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ABSTRACT

Educational Quick Environmental Scanning Technique (ED QUEST) is a process designed to identify emerging issues and events that indicate potential threats and opportunities to educational organizations, to analyze the probable impact of these variables on the organization, and to facilitate the development of appropriate organizational strategies. This manual describes, conceptually and through practical illustrations, each step of the ED QUEST process. In Part One, the essential elements of the process are described, including the criteria establishing information sources, identifying and analyzing critical trends and events, developing alternative scenarios, identifying strategic options, and selecting options to be incorporated into the strategic management process. Parts Two and Three provide differing examples in the form of two fictitious institutions (a small, private, four-year college with a planning team inexperienced in strategic planning; and a public two-year college) to illustrate that a variety of techniques and versions of the techniques can be incorporated into the basic ED QUEST process. Part Four discusses ways in which a college or university could institutionalize an ongoing environmental scanning process to systematically provide information for use in the strategic management program. Topics in Part Four include development of the program structure and the scanning taxonomy, and electronic file organization; identifying literature sources and databases; training scanners and abstracters; and conducting scanning committee meetings. Provided in appendices are a future prospects notebook, a round two Delphi questionnaire, scenarios developed at one of the fictitious community colleges used as an example, and biographical sketches. Contains 84 references. (KM)

for Management Research Policy Analysis and Planning

ED QUEST: A Process for Linking Environmental Changes with Strategic Management

James L. Morrison and Thomas V. Mecca

ED QUEST: A PROCESS FOR LINKING ENVIRONMENTAL CHANGES WITH STRATEGIC MANAGEMENT

Preconference Workshop
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EDUCATIONAL QUEST
LINKING ENVIRONMENTAL CHANGES TO STRATEGIC MANAGEMENT

The external environment of institutions of higher education can be characterized by change and turbulence. Administrators of colleges and universities have witnessed major shifts in the demographics of their institution's student clientele. External agencies have tightened their control of policy-making and fiscal decisions made by the institution's administrative staff. There has been a growing criticism of the value of the curriculum offered and the quality of instruction provided by many institutions of higher education. Less obvious, but no less significant, the pervasive spread of electronic technologies through American society has challenged the dominant instructional and managerial paradigm found in the majority of American higher education institutions. In short, the accelerating rate, magnitude and complexity of change occurring in all sectors of American society have created a new vulnerability in the higher education "tableau" (Keller, 1983).

Given this rapidly changing environment, the lead time for administrators to analyze changes in their institution's external environment and to formulate appropriate strategies has decreased. The context within which strategic policy interventions can be made is more circumscribed. In addition, the perceived uncertainty of implementing a particular strategy or set of strategies has intensified. In summary, the turbulence in an institution's external environment challenges the capability of decision makers to formulate those strategic plans required to effectively anticipate these changing conditions.

This phenomenon of rapid change has led to a recognition among administrators and organizational theorists of the need for a broadly based approach to institutional planning which emphasizes sensitivity to the effects of environmental change on the strategic position of the institution (Ellison, 1977; Cope, 1978). An administrator's analysis of the environment of the organization is critical to accurately assess the opportunities and threats that the environment poses for the institution and to develop the strategic policies necessary to adapt to both internal and external environments.

All organizations, including colleges and universities, are perceived by contemporary organizational theorists as social systems existing in and interacting with their environment (Gibson, 1968; Scott, 1981). An organization's environment is essentially all those factors external to it that affect it or are perceived to affect it. Hall (1977) divides an organization's environmental factors into two categories: the limited number of factors that directly affect it (the task environment), and the almost unlimited number of factors that influence all organizations in the society (the general societal environment). In essence, the task environment is composed of the set of factors that are unique to each organization, while the general societal environment includes the other environmental factors that are the same for all organizations.

Factors in the task environment are readily apparent to college and university administrators (e.g.. clients/students, funding, government educational policies and regulations, etc.). However, the distinction between the organization's task environment and the general societal environment is not always clear. Particularly under turbulent conditions, factors in the general societal environment "break through" into the organization's task environment (Kast and Rosenzweig, 1979). Consequently, changes in the general societal environment can and often do have significant effects on the organization, effects well documented in the literature of organizational analysis (Osborne & Hunt, 1974; Hall, 1977; Kast & Rosenzweig, 1979; Scott, 1981).

Contingency approaches to organizational theory have focused upon the effect of environmental change in creating uncertainty for policy-makers formulating organizational strategy (Anderson & Paine, 1975; Lindsay & Rue, 1980; Boulton, Lindsay, Franklin & Rue, 1982). Duncan (1972) describes three factors which contribute to this sense of uncertainty: (1) a lack of information about environmental factors which would influence a given decision-making

situation; (2) a lack of knowledge about the effects of an incorrect decision; and (3) the inability of the decision-maker to determine the probability that a given environmental factor will affect the success (or failure) of the organization or one of its subsystems in fulfilling its mission. In a later study, Leblibici and Salancik (1981) also found that the uncertainty experienced by a decision-maker arises from his or her inability to predict the outcomes of certain actions. This inability to predict decision outcomes is derived from two sources. The first is the nature of the world in which we live--multivariate, complex, and interrelated. The second is that we live in a probabilistic world--an event can occur tomorrow, next week, or next year which could affect the interrelationships of variables, trends, and issues. In essence, the more turbulent and complex the organization's environment appears, the less able an administrator is to anticipate the probability of success in implementing a particular strategy.

The uncertainty faced by a decision-maker in planning strategically is compounded by an increasingly dynamic and uncertain environment (Emery and Trist, 1980). Terreberry (1968) concluded that organizations in the future must be prepared to adapt even more to the influence of external forces. Therefore, the strategic planner and policy-maker cannot analyze the condition of the future environment by assuming that it will remain in a static state (i.e., orderly and incremental progression into the future). Most environments are dynamic and, consequently, rich in possible opportunities as well as possible threats to the organization. Lack of knowledge about possible permutations of the emerging environment denies the planner certitude about the future. Indeed, a decision-maker can never have complete information of the future. Policy decisions to effect a desired outcome at a future point in time must necessarily be made with partial information.

Traditional educational planning models are weak in identifying environmental changes and assessing their organizational impact. In his analysis of the approaches to planning exhibited by American educational institutions, Ziegler (1970) identified two primary assumptions which characterize the weakness of these models: (1) the organization's environment will remain essentially static over time; and (2) the environment is composed of only a few variables impacting education. In essence, the underlying assumption of most current educational planning is that environmental change will be a continuation of the rate and direction of present (and past) trends. Therefore, many administrators implicitly expect a "surprise-free" future for their institutions. We know, however, that this is not possible, and the further we go out into the future, the less possible it will be. A model is needed that enables administrators to detect signals of change in all sectors of the environment and to link environmental information to the organization's strategic management (Ansoff, 1975).

In recent years, a group of techniques has been developed, which educational policy-makers can employ in establishing the strategic policy of their organizations. These techniques come under a broad category of methodology known as futures research. A primary purpose of this methodology is to assist strategic policy planners in reducing the level of uncertainty associated with strategic decision-making. The focus of this methodology is the identification, analysis and evaluation of alternative future states of an organization's environment and the sources of change within it.

One futures research technique is environmental scanning, which has been defined by Aguilar (1967) as the systematic collection of external information in order to lessen the randomness of information flowing into the organization. The purpose of environmental scanning is to provide an early warning to administrators of changing external conditions.

All organizations acquire information on their environment in some form. However, Aguilar (1967) suggests that environmental assessment is more effective where a formal search replaces the informal search of the environment. Etzioni (1968) also recommends that organizations obtain information from both the general societal environment and the organization's task environment. The process of environmental scanning is described by Terry (1977) as consisting of three essential stages: (1) the identification of strategic issues through an assessment of the environment; (2) review of the organization's mission and domain of

operations; and (3) the development of strategic and tactical objectives. These stages have been incorporated in the SPIRE planning model in the oil industry (Klein and Newman, 1980).

The use of environmental scanning for strategic policy development has been studied principally in the context of corporations (Thomas, 1980). Recent literature of educational planning includes this technique as part of the strategic planning process at colleges and universities (Cope, 1981; Keller, 1983; Morrison, Renfro and Boucher, 1984). However, much of this literature describes the process of scanning the environment for issues, but does not detail how the information and analysis developed from the scanning is to be incorporated into the formulation of institutional strategy. This manual is intended to fill this void by describing in detail a process (ED QUEST) for linking environmental scanning to strategic management.

ED QUEST is designed to identify emerging issues and events that indicate potential threats and opportunities to educational organizations, to analyze the probable impact of these variables on the organization, and to facilitate the development of appropriate organizational strategies (Mecca and Adams, 1982). Unlike more complex methods for analyzing socio-economic and political environments, ED QUEST can be quickly and easily implemented. Moreover, it does not require that the institution spend scarce financial resources on specialized technical services or personnel. In its simplified form, the ED QUEST process consists of divergent-thinking activities in which assumptions about the future of the environment are examined and tested. The results of this process are then systematically applied to the formulation of organizational strategies. Upon completion, the institution will have (1) an initial data bank of trends, emerging issues, and events to monitor, and (2) courses of action that could be pursued by the organization in adapting to the changing environment. This information provides the foundation for on-going strategic management.

The purpose of this manual is to describe conceptually, and through practical illustrations, each step of the ED QUEST process. It represents an enhancement of an earlier version which describes the application of the generic model to educational systems (Mecca and Adams, 1981). In Part One, the essential elements of the process are described, including the criteria establishing information sources, identifying and analyzing critical trends and events, developing alternative scenarios, identifying strategic options, and selecting options to be incorporated into the strategic management process.

In the second and third sections of the manual, a description is given of planning teams at two fictitious institutions that use alternative versions of the ED QUEST process in developing institutional strategies. Part Two describes a version of ED QUEST used at a small, private, four-year college, by a planning team inexperienced in strategic planning. The basic version of ED QUEST that they used allowed them to develop the basic skills and knowledge of strategic planning while also formulating their initial plan. In comparison, the institutional planning team of the second institution, a public two-year college described in Part Three, elected to use an approach involving more sophisticated planning techniques. The purpose in using two examples is to illustrate that a variety of techniques and versions of these techniques can be incorporated into the basic ED QUEST process. The initial phases of the process should introduce the institution's staff to basic concepts and skills of planning. As the members of the planning team become more comfortable and proficient in their roles, more sophisticated methods of analysis can be used.

Finally, Part Four discusses how a college or university could institutionalize an on-going environmental scanning process to systematically provide information for use in the strategic management program.

PART ONE

THE ED QUEST PROCESS

OVERVIEW

The original concept of QUEST (Quick Environmental Scanning Technique) was developed by Burt Nanus of the Center for Futures Research at the University of Southern California in response to the need to focus management's attention on critical trends and events that could affect the organization's future (Nanus, 1979). QUEST was designed to quickly and inexpensively provide forecasts of events and trends, an indication of the interrelationships among them (and hence the opportunities for policy intervention), and scenarios that synthesize these results into coherent alternative futures. The objective was to produce a comprehensive analysis of the external environment and an assessment of an organization's strategic options.

ED QUEST was adapted from QUEST by the Institute for Future Systems Research to assist decision-makers in educational organizations in incorporating futures research techniques into their long-range planning processes. The primary aim of ED QUEST is to assist educational planners in identifying the driving forces at work in their organization's environment, the important and likely changes that these forces might bring about for that organization, and the strategies that the organization could implement in response to the anticipated impact of these changes. ED QUEST tailors the product of the environmental scanning process to the user's organization and does not rely on persons *outside* the organization to interpret the significance of the organization's environment. Involving an organization's top decision makers in identifying and evaluating critical trends and events virtually insures that the results *will* be used in strategic decision-making. Also, since ED QUEST is participatory in nature, it does not depend upon any single individual's view of the future. In addition, its emphasis on group participation, confrontation of the potential problems posed by the future, and development of strategies to overcome these problems can facilitate team development among key institutional decision-makers (Woodman and Muse, 1982).

Finally, because it is a systematic approach to analyzing and developing strategies for organizational change, ED QUEST can provide an important component in a comprehensive program of institutional development. Many institutional planning efforts fail to produce long-term organizational change or produce unanticipated, undesired side effects because they represent piecemeal short-range responses to institutional problems (Michael, 1973). Such a strategy of disjointed incrementalism assesses only the current and past state of the environmental context within which the institution operates, ignoring environmental factors that may have an impact on the future of the institution (Berquist and Shoemaker, 1976). The ED QUEST process, however, facilitates the link of information and analysis of environmental change with the identification and selection of strategies leading to general institutional improvement and renewal.

Assumptions

ED QUEST is based on three fundamental assumptions. First, it is assumed that the forces of environmental trends and events affect the organizational life of colleges and universities (Dill, 1958; Bourgeois, 1980). Such forces affect the choice of strategies for accomplishing the institutional mission as well as the nature and content of that mission. Second, given the likelihood that the institution's chief decision-makers possess differing perceptions of the forces shaping the external environment (Anderson & Paine, 1975), it is assumed that differing perceptions can be merged into a common view of the environment and possible future states of that environment. It is important to develop an organizational view of the current as well as alternative future environments, in order to determine the basis of the organizational response to these environments. Third, it is assumed that the environmental trends and emerging issues and their effects can be forecasted probabilistically, taking explicit account of their uncertainty, thereby, providing crucial information for the strategic management of an institution (Aquilar, 1967; Etzioni, 1968).

Primary Activities

The primary activities in the ED QUEST process are: (1) preparing for the ED QUEST process; (2) developing a notebook of critical trends and events; (3) defining the nature of the organization, including mission components, indicators of its performance and its strengths and weaknesses; (4) identifying and assessing the impact of critical trends and probable future events; (5) developing and assessing scenarios; (6) selecting strategic options; and (7) incorporating those options into the strategic management process (see Figure 1). This sequence need not be followed exactly. For example, defining the nature of the organization (activity three) could occur as the first, second, or third step in the sequence, but must precede scenario development (activity five).

PREPARING FOR THE ED QUEST PROCESS

There are four tasks that need to be completed in preparation for the initial ED QUEST session, including: (1) establishing the ED QUEST team; (2) selecting the team's facilitator; (3) briefing the team on the ED QUEST process; and (4) preparing materials showing past trends and forecasts of events that could affect the organization.

Establishing the ED QUEST Team

ED QUEST is essentially a small group process; therefore, the ideal team size ranges from 7-12 members. Indeed, Hogarth (1978) found that groups within this size range generally make better assessments of future uncertainties.

