQUALIZATION AMONG ORGANIZATION MEMBERS

Involvement of more organization people in participative decisions about the goals, methods, and criteria which will guide their work

The trend toward more democratic authority relationships—education of the masses has produced people who question the traditional views of authority—organization members want to know why.

Capital intensive organizations will require only a small corps of specialists, who are capable of solving non-routine problems through project-type organizational arrangements. For the most part—the adoption of capital intensive technology makes obsolete the bulk of lower skilled and unskilled labor.

Group efforts through cooperation and collegiality will replace the traditional structures, which are dysfunctional—The highly qualified specialists and professionals that will manage organizations will function most effectively through consultation and collegial interaction than through the appointment of layers of administrators in the traditional manner.

Increased tenderness in the relationship manager-managed—The legal framework of affirmative action, entry of women as co-equals in professional and managerial ranks and expectations of individual satisfaction in work context.

New perspective on time module—increased use of flexi-time: abandonment of 8hr/day, '40hr/week', 12mo/yr time module for flexibility to respond to individual needs includes sabbaticals on paid or unpaid basis.

More pluralistic and political-industrial democracy is moving from Europe to U.S. it is inevitable—Stakeholders (Government, consumers, workers will have more say over policy and direction of corporations).

Power equalization—increasing education of participants: Training and interest in problem solving at all levels; Narrowing zone of acceptance of positional authority.

The concept of the organization as a "community", leading to more integration, personal relationships, and depth.—These trends are widespread and fit other developments in the culture. The barriers to organizational development are that organizations are alienating, disconnected, and shallow. "Community" concepts counteract these barriers.

Trend toward greater openness in all phases of our culture—More "open" organizations will change all kinds of linearity, structure, and depersonalized aspects of the organization.

Greater demand for employee participation in decision-making, especially operative personnel—Extrapolation of past trends, greater educational levels of employees, heightened expectations; inevitability of European experiences with co-determination as a union bargaining issue; heightened social awareness and recognition of impact of organizational decisions by employees and internalized desire to induce social responsibility.

Involvement of more persons in the organization in participative decisions about the goals, methods and criteria which guide their work. Collaboration will increasingly spill over the boundary between "managers" and "workers." This involves decentralization of decisions and "new" more integration and coordination functions, rather than control functions for central headquarters personnel; and impact on interventions to establish minimum wages, fair firing and firing practices, unemployment compensation, etc., methods of motivating and controlling employee work and activity through threats of reducing wages or firing no longer will work. And trying to buy member loyalty through fringe benefits will bankrupt organizations. Positive motives to work and contribute to organizational goals must be found and developed. Participation in organizational decisions is the best way to develop a sense of ownership and responsibility in organizational members and workers.

Increase in social awareness and responses to changing societal demands for greater responsibility in social matters—Demands for corporations to increase social responsiveness will continue and corporations will respond.
ORGANIZATIONAL TRENDS AND APPEARANCE IN THE FUTURE
Second Round Delphi, Issues and Trends, Page 8

Increasing social responsibility for organizations both in protecting the health and welfare of employees and of customers and in managing the environmental impact of organizational activities and interventions—increasing social awareness of the ill-effects of social irresponsibility of organizations upon employee and customer health and safety and upon environmental quality will force standards of responsibility upon organizational management. New generations of management will come to welcome ways of achieving and maintaining social responsibility in organizational policymaking and operation.

Relationships between the organization and the individuals comprising it will be more individualized—Everyone needs not work and so both to attract and hold good employees the quality of work life will have to be improved. A major aspect of improvement will be special relationships like: individualized benefits, unique schedules, shared jobs, lump sum separations to start entrepreneurial ventures, much increased education, time off for consulting, teaching, sabbaticals, etc.

Impact of new attitudes of both managerial and hourly workers on management—Attitudes of people in organizations today with respect to such matters as participation in the decision making process, authority, work motivation, etc., are well known and will continue to change the way organizations operate.

Social changes—Desire for more participation; Educational levels higher.

J. TECHNOLOGY WILL ALTER ORGANIZATIONS APPRECIABLY.

Information, communication, automation, and computer technology employed by organizations will be increasingly complex and sophisticated.

The continued development and spread of "technology"—In two ways: (1) the spread of technology creating the environment to which organizations must respond (paradoxically organizations create this environment.) Autos, television, electronic products (CB), etc. (2) Providing new instruments and technologies for organizational use in administration, innumerable, but symbolized and led by the computer.

Information Communications Technology—The means by which individuals process organizations markedly affects the nature of organizations. Recent and projected developments in computer, management and communications technologies will alter the means and ways of information processing.

Improved video—communication, 2-way, global—Japan already offering community 2-way video. Conference video long predicted.

Technological sophistication—This will demand more highly trained personnel for key positions. At the same time, automation will reduce the demand for the conventional "blue collar" employees.

Improvements in communications—Because of improvements in communications and transportation, the world is shrinking. This, in turn, will lead to the growth of multinational organizations.

Complexity of technologies employed by organizations will increase—it is increasingly difficult to keep abreast of progress in other fields and branches of science. Our previous understandings of the basics in these fields (as Newtonian Physics, Atomic Theory, etc.) are obsolete, making it difficult to keep abreast.

Information flow will be much greater—Telecommunications and further improvements in information handling and communications.

Communication techniques leading to centralized recall and display of verbal, visual, and recorded material, hence centralized control by management—Extension of present technology and satellite capabilities, along with miniaturization through micro-circuitry.

Science Technology’s new developments, such as holograms, for totally integrated, interdisciplinary manpower form—Management guidance.
ORGANIZATIONAL TRENDS AND APPEARANCE IN THE FUTURE
Second Round Delphi, Issues and Trends, page 9

Freedom of information requires M.I.S. in a holistic way—Modern concepts require freedom of access to information and two-way communication. The character and climate of an organization can be deduced from the way it extends and withholds information. . . .

The major revolution in modern communication is that people want to "say it like it is," to have organizations tell them the truth, to be able to influence the situation, and to be "open" in the communication process. . . .

Micro-computer will enable more decentralization of administrative detail—More firms will have several small EDP operations rather than one large one.

Technology in general and computer/information processing technology in particular--The "chip" is making the computer virtually a free good. Mechanical, preprogrammed decision making will undoubtedly become ubiquitous in the home, the office and automobile.

Increasing system development utilizing hardware, software and para-professionals in Service industries—inflation pressure, emphasis on accountability and performance evaluation by Government.

Rapid Technological Change—The exponential rate of technological change will require an ability to rapidly adjust to a dynamic changing environment.

Computers—Increasing need for rapid information dispersal and availability. Real time data input will allow continuous monitoring of key functions and activities.

Advances in science and technology—Physical sciences, such as computers, miniaturization, electronics, lasers, cryogenics, etc. These advances have or will result in a national data bank of skills and job opportunities; computer devices in employee training; increase in number of operators of technical equipment, maintenance and service jobs; creation of entirely new technician jobs; better control and feedback of production; decentralization decision making; greater need for long range (particularly capital) planning; numerous effects, + and −, on middle management; holistic information flow.

The computer and its continuing development—This machine has already been the touchstone of organizational change in this decade. Continuing technological advances will project the influence for decades ahead.

Technological change, especially computer automation—Continuing and growing revolution in all functional activities of organization affecting marketing, research, planning to decision making; and wholly new techniques of training, learning and self-assessment.

Scientific basis for designing organization structure—Attention will turn from micro-organization to scientific study of organization design.

Increasing use of electronic (and post-electronic) information processing systems—and especially the trend toward "robots" and "artificial intelligence"—I believe this trend is too obvious to need elaboration. I should stress, however, that I also believe information processing systems (and the like) are about to move into a post-electronic mode, probably being more organically/biologically based, with the line between organic and inorganic being evermore blurred.

Organizations will tend to be capital intensive, rather than labor intensive—Technological developments and economic conditions mandate it.

Current middle-east technological exploration practices will point out the differential advantage of the U.S. in providing technological consultation to less developed countries which are better adapted to manufacturing economies.

Growing complexity of environments—More dynamic technologies. Expansion of domains of organizations—Functions, geographic, etc. Diverse constraints and demands upon organizations from environmental influences. Movement in business sector from primary consideration of "market" environment to broader considerations.

Rapid growth and development of technology—News reports, scholarly case studies, other research showing trends in this direction.
Dear

I have not yet received your responses to Round II of the Delphi on organizations of the future and am growing concerned.

I realize that you are very busy, especially at this time of the year, but I would appreciate you taking a minute to complete the round. As you know, this material is for my dissertation and there are certain deadlines I must meet for the Delphi Panel, my dissertation committee, and the Graduate School.

For your convenience, I have included another copy of Round II. If possible, please have your responses typed and remember that our timeframe is the year 2000, twenty-two years from now.

Thank you again for your cooperation and have a happy holiday.

Sincerely,

Suzann M. Owings
Now that the holidays are over, I hope that you will take a few minutes to complete the second round of our exploratory Delphi on organizations of the future.

Unlike many studies on organizations of the future and the trends and issues seen as influencing their development, this Delphi is an investigative survey which requires your expert opinion. The response to this investigation has been excellent, but I would greatly regret the loss of your very significant contribution to such a study.

Please take a few minutes to fill out the inquiry and return it to me using the enclosed stamped, addressed envelope. Wherever possible, please have your responses typed. Be sure to carefully read the directions--I need only six responses from you.

Thank you so much for your time and assistance in completing my dissertation project. I will be looking forward to hearing from you.

Sincerely,

Suzann M. Owings
January 30, 1978

Hello:

Thank you for your valuable contribution to completing our Delphi on organizations of the future.

In a few months, I will mail you your copy of the results. I think you will be pleased with our outcome. Thank you again for your assistance.

Sincerely,

Suzann M. Swings

THE ROBERT C. ANDERSON
SCHOOL OF BUSINESS AND ADMINISTRATIVE SCIENCES
The University of New Mexico
Albuquerque, New Mexico 87131
APPENDIX C

DELPHI TRANSCRIPTIONS

At the conclusion of the study, Delphi panelists received a booklet recounting the results of the study. Included in the booklet were a copy of the dissertation abstract, the names and addresses of Delphi panelists, the Delphi questionnaires, these transcriptions of the Delphi responses, and Figure 7 which compares Round I and II responses.
ORGANIZATIONAL ISSUES, TRENDS, AND RATIONALE
Round I Responses, page 1

TRANSCRIPTION OF DELPHI PANELISTS’ RESPONSES

Transcribed are responses to the first round Delphi. They have been placed into thematic categories, ten of which were then sent to Round II panelists. Minor spelling corrections have been made; ellipses usually indicate illegible sections of responses.

A. BLURRING OF ORGANIZATIONAL DISTINCTIONS

Increasing complexity and interdependence—The traditional model of organizations presumes minimal interdependence, hence we do not know how to manage it.

There will be increasing interdependence among organizations in using resources and making decisions—The autonomy of organizations is decreasing and effective inter-organizational relations become imperative for survival.

The “withering away of the state”—I use this ironically or paradoxically to refer to the increasing “powerlessness” of government at the same time that its functions and size increase. As it expands, its boundaries become more vague, more permeable. Related and characteristic: the growth of “gray area” in almost all sectors in which government and “non-government” are combined in intricate and often novel fashion.