Members of an ED QUEST team should be selected according to the extent to which candidate (1) determines institutional policies, (2) is knowledgeable about environmental forces affecting the organization, and (3) is capable of developing creative strategies for accomplishing the institutional mission. In addition, the ED QUEST team should be composed of members with varying styles of decision-making. Differences in decision styles relate to cognitive factors which influence preference for a certain type of data (i.e., quantitative versus qualitative) and a particular mode of processing that data (i.e., logical-objective versus feeling-subjective) (McKenney & Keen, 1974; Slocum & Hellriegel, 1983; Guild, 1987). Given a diversity of decision styles, individual members of a planning team will evaluate strategic planning information and formulate institutional strategy from differing perspectives (Blaylock and Rees, 1984; Guild, 1987). Although a variety of interpretations of the environment can appear discordant, it can also, when effectively managed, contribute both to the "richness" of the team's analysis and to the "robustness" of the strategies developed (Nutt, 1986).

Selecting the Facilitator

Typically, the team facilitator is selected by one of three methods. In the first approach an outside consultant is hired to assume the task and responsibilities of facilitator. This approach has the advantage of insuring a skilled planner to organize and conduct the sessions, and it does not add an additional task to the workload of a busy administrator. The disadvantage of this approach is that an outsider gains access to organizational secrets and may inhibit the development of ED QUEST skills within the organization.

The second alternative is to assign an administrator the role of facilitator. This individual should be of sufficient stature in the organization to be perceived as a legitimate leader by his/her colleagues (e.g., the assistant to the president for planning, the vice-president for planning or the director of institutional research). In this approach , the primary advantage is the facilitator's knowledge of the organization and its staff. However, it is imperative that the administrator-facilitator be extensively trained in futures research methods (i.e., judgmental forecasting, cross-impact analysis and scenario writing).

ED QUEST

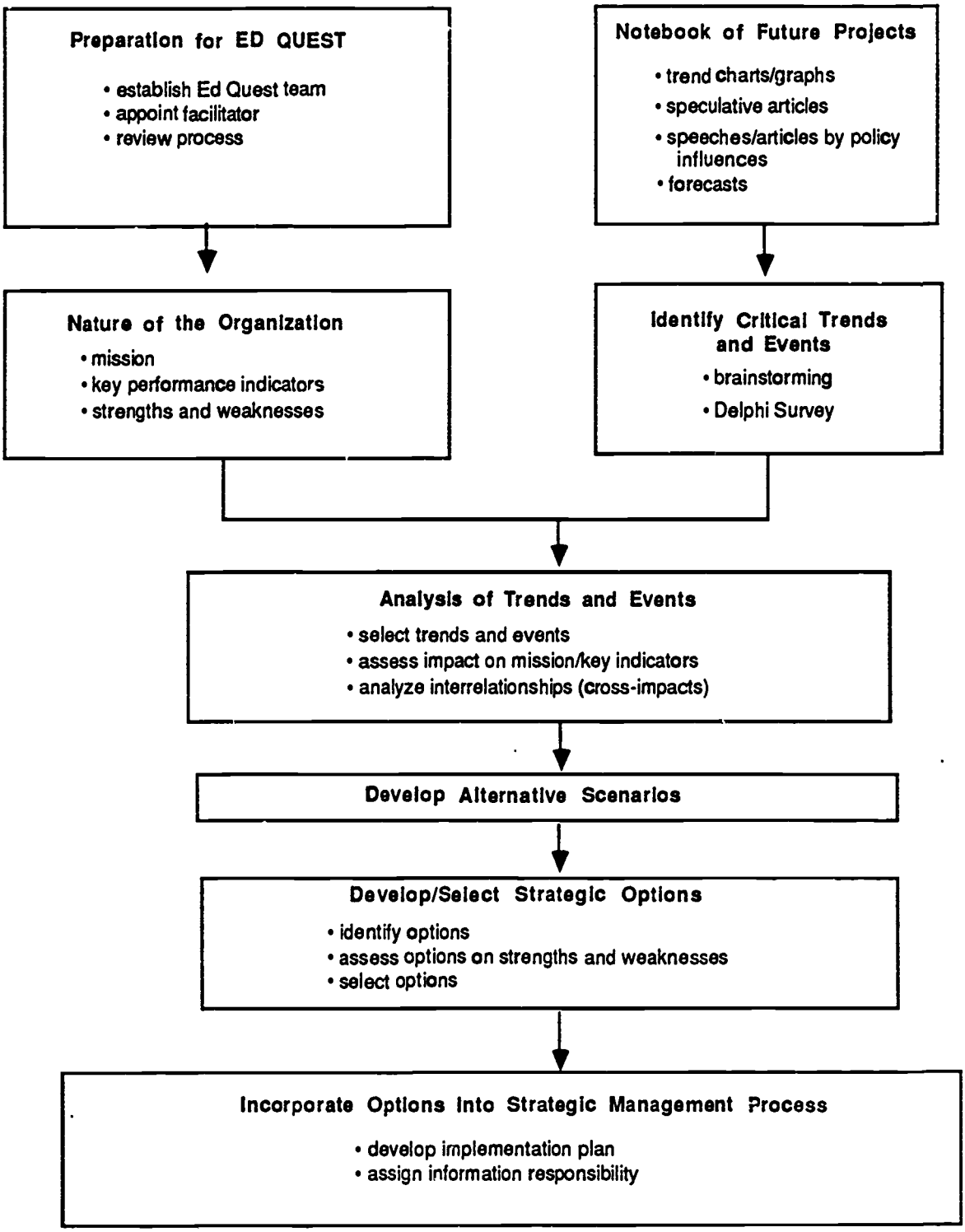


Figure 1

In the third approach, an outside consultant is initially employed to facilitate the process with the additional responsibility of preparing an internal facilitator. This has the advantage of allowing an institution to move directly into the process without having to wait for a staff member to be trained.

Regardless of which selection method is used, the facilitator's effectiveness as a team's leader will be eventually measured by the degree of skill he/she shows in orchestrating the ED QUEST process. That is, the activities followed should be technically appropriate to the planning team's level of experience in formulating strategy, and they should result in strategic decisions that are generally perceived by the team's members as being supportable (Miner, 1979). Therefore, the facilitator should have the ability to write clearly, to synthesize and summarize, to lead small group discussion, and to intelligently apply futures research methods.

Briefing the Team

Before initiating the ED QUEST process, the facilitator should orient the team to the basic ED QUEST principles and activities. At this meeting, the facilitator should emphasize the importance of involving the organization's top decision-makers in the ED QUEST process (if its results are to be accepted by the organization's staff) and should explain the benefit of the ED QUEST process in clarifying the collective view of the environment. The facilitator should also stress that the object of ED QUEST is to provide an understanding of alternative future developments that might affect the organization; it is not an exercise in prophecy. Indeed, the process is only the first step to an understanding of the environmental factors to consider in the organization's strategic management process. Using the results of the ED QUEST procedure as a starting point, later analysis will probe more deeply into specific trends and events relevant to the organization's future.

If the ED QUEST team will function as a Delphi panel, explanation of Delphi procedures should be included in the preliminary meeting. Although members of the team may be familiar with Delphi, the facilitator should review with the team members the purpose, and nature of the Delphi and their role as panel members (Martino, 1983).

Preparing the Future Prospects Notebook

An initial task of the facilitator is to develop a notebook of emerging issues, potential events and critical trends that could affect the organization during the planning time frame (five or ten years). (See Appendix A.) In addition to providing background information for the ED QUEST team, the notebook may be used as background material to construct a Delphi questionnaire (Campbell, 1971). The notebook should include the following: (1) trend extrapolations of key educational statistics (e.g., the number of high school graduates); (2) recent articles about the future of education; (3) speeches and comments by influential individuals (e.g., legislators, policy makers, researchers, futurists, etc.); (4) information on technological, economic, social, and political developments having possible future significance for education; and (5) data suggesting changes in American values/attitudes that affect education. Each team member must read the notebook prior to the first ED QUEST session; therefore, notebooks should be distributed at least two weeks in advance of that session.

Preparing for ED QUEST Sessions

Generally, two full-day ED QUEST sessions are conducted. In some instances, particularly when team members are inexperienced, each session is extended by four hours. The focus of the first session is (1) to define the organization in terms of mission, key performance indicators, and internal strengths and weaknesses; and (2) to assess and verify trends and events which may affect the future of the organization. In the interval between the first and second team sessions, a series of scenarios is developed and a session summary is written. Both are circulated to all team members.

In the second ED QUEST session, the team (1) assesses the scenarios for their organizational implications; (2) develops strategic options in response to the implications of each scenario; (3) assesses these options in terms of the organization's strengths and weaknesses; (4) selects those options that are robust across scenarios; and (5) assigns responsibility for developing and implementing an action plan to accomplish the most appropriate options.

When planning ED QUEST sessions, attention should be given to the meeting environment. During the sessions, participants should be insulated from interruptions. The facility should be comfortable, in an area that is free from distractions, and equipped with flip charts (on easels), markers and masking tape. Seating arrangements should facilitate communication among group members and maximize workspace, making a circular or semi-circular table configuration ideal.

DEFINING THE NATURE OF THE ORGANIZATION

Defining the nature of the organization is crucial to (1) identifying the trends and future events that could be particularly critical to the institution's future; (2) pinpointing the aspects of the organization's mission and performance that may be affected by those trends and events; and (3) identifying the institution's strengths and weaknesses that may influence the selection of strategic options. In defining the organization's nature, the team should focus on the mission, indicators of performance, and organizational strengths and weaknesses.

Elements of the Mission

To define the nature of the institution, the ED QUEST team should first describe the specific elements of the institution's mission. As a description of the organization's primary purpose, the mission statement identifies *why* the institution exists (the needs it fulfills), *whom* it serves (students, clients, stockholders), and *what* it intends to accomplish (programs, services or products it provides). By establishing the *"why," "whom,"* and *"what"* of the institution's mission, ED QUEST team members gain an understanding of the organization's present position within the external environment and a reference point for assessing any changes in that position within the planning time frame.

Specifically, answers to the following three questions can be invaluable to an ED QUEST team in defining the mission of the institution:

"What *needs* does the institution fulfill?"

"What groups of *students and/or clients* does the institution serve?"

"What *programs and/or services* does the institution provide?"

As the team addresses each of these questions, members should complete the form specified for this purpose (see Figure 2) for later reference. For example, the students/clients of a state-supported four-year college could include recent high school graduates, adults retraining for a new occupation, transfer students from two-year colleges or other four-year institutions, adults in occupations requiring continuing professional education or cultural enrichment courses. The needs of these students may include entry and upgraded employment skills, career counseling, avocational interests, and liberal education. The college could offer a variety of services to meet these needs including baccalaureate, residential and non-residential programs; student support services; faculty consultative services; non-credit instruction; and artists' series.

Identifying Indicators of Institutional Performance

Once the organization's mission has been defined, the ED QUEST team should develop a list of key indicators of institutional performance. Key indicators are organizational factors that make

the difference between institutional success or failure (Rockart, 1979) and typically include the factors that most people would agree are significant to the organization's well-being.

Indicators may include, *but are not limited to*, the attributes of effectiveness, efficiency, cost, and competitive advantage. Some generally accepted measures of these indicators include the following:

- placement rate of graduates
- student and faculty retention rate
- awards received by students
- awards received by faculty members
- institutional cost per student

Once an initial list of key indicators is developed, the team should discuss the significance of each indicator. Then, through a polling procedure, they should identify at least 10, but not more than 15, indicators that the majority of team members believe to be the most significant in evaluating organizational performance. The list of selected indicators will be used later in the process combining the internal with an analysis of the external environment.

Identifying Strengths and Weaknesses

A list of the organization's strengths and weaknesses is useful in developing a comprehensive picture of the organization's present conditions and in assessing the feasibility of the long-range strategies developed during the ED QUEST process (Steiner, 1979). The following definitions are helpful guides in the process of identifying strengths and weaknesses (Joseph, 1974):

Strength: *A currently advantageous situation* or capability (internal or external) that increases the "drawing power" or attractiveness of the institution

Weakness: *A currently disadvantageous situation* (internal or external) and/or capability that places the institution in a vulnerable position

The list of strengths and weaknesses could be developed using brainstorming or the nominal group technique. Another alternative is to have each team member complete the form shown in Figure 3 prior to the initial ED QUEST session. From the completed form, the facilitator can compile a preliminary list of strengths and of weaknesses to be reviewed and refined by the team.

rrespective of the procedure used, the team should select the 10-12 most significant strengths and 10-12 most significant weaknesses, which can be accomplished by asking team members to list in priority order the strengths and weaknesses on the form provided above (see Figure 3).

Name of Organization _____

	DEFINITIONAL CATEGORIES		
	CLIENTS/GROUPS SERVED...	NEEDS SATISFIED...	SERVICES OFFERED...
PRESENT			
FUTURE			

Figure 2: **ELEMENTS OF MISSION**

Name of Organization_____

STRENGTHS (Current advantageous situations, capabilities and/or successes)	WEAKNESSES (Current disadvantageous situations, capabilities and/or lack of successes)
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.
11.	11.
12.	12.

NOTE: Use as many forms as required by the number of strengths and weaknesses identified by the group.

Figure 3: **ORGANIZATIONAL STRENGTHS/WEAKNESSES**

IDENTIFYING THE UNIVERSE OF CRITICAL TRENDS AND FUTURE EVENTS

In order to understand fully the terminology used in the ED QUEST process, the following definitions are used:

> A **trend** is a series of social, technological, economic or political characteristics that can be estimated and/or measured over time. It is a statement of the general direction of change, usually gradual and long-term, and reflects the forces shaping the region, nation, or society in general. Trend information may be used to describe the future, identify emerging issues, or project future events. For example, at most institutions, student profiles are changing. Indicators of this trend include the increasing number of female students, minority students and full-time adult students.
>
> An **event** is a discrete, confirmable occurrence that makes the future different from the past. "Federal funding for student financial aid is reduced by 50%," is an example of an event.
>
> An **emerging issue** is a potential controversy that arises out of a trend or event that may require some form of response. For example, "Litigation as measured by the number of law suits per year in American society is increasing." An immediate consequence of this trend is substantially higher liability insurance for colleges and universities. An emerging consequence arises from a tendency of state legislatures to protect the public by requiring licensure of an increasing number of occupations, including periodic "updating" of credentials. This consequence implies an enhanced opportunity for the expansion of continuing adult and professional/occupational programs (Morrison, 1987).

The trends and events to be assessed during the ED QUEST process are generally identified in one of two ways. Both approaches use a Delphi procedure (i.e., repeated polling of ideas) for forecasting future changes; they vary in their complexity. However, either approach will yield a data base of trends and probable events that team members perceive as being significant to the institution's future. The team's facilitator should decide upon the particular approach that will be employed, based upon (1) the time available to prepare for the ED QUEST session, and (2) the scope of environmental scanning that will be conducted.

In the first approach, the ED QUEST team brainstorms (or uses the nominal group technique) a list of trends and future events at the first session, and selects from the list trends and events that would be the most significant if they were to occur. Although the simpler of the two, this approach requires more time during the session and may produce a less comprehensive list of trends and events.

In the second approach, several Delphi rounds are administered to team members and to other members of the administration and faculty prior to the initial session, and a final round is conducted during the session itself. This approach allows participation by more members of the college's staff, and the resulting event and trend set is likely to be more inclusive. Moreover, this approach allows more time during the first session for discussing the importance and the impact of the trends and events, a significant advantage since environmental forecasts are only valuable to the degree that they are translated into estimates of impact on future organizational performance (Halal, 1984). However, the development, administration, and tabulation of the questionnaires for each of the Delphi rounds takes substantial time to complete.

Approach 1: Brainstorming Critical Trends and Events

The team should focus on trends that will be important in defining the future operations of the organization and on future events that they believe would have a significant impact upon the institution and are likely to occur within the planning period. It is recommended that the team generate a trend set and an event set independently, although the same methods may be used to generate each set.

The simplest method of obtaining the trend set is for team members to brainstorm trends while the facilitator lists them on a flip chart. During the session, team members may refer to the *Future Prospects Notebook* or draw on information they have obtained through personal reading. The team should identify trends that span the social, technological, economic, and political sectors. The team may well generate some 60-70 trends. As each sheet of newsprint is filled, the facilitator should post it in full-view of all team members. Once the trend set is completed, the facilitator should encourage members to ask for clarification of any of the statements. The facilitator should ensure that the discussion become neither argumentative nor inordinately focused on any one trend.

To obtain a maximally comprehensive set of trends, the facilitator should encourage contributions from each team member. If the team is dominated by a few individuals, the nominal group technique may be more effective in generating the set (Van de Ven and Delbecq, 1974). In this technique, the facilitator requests each team member to individually list on a sheet of paper the trends that he/she thinks are most important to the future of the institution. After everyone has completed this list, the facilitator collects each person's list and redistributes them so that each person receives another's list. One at a time, each group member shares one trend from the list given to him/her, as the facilitator records each trend on the flip chart. The sharing of trends continues until all trends have been listed. Discussion of the nominated trends begins after all trends have been nominated.

After the trend set has been generated, regardless of the method used, the facilitator should ask each team member to vote for the five trends that he/she believes will have the greatest impact on the college. The 10 to 15 trends most frequently chosen become part of the list of "Critical Trends and Events." Those trends not selected are included in the institution's data bank of trends and events.

Similarly, the team's members generate an *event* set and then vote for those events they believe will have the greatest impact on the college if they were to occur. The 10-15 events selected most frequently are then assessed to determine the probability of their occurring some time in the future. To calculate the probability, each team member makes a list of selected events, and, using a scale from 0 - 100, estimates the probability of each event's occurrence within the planning period (see Figure 4). Finally, the mean probability for each event is computed by summing the individual estimates and dividing by the number of estimates.

The list of high impact events can be divided further into several subsets--low probability events (0 - 30), medium probability events (30 - 70), and high probability estimates (70 - 100). Including a range of events of varying probabilities adds a realistic sense of uncertainty to th ED QUEST scenario writing activity.

ASSESSMENT OF PROBABILITY FOR HIGH IMPACT EVENTS

EVENT NO.	EVENT	PROBABILITY	
	Description	My Estimate	Group Estimate

Approach 2: Delphi Survey to Identify Events

In the second approach to identifying critical trends and events, a modified Delphi procedure is conducted. Prior to the first ED QUEST session, the facilitator administers two rounds of the questionnaires to the Delphi panel, which includes the members of the ED QUEST team and, to assure broad input, other select individuals. Numerous descriptions of the use of the classic Delphi procedure are included in the futures research literature (Dalkey and Helmer, 1963; Pyke, 1970; Martino, 1983; Uhl, 1983; Morrison, Renfro and Boucher, 1984).

The purpose of the first round of the Delphi is to identify the perceptions of panel members regarding the critical trends and future events of possible significance to the institution. Each panel member is given the *Future Prospects Notebook* and an open-ended survey (see Figure 5). Before completing the Round One (R1) questionnaire, respondents are requested to review the *Notebook* and think about their previous reading and discussions with colleagues.

The information obtained in R1 provides the foundation for the Round Two (R2) questionnaire. In preparing the R2 questionnaire, the facilitator should eliminate redundant and unclearly-worded statements by conducting a semantic analysis of all R1 statements, as suggested by Tanner and William (1981). This process consists of the following sequence of tasks:

1. Determine the main idea underlying each statement.
2. For statements with more than one major idea, create two or more separate statements.
3. When the analysis of several statements reveals that they contain the same idea, develop a single statement to represent all statements.
4. Further reduce the length of statements by substituting one-word synonyms for underlying concepts.

In addition, statements which reference a trend's importance or an event's institutional impact should be reworded or excluded to avoid biasing R2 respondents. Also, a trend statement should be worded so that it describes the trend variable (i.e., "the rate of unemployment,") and does not forecast the trend's level (i.e., "unemployment has increased to 9 percent"), as it is the role of the members of the R2 Delphi panel to forecast the direction and rate of the trend.

For rewording event statements, the general guidelines developed by Salanick, Wenger, and Helfer (1971), Mitchell and Tydeman (1978), and Martino (1983) can be useful and include the following:

1. Events should be stated as a single occurrence rather than multiple occurrences (e.g., "A occurs," rather than "A, B, and C occur").
2. Events should not be stated in the form "A occurs because of B," except where the cause is part of the event to be studied.
3. Events should be definite and specific (e.g., "At least 20 percent of persons 24 years of age or older annually enroll in adult literacy classes," rather than "Many adults enroll in literacy-type courses"). Avoid ambiguous terms such as "most," "widely used," "normal," and "in general use."

EDUCATIONAL QUEST SURVEY

In this questionnaire, you are asked to think about the future of education in the college's service area, the state, and the nation.

Specifically, you are to select three trends you believe will have importance to this college's future and three events that in your opinion will have (1) a high likelihood of occurring in the next 10 years and (2) a significant impact upon higher education.

List each trend and event in the appropriate space below.

TREND 1 _____

TREND 2 _____

TREND 3 _____

EVENT 1 _____

EVENT 2 _____

EVENT 3 _____

Figure 5: ROUND 1 QUESTIONNAIRE

4. If the event is unfamiliar to the team, moreinformation and description should be given; if the event isfamiliar, less description is needed. As a general rule, state-statements should be about 25 words long to ensure the greatest degree of understanding.

The facilitator should include additional trend and event statements on the R2 questionnaire if R1 responses were insufficient to describe potential changes in a particular sector of the college's environment (e.g., social, technological, political, economic). Supplementary statements can be identified by reviewing a variety of information resources in the social, technological, economic, and political spheres.

The R2 questionnaire contains two parts (see Appendix B for an example). In Part I, respondents are requested to perform two tasks: (1) forecast the level of each trend at two points in time, by assuming the present level of the trend is equivalent to 100; and (2) assess both the positive and negative consequences for the college, should the trend materialize as forecasted, using the scale of 0 (no consequences) to 10 (revolutionary consequences). In Part II, respondents are requested to estimate the probability of each event's occurrence during the forecast period (0 to 100) and its positive and negative impact on the institution, using a scale of 0 (no impact) to 10 (revolutionary impact). To tally R2 responses, the median estimate of each trend's level is computed for several points in time, and a mean is established for the trend's consequences (positive and negative). In addition, the median probability and mean impact (positive and negative) are computed for each event statement. The results are included on a master list for trends and one for events. For ease of review, the trends and events contained in the master lists may be grouped in environmental sector categories.

To facilitate the analysis of the event set, matrices can be prepared to graphically display the results of the R2 Delphi. Events are placed on a probability-impact matrix, grouped in three categories of importance (i.e., high, moderate, low/none) by three categories of probability (High, Moderate, and Low). (See Figure 6.) This matrix displays the probability-impact position of each event relative to all other events.

As noted in the brainstorming approach to identifying trends and events, low, medium, and high probability events are included in the event set. A range of events adds a realistic sense of uncertainty to the scenario writing stage of the ED QUEST process.

During the first ED QUEST session, a comparison of the master list with the critical trends and events lists allows participants the opportunity to review and question the estimated level of each trend and probability/impact of each event. The facilitator should encourage discussion of master list trends and events that received a wide range of responses from the R2-questionnaire. As a result of the discussion, the team may decide to reestimate the value of certain trends and/or events by having each member make an independent estimate and then calculating the median (or mean) for all estimates. This "estimate-talk-estimate" process appears to improve the quality of a trend or event score by reducing the variance of the estimates (Gustafson, Skukla, Delbecq, and Walster, 1973). As a result of the reassessment, trends and events may need to be added to or deleted from the list of critical trends and events.

ASSESSING THE INTERRELATIONSHIPS BETWEN TRENDS AND EVENTS

Development of a cross-impact matrix is recommended to assess the interrelationships among the events and their relationship to the trends in the set and is important for several reasons. First, the planning team can assess the effect of one events occurrence on the probability of other events and can develop the understanding that events of the future are seldom discrete, but usually intertwined (Hudspeth, 1974). Furthermore, by clarifying the relationship between events, a cross-impact matrix provides insight into the relative importance of events in the set (Enzer, 1970). That is, through assessing interrelationships, events are identified that, should they occur, have the potential to be powerful "actors" in the institution's environment. The information gained from the cross-impact matrix will assist the team in developing the college's alternative futures and in establishing the causal linkages among the events and trends contained in each scenario (Enzer, 1972).

Event-to-Event Assessment

Using the event-to-event cross-impact form (see Figure 7a), each team member should list all events in the set and their estimated probability values on the left-hand side of the sheet. The numbers across the top of the form, correspond to the numbers on the left.

For every cell in the matrix, each team member should (1) take note of the event listed to the *left* of the cell and its estimated probability value and (2) assess how the occurrence of that event would affect the likelihood that the event *over* the cell would occur. A variety of scales can be used to assess event-to-event impact. If team members have no experience with the cross-impact technique, the facilitator may decide to have team members use "+/-" signs; with "++" indicating a great increase, "0" representing no change, and "--" specifying great decrease (Wagschall, 1983). Alternatively, with an experienced team a numeric scale can be used, such as "+3 to -3" (Enzer, 1970) or "+10 to -10" (Kane and Vertinsky, 1975), and the more precise the scale the better the indication of the relative power of each event.

For each cell, the response of all team members are collected and summed algebraically (i.e., with regard to sign); the resulting "team score" indicates the degree to which the event's probability is influenced by the impacting event. The team cell scores are summed for each row and each column *without* regard to the sign (+/-) of the cell score. The *row* totals represent the impact of an event's occurrence relative to all other events--the larger the sum, the greater the impact. The *column* totals indicate the relative sensitivity of an event to the occurrence of the other events--the larger the sum, the greater the sensitivity. The information in the cells, row totals, and column totals should be used in developing scenarios.

Event-to-Trend Assessment

Using the event-to-trend cross-impact matrix form (see Figure 7b), team members again list events on the left side of their forms. Across the top of the matrix, the team members list abbreviated trend statements. As in the event-to-event assessment, each member notes the event to the left of the cell, assesses how the occurrence of that event would affect the level of the trend that is listed above the cell, and assigns a score according to the scale used. Again, assessments are tabulated for each cell algebraically, indicating the degree to which the trend level is affected by the specified event. Row and column sums are also calculated without regard to sign.

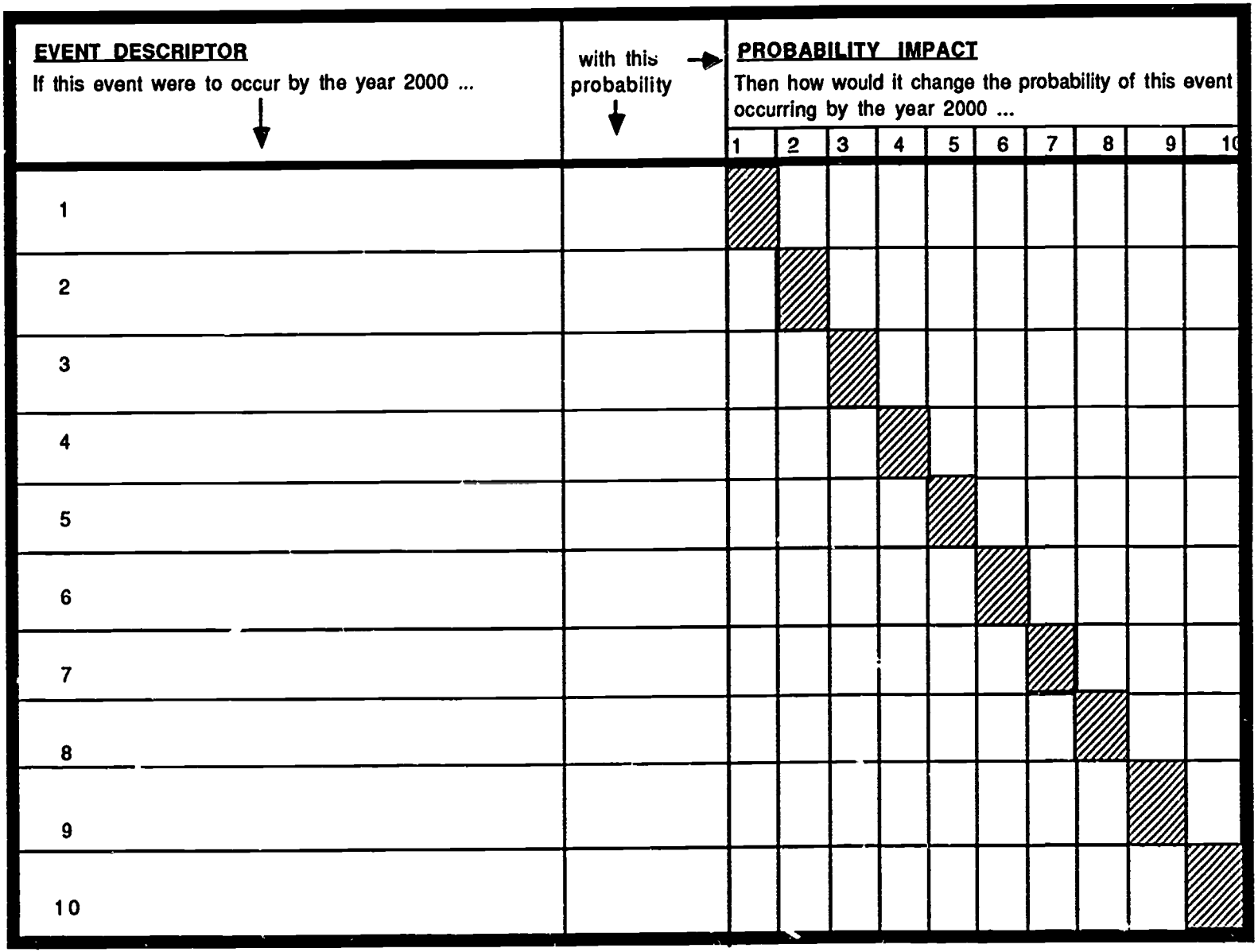
To speed the cross-impact assessment process, the team can be divided into two groups, with one group conducting the event-to-event assessment and the other group completing the event-to-trend analysis.