There will be increasing similarities among different types of future organizations—Uniformity, standardization and similarity between different forms and types of organizations (i.e., public, voluntary and private) will increase; the bureaucracy and its associated techniques (PPBS, MBQ, etc.) will infiltrate all organizational aspects of the future society.

Required interface between Government and the organization—There is increased interface between government with other private and public institutions...Departmentalism for cross collaboration between organizations and government will be required. Interchanging personnel across these organizational systems will increase. More interdependence will emerge as a regular way of operating organizations.

Increasing need for interorganizational coordination—increased organization of all human activities. Problems of economic and social integration.

The appearance of coalitions between firms in rich, poor, and ideologically different countries in global industrial system constellations (GISCs).

The introduction of geocentralization processes in nations and unions which will react on the multinational corporation’s desire for viability and legitimacy.

B. GREATER CENTRALIZATION AND DECENTRALIZATION OF ORGANIZATIONAL FUNCTIONS

More decentralization of decision making accompanied by definite and clearly defined centralization in the pattern of General Motors—Because (1) many firms will grow larger and some much larger, requiring more decentralization; and (2) since more people have learned the dangers of too much decentralization, enterprises will give attention to holding control in major matters at the top.

Greater centralization of some organizations—Highly centralized control possible by (telecommunications and further improvements in information handling and communications).

Greater decentralization of other organizations—Participation from many remote locations suggest participative decision making feasible.

There will be more decentralization of large corporations into profit center divisions—The large size will require divisions into smaller and more manageable units, more General managers, more MBO, more delegation to lower levels. The use of microcomputers will expedite the decentralization move.

Corporations will be larger and more concentration of ownership—The trend has continued since 1920 and no serious impact of either anti trust nor other influences have stemmed this concentration.

Increasing geographic decentralization—Communication technology making location in limited number of urban centers unnecessary.

Increasing planning (both organizational and community) will be more important in future organizations—as future organizations become more complex, larger and more centralized, it is highly probable that planning, both within the organization and between the organization and its outside environment, will become more important and more in demand—as an approach to making order out of complexity.
C. EDUCATIONAL AND ORGANIZATION DEVELOPMENT (0-0) ACTIVITIES

Increasing use of "social inventions" (rather than patchwork of obsolete social traditions with some modern techniques, as now). Going beyond "modern management techniques" (including systems analysis as well as applications of humanistic and behavioral psychology) to parapsychological methods—This is another way of saying the social sciences will continue to move away from both folk traditions and from a "scientific" orientation towards a "design" orientation. We will increasingly recognize the legitimacy of inventing social institutions as we recognize the legitimacy of inventing physical technologies today.

Increasing educational levels and participatory value systems of employees—Educational trends, public opinion polls, impressions and experiences of managers, educators, and social scientists.

Greater psychological understanding—There is growing knowledge among younger people in management about issues having to do with motivation. This contrasts significantly with the psychological blindness of many senior executives. When such people find themselves in positions of greater responsibility, we can expect more radical change in organization structure and processes than we are presently seeing.

Increasing demands for jobs in organizations to be interesting and provide opportunities for the growth and development of members—Once again, education has played a major role. As organizations now exist, there are many dull and boring jobs that must be performed. The more highly educated and/or trained, the less willing people are to perform dull jobs.

Shift to more emphasis on Quality of Work Life at all levels of the organization—Societal shifts reflected in more individualistic and at time hedonistic outlooks on the part of younger people.

Continual organizational development and educational activities for all personnel, both to foster personal growth and organizational adaptability to turbulent and changing environments—Changing and turbulent environments require renewed and reeducated workers and renewed and continually revised forms and patterns of education, training and organizational development. Opportunity to grow and learn also helps to meet the motivational problem...

Increased need for continuing education and training—Management at all levels must keep up with the accelerating change. Organizations could well end up with employees spending 50% of their time doing their job and 50% of their time training to keep up with the changing environment.

A considerably greater percent of total work will be organized and designed with the understanding that work must contribute to human growth and vitality. This will result from both individual redefinition of work and movements like industrial democracy and quality of work life programs—New recruits are demanding more meaningful and psychologically rewarding work. In Europe employee representation on boards of directors is increasing. Despite current slowness of progress and the absence of a U.S. grown swell for QWL improvements pressures for increased productivity to face international competition will bring large improvements in the design of work.

Behavioral science knowledge and experience about groups and organizational improvement—Rapid growth and interest in "organization development" (OD).

D. GOVERNMENT REGULATION AND SURVEILLANCE

Organizations will be increasingly open to public scrutiny in their decision-making processes—Secrecy and confidentiality will be less acceptable in the eyes of the public as groups such as Common Cause exert vigorous pressure toward a culture of disclosure.

Increasing federal regulation of private organizations—Increasing interdependence among units in society prompts governmental interest in regulatory and coordinating units. Also—societal demand that humanistic values (e.g., equality in employment opportunity) be imposed on organizations operating according to self-interest promotes further government regulation.

There will be increasing demands by the public for organizations to assume social responsibilities—The public is becoming more outspoken in what it expects of its institutions. For example, current issues involving federal control of scientific research facilities; educational institutions are being sued because graduates lack basic marketable skills; and industrial workers are demanding greater precautionary measures when working with chemicals.

Federal intervention in the decision making processes of corporations—There has been an extraordinary thrust in government intervention in decision making processes (e.g., automobile companies) and this will continue. Government is likely to increase its interface in managerial functions ranging from boards of directors to accounting practices.
ORGANIZATIONAL ISSUES, TRENDS, AND RATIONALE
Round I Responses, Page 3

Government influence on business and growing web of legislation—legislation represents an increasingly effective technique for accelerating change in the work conditions, employment policies, product techniques and other key aspects of organizational functioning—at times irrespective of what management sees as economic or desirable.

Growing government control that burdens organizations with more costs than benefits—Costs greater than benefits—both economic and social. Massive increase in bureaucracy as required by various governmental programs, such as racial, ethnic, and countless other quotas for employment. Substantial increase in company costs, less within-company employee freedoms, substantial declines in market flexibility to meet human needs efficiently.

Government legislation—Obviously growing, Raw material shortages.

Government Regulation will require addition of many specialists to deal with various agencies. The organization will have to add a substantial number of people basically doing nothing but reporting and liaison to government—The very evident trend to more restraints and standards, as well as reports of tests and conformance.

Increased governmental surveillance and regulation, probably in pursuit of a consumer bill-of-rights—Extrapolation of consumerism movements and the trend to a “riskless” society. Increased governmental role, with especial regard to creating a countervailing agency for consumers. Governmental re-organization may make the federal bureaucracy actually able to develop the capability to develop standards and audit methods for the paperwork flow currently required for “regulation”.

Increased government regulation will increase need for top corporate staff—Government regulation is obvious—increased staff of specialists is logical response to need.

Governmental Control—Increasing information requirements of governmental regulatory agencies will make reporting to the government a major organizational function.

The growing power of government over industry and commerce—Laws, administrative regulations and Executive Orders—metrics management as to commerce, labor relations, production, ecology, products and social relationships. These obligations in turn affect policies, organization relationships, methods, location of plants, marketing practices, pricing of products, wage rates, etc.—all of them ultimately being reflected in the kind of organization structure evolved to adapt for survival.

Additionally, they will increasingly foster closer relationships between business and government, including leaves of absence of executives to serve in government posts.

Affirmative action requirements—Accelerating governmental intervention

Pressure to make organizations more responsive to their publics—Constituent groups will continue to press for a series of important issues, whether it be better defense capability, better environmental protection, or whatever. At the same time, state and federal political pressures will include increasing numbers of regulations pertaining to the constituent groups.

Government develops segmented, polycentric organization, and then networks to cope with conflict between resource developers and citizens mobilized—technocratic networks develop. Citizens mobilize in social movements, which are segmented, polycentric and networked.

Action and interaction of all of the above is already underway.

This in fact spells the end of centralized bureaucracies. But prevailing ideology will still act as if there is centralization on the one side, and disorganization on the other. Reality is what I have described in various publications both old and forthcoming as segmentary, polycentric and networked organization as main organizational type. For next 20 years or so.

E. MATRIX FORM

Increased use of matrix organization in non-defense industries—Although managing by objectives has not succeeded as it should, companies will use MBO or other emphasis on objectives. With inability organizationally to make individual positions responsible for every major objective, must resort more to grid/matrix organizations.

Matrix forms of organization—Traditional hierarchy will persevere because of inherent status conscious functionality in many situations.

Focus on projects, programs, etc. will require superimposing alternative approaches to organizing resources and emphasizing new roles that are not in the traditional hierarchy. Therefore, a flexible matrix structure will be required to cope.

The trend away from a sense of community and toward more individual action (doing your own thing)—Loss of motivation and community of interest in the firm; increased turnover; decreased loyalty to the firm or allegiance to its objectives. More difficult motivational problems and coordinative problems.
Matrix Organizations will be required because of complexity of problems—Organizations will require new structures to cope with needed flexibility. Organizations of the future will become increasingly complex in terms of size, financial resources, manpower utilization, and service diversification. Traditional structures will not be adequate. Organizations will need to use "temporary systems." Task forces, project groups, and other such strategies will be required to help an institution adapt and react to its environment. To permit an organization to be proactive rather than reactive, matrix organization concepts will emerge.

Increasing use of Matrix Structures--increasing difficulty of functional bureaucratic designs to encompass project demands and innovations.

Advent of the era of the "professional" organizations, providing professional service and consultation—Lessen economic reliance on manufacturing sector in the U. S. economy, partly from international competition, plant obsolescence, restricted capital formation, and a larger service-economy orientation.

Post-Industrial Economy—The trend towards more service organizations and away from material goods production will continue at an accelerated pace leading to more fluid organizations.

Growing diversity of organizational designs—Recognition of the need for alternative designs in response to environmental and technological factors. Movement from traditional hierarchical structures to alternative designs. Necessity to develop adaptive, innovative organizations.

Organizations will be composed of more temporary systems and units to increase their ability to adapt to change—The task force and the audit team are already features of high technology industry. Pressures for rapid adaptation will make the classic hierarchical structure with its fixed boxes of responsibility and authority obsolete.

Planned change—Less emphasis on maintenance and preserving the status quo; more emphasis on adaptation and innovation; built-in change processes that continually identify problems and opportunities for change.

The need for rapid and flexible response—Larger organizations are already positioning themselves in the form of smaller units which may rise and fall as products presently rise and fall leaving human resources and financial resources, as well as a knowledge base, the core of what constitutes the large organization, to be deployed in amounts and forms as may be necessary.

F. SCARCITY

Increasing scarcity—The energy crisis, population, and precariousness (vulnerability to nature) or our food production system demand a non growth model for organization.

Energy shortages—Solar, wind resources won't develop fast enough, nuclear not technologically feasible, so normal-style operation of western-based organizations will be handicapped.

Depletion of present energy sources and degradation of physical/social environment--Energy shortage and effects of pollution fairly well-defined. Technological breakthroughs (e.g., laser controlled fusion) probably will follow 50-year implementation pattern—Thus should not find wide-spread applications within a period as short as 20 years.