IMPACT

PROBABILITY		High	Moderate	Low/None
		6.0 - 10	3.0 - 5.9	0 - 2.9
High	0.75 - 1.00			
Moderate	0.50 - 0.74			
Low	0 - 0.49			

Figure 6: **PROBABILITY/IMPACT MATRIX**

CROSS-IMPACT ASSESSMENT



EVENT DESCRIPTOR If this event were to occur by the year 2000 ... ↓	with this probability → ↓	PROBABILITY IMPACT Then how would it change the probability of this event occurring by the year 2000 ...									
		1	2	3	4	5	6	7	8	9	10
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

Figure 7a

CROSS-IMPACT ASSESSMENT

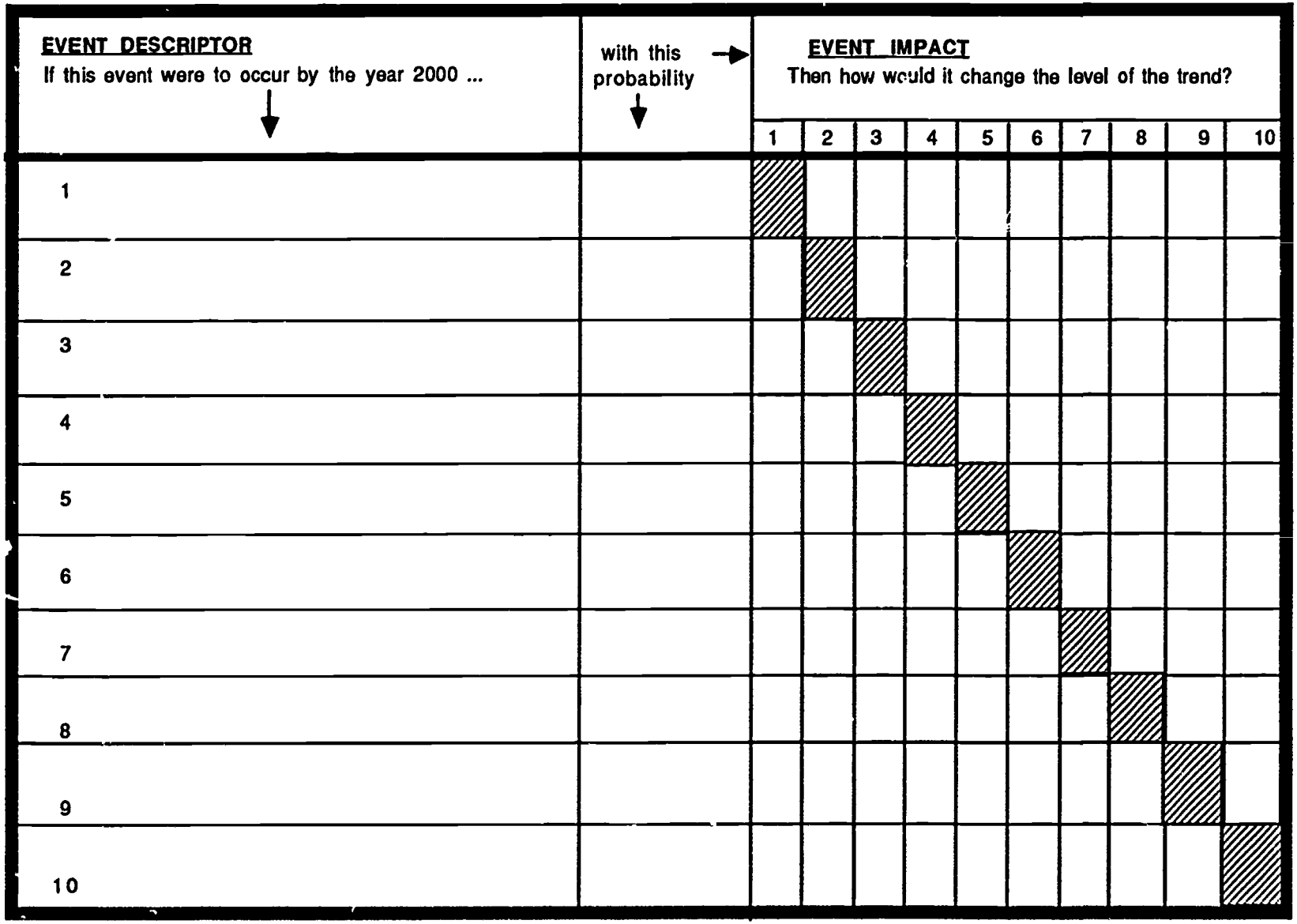


Figure 7b

ASSESSING CRITICAL TRENDS AND EVENTS ON KEY PERFORMANCE INDICATORS

Following the selection of the critical trends and events and the assessment of their interrelationships, the ED QUEST team should assess the importance of the identified trends and events and determine their impact on key performance indicators. This assessment process is similar to the cross-impact analysis and serves to identify the specific changes in organizational performance that may result from the critical trends and events.

To reduce the time required for this phase of the process, the team may be divided into groups, and each group should be assigned a portion of the key indicators. Using the grid shown in Figure 8, each group should list the assigned indicators at the top of the grid and the trend and event set on the left.

Using a +10 to -10 scale, every group should assess the impact that each trend and event will have upon assigned indicators. After the grids are collected from the groups, all positive and negative impacts for each trend or event can be summed and recorded in the columns titled "Total Positive Impact" and "Total Negative Impact." In addition, the absolute sum (i.e., without regard to sign) of the total positive and total negative impacts for each trend and event is entered in the absolute impact column and identifies the trends and events that have the potential to affect the institution's performance the most. This assessment provides information for use in the development of alternative scenarios.

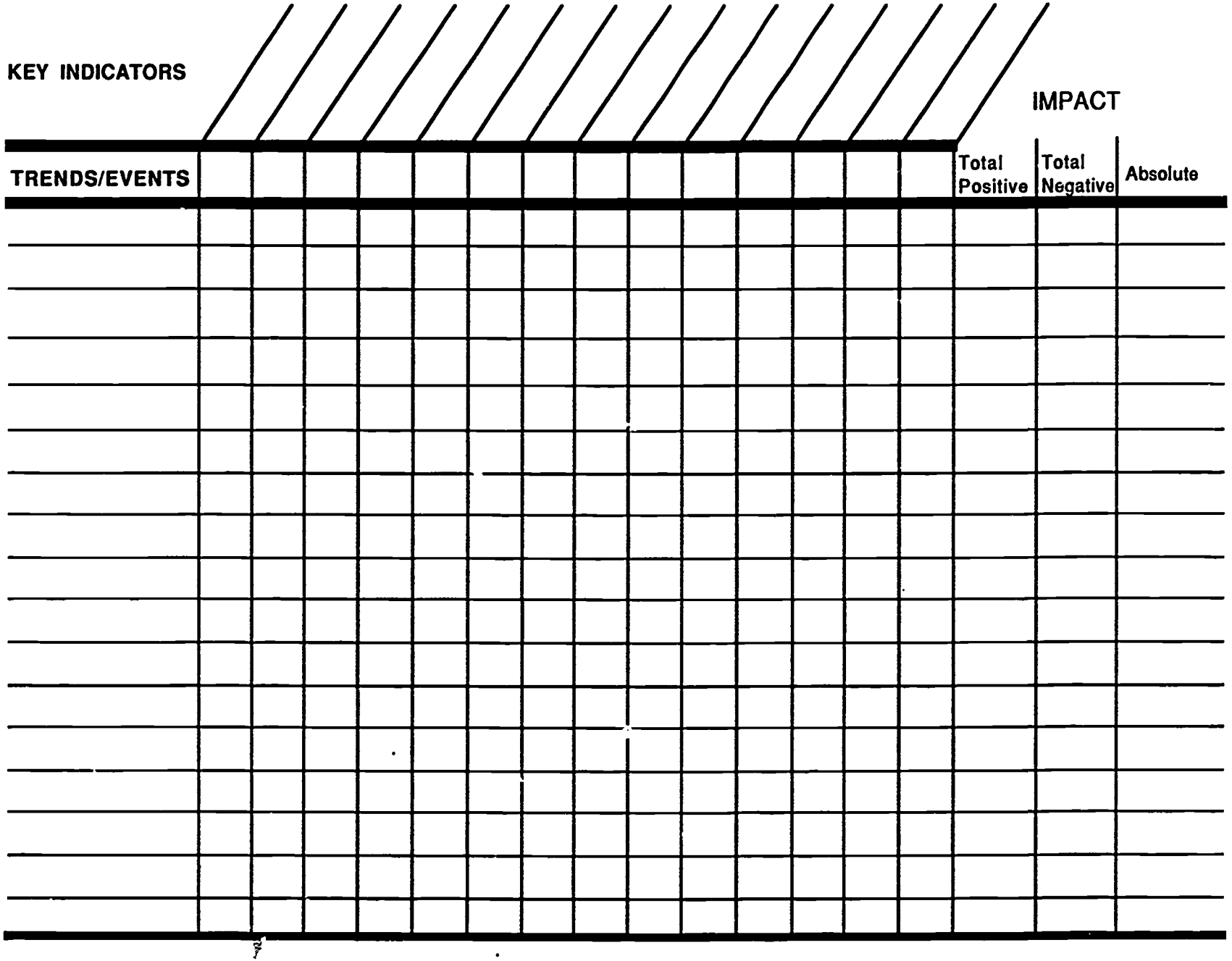

KEY INDICATORS
IMPACT
TRENDS/EVENTS
Total Positive
Total Negative
Absolute

Figure 8

DEVELOPING SCENARIOS

In ED QUEST, as with other futures research models, the development of alternative futures is recognized as central to effective strategic decision-making. Given, no single predictable future, organizational strategists need to formulate strategy within the context of alternative futures (Heydinger and Zentner, 1983: Coates, 1985).

As a plausible description of one alternative future of the external environment (Mandel, 1983) each scenarios consists of a particular configuration of trends and events from the set and defines a unique mix of future environmental forces that may impact on the institution. Within the context of a scenario's alternative future, the team can identify causal relationships between environmental forces, the probable impacts of these forces on the organization, the key decision points for possible intervention, and the foundations of appropriate strategies (Kahn and Winer, 1964; Sage and Chobot, 1974; Martino, 1983; and Wilson, 1978). By providing a realistic range of possibilities, the set of scenarios facilitates the identification of common features likely to have an impact on the institution no matter which alternative does occur.

The data developed in the first session serves as the basic data pool for preparing a series of scenarios. Specifically, the data pool includes the following:

1. A list of critical trends and events
2. An assessment of the institution's mission including clients served, needs satisfied, and programs offered
3. A list of key indicators
4. A cross-impact matrix showing the interrelationships of events

When developing scenarios, the facilitator should use a systematic scheme or "logic" that results in several alternative scenarios rather in one scenario. Any of a number of scenario taxonomies, each with its own benefits and limitations, may be used to guide the development of a scenario logic (Bright, 1978; Ducto and Lubben, 1980; Hirschhorn, 1980; Boucher, 1985).

Numerous approaches can be taken in the writing of scenarios, ranging from a single person writing a description of a future situation (Martino, 1983) to the use of a computer model that utilizes the cross-impact analysis into the scenario-generating process (Enzer, 1980a, 1980b; Mecca and Adams, 1985). Given the large number of options, only four of the most effective approaches are described below. A broader range of scenario writing alternatives is described by Mitchell, Tyedeman, and Georgiades (1979), Becker (1983), and Boucher (1985).

In the first approach to writing scenarios, the facilitator records each critical trend and event on a card (e.g., a 3 x 5), and places each card face up on a table. Giving special attention to trends and events that strongly impact institutional performance and mission and using the results of the cross-impact matrix, the facilitator groups the cards according to interrelationships in order to plot a plausible change of events. Utilizing some means to connect the cards (e.g., pipecleaners, string, etc.) the facilitator can show the network of interrelationships. Initially, the facilitator should concentrate on the "strong impact" events, but the interaction of all the identified trends and events should be considered. A guiding theme is, "If this happens, then what will probably occur, thus leading to these other developments." Some events, of course, would increase the likelihood that one set of trends and events would occur while, at the same time, decreasing the chances that a different set would occur. After one chain of events is constructed, the facilitator records the results on paper and repeats the grouping process until several possible chains of events have been developed and recorded.

Also highly visually oriented, the second approach utilizes the impact network technique to identify the potential impacts of key events on other events and trends and to describe how a particular alternative future could unfold. The value of impact networks lies in their simplicity and in their potential to quickly identify a wide range of impacts.

Although the impact network is a simple procedure that could easily be performed by one person, group involvement is recommended to help insure valid and comprehensive results. Operationally, an event is selected that was identified as a strong actor from the cross-impact analysis and/or key indicator assessment and is written in the middle of a sheet of paper (or newsprint if it is developed by a group). First-order impacts of the event are identified and recorded, and each is linked to the initial event by a single line (see Figure 9). When all first-order impacts have been identified, or when the space around the initial event is occupied, the process is repeated for each first-order impact event to determine the possible effects if this event were to occur. The second-order impacted events are linked to the first order events by two lines. These steps are repeated for third and fourth-order impacts, or as far as the analyst prefers. Typically, third-and fourth-order impacts are sufficient to explore all of the significant impacts of the initial events.

Feedback loops can be used to determine changes in the rate or intensity of a development resulting from a lower order event. For example, a fourth-order implication might increase or decrease an implication of a third or a second order impacted event. The entire process is repeated for each strong actor.

The facilitator using the impact network technique should keep in mind a number of potential pitfalls. First, given the complexity of the resulting network, it is difficult to write alternative scenarios that clearly, concisely describe the pivotal events, intricate relationships, and transition process. Second, each scenario can be so idiosyncratic that it is difficult to develop strategic options that transcend individual scenarios. Overall, this approach is highly dependent upon the creative and analytical abilities of the analysis and requires careful execution to be effective.

The third alternative to writing scenarios is helpful in creating a range of alternative futures. First, a "most likely" future is developed from the trend and event forecasts that were calculated in the first ED QUEST session. Variations of the "most likely" theme are then developed (Boucher, 1985). By using the cumulative probabilities and the relationships specified, an "unsettled" future, a "turbulent" future, and a "chaotic" future can be written. For example, an "unsettled" world is one where events are assumed to occur in the year in which their probability reaches the 60 percent level. In the "turbulent" world, the level is 30 percent. In the "chaotic" world, the level is 10 percent.

The final approach to generating scenarios is a modification of one suggested by Ashley and Hall (1985) and is particularly effective if the organization's decision makers wish to examine the implications of alternative futures on issues or decisions considered significant to the institution's future. First, the issues and decisions that the institution needs to examine are identified. The analyst then selects the key decision factors that would affect each issue or decision. For example, if the question to be decided is whether to increase the proportion of the institution's budget allocated to continuing education, then the factors that may be considered in the scenario include demographic changes in the adult population, technological change requiring job retraining, and completive education systems offering continuing education.

Having selected the key decision factors, the next step is to identify the critical forces in the environment that affects them. In ED QUEST, these forces are represented by the list of critical trends and events developed by the team. The essential task at this point is to match identified trends and events with their appropriate decision factor. From the example above, if the factor of demographic changes in the adult population from the example above was selected, specific trends related to migration patterns of retired people, educational attainment of adults, and so

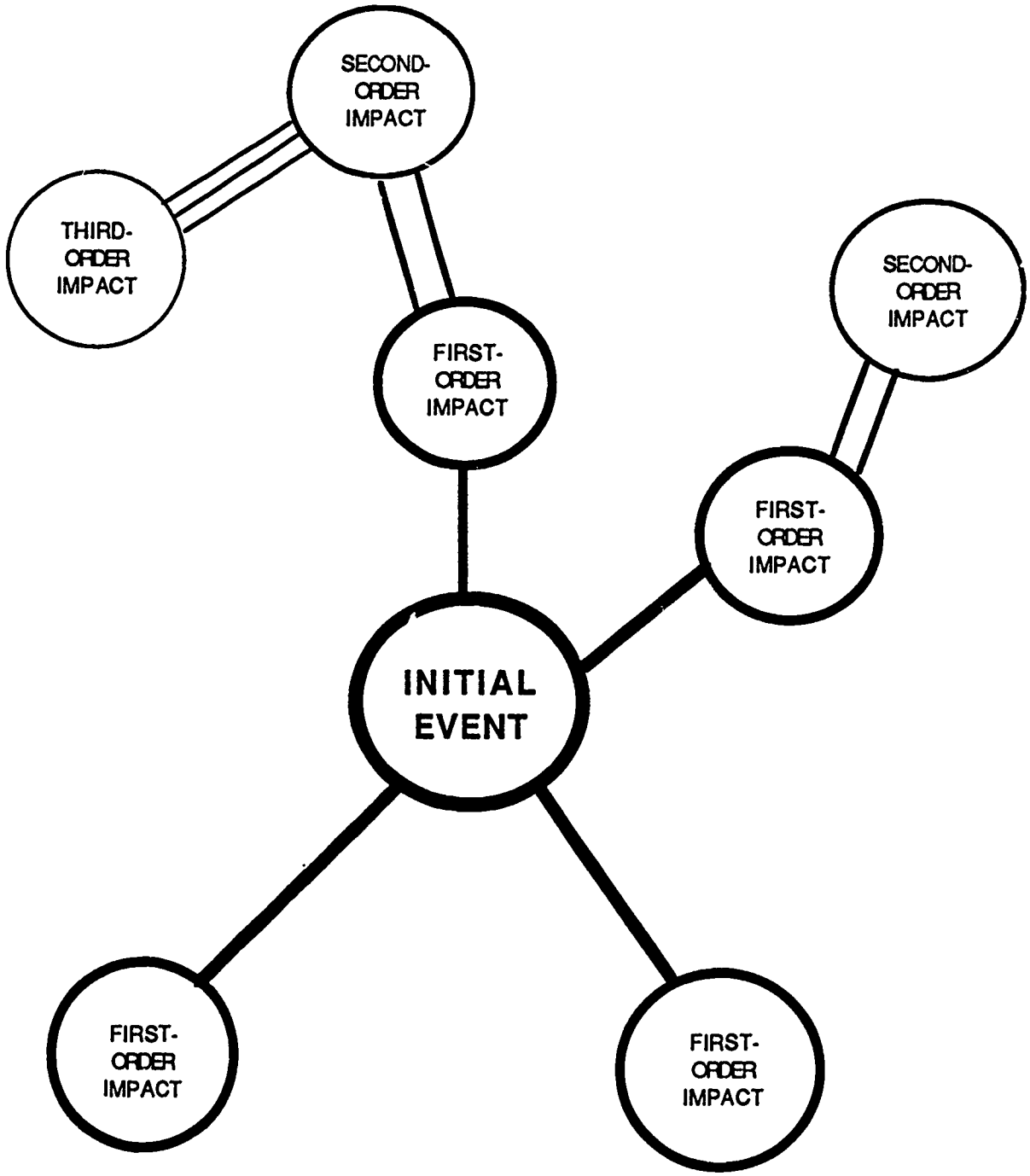


Figure 9: IMPACT NETWORK

on, would be identified for incorporation into the scenario. At this point, the impact network technique could be used to graphically display the way the scenario unfolds.

The number of critical issues and decisions identified determines the number of scenarios to be developed. Hypothetically, a single scenario could be generated for each issue and decision, resulting in an unmanageable number of scenarios to analyze. However, the number of scenarios can be reduced to a manageable number by either (1) limiting the number of issues and decisions from which scenarios are generated to the four or five most important ones, or (2) clustering issues and decisions into issue/decision groups that are affected by similar key decision factors and, therefore, the same set of trends and events.

Scenario writing is not an exercise in prophecy but is an attempt to envision a number of plausible alternative futures that, if they occur, will require the institution to respond. Their purpose is to assist the team in developing strategic options for dealing with each alternative.

After scenarios have been developed, the second ED QUEST session is conducted. During this session, the team identifies the implications of each scenario for the institution, formulates preliminary strategic options, and assesses the impact of the strategic options on the institution's strengths and weaknesses.

A packet of materials for the team must be developed prior to the meeting. The packet should include a copy of each scenario, a scenario review form (see Figure 10), and two grid sheets, one for listing institutional strengths and one for listing institutional weaknesses.

SCENARIO:_____

1. IMPLICATIONS OF THE SCENARIO
2. STRATEGIES

Figure 10: SCENARIO REVIEW FORM

ANALYZING SCENARIOS

At the beginning of the second session, the facilitator should explain the scenario analysis process. If the team is divided into small groups, the number of groups should correspond to the number of scenarios, assigning one scenario per group unless there are compelling reasons to do otherwise.

The initial activity of the session is for the team to analyze the scenarios that have been created. Boucher and Morrison (in press) have identified a number of criteria that should be used in evaluating scenarios. These criteria emerged from the perspective that no scenario should be viewed as a prediction of a future state of affairs. There is no single future waiting to be discovered. Instead, there are an infinite number of possible alternative futures, each varying because of interactions among human choice, institutional forces, natural processes, and unknowable chance events. Each scenario, of course, represents a possible future. But no scenario should be considered a prediction (i.e., an assertion about how some element of "the" future will in fact materialize). Rather, a scenario should be viewed as a probabilistic statement about some element of a possible future (i.e., a forecast). Note that "probability" does not mean relative frequency (the classical interpretation), but degree of belief (the Keynesian interpretation). The underlying form of a forecast is, "If A is true, plus some allowance for unknown or unknowable factors, then maybe we can expect B or something very much like B."

Given this perspective, the criteria for evaluating scenarios are as follows:

1. Clarity--Is the scenario intelligible? Is it clear enough for practical purposes?

2. Intrinsic credibility--To what extent does the scenario "make sense? Does it have face validity?

3. Plausibility--To what extent is the scenario consistent with what the user knows about the world outside of the scenario and how this world really works or may work in the future?

4. Policy Relevance--If the scenario is in the ballpark, to what extent will it affect the successful achievement of the user's mission or assignment?

5. Urgency--To what extent does the scenario indicate how quickly necessary changes must be developed and implemented?

6. Comparative Advantage--To what extent do the set of scenarios provide a better foundation for investigating policy options than other sources available to the user? To what extent do they provide a better foundation now for future efforts in forecasting and policy planning?

7. Technical Quality--Was the process that produced the scenarios technically sound? To what extent are the basic forecasts within the scenarios mutually consistent?

Like plans, forecasts within scenarios are transitory things that need constant adjustment if they are to guide thought and action. Therefore, if something important is missing from the scenario,

add it. If the forecast seem trivially obvioushighly counterintuitive, probe the underlying logic. If the results survive, use them. If not, fix them.

After the group has rigorously examined the scenarios, they should ask themselves, "How would the institution be affected if this particular future materialized?" This step is a critical part of strategic planning because environmental forecasts are of little or no value unless decision-makers estimate the degree and nature of their impact on the organization (Halal, 1984). Team members should begin the identification of implications by assessing the consequences of the scenario to the current and future mission elements of the organization. That is, what changes would the scenario have on the student groups presently served, the needs the institution fulfills, and the programs and services the institution provides? What student groups, other than those presently served, have needs that could be satisfied by programs/services offered by the institution? The scenario's impact on the institution's ability to attract revenue, to retain qualified personnel, and to use technology should also be explored.

Each group should select a recorder to list on newsprint the implications suggested by the group for presentation to the ED QUEST team. Other members of the planning team will critique these presentations and propose additional implications that, if acceptable to the team, will be added to the list.

DEVELOPING STRATEGIC OPTIONS

After all lists of implications have been modified/approved by the ED QUEST team, the small groups reconvene to brainstorm a preliminary list of strategic options. It is critical that the team develop a list of strategies that are feasible and are appropriately focused (i.e., strategies not operational objectives). To ensure this, the facilitator should briefly review for the planning team the characteristics of an institutional strategy and the decision areas to which institutional strategy applies.

The concept of strategy is deceptively simple and, therefore, difficult to define (Cope, 1981). In ED QUEST, strategy is defined as a set of consistent behaviors that the organization undertakes for a period of time to maintain its internal stability while simultaneously adapting to change in its external environment (Mintzberg, 1978). Thus, the essential functions of an institutional strategy are to (1) define the relationship of the total organization to its external environment and (2) give guidance to the institution's staff in carrying out their administrative and operational activities (Shirley, 1982). More specifically, a strategic option should

- Define (or redefine) the relationship between the entire organization and its external environment.
- Be sufficiently significant that its implementation is important to the success of the entire school and not just a single functional area of the organization.
- Require the participation of a variety of functional areas within the organization.
- Provide direction for the administrative and operational activities of the organization.

As stated above, one function of a strategy is to define the relationship between the college and its external environment. There are seven decision areas that determine the characteristics of that relationship, including the following:

- Basic mission

- Array of programs and services
- Types of students served
- Geographic area served
- Educational goals and objectives
- Competitive advantage(s) over competitors (e.g., low tuition, location, etc.)

A strategy that would affect one or more of these decision areas and, thereby, would affirm, expand, or redefine the relationships between the college and the environment is a good candidate for adoption by the planning team.

The team should also avoid several common pitfalls of strategy making (Cameron, 1983). First, many decision-makers interpret new institutional problems within the framework of past difficulties, thereby, tending to pursue strategies that were successful in the past but may not be appropriate to the environmental changes forecasted for the future. Second and closely related, when faced with environmental uncertainty, decision-makers typically view innovative strategies with skepticism and avoid them when, in fact, more and creativity may be precisely the means to success.

Assessing Strategic Options

Once the preliminary list of strategic options has been agreed upon, each group measures the potential of each strategic option to enhance or inhibit each institutional strength and weakness. The group prepares two grids, one for the strengths set and a similar grid for weaknesses (see Figures 11 and 12). Each grid cell represents an intersection between a strategy and strength (or weakness). The group indicates its assessment of the impact by entering a value in each cell on a scale of +10 (greatly enhances) to -10 (greatly inhibits). To assign a score, team members should ask, "Does this strategy enhance (+ values), inhibit (- values), or have no impact (0) on this institution's strengths (or weaknesses)? Once the grids for strengths and weaknesses have been completed, the assigned values are algebraically summed for each row. The sum represents the overall impact of a particular strategic option on all strengths (or weaknesses).

After all sums have been computed, the group can select the strategic options to be considered for inclusion in the institution's strategic management process. Looking at row scores, the group should select strategic options with large positive impact on institutional strengths and large negative impact on institutional weaknesses.

Selecting Strategic Options

When the groups have completed their assessment of their respective strategic options, the ED QUEST team is reconvened. A representative of each group lists (e.g., on a flipchart or handout) the proposed strategies in terms of the strengths and weaknesses analysis. A spokesperson for each group then reviews main elements of their scenarios, discusses the proposed strategies (e.g., rationale, intent, etc.) and presents the results of the assessment on organizational strengths and weaknesses.

Upon completion of the group presentations, the facilitator leads a general discussion to address the following question: "Which strategies are the most robust; that is, if implemented, could address the implications of more than one of the alternative futures presented in the scenarios?" The strategies that the team decides meet this criteria become important to the future of the institution.

STRATEGIES	STRENGTHS									
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.

Figure 11: STRATEGIC OPTION IMPACT MATRIX (Organizational Strengths)

STRATEGIES	WEAKNESSES									
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.

Figure 12: STRATEGIC OPTION IMPACT MATRIX (Organizational Weaknesses)

Other criteria may be used to select the final list of strategies, including political feasibility. For example, a strategic option specifying the development of an innovative degree program, may be considered inappropriate if team members conclude that the option's chances of successful implementation are not good.