Finite limits to resources—Every theory we use, and every operational model for decision-making has a set of underlying premises that resources are abundant, and continuous economic growth is desirable, necessary, and possible. This means that we face a paradigmatic anomaly—in Thomas Kuhn's terms. The problem we face cannot be addressed within the dominant social/organizational paradigm.

Pressures to be more efficient in use of resources—natural, economic, personnel—The use of energy issue is already with us. This will be coupled with an increased interest in lowering costs of both private and public organizations. This will be coupled with a continuing concern with utilizing a wider variety of people in non-traditional ways—-the elderly, women, minorities.

Large scale, extensive, intensive development of key energy, water and food producing resources undetermined by and interacting with concept of system permutates some pressure for what I have called a segmented, polycentric, network organization.

Coping with impact on them of this, citizens develop formal and government endorsed or mandated citizen participation networks.

Shift of political power and cultural momentum away from the US and the West generally and increasingly towards various parts of the Third world (only the beginning of a longer-term trend). I believe this to be a major factor behind what is presently called "the energy crisis," and it will increase, rather than diminish. Though there will be more multinational corporations (and more globalism generally), the present imperialistic management practices of Western-based organizations will be increasingly
difficult to sustain. "Eastern" and "Southern" decision-making styles will increase in appeal, partly as rational adaptations by Westerners and partly because non-Westerner's influence will increase.

Costs of control of organizations, particularly large private ones, approaches infinity, which really means control systems collapse. Reason: rapidly growing legal controls on everything, from pollution to management to antitrust and on and on. When everything is illegal, or subject to endless litigation to find out what is legal, everything becomes legal.

G. BUREAUCRATIC DOMINANCE

Less use of committees for decision making—As the need for more individualized personal responsibility is recognized.

Retention and emphasis on bureaucratic structure but with constant reflection the times—Participation and involvement exist at sheltered headquarters protected through power politics—structures needed to allow for flexibility in employment and defined path to goals and objectives.

Persistency of organizational forms—This has been the over-riding trend of the last 20 years, with new organizations copying old. To this is added the fact that the existing power arrangements will continue to press for the maintenance of the established order.

Mentalization issue—There is increasing disenchantment with self-motivational models. This will increase. The country will feel the need for a superordinate national goal to secure motivation in work places.

Increasing politicization of large organizations, public and private, leading to increasing stagnation of both output and ideas. Reasons: Modern trends requiring ad facts or ad face seniority and tenures; no one gets fired for anything. Joint and Group DECISION making, leading to endless political discussion of any move.

Substantial inflation that averages more than five percent annually--As proven through history, inflation weakens the social stability of a nation because it increases worker and citizen unrest. The focus of organizations changes from efficiency to power, particularly political power, in order to ease the harm of inflation or to reap gain from it.

Capital shortages will increase cloud of financial executives and percent of moving to CED offices—Financial management seems to be increasing in importance more than other functional specialists--also purchasing—Traditional marketing is the big loser.

Multinational competition—World economy emerges—Markets very competitive; Pressure for growth and consumer sales faction.

H. ORGANIZATION POPULATIONS

Secular changes in basic social institutions, e.g., the family, religion, the schools—By shaping the human material for organizations they give shape to organizations. In general, these basic social institutions are producing humans less amenable to classic (i.e., Weberian) bureaucratic forms and styles.

Population—The emerging trend towards rural immigration will result in more and smaller organizations on a geographically dispersed basis. The age migration of the population towards an older average will alter demands, both internal and external.

Segregation/localist movements—Rise in political consciousness of segregationist groups since 1950's.

The population explosion—unless unrestricted breeding is discouraged. Third world nations will become over-populated with increased friction between the "haves" and the "have-nots" as in India today. This will have political repercussions directed toward the destruction of "Big Business" as we know it today.

The increasing proportion of women and racial minorities in organizations—The effects of affirmative action policies and better education among minorities will have the affect of making the organizations of the future more pluralistic and multicultural in their composition and behavior.

Racial Relations—Present emphasis on organization practices making up for past injustices will fade. Minority groups will be intolerant of poor performance in minority groups. Majority groups will become more defiant and militant towards minority groups.

Social norms buttressed by population trends—Shirts towards equality, leisure time, real life styles, etc. which are reinforced or affected by relative shifts in the proportion of young and old promise a vastly changed organizational context.
ORGANIZATIONAL ISSUES, TRENDS, AND RATIONALE
Round 1: Responses, Page 8

Housing and transportation and their interrelationships with employment. I have no idea whether population will be more or less concentrated. I only know it will be changed. The influx to the cities has now ceased. Is it reversed? Will people work at home in the future? Will they work in small clusters, will they work and live in "towns" designated for integrated production and recreation?

Slower growth economy while at the same time increased pressure for those traditionally excluded from positions of power, e.g., women, minorities will lead to more dysfunctional forms of "gamanesship" and "careerism". Society is currently overeducating and over creating the expectations of its younger workforce without changing the opportunity structure; thus higher educated people are increasingly being undersatisfied and women and minorities and the pressure gets even worse.

The principle of merit in the selection of employees will increasingly compete with other criteria for employees recruitment — pressure from disadvantaged groups for employment opportunities will continue to mount.

Differences between the have and have nots, rich and poor, will widen. As increasing number of the populace is trying to become the have rather than the have nots, this will only set higher minimum standards for being poor. Higher education will be the means through which most people will try to acquire more wealth. The distribution of wealth is not likely to change at the international level, however, there will be greater participation in world trade by third world countries.

I. POWER EQUALIZATION

The trend toward more democratic authority relationships — Education of the masses has produced people who question the traditional views of authority-organization members want to know why.

Capital intensive organizations will require only a small core of specialists, who are capable of solving routine problems through project-type organizational arrangements, for the most part. The adoption of capital intensive technology makes obsolete the bulk of lower skilled and unskilled labor.

Group efforts through cooperation and collegiality will replace the traditional structures, which are dysfunctions. The highly qualified specialists and professionals that will manage organizations will function most effectively through consultation and collegial interaction than through the appointment of layers of administrators in the traditional manner.

Increased tenderness in the relationship manager-managed — The legal framework of affirmative action, entry of women as co-equals in professional and managerial ranks and expectations of individual satisfaction in work content.

New perspective on time module — Increased use of "flex-time" abandonment of 9-5 daily, "all-inclusive", 12 hour time module for flexibility to respond to individual needs includes sabbaticals on paid or unpaid basis.

More pluralistic and political-industrial democracy is moving from Europe to U.S., it is inevitable. Stakeholders (government, consumers, workers) will have more say over policy and direction of corporations.

Power equalization — Increasing education of participants; training and interest in problem solving at all levels; narrowing zone of acceptance of positional authority.

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Increase in social awareness and responses to changing societal demands for greater responsibility in social matters — Demands for corporations to increase social responsibility will continue and corporations will respond.
ORGANIZATIONAL ISSUES, TRENDS, AND RATIONALE
Round I Responses, page 7

Involvement of more persons in the organization in participative decisions about the goals, methods and criteria which guide their work. Collaboration will increasingly spill over into the relations between "managers" and "workers." This involves decentralization of many decisions and "new" more integration and coordination functions, rather than control functions for central headquarters personnel—with governmental interventions to establish minimum wages, fair hiring and firing practices, unemployment compensation, etc., methods of motivating and controlling employee work and activity through threats of reducing wages or firing no longer will work. And trying to buy member loyalty through fringe benefits will bankrupt organizations. Positive motives to work and contribute to organizational goals must be found and developed. Participation in organizational decisions is the best way to develop a sense of ownership and responsibility in organizational members and workers.

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Information Communications Technology—The means by which individuals process organizations markedly affects the nature of organizations. Recent and projected developments in computer, management and communications technologies will alter the means and ways of information processing.

Improved video—communication, 2-way, global—Japan already offering community 2-way video. Conference video long predicted.

Technological sophistication—This will demand more highly trained personnel for key positions. At the same time, automation will reduce the demand for the conventional "blue collar" employees.

Complexity of technologies employed by organizations will increase—It is increasingly difficult to keep abreast of progress in other fields and branches of science. Our previous understandings of the basics in these fields (e.g., Newtonian Physics, Atomic Theory, etc.) are obsolete, making it difficult to keep abreast.

Information flow will be much greater—Telecommunications and further improvements in information handling and communications.

Communication techniques leading to centralized recall and display of verbal, visual, and recorded material, hence centralized control by management—Extension of present technology and satellite capabilities, along with miniaturization through micro-circuitry.

Science Technology's new developments, such as holograms, for totally integrated, interdisciplinary manpower form—Management guidance.

Micro-computer will enable more decentralization of administrative detail—More firms will have several small EDP operations rather than one large one.

Current middle-east technological exploration practices will point out the differential advantage of the U.S. in providing technological consultation to less developed countries which are better adapted to manufacturing economies.
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Freedom of information requires M.I.S. in a holistic way—Modern concepts require freedom of access to information and two-way communication. The character and climate of an organization can be deduced from the way it extends and withholds information... The major revolution in modern communication is that people want to "say it like it is," to have organizations tell them the truth, to be able to influence the situation, and to be "open in the communication process....

Technology in general and computer/information processing technology in particular—The "chip" is making the computer virtually a free good. Mechanical, preprogrammed decision making will undoubtedly become ubiquitous in the home, the office and automobile. Increasing system development utilization hardware, software and paraprofessionals in Service Industries—Inflation pressure, emphasis on accountability and performance evaluation by Government.

Rapid Technological Change—The exponential rate of technological change will require an ability to rapidly adjust to a dynamic changing environment.

Computers—Increasing need for rapid information dispersal and availability. Real time data input will allow continuous monitoring of key functions and activities.

Advances in science and technology—Physical sciences, such as computers, miniaturization, electronics, lasers, cryogenics, etc. These advances have or will result in a national data bank of skills and job opportunities; computer devices in employee training; increase in number of operators of technical equipment, maintenance and service jobs; creation of entirely new technician jobs; better control and feedback of production; decentralization decision making; greater need for long range (particularly capital) planning; numerous effects, + and -, on middle management; holistic information flow.

The computer and its continuing development—This machine has already been the touchstone of organizational change in this decade. Continuing technological advances will project the influence for decades ahead.

Technological change, especially computer automation—Continuing and growing revolution in all functional activities of organization affecting marketing to research; planning to decision making; and wholly new techniques of training, learning and self-assessment.

Scientific basis for designing organization structure—Attention will turn from micro-organization to scientific study of organization design.

Increasing use of electronic (and post-electronic) information processing systems—and especially the trend toward "robots" and "artificial intelligence"—I believe this trend is too obvious to need elaboration. I should stress, however, that I also believe information processing systems (and the like) are about to move into a post-electronic mode, probably being more organically/biologically based, with the line between organic and inorganic being evermore blurred.

Organizations will tend to be capital intensive, rather than labor intensive—Technological developments and economic conditions mandate it.

Growing complexity of environments—More dynamic technologies. Expansion of domains of organizations—Functions, geographic, etc. Diverse constraints and demands upon organizations from environmental influences. Movement in business sector from primary consideration of "market" environment to broader considerations.

Rapid growth and development of technology—News reports, scholarly case studies, other research showing trends in this direction.

Advances in technology and science will continue although there will be a reduction in the rate of accomplishment—Industries specializing in communications of one type or another will experience rapid growth and development, whereas other industries such as steel will experience a reduction or maybe no growth at all. Advances in all related fields of physical sciences will see a notable change inasmuch as young, new scientists are being attracted into biology and related fields.

K. OTHER

ALTERNATIVE ORGANIZATIONAL PATTERNS

Alternative organizations (coop, communal) popular—Models now apparent and new prestige of small business will be combined with alternative life styles.

Greater differentiation of the marketplace—Products, needs and services seem to have shorter lives and to rise and fall with significant social changes. For example, the whole chemical industry is an anathema to many people. As a result, hair coloring, food additives and similar things are being rejected. There is a great pressure toward the natural.
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Emergence of small business as popular career—New bill to establish programs for small business patterned after land-grant programs now being passed by Congress. Will have major impact on research and education.

Small business will be about as they are now—The high rate of business failure among small companies bars the real gain in effectiveness, and the same mistakes being made today will be made then.

Intense economic and political competition—Rapid growth in quality and export efforts relative to products manufactured in Japan, Germany, Taiwan, etc.

Trend toward blending the transcendental and holistic concepts and experiences into holistic organizational models—This trend is the most revolutionary of current events, and I believe it will have the most radical impact upon organizations.

NORMATIVE CHANGES
Decline of the work ethic.
Lessened interest in work, person—Economic influences: affluence; shorter work week; unemployment and welfare benefits; increasing fringe benefits; early retirement; more time for leisure activities.

Social influences: decline of the work ethic; more mass education; less stigma attached to joblessness; career changes in a lifetime; job mobility; but resistance to authority; increasing interdependence of labor and management; social pressures on business.

Management influences: subdivision of tasks, as on the assembly line; technology and mechanization; consultative supervision; attention to individual differences and needs.

Increasing disarray in the normative order or "value system" of industrial society.

The Industrial model does not fit the post industrial service economy.

The role of dissent in the modern corporation...will give new respectability to this form of expression.

DESCRIPTIONS OF ORGANIZATIONS IN 2000

LITTLE OR NO CHANGE IN ORGANIZATIONS

...No doubt many "organizations" will be more or less exactly as they are as present while some will be more wholly "modern" in the sense of being products of the three trends I identify. Further, whether the future foreseen by Herman Kahn, or that of Bill Harman (or that of Gordon Tattray Taylor for that matter)—to mention only some popularly-identified alternative futures—comes about will greatly influence how these trends reveal themselves.

They will be substantially as they are today, except that they will be:
1. Less flexible to market needs because of bureaucracy and controls.
2. More bureaucratic because of governmental and social controls.
3. Permanence somewhat more participative. (Large size and chains of command will continue to exist.)
4. Internal rewards will be based more on external political and social power of different groups, rather than job performance which is the dominant reward basis today.

The pyramid will still be dominant; more use of matrix (project) organization—teams also at top of organizations; no major new developments except in this time span more continuation of current trends.

I begin with the premise that organizations are very resistant to change and that the forms which we now know will tend to persist. There will probably be a tendency for extremely large organizations—conglomerates and large government systems—to be broken down into smaller components, but these themselves will still be large. There will probably be less, rather than more, freedom of action of organizations, as governmental agencies at all levels and constituent groups will continue to pressure organizations in opposing directions. Communications will be more rapid, but the rapidity will be met with the problem of increased content and complexity, so that the communications process will not be any quicker.

I have no idea how organizations will differ from present. I am sure that in some ways they will be the same. The Roman Empire of 2,000 years ago had much in common with General Motors of today.

I do not see organizations (in a structural sense) looking much different in 2000 than now. Not much change has taken place between 1955-1977, but the most significant changes are the following: And I would expect there to be used even more and that authority (for decision) relationships will be defined more carefully and accurately:
1. Increased use of product managers.
2. Increased use of market managers.
3. Increased tying of research and development organization to the marketing organization.
4. Greater powers to marketing positions.
5. Decentralization of computer services to be nearer the user—even through machinery may be centralized, decentralization of user stations.
6. More prominence to staff departments and recognition of essentiality of advisory positions. (Also—far more females in top management positions in business, government, military, and other types of enterprises.)

1. The large corporation will be an economic empire, strongly decentralized, under heavier government control.
2. The small business will continue to be as screwed up then as it is today.
Most of the experimental forms such as worker memberships on board will exist in token form only. The existing theory of bureaucratic organization will still prevail, but modified by decentralization, and MBA to produce more participative management. There will be more educated, middle class white collar employees and less hourly rated blue collar employees which will require this participation (a middle class value).

I don’t think the total mix of organizations in our society will change much in the next 22 years. Individual organization will evolve, some will die and some new ones develop.
However in terms of criteria such as number of organizations, their sizes, structure, role in society, methods of operation, I see little change. My reasons for feeling this way are:
1. I don’t see much difference between 1965 and 1977.
2. I think social changes take place very slowly. Of course there are some real exceptions to this however most claimed exceptions are not social changes rather changes in media coverage.

Fundamentally, I believe we shall recognize the corporations of the year 2000 but they will operate considerably different than today. There will be more government regulation as noted, less emphasis on profit maximization, more responsiveness to interests of both managers and hourly workers for “a piece of the action,” more concentration of management on environment in the making of strategic decisions, a change in business ideologies to more social responsiveness, less routine work at all levels, greater requirements (in terms of breadth of understanding and capabilities) of top managers, less authoritarian managements, and more project teams.
Assuming major outside events do not occur which is highly unlikely, organizations will not look too different than they look today. New terminology will emerge—but human behavior changes much more slowly than technology. A survey of predictions of this nature over the past 40 years have missed the mark by wide margins—they always overlook
1. The intervening variables
2. How slowly basic human nature changes

Major corporations move headquarters to rural settings. Company towns spring up like land-grant colleges in Southern states. Most are located within 90 minute drive of airports.
Transactions among corporations conducted by electronic media as costs of travel increase.
Many organizational functions performed in satellite offices/factories, with results shipped to central facility. Costs of commuting long distances to work no longer can be shored up by employees.
Technologies employed by different units within each organization become more complex and dissimilar. Problem of understanding and coordinating work performed in separate units becomes critical. Managers who can integrate heterogeneous units ascend organizational hierarchy of power/status. More of management’s time is spent in career-long education programs in attempts to keep abreast of, and learn to coordinate, increasingly complex technologies.
See Lawrence and Lorsch study: Organization and Environment—Managing Differentiation and Integration.

Assuming we make it that long—About like they are now at least or far as the external or symbolic signs go. They will appear to be even more centralized than they are, but they will be operating in fact or in process, as highly decentralized entities.
Personal income will not be tied to job or job performance as much as now or even at all. We will have some new system or idea for getting money to people to live on.

ADAPTIVE ORGANIZATIONAL FORMS

ORGANIC, PARTICIPATIVE DESIGNS

The organization of 2000 will operate with widely decentralized responsibility in plants and in work units for setting production goals and productivity standards and for determining pay and quality of work. Information about economic factors (markets, etc.),
about technical masters and about work plans in other parts of the organization will be openly and readily available to each deciding unit, both electronically and through resource persons and materials. The central office function will be no longer control of local plans but coordinating, integrating and reconciling discrepant plans and requirements, unit to unit. Integrating task forces will be employed rather than rigid specialist departments.

It will be expected that plans for developing personnel and evaluating and inventing organizational forms and practices will be developed along with plans for operation and technological innovation. Time spent on educational and developmental activities will be seen as a valid use of company time. Both internal programs of education and development and participation in outside educational programs will be employed.

Multiple criteria for judging adequate operational policies and practices will be employed, in which profitability is only one criterion, along with criteria of health, safety and environmental quality maintenance and enhancement. Public persons, from government and from watchdog groups, will participate in developing to independently developed plans and practices.

Relatively flatter structures.
Widespread use of computers for planning and operations in conjunction with regular business applications plus applications/usage for individual members on a personal basis.
Greater use of behavioral science research and techniques.
Growing use of manpower planning plus career planning which should lead to much more effective use of human resources.
Major shifts in policy favoring participation, equity in people handling, human and various managerial roles.

I think organization members will demand more of a role in decision-making in areas that concern them. This would result in a more decentralized organization structure. This in turn would lead to a taller, more narrow organization chart.

The demand for interesting jobs can be met in three ways that I foresee. One: automation could handle a significant number of these jobs. Second: in the more democratic environment, dull and boring jobs could be divided equally. Third: job enlargement. What actually occurs will probably be some combination of these three.

More structured participation by "have nats" (employees, consumers, minorities) on boards.

More top management decision making
More "real time" planning--less formal systems
More consideration for the "whole" person in their career plans, work demands, etc.
More alternative career routes than just managerial hierarchy climb
More division of organization into "small" autonomous businesses.

Organizations will tend toward the freer form "organic" structures described by Lawrence and Lorsch and by Warren Bennis. They are likely to be less authoritarian and more participatory. Most persons in top organizational positions today can remember the 1960's and the threats that decade posed. The next generation of top managers (fully in control by the year 2000) will have no such memories. Scarcity, conservatism, emphasis on security will mean much less to tomorrow's leaders and to most other organizational participants. A "consensus" form of organization is much more likely as educational levels continue to rise and value shifts in leaders take place.

Government will take on an increasingly important role in its regulation of private business. As current experience indicates (i.e., OSHA, ERISA, EEO), society increasingly views business not "private" but as a public activity subject to public regulation. This is particularly true in the area of employment. A job will increasingly be viewed as a right of each citizen. Perhaps the Japanese approach to lifetime employment will be a model for the future.

At the same time organizations will be forced to be more adaptable because of rapidly changing technologies, energy scarcities, shortened product life cycles, and international competition. Organizations that can effectively tap the creativity of knowledge workers (an increasingly expanding category) will be most likely to survive in tomorrow's competitive and yet restrictive environment.

I think we will see organizations made up of conglomerations or large groups of managers and executives who are carefully psychologically described and who are knowledgeable about themselves. New organizational units will be set up in three simple hierarchical levels with highly focused tasks to which people will be assigned on the basis of fit between their personality and the task to be accomplished. Structures will be modified by the people in those organizations in keeping with marketplace demands and environmental changes. Although much conceivably can be accomplished at home by the use of computers, nevertheless, in order for there to be organizational cohesion and to sustain organizations families, which will be even more imperative as the communities are less binding, it will be necessary for people to meet together physically and to deal with each other face to face. Organizations will have headquarters bases from which they will draw organizational
ideology, character, concepts, financial resources and technical expertise. Organizational components will move from one parent organization to another as the new parent more closely fits the support needs of the subsidiary, a movement which will more frequently be determined by the people within the subsidiary. Organizational leadership both at the headquarters and subsidiary levels will have well-defined responsibility for community leadership as well, and will clearly be judged on how well they do that community leadership task.