INCORPORATING OPTIONS INTO STRATEGIC MANAGEMENT

The results of the ED QUEST process can be incorporated into the institution's strategic management in several ways. Specific plans may be developed for implementing each strategic option selected by the planning team. In this approach, personnel would be assigned responsibility for developing detailed action plans and recommendations for implementation. Typically these staff members would have knowledge, expertise, and functional responsibilities in the area related to and/or affected by the implementation of the strategic option. The action team, composed of the staff who were assigned planning tasks, might periodically provide a progress report to the college's administration and the institutional planning team and make recommendations for changes in institutional policy.

Another approach is to incorporate the strategic options into the institution's annual operational plan. Each option identified through the ED QUEST process would be reformulated as a specific institutional objective. Specific subobjectives with projected completion dates are derived and the appropriate functional units are assigned responsibilities for their accomplishment.

Regardless of the option used, the results of the ED QUEST process must form the basis for setting the strategic direction of the institution. By anticipating what is happening in the external environment and assessing how it will affect the nature and quality of an institution's programs, the senior administration will be in a better position to deal with uncertainties inherent in the future and improve the institution's capacity to accomplish its mission.

PART TWO

USING ED QUEST AT BLAKE COLLEGE

INTRODUCTION

Many visitors, when first viewing the campus of Blake College, describe it as "just how a college should look." However, the old brick and ivy covered walls hide the conflict of a college attempting to blend its traditions and historical roots with the uncertainty posed by an unknown future. Like other colleges, Blake typifies the small private four-year college attempting to find a way to move beyond the institutional confusion imposed by the external changes in patterns of college attendance, heightened competition, new technologies, and the lifelong learning boom.

THE SAGA OF BLAKE COLLEGE

Blake College is a fictitious four-year institution located in a prairie state of the American Midwest. It was founded by Samuel Jubal Blake, a New England clergyman, who graduated from Harvard College in 1866 and traveled west to begin a ministry in the hamlet of Williamston. In 1869, Blake established the Williamston Academy to provide ". . . the sons and daughters of these frontier settlers and the native inhabitants of this place with the learning necessary for each one to qualify for fields of collegiate studies, to prosper as a member of this community, and to serve as a citizen of a republic of democratic institutions."

For the next twelve years, Williamston Academy remained a private non-sectarian school. While providing instruction in subjects useful in a region of growing commerce, the Academy's curriculum, also contained courses in general studies and the liberal arts. This educational philosophy originated from the college founder's experience as a Vermont farm boy and a classical scholar and later became the hallmark of the institution. With enrollments growing slowly but steadily, the student body numbered 27 (including the son of a Chippewa chief) by the end of the school's first decade.

In 1882, control of Williamston Academy was assumed by the religious denomination with which the school's principal was affiliated. Blake College prospered and grew during the next 50 years under the strong leadership of its presidents, including Samuel Blake (1889 - 1909), Nathan Ruggles (1909 - 1911), F.A. Sturtevant (1911 - 1923), and Jubal Blake Lieber (1923 - 1948). By the beginning of America's entrance into World War I, the college's "Old Campus" had been almost complete. The President's annual report to the college's trustees in 1928 showed that the institution's enrollment had almost doubled from 270 students in 1917 to 510 students by the end of the next decade. During this period, the college also expanded its curriculum to include programs in business, home economics, and music. The endowment steadily grew, with Blake receiving in 1926 its largest gift of this period, $350,000, from T. G. Dorf, an alumnus who made his fortune as a Midwest grain speculator.

The 1930s were difficult and austere times for the college. The rapid expansion of the college during the 1920s led the Board of Trustees to over-commit the college's resources to capital improvements. Moreover, the agricultural economy of the Midwest was devastated by the Great Depression. The farmers and small businessmen within the state, whose sons and daughters were the backbone of Blake's student body in previous years, found it difficult to pay the tuition required to obtain a Blake education. As enrollment began to slip, President Lieber, with the support of the college's Board of Trustees and the officials of Blake's affiliated denomination, instituted a program of ". . . measures to stem this momentum of despair and possible insolvency." All faculty salaries, the first area of college operations to feel the effects of the new institutional austerity, were trimmed. The construction of a new dormitory and home economics laboratory were delayed. A modified form of cooperative education was instituted in the college's curriculum in the hope of providing students with both work experience in their major field and a modest source of funds. Finally, Blake was saved from closing its doors during this period by three major loans made to the college between 1933 and 1944 by the religious denomination with which the college was affiliated.

The conditions of austerity continued through the years of World War II, with the administration of Blake's college finances becoming a matter of major concern for church officials. In 1946, these officials recommended to the Education Board of Denomination that support for Blake be discontinued indefinitely. The next year, the denomination at its annual convention in Chicago voted to disaffiliate itself from the college. A group of prominent businessmen, many of them alumni of the college, were constituted as the college's new Board of Trustees with full power over all affairs of the institution.

The late 1940s and early 1950s were a period of rapid change at Blake. The principal architect of this growth was John W. MacIver, a young historian chosen as president of the college at the retirement of Jubal Lieber in 1948. MacIver recognized the changing character of the student body of American higher education that was represented by the returning war veterans. Having served as an officer in the military during World War II, he deeply believed in the obligation the nation had to support the educational aspirations of these men and the seriousness of purpose they would bring to campus life as students.

During MacIver's tenure as president, campus facilities grew. Land acquired in 1947 was used to build a new home economics laboratory building (1950), infirmary (1951), a dormitory-student center (1953), a natural science classroom building (1954), and a new building to hold the college's library of 157,000 volumes and periodicals (1957).

The college also extended the range of its academic curriculum and educational support services. New undergraduate majors in engineering, accounting, fine arts, and physical education were initiated. A master's program for elementary school teachers was created, soon followed by graduate programs for secondary school teachers and teachers interested in becoming educational administrators. An office to provide academic counseling and job placement serviced was also established.

Enrollment in the college doubled between 1948 and 1954 to a student body of 1,347 undergraduate students and 178 graduate students enrolled in the recently inaugurated master's program. While not initially very apparent to the casual observer, the composition of the student body was also quite different. Prior to 1949, the majority of Blake's students were of traditional college age. After 1949, the number of older students on campus gradually increased. By 1952, over 20 percent of the students were over 22 years of age.

MacIver also displayed great skill as a fund raiser. In 1948, the year he assumed the presidency, the Board of Trustees reported Blake's endowment to be a modest $3.5 million dollars. The new president immediately began to work to increase that by strengthening the institutional advancement staff and cultivating prospective contributors throughout the Midwest. Two major gift campaigns successfully conducted by the college tripled the endowment so that by 1960, the college's chief finance officer reported an endowment of $10.1 million dollars.

Upon MacIver's resignation from Blake in 1958 to become chancellor of a neighboring state's land grant university, the college's Dean of the Faculty, Roger Russ Fredericks, ascended to the presidency. Fredericks, recruited by MacIver soon after the latter came to Blake, continued the commitment to institutional development and expansion through strong and decisive leadership. A firm believer in good "town-and-gown" relations, he instituted in 1961 a program for adults who wished to earn their degree on a part-time basis by attending evening classes. At the time of its establishment, the program was considered by the faculty as academically questionable; it was strongly opposed by many of the college's senior faculty. However, after extensive discussion with a determined president, the proposal to create the program was passed by the college's faculty council by the slender thread of a single vote. However, the establishment of evening programs, labeled "Ruff's Drive-In" by one faculty wag, became part of the Blake saga. Even today there are a number of faculty members and entire departments that refuse to offer their courses through the college's evening division.

Fredericks, in the best tradition of Blake's previous presidents, continued to serve as the catalyst for change throughout the 1960s and early 1970s. He believed that ". . .the modern

college could not be successful simply by following a tradition of Mark Hanna and a student on each end of the log." Impatient with what he viewed as faculty obstinence, he strived to put Blake in the vanguard of higher education by proposing and supporting many new programs and educational changes. These included audio-tutorial instruction in a foreign language, a living-learning center (later discontinued), and an experimental project in student advisement.

Major capital improvements were also made in the campus facilities during this period. The campus master plan inaugurated by John MacIver was completed in 1972. Several of Blake's older buildings and dormitories were renovated. In addition, a new fine arts building was completed that allowed the faculty in art, music, and drama to be housed in one central facility. This facility and the events provided in it quickly became a major cultural asset to the people in this part of the state.

However, accomplishing the goals of Blake's master plan was not without cost. The Board of Trustees was able to easily finance the initial phase of these capital improvements out of the revenue brought by increased enrollment. Confident in the long-term viability of Blake's enrollment based upon recent the college's recent enrollment history, the members of the board, following the administration's recommendations, adopted a similar strategy to finance the remaining phases of the plan. As enrollment began to peak and then decline in the mid-1970s, Blake's administration had to reduce the corpus of its endowment to cover the repayment of construction loans. Although using his skills as the institution's chief fund-raiser, Fredericks could not secure sufficient funds to cover the amount of the reductions in the endowment. Consequently, Blake's endowments began to steadily, though not drastically, decline during the 1970s, a trend that continued through last year. That year, the college's chief finance officer reported that Blake's endowment stood at $5.7 million dollars.

Frederick's presidency was increasingly marked with antagonisms between the college's administration and faculty; this antagonism eventually adversely affected a tradition of institutional decision-making based upon shared consultation with the faculty. As Blake's enrollment difficulties increased during the latter half of the 1970s and the early 1980s, the president's leadership style increasingly frustrated a significant portion of the faculty. The college's governing board, aware of the difficulties, were reluctant, however, to lose an effective fund-raiser at a period of severe financial problems.

Two years ago, the president announced his retirement. The Board of Trustees, anxious to solve financial and enrollment problems, spent one year conducting a national search for the new president and, last year, appointed Elizabeth Anne Franklin. She came to Blake College from the position of vice president at a large private university on the West Coast where she had earned a reputation as an effective practitioner of consensual governance.

THE STUDENT BODY OF BLAKE COLLEGE

Declining 18 percent since the enrollment peak of 1974, the current enrollment of Blake College is just over 2,200 with 1,713 undergraduate students and 493 graduate students in the Masters of Education program. The largest undergraduate program in the college are business and education. Currently, 33 percent of Blake's undergraduates are enrolled in business and 23 percent are enrolled in education, representing a shift over the last decade. In 1974 education was the largest program with 29 percent of all undergraduates. With the exception of business, the enrollment in the college's other program has declined during this period (see Table 1). Although enrollment in the institution's graduate program dropped between 1974 and 1980, it has returned to a level comparable to the beginning of this period.

Table I
Enrollment Profile

	1974	1980	Current Year
A. Undergraduate	2187	1834	1713
Humanities/letters	113	84	89
Business	534	568	574
Education	643	531	391
Home Economics	379	223	234
Natural Science	229	179	187
Social Science	297	249	238
B. Graduate (M.Ed)	503	471	493
C. Division (Undergraduate)			
Lower	1380	1082	979
Upper	807	752	734
D. Enrollment Status (Undergraduate)			
Full-time	1951	1616	1492
Part-time	236	218	221
E. Transfer	57	141	274
F. Financial Aid Recipients (Undergraduate)	487	422	441

Since 1974, the distribution between lower division and upper division students has also changed. In 1974, almost 63 percent of Blake's undergraduate students were enrolled in lower division courses and 37 percent in upper division courses. This current year, the number of students in the college's upper division courses represent 43 percent of all undergraduates. A major cause of this change has been a change in the admissions philosophy of the college towards transfer students from the neighboring community college in Williamston. In 1979, an articulation agreement between the two institutions was signed that allows any graduate of the two-year college who has a GPA of 2.0 to matriculate with full-credit at Blake as a junior. This group of students has steadily grown since that time and currently represents 16 percent of Blake's undergraduate enrollment. Many of these students, however, complain of the lack of a well-developed placement and counseling program.

Historically, over 90 percent of Blake's students have come from within the state. However, this characteristic of the college's student body began to shift in the mid-1970s as the number of

secondary students within the state began to decline. Two years ago the college established a recruitment program, using Blake alumni, to increase the number of out-of-state students. This year, slightly more than 80 percent of the students claim in-state residence. Also, through an agreement with the embassy of several Middle Eastern countries, the college created a special five-year course of study leading to a B.S. in business for students from these countries. There are 50 foreign students currently enrolled in this program, but this program is not universally endorsed by townspeople or faculty members and students.

Other shifts are occurring within the student body profile. The percentage of female students rose form 46 percent in 1970 to 55 percent this year. The percentage of black students rose from 4 percent in 1970 to 11 percent this year. The median age also rose from 19.5 in 1970 to 21.3 this year. Although the average high school GPA and high school rank have remained stable throughout this period (upper quarter), the average SAT scores have declined from 870 in 1970 to 770 this year, a source of concern to many faculty members (see Table 2).

Table 2
Student Body Profile
(Undergraduates-Credit)

	1970	1980	Current Year
A. Sex (Percent)			
Male	54	43	45
Female	46	57	55
B. Race (Percent)			
Asian	–	1	4
Black	4	8	11
Native American	–	1	–
Caucasian	95	88	80
Hispanic	1	2	5
C. Median Age (Years)	19.5	20.7	21.3
D. Residence (Percent)			
In-state	92	85	80
Out-of-state	8	14	17
Foreign	–	1	3
E. Freshman Profile			
Average SAT (Math and Verbal)	870	730	770
Average High School Rank	23	26	26
Average High School GPA	82.4	81.7	81.9

Overall, students are satisfied with most aspects of their education at Blake. A comparison of student satisfaction scores from two studies conducted by the administration in 1972 and 1984 showed that Blake students were satisfied with the variety of courses available, the quality of instruction, the friendships they make with other students, and the extracurricular activities offered by the college (see Table 3). However, there were indications that students tended to be dissatisfied with faculty-student relations, the college's academic reputation and the college's administration.

Table 3
Student Satisfaction

Satisfaction Measure	Score 1972 (N=1843)	1984 (N=1448)
Faculty-Student Relations	3.9	2.7
Quality of Instruction	4.1	3.8
Friends with Other Students	4.3	4.2
Variety of Course Variable	3.9	4.1
Intellectual Atmosphere	2.7	3.2
Extracurricular Activities Available	4.1	4.1
Administration of the College	2.5	2.9
Academic Reputation	3.1	2.6
Library Holdings	3.0	3.1

*Five point scale: 5 (very satisfied) to 1 (very dissatisfied)

Blake is not considered "selective" in its admission requirements. The typical freshman entering the college in the last two years had a combined SAT score of around 750, completed high school with a GPA of almost 82 percent and was approximately in the top quarter of his or her class. While admissions decisions are made on the basis of review of high school transcript, class rank, and ACT scores, heavy emphasis is given to the results of a faculty interview which is held with each applicant.