1. Organizations will be operating in a turbulent environment which requires continual change and adjustment.
2. They will have to adapt to an increasing diversity of cultural values in the social environment.
3. Greater emphasis will be placed on technological and social forecasting.
4. Organizations will continue to expand their boundaries and domains. They will increase in size and complexity.
5. Organizations will continue to differentiate their activities, causing increased problems of integration and coordination.
6. Organizations will continue to have major problems in the accumulation and utilization of knowledge. Intellectual activities will be stressed.
7. Greater emphasis will be focused on suggestion and persuasion rather than coercion based on authoritarian power as a means for coordinating the activities of the participants and functions within the organization.
8. Participants at all levels in organizations will have more influence. Organizations of the future will adopt a power-equalization rather than power-differentiation model.
9. There will be greater diversity in values and life styles among people and groups in organizations. A mosaic psychosocial system will be normal.
10. Problems of interface between organizations will increase. New means for effective interorganizational coordination will be developed.
11. Computerized information-decision systems will have an increasing impact upon organizations.
12. The number of professionals and scientists and their influence within organizations will increase. There will also be a decline in the proportion of independent professionals with many more salaried professionals.
13. Goals of complex organizations will diversify. Emphasis will be upon satisfying [sic] a number of goals rather than maximizing any one.
14. Evaluation of organizational performance will be difficult. Many new administrative techniques will be developed for evaluation of performance in all spheres of activity.
15. Processes of planned change, with widespread involvement of organizational participants, will receive increasing managerial attention.

Organizations will evolve into smaller, more flexible, more specialized, more service oriented, and more geographically dispersed forms. Increased codification of jobs, personnel, and activities will yield more rigid formal structures which will be compensated for by more flexible informal structures. Increased refinement of measurement technologies both social and physical will yield a more formal meritocracy with less emphasis on rigid hierarchy and more emphasis on decision-taking where and when human, physical, and informational resources form a nexus. Concurrently, the boundaries of an organization will be redefined to include a wider concept, an open-systems concept, of an organization. Current distinctions between producer/consumer, public/private, and profit/non-profit will be further blurred. There will be an increased tendency for organizations to be redesigned to fit individuals rather than having the latter adapt to the former.

Improved productivity, and not increased productivity, will be the goal for major organizations. This improved productivity will result in lower-priced goods and services, higher wages, increased profits, shorter working hours, etc. To facilitate improved productivity, organizations will extend themselves internationally setting up world-wide informational data-banks for accumulation and dissemination of information. Research will expand. Organizations will actively monitor their activities for possible social consequences. Publicity and public relations will increase and expand.

Organizations will provide services for the distribution of goods, information, health facilities, psychological and economic facilities, leisure activities, transportation, education and training, and research to provide and continue such services. Employees will take an active part in organizations--but not at the decision- or policy-making levels. Specialists will be trained for every job and/or field. Employee satisfaction will likely be a problem in that jobs in the aggregate will have increased but not top level managerial-decision making jobs.

Organizations will have short- and long-term goals; government, private and public organizations will work together on national and international social and economic goals; and organizations will be internationally oriented in values and attitudes.
MATRICE FORMS

The organization of the future will function in a low-key, subdued manner, under the direction and through the guidance provided by teams of highly qualified specialists and professionals. Management will be characterized through group effort and consultation, rather than by hierarchies and chains of command. Individuals will gain recognition through the expertise that they have to contribute to resolving and solving the non-routine problems that arise in the functioning of the organization. Hierarchy, chain of command, span of control and similar traditional organizational terminology will be replaced by terms emphasizing cooperation, mutual respect, group effort, expertise, creativity, innovation, etc.

In my opinion the organization of the future will largely be pyramidal, but with modifications, such as:

1. Large corporations will set up a vice presidential level of specialist advisors, each member concerned with the effects of his specialty on the entire organization, and available to any supervisor, manager or senior executive in any function. These specialists will not exercise direct line control.
2. Even if large companies do not utilize the advisory council device, they will still divide highest level decision making among two, three or more top executives, with line authority over their respective areas.
3. Decision making at the highest levels will increasingly be based on mathematics (operations research), less on intuition and/or experience. Forecasts of alternate courses of actions (options, scenarios) will be available.
4. Computers will assume greater importance in information flow, planning, decision making, research, marketing, production control and management by exception. This is the area of cybernetics.
5. As information flow makes possible downward thrusts of decision making, at the same time it will retain control and accountability at successively higher levels.
6. Control will be centralized as production and marketing operations are decentralized.
7. Organization lines of authority will be less rigid; the distinction between line and staff functions less clear.
8. The management of conglomerates and multinational companies will necessitate more creativity, innovation, executive development; and will richly reward competent, risk taking, broadscope executives who learn how to delegate.
9. Task forces, or project teams (including specialists of any rank) will increasingly be assembled for tackling non-routine problems. Some service organizations, such as large engineering consultants, will utilize a matrix organization structure which adapts readily to changing demand.
10. Mass production will be handled by small production teams of interchangeable workers who perform such functions as planning, decision making, discipline, hiring, firing and distribution of earnings, all within established guidelines.
11. Line supervisors will be less authoritative, more participative.
12. Professional and service functions will increase in importance.
13. Employee profit sharing will spread, but self-awarded executive bonuses will be curtailed.
14. Company expansion will be limited by growing scarcities--capital, natural resources, energy and possibly land.
15. Boards of directors will be working boards, rather than rubber stamps; will include a preponderance of outside directors and large stockholders, rather than being dominated by self-serving company executives; will have greater legal accountability. Boards will in actuality establish and modify overall company policies.

Organizations in 2000 will be far less linear, structured, role differentiated, and alienated than at present. Present trends toward computerization, role specificity, clear channels, hierarchization, firm controls, and persuasion orientation will be reversed. Organizations will be organized around decentralized teams that relate to each laterally. Relationships will be far more personal, informal, and simple than at present. At the same time the organizations will focus upon work itself, intrinsic motivations, self-determination, and proactive individuals--rather than upon non-productive, "management" functions such as level control, supervision, public relations, evaluation, communication and other non-"work" activities. I believe that organizations will be far more simple, smaller, more autonomous. I think most of the trends that I'm mentioning are already clear though clouded over by my highly publicized phenomena.

In the year 2000, operative employees will sit on the boards of directors of major companies; as well as major administrative bodies such as the executive and financial committees; they will perform active planning, administrative and personnel of consumer groups. The organizations which they will serve will tend to be smaller than today, and a lower ratio will be manufacturing and traditional marketing in orientation; companies will be heavily constituted of "professional" employees working in project
teams for consultation and technological design configuration projects, most of which will be international in nature. Temporary organizations will be relatively common, with matrix organization an important form. Traditional management practice and reward systems will be favored with peer review and broader performance criteria and sanctions. Formal industry regulation agencies will monitor organizational operations, largely from self-reports from the organizations they regulate; audit teams, comprised of consumer representatives and operatives from the industry classification, will exist for those sectors with a "significant" impact on the economy and/or potential for significant damage to environment, competition, or consumers. These characteristics will by no means be universal, although the trend will be in that direction by 2000; these characteristics will not be uncommon, however, and the "modal" organization will have a high probability of exhibiting them.

1. More ad hoc organizations--finite lifetime (sunset laws more common)
2. More governmental intergovernmental control organizations to keep multinational companies under supervision
3. Corporations will have more public (consumers, employees, public) in Boards of Directors (see talk by Halal at Alternatives to Growth 77 Conference Oct. 1977, Houston, on Post-Industrial Corporation).

The bureaucratic organization will probably be characterized by matrix relationships where individuals relate to a functional line manager as superior but also to one or several project or program managers on whose team they accumulate a performance record. The control will have passed from managers to government agencies heavily regulating organizations and their operations. Except for requirements of technology, organizations may deliberately gravitate toward small size--"small is beautiful"--or function as independent organizational units within the framework of large corporations. This will satisfy dimensions and lifestyle. Quality of life and quality of work expectations of new generations of managers and employees alike. Hours of work are likely to be reduced with retirement on a voluntary basis after age 65.

Organizations will be designed for maximum flexibility for change. Major decision making will be more centralized than at present with computer conferencing widely used. I suspect that some variation of the matrix will be more common than the traditional hierarchy (particularly in high technology organizations). I expect to see some sort of adaptation of the matrix form of organization used at the decision making levels of the organization and the hierarchical form used at the implementation levels.

GREATER VARIETY OF ORGANIZATIONAL FORMS

This is really crystal ball gazing. It also focuses on the United States. A much higher percentage of women and minorities in managerial and professional positions; a sharing of remedial actions relative to the disadvantaged, disabled, etc. across organizations.

Intense efforts to move toward more effective communications, teamwork along with the rapid adoption of new technology. The organizations that can manage this tension will succeed. The successful ones will be either highly participative with high group and organizational skills, or will be benevolent autocracies with charismatic leadership. Those which become laissesz-faire will fail as will those which fail to negotiate flexible practices with employee organizations or fail to accommodate to the harassment of constituent bodies.

Organizations will be considerably more varied than they are today. I expect the smaller, entrepreneurial form to become more popular. It will perform work now done in large organizations as staff services. I also expect to see a few people owning a number of small craft businesses, providing professional management services without changing the essential character of the small enterprises. Larger enterprises will be designed for special purposes, much as machines are designed. A few will be so highly automated that they can provide custom product designs with automated production lines.

Basically think that we are moving towards more diversity and complexities in organizational forms. Movement towards divergence rather than convergence. We will likely have a much broader spectrum of organizational types than currently exist. Environments more complex and dynamic, technologies more dynamic, goals and values diverging, complexities in measuring organizational performance, etc. will contribute to this divergence.

Organizations in the year 2000 will be characterized by near parity of men to women and whites to non-whites, especially at the middle-management levels; the top, executive levels will remain numerically dominated by white males--in North America. Intentional, purposive change will be an explicit and acknowledged specialization of large, complex organizations. The various phases/stages of socio-technical planning processes will be regularly and routinely applied to every facet of the future organization's behavior--both internally and across the boundaries of the organization. Finally, as government policies permeate every facet of future life, including its organizations, it (the public sector)
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will both affect, and be affected by the organizations of the private and voluntary sectors. Management and planning techniques and conventional wisdom will be standardized throughout all organizations; one will not be able to distinguish one organization from another. Many large organizations will begin to look like and operate like universities, with sabbatical leaves, continuing education, 9-10 month work years, etc.

The year 2000 is not that far away—there will be no one prototype organization rather we will have a broader array of types than now some worse some better. The range will include:

1. Highly mechanistic, low level high turnover, high alienation organizations like McDonalds
2. Large multinational corporations like today's IBM, Citibank, mobil—not too different
3. Mini-organizations due to new computer and communication technologies move "at home" small businesses or work by larger corporations in modular small organizations
4. A "few" Type 2 organizations which reflect Quality of work life—value stability, humanistic values, etc.

Two generalizations:
1. In general, I expect organizations to become "flatter," and more complicated, both in their internal operations and in their relations with other organizations. In loose terms, more equilateral and libertarian. Some movement toward Ad Hocacy—but not as much as Toffler predicts. Considerable movement toward "systems of organizations" as per James Thompson.
2. I expect increased "Seed of diversity," of organizations. I expect all the historically evolved forms to survive. "Large" organizations will be "classical" bureaucracies. Others will be modern versions of old "communes" and communal experiments. There will be new complexes of organizations with new "horizontal" coordinating mechanisms. And organizations not yet even in blueprint.

BIMODAL STRUCTURES

It will be quite bimodal. Huge public and private organizations will exist and act alive, but nothing much will be happening, given the three developments noted on the reverse page. The common thread for the hundred largest private and all large public organizations will be decadence and decay. There will be much controversy, legal fighting, philosophical discussions, etc. about what should be done, but nothing much will work.

The smaller organizations (particularly private firms from $100,000 to $500 million in sales) will be flourishing. Most will be de facto or de jure exempt from control efforts by governments. Hence they can move rapidly and expand sightly. One critical overlooked technological development, namely the rapid evolution of non-economies of scale technologies, will aid this evolution. Another will be the realization that some one has to produce something, or society will collapse. Hence we will see much noise, but little real control efforts, for these smallish organizations. Another overall development aiding these smallish activities will be the easy availability of highly skilled people, given present educational activities and the inability of large organizations to utilize many of them, given their stagnation.

Organizations will be both large and small. Generally they will be overseen by committees with representation on these committees from owner, public and employee groups. Those organizations seem as having greatest impact on quality of life will have the strongest public representation. Managers and officers will be elected for terms of several years. Within the organization structure there will be a function which as part of the planning process weighs and assesses the impact of mission, programs, and product or service on the quality of life. Groups and units will be formed to serve a particular function or bring a new service or product into being and then be replaced by others. Employees will come and go not on regular schedules but on individually negotiated relationships. There will be serious attention given to the utilization of human resources and work with a good organization seen as a reward for capability and accomplishment. The highest reward will be to work at and on work that is interesting, stimulating to growth, and rewarding in terms that the individual desires. High quality work will probably not be paid as well as low quality work that still has to be done. Organizations will have greater diversity of people, varying ages, varying capabilities, and diversity of background and race.

Two types: the giant organization, like a super utility, based on computerized operation. Services will be regularized to avoid the need for individual contact or attention.

The Mom and Pop operation—which will pick up the crumbs in the form of small personal-service operations.

NETWORKS

Tony Judge's model of "potential organizations," networks that form and reform according to need, with instant computer access to collaborators around globe, will
reduce need for travel and for files. Headquarters and hierarchies will be too expensive and inefficient anyway. Networks will replace organizations. Duane Elgin's Stanford Studies on breakdown of bureaucratic mechanisms is one scenario, parallel growth of localist capabilities will accompany it.

Organizations will be increasingly linked together in networks dealing with common or similar problems. The resource stringency that will characterize the world in 20 years will increasingly require organizations to pool their resources and capabilities. As a result of these inter-connections, organizations will increasingly expose their internal affairs to outside scrutiny. In many areas, these inter-organizational contacts will be international in scope. The merger or amalgamation of many presently independent organizations will also result from these increased inter-connections among organizations.

Large scale, extensive, intensive development of key energy, water and food producing resources undergirded by and interacting with concept of system generates some pressure for what I have called a segmented, polycentric, networked organization.

Coping with impact on them of this, citizens will develop formal and government endorsed or mandated citizen participation networks.

Government develops segmented, polycentric organization, and then networks to cope with conflict between resource developers and citizens mobilized—technocratic networks develop. Citizens mobilize in social movements, which are segmented, polycentric and networked.

Action and interaction of all of the above is already underway.

This, in fact, spells the end of centralized bureaucracies. But prevailing ideology will still act as if there is centralization on the one side, and disorganization on the other. Reality is what I have described in various publications but old and forthcoming is segmentary, polycentric and networked organization as main organizational type. For next 20 years or so.

OTHERS

Organizations will have grown tremendously in size. With the growth will be a corresponding increase in the power and influence of the various bureaucracies spawned in the course of growth. Initiative, creativity and innovative thinking will be discouraged. The entrepreneur will tend to disappear or at least be discouraged. There will, of course, always be an aggressive minority who will seize and hold power and wealth, but democracy, as currently conceived, will be replaced by a more rigid and structured political style.

There are two choices, and the outcome will largely be determined by 1985:
1. Heightened international conflict of the most serious type. Nuclear blackmail by both governments and terrorist groups for the control of resources, authoritarian governments everywhere as resources are closely managed and centrally allocated, very probably all-out nuclear war because this is the only type of war possible (conventional war requires energy we do not have). Devastation within the decade.
2. A somewhat more humane future, if a painful one in some respects. Swift reversal of trends so that we approach equalization of per capita income around the world, global sharing of resources, separation of work from income, end of private property, transformation of social hierarchy into formal structured nonhierarchy, end of competitive market systems, all decisions made by agreement. Even in this world, however, material "hardship" as we now define the term. Very little if any individual automobile travel, almost self-sufficient communities, reverse migration from city to country as we require smaller farms, end of natural gas and oil for home and factory heating. The end of the family and the nation-state as we know them now.

1985 is the latest time for this crisis to form choice upon all of us (globally). It is more likely to be 1980-1983. We face either unimaginable destruction, or the largest social change since either (1) the shift from hunting to agriculture about 5000 years ago, or (2) the shift from feudalism to industrialism. I am inclined to see it as (1).
TRANSCRIPTION OF DELPHI PANELISTS' RESPONSES

Transcribed are responses to the second round Delphi. Also noted are the number of most and least significant votes for each category and the responses given to support those decisions. Rationale was not always provided for panelists' votes.

A. BLURRING OF DISTINCTIONS BETWEEN TYPES OF ORGANIZATIONS

MOST SIGNIFICANT: 13%

This issue is significant because commonalities among private and public organizations will operate to minimize present distinctions, such that issues of government and regulation will become more self-regulating and policing than intervention from the outside.

... I think that the boundaries will become blurred... It is likely that large businesses will turn over specific functions to contract agencies and that a lot of unenforceable contracts will be used between different firms.

This is indicated by present events and case studies of governmental, industrial and research organizations dealing with energy development and citizen resistance to such development. The orgs. interact and mingle.

Blurring of distinctions will happen because the overall goals of organizations will be more similar and less need for differences.

Especially government and private sector organizations; also organizations dealing with each other across international boundaries.

Business organizations will increasingly have to consider multiple constituencies and list all important government actions. All organizations must be profit-minded, meaning how do they get the most out of their resources.

There is more and more blur between what is private and what is public. Managers will be more public oriented. Organizations will work for society oriented objectives.

The systems approach (inputs, activities, and outputs) points up the similarities in character and structure of profit and non-profit organizations. MBO has produced this blurring effect between profit and non-profit--both have objectives.

Profit, non-profit, not-for-profit, regulated, and government organizations will be increasingly difficult to distinguish.

Organizations will be increasingly "open," hence more subject to having their characteristics imitated.

Because all things will be found to be integrated. We cannot serve singly any longer, we will serve total systems.

This has always been the case, but it is simply being recognized more clearly now. To some extent, this parallels another trend concerning increased regulation, which will blur or erase public/private distinctions.

Due to the action and interaction of many factors, the organizational world will become more complex. Organizations will interrelate and intertwine in very complicated and subtle ways.

LEAST SIGNIFICANT: 16%

Maintenance of particular forms of organization will no longer be so important--public or private, cooperatives or private stock companies, etc. Organizational form will be accepted as of instrumental rather than of final value.

This has already occurred.

Legal restraints will greatly retard this development let alone philosophical considerations.

Significant, but of limited impact.

Traditional industrial and inter-organizational patterns are highly unlikely to change drastically, especially within only 20 years. Greater distinctions likely, if any.

Organizations will continue to be diverse and distinct--in fact we may see more diversity. However, there will be an increase in interdependence and boundaries will overlap. (This item may reflect two different trends.)

Competition between organizations will continue. It's too much a part of human nature.

A continuing, but not too impactful process--except over centuries.
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8. GREATER CENTRALIZATION OF SOME FUNCTIONS AND GREATER DECENTRALIZATION OF OTHER ORGANIZATIONAL FUNCTIONS.

MOST SIGNIFICANT: 8
It will appear that there is greater participation, but the complex issues will make real participation unlikely.
Both trends will be felt and have new impacts.
Clear impact on stability, communications channels, decision power distribution, etc.
This will continue to be the major organizational form from which and to which managerial systems will be formed. Of central importance.
The ability of people rather than organizations which will derive power.
The organizational form of the future will continue to be dominated by multinational firms—requiring a unique balance of centralization and decentralization.
Will materially influence people's job life.

LEAST SIGNIFICANT: 16
As technology increasingly impacts future organizations, the distinction between centralization and decentralization will become less significant. Technological innovation will operate to bring satellites closer to headquarters and vice versa.
The essential lessons of size have been encountered already and coped with relatively well.
I rather expect that size will tend to decrease, not increase, for large organizations.
Similar to present—there has been this type of (trend) change for past 20 years.
Decentralization is continuing, real power is diffused, not centralized.
More individuals will expect to participate in decisionmaking—higher educational levels, increasing levels of aspirations.
This has been going on and has not created great change or breakthroughs in how we operate.
A familiar trend. Therefore, it will not seem much different twenty years from now. Less effect on what organizations look like.
This doesn't seem to me to be a prediction of anything I can identify.
Not much action in these terms because of contingency approaches to management.
I have no doubt this will take place—I just don't regard it as very significant.

C. INCREASE IN EDUCATIONAL AND OD ACTIVITIES WITHIN ORGANIZATIONS.

MOST SIGNIFICANT: 6
Expectation of organizational change and evolution will be firmly established. Educational activities will be the dynamic aspect of planning and evaluation of goals, priorities and programs.
OD and organizational education will change greatly from its present form, but will continue to have significant impact—increasingly.
Certainly more on educational but OD is so broad as to be shapeless. If a manager studied all of the OD in the world and took every single iota of it to be acquired what would he do? Education which changes behavior, learning, will grow substantially however.
Much more attention will be paid to people, their aspirations, roles, tasks, etc. This trend associates with E, I and J.

LEAST SIGNIFICANT: 17
This is relative. 99% have never and will never use these techniques. The rest may increase technical training but will probably reduce other forms because of needs for efficiency in terms of scarcity.
This may be a current fad.
Educational and OD activities typically the first to go under cost/profit pressures; no reason to assume otherwise as organizations undergo tremendous profit squeeze over next 20 years; those which have always been committed will continue but marginals will drop out.
There are already going on, but are significantly recurrent fads. The most important teaching will be done by managers.

Nothing new here.

Emphasis will be on objectives. Work will be more results oriented rather than activities oriented.

The impact of this isn't clear. Organization members will also be subject to great educational impact from outside the organization.

Effective content of these areas is so low as to have only minor effect.

There will be less interest for dedication and commitment to the organization.

OD is increasingly recognized as just another form of manipulation, to have employees believe their personal objectives coincide with organizational objectives. As such, OD is well past its high-watermark already.

This is simply a wish—production and profit needs will supersede.

Organizations will need better quality continuing education programs—not more of them.

A background factor—doesn't promise to change things very much.

D. INCREASING GOVERNMENTAL REGULATIONS AND SURVEILLANCE OF ORGANIZATIONS.

MOST SIGNIFICANT: 29

Industry becoming a reluctant junior partner in an evolving socio-political-industrial complex.

Many organizations have already indicated that the failure of self-regulation will lead inevitably to government regulation, e.g., the accounting profession.

More regulation is steadily reducing the freedom of action and area of choice.

Government influence likely to touch all phases of organization activity, structure and process.

Here, I think that government control will significantly decrease, de facto or de jure. Hence this is significant point, but not for the reasons given in the discussion sheet.

If this trend continues, it will change the basic form of our economy and the way organizations relate to each other, customers, etc.