FACULTY

Blake College has more than 115 full-time faculty members, of which 84 are tenured. About sixty percent hold doctorates or an equivalent degree. Eighty percent of the full-time faculty are males, and the average age of the full-time faculty is 48 years old. There are also thirty adjunct professors and part-time faculty who are employed primarily to teach in the college's business and education programs.

Most faculty view the college as primarily a teaching institution. Although some of the junior faculty conduct research, most faculty members at Blake view their primary role as teaching and directing their students. As a senior member of the faculty expressed it at a recent convocation: "There is a long tradition at Blake--we teach students, not classes." Sixty-five percent of the faculty have been at Blake for ten years or longer.

Faculty of the institution are organized into six divisions, including natural science, social science, humanities and letters, business, education, and home economics. Within the college, the faculty of natural science and music are generally considered the most outstanding. The faculty of the natural science division owes much of its reputation to the fact that over fifty percent of the college's biology and chemistry students who have applied to medical schools in the last ten years have been accepted. The music department of the college also has gained an excellent reputation over the years. Its music groups are known throughout the mid-west for their fine performances, and a number of graduates from the department have also gone on to advanced study at music conservatories in the eastern U.S. The music faculty take great pride in the number of graduates now active in major orchestras throughout the country.

BLAKE COLLEGE TODAY

In the early 1980s, Blake College found itself in a precarious position. Although the trend of a declining enrollment that began in the mid-1970s appears to have bottomed out and stabilized for the last two years, student revenues are still below the level needed for institutional solvency. Faculty morale dropped as departments experienced increasing budget constraints.

Several young faculty who were outstanding teachers and promising scholars "jumped ship" because of what, as one of them explained in a letter widely printed in the student and area newspapers, ". . . many of my colleagues and I perceived to be a hopeless situation which is being ineptly and inadequately addressed . . . ."

A study conducted by consultants from a Chicago marketing firm also found that the college's image and competitive position among other colleges in the region had declined during the previous decade. More alarming was the study's finding that a small but not insignificant percentage of high school seniors who would have been candidates for admission into the college in years past, now enrolled in high tech curricula at the area community college.

THE ED QUEST PROCESS AT BLAKE COLLEGE

During her first months on the job, the new president determined that there was no consensus among the members of the college community as to the strategic direction the college should take in meeting its problems. She decided that the "guess and hunch" mode of operating the institution had to end and a plan had to be developed to which the whole college could subscribe. However, having participated in long-range planning efforts at her previous institution, Franklin knew that developing a detailed comprehensive plan would require additional staff and resources. Moreover, she did not believe that developing such a planning effort at this time would be beneficial to the college as there was no agreement within the institution as to even the general direction the institution should take. She concluded that what was immediately required was (1) the development of an awareness among the college's key decision-makers of the external forces affecting the college's future, (2) the identification of strategies that the administration could take to move the college ahead and, more importantly, (3) the establishment of a cadre of staff members who understand the process and method appropriate to setting long-range institutional strategy.

During her first summer as president, Franklin, together with the college's dean and two faculty members, attended a regional meeting of institutional research and planning personnel from the colleges and universities in that section of the country. While at the meeting, the president and her colleagues attended a workshop on ED QUEST. Although unfamiliar with the concepts and techniques of strategic planning and futures research, they agreed that the ED QUEST process appeared to offer a promising approach by which to initiate strategic planning at Blake College.

Back on campus, the president and the other attendees shared the information on the ED QUEST process with the Administrative Council and Faculty Senate. Although some staff were skeptical of the concept of strategic planning and feared that it was an attempt ". . . to operate this college like a division of General Motors," there was majority agreement among all segments of the college community to move ahead with the planning effort.

A two-day retreat and planning session was held at a site away from the college's campus. The participants were housed overnight at the conference site. In addition to the president, the ED QUEST team included the Dean of the Faculty, Dean of Students, Director of Finance, five members of the faculty, two members of the Board of Trustees, and several students selected by the student association. The president selected the team using the following criteria: knowledge of the college, influence among their colleagues, creative approach to problem solving, or representative of a key stakeholder group in the college.

Prior to attending the two-day planning session, two important components of the process were completed. First, President Franklin contracted with an outside consultant to serve as the ED QUEST facilitator. She appointed her executive assistant to provide liaison between the college and the consultant. Second, a notebook of background material was compiled and distributed to all members of the ED QUEST team. The notebook contained information on general societal trends and developments for the United States, the state in which the college

was located, and the college. Readings on the future of higher education were also included as part of the background notebook.

At the initial session, the president called the meeting to order and described the many changes taking place in higher education as a result of technology, new non-traditional students, competition from other newer forms of postsecondary education, and changing federal policy towards higher education. She asked the team's members to put aside their immediate concems about the college and to think about the long-range opportunities and risks the college might have to face in the future. She then turned the program over to the consultant, whc provided participants with a general introduction to the two-day program and a brief description of the ED QUEST process. The consultant then asked the group to list the college's students and clients. The group quickly identified over fifteen student groups (e.g., part-time students, adult students, etc.) which the consultant recorded on a large sheet of paper. When the list was complete, a vote of the group showed that the most important student groups to Blake were recent high school graduates, transfer students, adult part-time students, and public school teachers.

For each major student group, the team members were asked by the consultant to identify what student needs Blake satisfied. A long list was soon developed. For example, for "transfer students," the list included such items as upper division courses, flexible course scheduling, placement services, a special advisement service, and an orientation to the college.

Finally, the team listed the programs and services offered by Blake College. These, too, were written down by the consultant and, were then posted with the lists previously developed. The completed lists are shown in Figure 13.

After a brief break, the team discussed the indicators of institutional performance. The consultant's question was, "If you were to come back to Blake College in the year 2000, what indicators would you inquire about to measure the success of the college over the intervening years?" Almost thirty indicators were suggested. After some discussion, the group concluded that the most important indicators were the size of the student body, average SAT score of entering freshmen, enrollment in the college's programs, the number of graduate students, size of outstanding debt, publications of faculty, number of tenured faculty, student satisfaction, retention rate of students, the percentage of graduates enrolling in graduate and professional schools, and faculty morale.

Blake's planning team also identified the trends, events and developments having an impact on the college. The activity began with the consultant stimulating their imagination by calling attention to material in the *Future Prospects Notebook* and briefly reviewing some well-known futures literature--Alvin Toffler's *Third Wave*, John Naisbitt's *Megatrends*, Marvin Cetron's *Encounters with the Future: Forecast of Life in the 21st Century*, Marilyn Ferguson's *Aquarian Conspiracy* and others.

Name of Organization: Blake College

	DEFINITIONAL CATEGORIES		
	CLIENTS/GROUPS SERVED...	NEEDS SATISFIED...	SERVICES OFFERED...
PRESENT	High School Graduates Transfer Students Adult Part-time Students School Teachers	Liberal and General Education Lower Division Courses Upper Division Courses Graduate Courses Credentials (BA/BS/MS) Occupational Counseling Orientation to College Flexible Course Scheduling Professional Education	BA/BS Curriculum MS Program (education) Counseling (academic, placement, occupational) Library Student Activities
FUTURE			

Figure 13: ELEMENTS OF MISSION

The consultant asked the following question:

> What are the critical developments that you believe could happen between now and the year 2000 that, assuming they were to occur, would greatly impact the viability of Blake College? These can be trends, events, or issues which could be either of a social, technological, economic, or political nature. I want us to think about those future developments having both direct or indirec. consequence for higher education and for Blake College.

Following this directive from the consultant, the group brainstormed fifty-four developments, which were listed on large sheets of paper and posted around the room. During the activity, the consultant made sure that there was maximum participation from all team members. Once the list was complete, the consultant led a discussion of the items on the list. At times, the discussion was spirited as individual members explained why they believed (or did not believe) a particular item on the list was significant to Blake's future and might (or might not) occur. Several new developments were also added to the list as a result of this discussion.

When the entire list had been reviewed, the consultant had each member of the team select ten of the developments he or she believed would have the greatest impact on the college if they were to occur at some time in the future. Each individual recorded his or her preferences on a special form and all responses were then tabulated. From the results of the tabulation. it was obvious that 26 developments had attracted most of the votes. These developments became the basis for the group's deliberation during the remainder of the ED QUEST session. The group then examined each of these developments and, guided by the consultant, carefully reworded them so that all participants agreed on what each development meant.

With all 26 developments identified, the consultant asked each participant to write down his or her estimate of the probability of each occurring by the year 2000. When the estimates were tabulated, they showed a fairly strong consensus about the probability of some of the developments, but disagreement on others. The consultant focused the team's attention on the latter, asking team members to develop an explanation for the extreme votes in such a manner that the individual who cast the "vote" was not identified. He explained that anonymity was important to help focus the attention of the team on the reasoning behind the vote rather than the personality who cast it.

Another round of probability estimates of the developments with wide ranging votes was conducted, and there began to be convergence of the estimates for some developments. It was pointed out to the team that it was not necessary to achieve group consensus on all fourteen developments but only to understand the reasons for the disagreement among group members. Since all 26 developments on the list had previously been judged to have a high impact on Blake College, those that also had a high probability of occurrence were judged to be the ones that demanded immediate attention by the college in developing its strategic decisions These 14 developments are shown in Figure 14. The remaining 12 developments with lower probabilities of occurrence, while set aside for the remainder of the session, required systematic monitoring and constant reevaluation by the college's staff

To assist in understanding how these critical developments affected one another, the consultant introduced the idea of a "cross-impact matrix." The team was divided into groups and each group was given a blank matrix. The consultant assigned each group a number of developments from the list of critical future developments. To simplify the process, five symbols were used to indicate the possible impact of one development on the other. They were:

++ (greatly increased probability of the development's occurring)
+ (increased probability of the development's occurring)
0 (no change in the probability of the development's occurring)
- (decreased probability of the development's occurring)
-- (greatly decreased probability of the development's occurring)

1. National accreditation of colleges and universities
2. Upholding of mandatory retirement age
3. Resumption of military draft
4. Institution of national standards for BS/BA degree
5. Mandating of state government programs assessment of all curricula
6. New student revolution
7. Institution of compulsory national service
8. Adoption of plan of "free tuition" for the public two-year colleges by State legislature
9. Elimination of tax-exempt status of educational organizations
10. Administrative consolidation of all two-year colleges in the state
11. Imposition of growth limits on the state university system by the state government
12. State fiscal crisis
13. Established higher education voucher program by the state
14. Raising of public confidence in the value of college and university education

Figure 14
Blake College - Critical Future Developments

When each group had completed its matrices, the monitors recorded the group's assessments for each cell and summed the *number* of symbols across the row. An abbreviated summary of this tabulation is shown in Figure 15. The row totals represent the relative impact of the occurrence of the development on the other developments on the matrix -- the larger the sum, the greater the impact, positive or negative. The column totals indicate the relative sensitivity of an event to the occurrence of the other events. Again, the larger the sum of a column, the more the event was judged as being influenced by other events. Events influenced positively so that the probability of occurrence was assessed as increasing were preceded by a plus (+) symbol; those whose probability of occurrence were seen as decreasing were preceded by a minus (-) symbol. Six developments were assessed as having a great deal of positive impact were they to occur. They were developments 2, 3, 5, 10, 11 and 13. All other developments were seen as having an impact of a small magnitude. Of the total developments, seven were highly sensitive. These were developments 1, 2, 4, 5, 7, 8 and 11.

The final major task of the first ED QUEST session was an assessment of the importance of the critical developments on the college's mission and key performance indicators. The consultant explained that this task enabled the team to identify the specific changes that the developments were likely to have on the college's mission and how these changes could affect its performance. The list of students, needs, and programs previously developed and posted was used to assess the impact of these developments on the mission. The consultant led a discussion as to how each of the three components of the mission could be affected in the future. That is, would they add to, subtract from, or otherwise alter the student groups currently being served? The consultant recorded the responses on a large sheet for later use in the formulation of strategic options.

Once this task was completed, the team, again divided into small groups and assigned a set of developments, assessed the impact of the critical future developments on each of the previously identified key performance indicators. Using a form of cross-impacting, each group listed each development down the left column and key indicators across the top of the form. Again, using the five symbols (i.e., ++, +, 0, -, and --), each group then assessed the positive or negative impact of each development on each indicator in the appropriate cell. When completed, the facilitator tallied all responses. The sum of the symbols of each row provided the team with a criticality index of those developments which were most important in developing strategic options. Again, developments 2, 5, 10, and 11 were determined to be most significant to the future of Blake College (see Figure 16).

Name of Organization: Blake College

EVENT DESCRIPTOR If this event were to occur by the year 2000 ...	with this probability	PROBABILITY IMPACT Then how would it change the probability of this event occurring by the year 2000 ...										Sum
		1	2	3	4	5	6	7	8	9	10	
1 National accreditation	.65		-	0	+	+	0	0	0	0	0	3
2 Mandatory retirement eliminated	.70	++		0	++	++	++	0	+	+	+	11
3 Military draft	.75	--	--		+	--	++	++	--	0	+	14
4 National Standards (BS/BA)	.60	++	0	0		+	0	+	0	0	+	5
5 Mandated program assessment	.80	++	-	+	++		+	+	++	0	+	11
6 Student revolution	.60	0	-	+	0	0		+	+	0	0	4
7 Compulory national service	.70	+	-	-	+	0	+		0	0	0	5
8 "Free Tuition" for two-year colleges	.90	0	-	0	0	+	0	-		0	+	4
9 Elimination of tax exempt status	.75	0	-	0	0	+	0	0	0		0	2
10 Consolidation of two-year college	.85	+	-	0	++	++	0	-	++	-		11
Sensitivity		10	10	3	9	10	5	7	8	2	5	

Figure 15: SUMMARY OF CROSS-IMPACT ASSESSMENT

The ED QUEST team then focused on identifying organizational strengths and weaknesses, the final task of the first day's session. The consultant first provided the team with definitions and examples of an organizational strength and an organizational weakness. He briefly explained the importance of this task to the evaluation of the effect of the institutional strategies on the college's internal environment. Using a modified form of brainstorming, the group generated two lists: one of strengths and one of weaknesses. Once they completed the development of these initial lists, the consultant led team members in a discussion of the items on each list. The focus of the discussion was to clarify each statement. The team members then selected from each list the 10 most significant strengths and the 10 most significant weaknesses of Blake College. Figure 17 shows the final lists.