Cost and detail imposed by regulation will be the number one challenge of all business—especially the small manufacturers will affect every aspect of operation.

Government interpenetrates industrial and other organizations, but these, in turn interpenetrate government. Each surveilling the other—relates to merging, blurring. And some new organizations are developing to help deal with this.

Every evidence is that such regulation will grow and at an increasing rate.

This will happen with no real benefits for the public.

Probably the single most important trend, from numerous different sources.

Government will regulate and watchdog especially with communications/IS revolution.

This trend has been apparent throughout 20th century and will continue. Probably not as much of an impact on business as upon other organizational types. Past two decades has seen increasing regulation of health care and delivery systems, schools, etc.

Shortages and economic problems will lead to more regulation.

State and local government will increase in influence as well as national.

New bureaucracies will continue to proliferate.

Society is in a transition to more social benefits. For a century our society has been in a great economic era. Our economic success enables us to work for more egalitarianism. This requires government as monitor.

This force is very powerful and untamed. It can have very significant impact on what organizations do and how.

Clearly on the rise to a point of socialism today. Jimmy Carter ran on the promise of curbing government but has accelerated its control over all of us, and this will be the precursor of the future.

Correlate with "A" above. Government role will continue to increase over next twenty years. A variety of new organization types are likely to emerge.
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The economy will increasingly be subject to central government management, hence the decision-making autonomy of all organizations will shrink.

As organizations are taking on a public interest and public interest groups are making themselves into power groups.

This trend is too strong to reverse in the foreseeable future.

This is and will continue to be a major force and problem. It will result in many changes in organizational structures and managerial processes and behavior.

The initial reaction to real scarcity will bring about increased regulation—probably more and more detailed allocation of the resources themselves. Incidentally, your own time frame is too long. The real crises arrive within 5-10 years.

This is simply a trend projection and the nature of the beast.
A major change factor with promise of increasing dominance.

LEAST SIGNIFICANT: 5

The "ideological" objections toward governmental or managerial authority will be reduced. Government will be accepted as one partner along with "producer" and "consumer" partners in collaborative policy-making and planning.

It is beginning to tear down. As since Watergate, this has been reversed. Organizations already respond, this won't change things too appreciably.

E. INCREASING USE OF THE MATRIX FORM

MOST SIGNIFICANT: 7

These alternatives to hierarchal arrangements are more appropriate for professional personnel.

Matrix remains a quagmire; needed but still poorly implemented since it conflicts with conventional bureaucratic logic and power.

The size, volume, and complexity of organizational relationships requires a results oriented matrix style. Many firms already have some matrix structure.

This corresponds also to the need for change in the organization and freedom to reassign employees to new job assignments.

Ideally suited to dynamic environments and needs of the "techno structure" as defined by J. K. Galbraith.

LEAST SIGNIFICANT: 12

Even by 2000 AD, the matrix form will be less prevalent than pyramid and/or bureaucratic forms.

If scarcity prevails, then the older authoritarian models will prevail—like it or not. They always do.

I see a limit on the applications of matrix form—that being project orientation.

Slurring will weaken project's borders—But this is definitional.

Old forms are hard to break down—see #6.

Matrix form will be obsolete by free-form multiple-node communication system.

Comes from Academia—and their misty eyes can't see reality.

Won't happen.

Matrix inappropriate for routine functions which will predominate organizations in 2000. However, these bureaucracies may employ matrix organization in R&D, project areas, etc.—see Ansoff and Brandenberg.

No doubt this will continue. It probably will even grow somewhat. But it is limited to certain types of organizations, which will continue to be a minority of the organization population.

F. ORGANIZATIONS WILL BE FORCED TO DEAL WITH SCARCITY.

MOST SIGNIFICANT: 24

Most natural resources are finite. Man's exploration of them causes scarcities and substitutions, necessitating organization changes to adapt.

Awareness of threats to human survival in policies of "unlimited" growth and exploitive practices will lend acceptability to collaborative planning across national lines, across manager-worker-consumer cleavages, across ethnic and racial boundaries.
Very obvious re: energy, next water and food.

Energy and resource scarcity will be the shaping force much like the Great Depression of the 30's. The age of affluence wains.

Organizations always have, so what else is new? The biggest scarcity will continue to be trained minds of good people, not the resource problems noted in the discussion. If all of these problems turn out to be important, few will be solved, given the lack of trained minds to deal with them!

The reaction, depending upon the kind of scarcity, may be substitution, or new forms of technology.

This trend will probably cause increasing pressure on managers to centralize authority.

The management of demand. The management of scarcity will challenge the basic assumptions of much business planning—especially relative to new product introduction, marketing effort, imp. of purchasing, etc.

It is not so much that we have reached limits, but that we are debating the subject, arguing over its, conflicting over its, and in some cases experiencing shortage or citizen action blocking resource development. This forces organizations to deal with issue of scarcity.

Scarcity is already being felt in fuel availability. This phenomenon will escalate into additional resource areas.

This will lead to conservation.

This is obvious and will become more so in the future.

Many current externalities (e.g., pollution clean-up costs) will be included in product cost, forcing more efficiency. Also continual scarcities will mean more "technological substitution."

See state of our supplies of steel, coal, gas, etc.

As the population increases with no restrictions on wastefulness, increasing scarcity is inevitable.

We have already begun to create new designs and new methods of conservation and new procedures for utilizing new materials.

This dwarfs all other problems or crises. It is more the case that the world will have to deal with scarcity, either through a series of wars and famines, or through the invention of social forms that are almost impossible to imagine at present. This will include, among other things, the separation of work from income.

This is a reality—and will force many re-examinations.

The most important impact will be on slower growth economy hence a new emphasis on effective utilization of human resources—growth cannot be the emperor's clothes to ... utilization of people.

Historically, major technological (and subsequent cultural) changes have followed scarcity (e.g., bronze to iron and wood/charcoal to coal).

LEAST SIGNIFICANT: 11

This is presently the situation.

Organizations have always had to deal with scarcity.

An area that all organizations will come to adjust to but because of its technological involvement, most will likely accommodate.

While efficient organizational behavior in many governmental organizations may be considered by some to be unusual today, all future organizations will seek to optimize efficient behavior; this is not considered a significant change.

Scarcity will be a significant issue, but will not appreciably affect the nature of organizations.

Don't see this as a major change over next 25 years. Probably longer run. Organizations have always dealt with scarcity and have adapted.

May be true. However, this factor will not appreciably affect what organizations look like. Will affect ends and means.

Scarcity is nothing new, the recent relative surplus in some areas was abnormal.

True, but scarcity is a relative term. If an item is scarce price will rise and we shall have new supplies, new competing alternatives or reduced demand.
That we are in for a resources crunch is clear. And organizations will be in the center of it. But what it means for organizational forms and styles is quite unclear.

G. ORGANIZATIONS WILL CONTINUE TO BE DOMINATED BY BUREAUCRACY.

MOST SIGNIFICANT: 5

Most organizational activities will remain routine and best performed by bureaucracy (production, education, etc.). Matrix form useful only where trade-off of steady state efficiency for flexibility is justified.

Government is not going to give-up—few politicians will buck it.

Organizations must remain bureaucratic in form as soon as size is beyond face-to-face contact—task performance—but with new recognition of job redesign.

Traditional industrial/manufacturing firms will re-bureaucratize partly from need for more decision control (government regulation) and partly for cost savings (profit squeeze).

And they will be in decay, I suggest, which makes this one important. One only has to look around to see decaying organizations (e.g., universities) to see this happening today.

LEAST SIGNIFICANT: 28

It will continue to be dominant form but not a significant issue.

The statement assumes a continuing separation of science and humanism, but the more likely trend is toward some new combination of science and humanism. Bureaucracy is an organizational design associated only with modern science.

We will need greater freedom of action and we will not permit restraints.

True, but what else is new.

Inflexibility and unresponsiveness of most bureaucracies will lead to public demands for change. Bureaucracies are the dinosaurs of the 20th century.

The “bureaucracy” we know in the future may be quite different from “bureaucracy” as we have known it in the past.

Because it is the continuation of a theme, it will not have as much impact as some of the other factors listed.

This simply does not mean change.

Bureaucracy is at its peak. It does not provide for human productivity and satisfaction. It will decline because we can’t afford the inefficiency to pay for social benefits.

No change in current trend.

Certainly power always has to be distributed, so I don’t see anything more significant than it is now.

There already have been major modifications in traditional bureaucratic form and these changes will continue. Obviously we will still have bureaucracies, but the trend is towards more adaptive-innovative organizations.

Trends indicate a shift toward greater organization flexibility, i.e., “matrix type” structures.

Organizations will continue to be dominated by bureaucracy but less so than at present—this is not a significant trend.

Traditional bureaucracy is losing out. It will hang in formally, but in fact not have power and influence in comparison with segmented, polycentric networks—task force organization, etc.

True, but since reflects status quo—limited impact.

I do not believe that this is an accurate statement.

If you mean that the bureaucratic form (descriptive) will be used where efficiency is needed, this is likely but not particularly important.

It endures because it works in many applications, yet can be flexed into new shapes where necessary.

This is a truism that has little meaning today and less so in the future.

The fact that this form may continue provides little new by way of further required adjustments.
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What other organizing forms are there?

H. POPULATIONS IN ORGANIZATIONS WILL CHANGE.

MOST SIGNIFICANT: 4
Shifts in populations—women, blacks, hispanics, etc.—will be important. But more important will be other shifts in the "population" arising from basic cultural shifts originating in family, education, recreation, etc.
Injection of different value systems and lifestyles will lead to organization change.
Continued erosion of most power to select, promote, etc. will affect productivity, motivation, leadership and communication practices.

LEAST SIGNIFICANT: 14
Not of major significance, but an important trend.
Minorities will adopt the values and customs of the organization as opportunities open up to them.
This will have stabilized within ten years and be ordinary by the year 2000. It is a problem on its way to solution.
This trend is toward equality of results for all organization members.
Possibly less mobility as reversal of current trend takes place. Minority issue not important in 2000.
While an obvious trend, its impact will be relatively minimal on organizational operations. Human variable likely to decrease in relative importance as other forces assume predominance in renewed quest for efficiency.
This will happen, but won't be a problem.
Will be important, but less so than other factors in list.
Not the major trend—the other more dynamic trends—will have more basic effect.
Do not expect this to have a significant impact on organizations.
There seems to be no evidence of this.

I. POWER EQUALIZATION AMONG ORGANIZATION MEMBERS

MOST SIGNIFICANT: 114
This has been an obvious and important trend for decades. I expect it to continue and perhaps accelerate.
In contrast to traditional views of people and traditional ways of organizing (bureaucracy), this trend will have significant impact on both structure and process in organizations.
This trend has greater potential which if realized will increase quality of work and human growth.
This is a fundamental trend. This is closely related to items C and E. Greater emphasis upon quality of work life and participation. Happening in business corporations, hospitals, school systems, etc. Strong evidence of trend in other industrial countries.
Extrapolation of Kodak, Campbell GM (etc.) trends, plus European experience with co-determination, plus government intervention/control for consumer protection will result in major lawsuits which will result in consumer and government representatives on Boards of major important-industry firms.
Inevitable trend in history, that is accelerating, for more participation—basic and long term trend.
This trend will be in direction opposite to point F. Therefore, conflict will result.
Continuing democratization of organizations, and growing proportions and promotion of women and racial minorities will operate to reduce the power of external bargaining of future organizations; concurrently, more individuals will increase their personal power inside organizations. These organizations will be characterized by decreased internal cohesion and increased humanism.
Will lead to a modification of most bases for social interaction; participation; opportunity for personal growth, etc.
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Acceptance of participative modes of decision-making is inescapable will lead to information-sharing as a basis of sound decisions both within and across organizational boundaries.

LEAST SIGNIFICANT: 9

Don't believe this is going anywhere.

Increased complexity of organizational processes and technologies render participation of questionable value except among those having appropriate expertise.

Again, misty-eyed academicians posting a world they wish could exist—and won't.

The ability of people rather than organizations which will derive power.

This has run a fad but finally a leadership elite that is willing to assume responsibility.

This may have run its course. The classes from colleges between 1965-1982 produced more noise and nuisance than lasting effect. I see a swing to the right.

This will be much more limited than most people believe simply because there isn't time for the multiple meetings at higher decision-making levels, nor is there sufficiently widespread information and education to participate in really significant decision.

Resource scarcity pushes in the opposite direction, as does the incredible amount of time it takes to run a democracy if work has to be done. It takes more people than you ever will have to get everyone totally involved in the decision process.

The general experience in many professional industries is easily transferred to new settings.

J. TECHNOLOGY WILL ALTER ORGANIZATIONS APPRECIABLY.

MOST SIGNIFICANT: 23

Our computerized society today will be further "machined" and controlled by rapid information-retrieval and identification devices.

Education of managers/technicians increasingly demanding—emphasis on quality continuing education. No decline in percent of semi-skilled and unskilled workers. (e.g., majority of jobs in computer industry require few skills.)

Open up creative new organization design possibilities—flexible time, flexible geographic placement (people can work at home) etc.

We will be able to create integrative types of executive branch centers which will be competing with multi-nationals and giving oncoming generations the capacity and ability to be equal in knowledge to the opportunities offered shaping the multi-nationals by the competition of having knowledge and ability to compete.

By far the most significant factor in organizations will be the changes in communications and travel due to technology.

Altered patterns of communication will alter organization structure and policies.

Technology is a prime determinant of the birth and death of organizations or their functions.

We have only scratched surface of impact of computer, for example.

In 22 years the world and possibly the people in it will have gained incredible changes if they have not destroyed themselves.

Micro-wave; computer; etc. will make it possible for people to handle the information glut.

With technology of products and the kind of people required to make them, as well as the structure to support them, means that there will be much organizational change.

Technology and environment will remain as the key determinants of organizational designs and managerial practices. But, we will begin to design the technology to accommodate to people rather than the reverse.

When it becomes possible to produce custom made-to-order products on an assembly line, the whole structure of industry will change.

The effect, however, will be to simplify, not convolute many tasks reducing the need for technocrats and reallowing general labor.
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Technology has a basic effect on organizational behavior. As technological innovation occurs, it will be decisive in determining the precise nature of organizations and their degree of responsiveness, both to external and to internal force requirements.

Likely to radically alter most internal procedures and the nature of processes and interactions at all organization interfaces. Complexity is not the point. Technology offers new capabilities. It also will displace and demand new support, including human skills.

The trends are definitely in this direction and cannot be reversed. Multidisciplinary information will increasingly become the mortar to bind the disparate "bricks" of the coming socio-politico-industrial complex, i.e., the new society.

LEAST SIGNIFICANT: 3

Pertinent limits to resources will force us into more "primitive" forms of technology, thus heading toward simplicity rather than complexity.

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The spontaneous emergence of some archetypical, universally acknowledged symbol, possibly as a sign off or side effect of a technological innovation. Involvement with this symbol could turn out to be either greatly good or greatly bad.

I will, this wild card: The energy crisis will assume the major proportions predicted by some (e.g., Fred Thayer) with consequences so severe that all (normal) bets are off. From this would flow major organizational adaptations to achieve survival. Domination in a chaotic world in which normal government and commerce would come to an end.

Biological and medical breakthrough stemming from genetic control. New resources of food, cures, cures for physical and mental ailments.

New energy source will be developed.

1. Contact with an outside civilization; or.

2. World war III.

Of course, if I could answer such a question, the event would no longer be unforeseen. I believe the "war" already is foreseen (catastrophic certainty before 2080), and we face an apocalyptic choice between social transformation or almost total destruction. If presidents and cabinet officers always routinely use the word "catastrophe," why should we vince at using it? The depth of the intellectual problem is that we are so committed to the idea that we can systematically solve any problem that we even refuse to listen to presidents when they speak.

The government and the community-national corporations will be forced to recognize now that their efforts have been in erasing their image, abilities, and resources. They will find that it will be in their interest to redesign goods, materials and distribution and that these people can be better served not in single production but in systems giving then a way of life with multiple products and helping create a monetary supplement to present gold standard via their finished materials, containerized for use as a new economic value on a worldwide acceptable value basis.

A nuclear war would, of course, completely change the rules of the game. Significant threats to national security, such as widespread nuclear threats, could lead to substantially increased government controls which, in turn, could result in different types of organizations and organizational relationships. But, I give this a low probability to the year 2000.

Organizations will be viewed as having as their most important mission the creation of employment-to continue in operation regardless of profit level. Governmental subsidies will be available-control that passed from owners to managers will pass to government functionaries regulating economic life for full employment. A serious international crisis will greatly increase the power and role of public as opposed to private organizations in countries like the U.S. where there has been resistance to the growth of governmental power.

Intolerable unemployment levels, particularly in 18-26 age bracket will cause considerable rethinking by 2000, namely: Less emphasis on efficiency and more emphasis on employing human resources, even if
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they are less efficient.
Reverse retirement trend toward 60 or 65 rather than 65 or 70.
Institutionalizing the concept of tapering off at age 65 would encourage alternative means of keeping active.
More effective and imaginative ways to use human resources on a part time basis.
1. . . . Things that do not change will remain the same applies here.
2. Fifty percent of the problems due to acts of man and ten percent due to acts of God. These are the insurable risks. The big problem will be of our own making, the rest can be covered by insurance except for major unsalvageable catastrophes. Who knows about these?
There may be a tax payer/social security contributor revolt which would rock the foundations of government and profoundly affect the organization of work and companies.
The unforeseen event will be the discovery of a process to extract energy from the hydrogen sun around 2000 A.D. The dynamic American economy has been based on cheap energy for a century. There is enough energy in a glass of water (if the energy can be extracted from the store) to drive a small car from Ohio to California and back. Probably the process will be discovered by serendipity.
Between the "X" bomb and genetic manipulation, the outlook for life on earth is questionable.
A new type of organization may prove of major importance—either large corporation or government agency. Examples in this century: multinationals, non-profit institutes. What is next?
The surprise discovery that a minor overpopulating country has an atomic bomb with which it threatens a powerful nation unless they allocate employment resources to that country. This will highlight a shift from a general concept of business organizations as institutions to maximize return on investment to institutions which maximize jobs.
The development of supernatural cooperation, coordination, regulation and control of organizations. Happening now through greater scientific and technological interchanges, but there may be increasing social control over multinational corporations. World-wide rather than national government regulation and surveillance of organizations (extension of item 2).
The development of a non-electricity power source, probably by a basement inventor/developer and the gradual erosion of traditional electrical appliances as small firms apply its simple and inexpensive technology, until major industries (power and electricity-based-products manufacturers) are crippled until they adapt—only to be permanently weakened (or replaced) by the small innovators.
Fantastic displacements, industrially, product-wise, and humanly (not to mention technologically), will create a whole new organization/industry equilibrium with large numbers of small firms rather than a few large firms as now, greater marketplace and innovative competition, heightened industrial growth but only after a severe depression and a decade of high unemployment. Then quantum jumps in R & D and science.
Space technology, (perhaps not unforeseen) will (may) allow the beginnings of populated space stations orbiting the earth. Technological developments may create highly promising areas of investment—growth industries which do not exist today. (Business week cover story on this earlier in the year). Ultimately, self contained cities orbiting the earth may provide a way of taking pressure off the earth's limited resources (use of solar and nuclear energy—hydroponic methods for raising vegetables and fruits, etc.).
Most likely to be a basic experience in transcendent behavior of some kind—something like the impact of Freud and the unconscious. This event is likely to transform the nature and appearance of organizations. It will be in area of hypnosis, altered states of consciousness, experience of after life, or some such dramatic and visible experience.
I have trouble foreseeing the unforeseeable. But if you mean low probability?
Re-emergence of concept of plenty; expanding good, energy plenty, managing in era of plenty.
1) Complete revolution in work patterns (office location, work at home, training, information availability, etc.) brought on by wide-spread communication and interaction via union of cables TV and computer technology or
2) Major revolution in transportation (such as Mag Energy Transmission etc.) which also restructures work patterns in all organizations and completely change scope and power of several major industries.
There could be a major war over resources involving unanticipated alliances.
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A major war.
I don't think that anyone is aware of the significant use of and attention to small business that is upon us. We are on the brink of an entrepreneurial revolution--legislation is pending, education programs are developing, social norms are supporting the rise of small business as a career.

1. Systematic contact with extraterrestrial aliens--we find that not only are we not alone, but not even very important.

2. Genetic manipulation of primates significant enough to create a new work force.

3. Development of some new (or refined) energy source which is easily available everywhere and relatively cheap (e.g., hydrogen, alcohol, solar).

This would be even more messy if the new search had new economies of scale, so homeowners and others could generate power in their backyards at competitive prices.

Worldwide economic collapse leading to general state of terrorism, which may lead to political collapse of governments and major war in many parts of the world.

Contact with extra-terrestrial intelligence.

A whole re-examination of what constitutes the desired goals of organizational participation, especially economic... as cost of living continues to shift.

China will be a nation in world community, the acknowledged pace-setter in the way the U.S. is today.

The adoption of something like the income maintenance plan to assure the allocation of resources for the sustenance of the populace to compensate for the decreased employment opportunities.

Renunciation of war among nations as a mode of conflict resolution, since it betrays against human survival on earth; leads to dismantling of national defense establishments, the strengthening of transnational nodes of planning, social and economic, and reliance upon international policing and peace-keeping.

This action tends to reduce reliance upon competition as a major motivation in organizational work and a new commitment to inventing, empowering and utilization of cooperation modes of planning and control both within and across organizational boundaries. Cultural variations are accepted as part of the "facts of life" by organizational planners.
BIBLIOGRAPHY
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*Indicates literature appropriate for inclusion in an organization futures literature: Articles, books, and books which contain sections that are concerned with organizations of the future. For a more complete list of organizational futurists, add the names of the authors of these articles and books to those in Appendix A.


Learning Center, 34-46.


* ______________. 1976. The Coming of Post-Industrial Society:


Francisco: Chandler Publishing Co.


Contemporary Authors, various editions from the series. Detroit: Gale Research Co.


________. 1973. The Use of Expert Opinion in International-Relations Forecasting. Los Angeles: The University of Southern California, Center for Futures Research.


*Lesley E. This, and Robert G. Bidwell, Jr., ed. 1971. Optimizing Human Resources: Readings in


CURRICULUM VITAE

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