The consultant began the second session by reviewing the results of the previous day's deliberations and by providing an overview of the tasks the team would undertake for the remainder of the process. He explained that the major goal of the day's session was to identify the strategies or possible courses of action that Blake College could follow in dealing with probable changes in its external environment. However, to accomplish that task, the group would first have to develop a picture of the implications of the alternative futures posed by the trends and events the group had identified in its previous day's session. He then demonstrated impact networking.

The consultant divided the ED QUEST team into three groups and assigned each group two "actor developments" identified from the cross-impact matrix and key indicator matrix. Next, each group developed an impact network for each assigned event. They began the development of a network by first linking the "actor development" in the external environment to the implication that resulted from its occurrence. These first order implications were, in turn, linked to second-order implications. This process was repeated for the second order implications until the group decided the network was sufficiently "rich" in identifying the significant implications in that particular future.

KEY INDICATORS / TRENDS/EVENTS	size of student body	average SAT	enrollment	number of graduate students	size of outstanding debt	publications of faculty	number of tenured faculty	student satisfaction	retention rate	% of graduation in graduate schools	faculty morale		sum				
1	+	0	+	+	0	0	0	+	0	+	+		7				
2	+	+	+	+	-	++	--	++	++	+	++		16				
3	+	+	++	0	0	0	0	0	+	+	0		6				
4	+	+	+	+	-	0	0	0	0	0	+		6				
5	+	+	++	+	0	0	-	++	+	+	++		12				
6	+	+	-	0	0	0	0	-	-	0	0		5				
7	-	-	-	0	-	0	0	0	-	0	0		5				
8	-	0	-	0	+	0	0	0	0	0	-		4				
9	0	0	0	0	++	0	0	0	0	0	--		4				
10	++	-	++	+	--	0	0	++	--	+	+		14				
11	++	++	++	++	--	0	0	-	-	+	+		14				
12	+	+	-	+	-	0	0	0	0	0	0		5				
13	+	+	+	++	-	0	0	0	0	-	+		8				
14	+	0	+	+	-	0	0	0	0	-	+		6				

Figure 16

Strengths:

1. An institutional history (the "Blake Tradition") from which to build a future
2. New administrative leadership
3. A faculty and staff who understand the mission of the college
4. A faculty and staff who are generally closeknit and supportive of one another's efforts
5. An overwhelming majority of faculty committed to teaching and students
6. Support and good will of the people in the local community and the state
7. Completed campus facilities (i.e., no new or major facilities needed)
8. A loyal alumni, some of whom hold significant positions of power and influence in the state
9. A governing board interested in supporting quality education and willing to allow the administration and faculty to manage the college
10. Reputation of its graduates

Weaknesses:

1. Graduate program/course offerings viewed by students and the profession as bland and not exciting
2. Lack of commitment or institutional support for faculty scholarship
3. Facilities, while structurally sound, in need of major renovation
4. Lack of an institutional vision or clear priority for the college's future
5. Complacency among factions of the senior faculty
6. Little institutional loyalty or commitment among new and adjunct faculty
7. Inability and, at times, disinterest in responding to the community's needs of higher education
8. Disinterest in needs of non-traditional students (i.e., educational needs, specialized services, etc.)
9. Lack of an adequate and solid base of financial support
10. Wide variation in the quality of the college's curricular programs

Figure 17

Most Significant Strengths and Weaknesses of Blake College

Figure 18 illustrates a completed network by one of the groups assigned the event, "Program Assessment Mandated." The first order impacts were: (1) an incomplete focus on curriculum goals; (2) increased funding for test construction and for implications of tests across programs; (3) "teaching to the test"; (4) enrollment of fewer "high risk" students; and (5) incomplete dissemination of information about the performance of students. The increased focus on curriculum goals causes standardization of course syllabi and curriculum revision. Incomplete funding for testing stimulates the development of a new bureaucracy handling instructional, developmental, diagnostic services, and testing. Moreover, there is now increased attention to student assessment and remediation.

When all groups had completed the task, each of them shared the networks with the entire team. The consultant asked the team members to evaluate each network by answering the question, "Does the impact network describe a plausible set of circumstances that could evolve from the occurrence of the initial actor development?" During several network presentations, the members of the Blake team had a lively discussion of possible alternative or "branching" points in the network, where the future could have evolved differently than that depicted by the

network. After all impact networks had been reviewed, the team members decided that the implications of three of the networks were most critical to the future of Blake College. They then concentrated their efforts on developing strategies for these networks.

Since the major goal of the workshop was to identify possible strategies that Blake College could follow to deal with probable future developments, the participants were again organized into groups. Each group was assigned a particular impact network for which to identify strategic options and was asked to propose at least five strategies for its assigned network. Two of the groups decided to first brainstorm a set of strategies and then, after discussing the set and clarifying the meaning of the strategies proposed, select what the group considered the best five. The third group, through a process of discussion, simply formulated five statements of strategy.

Upon the groups' completion of their lists of strategic options, the consultant reconvened the participants. He asked each group to report its list of strategies and present a rationale for the strategies. During the reporting process, several groups identified similar strategies. The consultant pointed out that such a situation was beneficial, as it implied that the duplicate strategies might be sufficiently "robust" to address external conditions that might affect the college under alternative futures.

The participants, again divided into groups, assessed the impact of each of their options upon the institutional strengths and weaknesses identified during the previous day's session. Using a strategic impact matrix for strengths and another matrix for weaknesses, the members of the group determined whether a strategy enhanced, reduced, or had no impact on each strength (or weakness). A scale of 0 (no impact) to 3 (major impact) was used. The scale value selected by the group for each cell of the grid was preceded by the symbol of + (i.e., enhance) or - (i.e., reduce). When each matrix was complete, the values for each row were summed. The consultant then pointed out to the Blake planning team that the optimal strategies were those assessed as enhancing strengths and reducing weaknesses. Of the entire list of strategic options assessed, six were identified as being optimal and thus warranted serious consideration for possible adoption as institutional strategies. They are shown in Figure 19. This concluded the second day of Blake College's ED QUEST process.

Since both sessions of the college's ED QUEST were combined into a continuous two-day workshop, the session report summarizing all activities and decisions made was not prepared by the consultant to circulate to participants until approximately two weeks after the session. Follow-up activities, based upon the outcome of the ED QUEST process, began at a joint meeting of the college's faculty and administration following receipt of the ED QUEST session report. Task forces were appointed by President Franklin to develop action plans for each of the strategic options selected for implementation. In addition, the strategic options selected were incorporated into both a Title III proposal the college submitted for funding to the federal government and a proposal prepared by the college's Dean of Academic Affairs to a regional foundation, requesting support for the purchase of laboratory equipment for the college.

During the year subsequent to the ED QUEST session, a number of planning activities were undertaken that were based upon the strategic options chosen for implementation. Many of these activities have moved programs and services closer to the students being served and have demonstrated to external agencies Blake College's concern with controlling institutional costs while attempting to improve the quality and scope of its educational services and programs. In addition, the Blake administration staff has begun working more closely with the finance committee of the Board of Trustees to develop a more detailed long-range financial plan for the college to support the institutional programs necessary to implement the strategies identified through the ED QUEST process. Although not complete , a preliminary report from the newly formed Office of Institutional Studies indicated a most positive and cooperative attitude among segments of the college and an emerging perception that Blake College is moving into the future with renewed confidence and vigor.

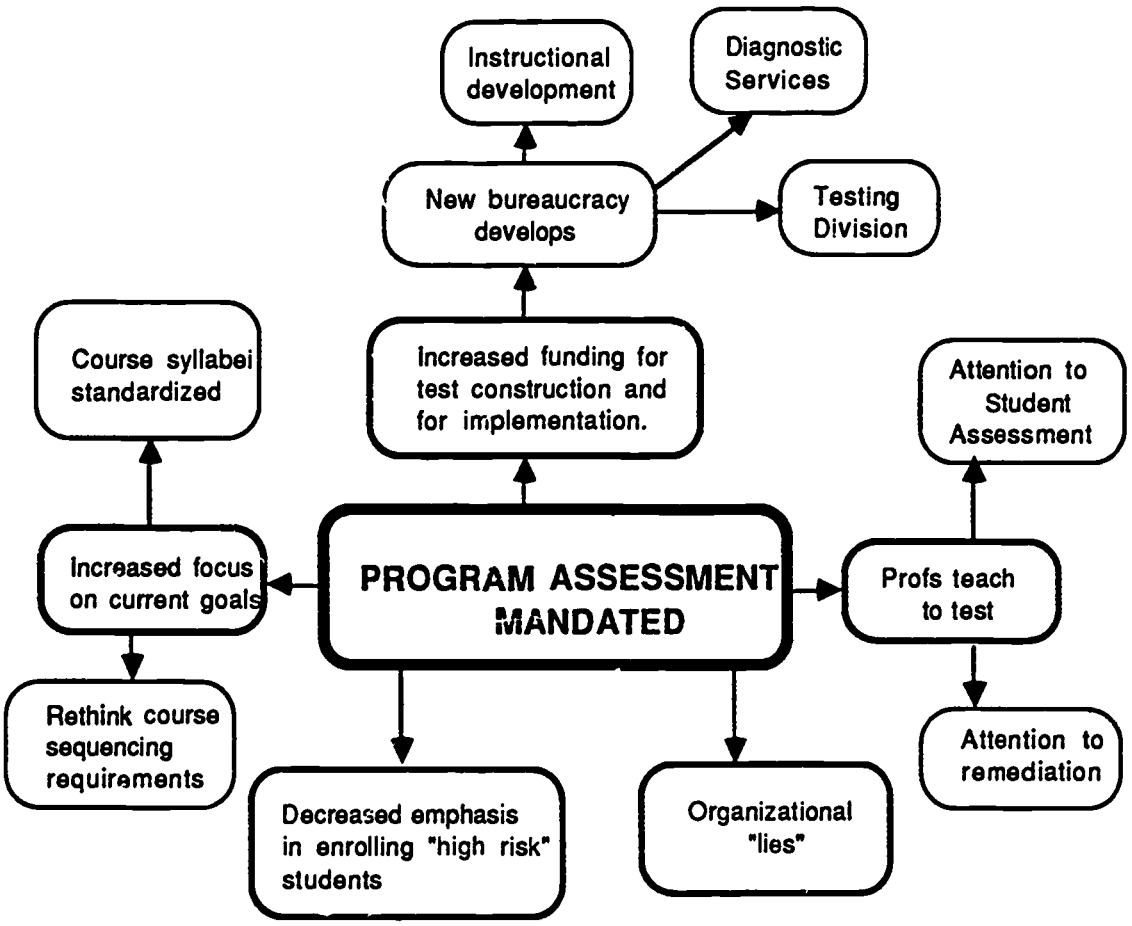


Figure 18: **IMPACT NETWORK: PROGRAM ASSESSMENT MANDATED**

1. Blake College will enhance its collaborative relationship with regional schools, business, industry, and governmental agencies, including cooperative funding, in providing inservice education, new curriculum and services.

2. The college will give renewed emphasis to promoting and updating the humanities and social sciences to encourage the development of cultural literacy and skills so that "making a life" will become as important as "making a living."

3. Lifelong educational endeavors for career, personal, and cultural development will be given the same attention by the college as has been true in the past for education designed for traditional college-age students.

4. The curriculum and instructional delivery of the college will be customized and individualized to augment the traditional group delivery systems in order to better serve the great variability in preparation and learning styles among Blake's students.

5. Funds for curriculum revision, staff development, and equipment improvement will be sought from external sources to maintain the college's programs and personnel at the highest level of quality possible.

6. Special attention will be given to developing a program for phased retirement of senior staff and the recruitment of comparable replacements. Faculty involvement in the selection, induction, and tenure-granting process will be strengthened.

Figure 19

Strategic Options Selected

PART THREE

USING ED QUEST AT UTOPIA COUNTY COMMUNITY COLLEGE

INTRODUCTION

This description of the ED QUEST process at Utopia County Community College (UCCC), a fictitious two-year institution, is based upon the actual ED QUEST experiences at several institutions. To add realism to the UCCC case, a general description of the college is also included.

DESCRIPTION OF UTOPIA COUNTY COMMUNITY COLLEGE

Utopia County Community College is a hypothetical public two-year college located in the southeastern section of the United States. The college was established in the spring of 1965 by a resolution passed by the Legislative Commission of Utopia County and approved by the State Commission for Post-Secondary Education. In creating the Board of Trustees of Utopia County Community College, the State Commission charged the Board with the responsibility of ". . . developing and implementing a comprehensive program of post secondary education to serve the residents of Utopia County desiring general education leading to admission at a baccalaureate-degree granting institution, vocational and technical training, and continuing and adult education."

Utopia County Community College opened to students in September 1965 as the seventh public two-year college in the state system, which now includes fourteen schools. UCCC has always maintained an open admissions policy by admitting all residents in the service area who met either one of the following requirements:

1. Graduates holding diplomas from accredited secondary schools

2. Persons 18 years of age or older, not possessing a high school diploma, but who can present evidence of being able to pursue successfully and profit by a proposed course of postsecondary study

The College's Service Area

Located in the southwest corner of the state, Utopia County is the state's least populated county with twenty percent of the state's land area (4,300 square miles) but only twelve percent (158,000) of the state's population. With a population of 63,000, Franklin is the largest municipality in the county. The other towns in the county range in size from 8,000 to 12,000 residents. Although the county has maintained its position as the most productive agricultural county in the state, it has undergone major economic changes. In 1950, 35,000 county residents were employed in agriculture; in 1980 only 8,500 were so employed. During the same period, the non-farming workforce grew from 17,000 in 1950 to over 47,000 in 1980. The distribution of persons employed in Utopia County by major employment classification is described in Table 4.

TABLE 4
Distribution of Employed Workforce by
Major Employment Classification

Classification	Number Employed
Manufacturing	21,320
Construction	2,890
Transportation and Public Utilities	1,480
Wholesale and Retail Trade	7,060
Finance, Insurance, Real Estate	1,580
Services and Miscellaneous	4,380
Government	8,870
Agriculture	9,473
Total	57,053

At 36 percent, manufacturing is the single largest sector of the county's workforce. In 1980, approximately 22% of all manufacturing workers were employed in the area's steel producing industry, down from 43% in 1960. The remainder of the manufacturing workers are employed by the glass (8%), textiles (12%), machine tools (5%), wood products (3%), plastics (10%), food processing (5%), micro-electronic components (9%), home furnishings (8%), computers (6%), and medical products (9%) industries.

Since 1972, five corporations have established manufacturing facilities in Utopia County. Two of these industries are multi-national companies in the field of high technology. As the county's economy matures, the area industries are being supplemented by the so-called "clean" businesses such as computer services, insurance, and bio-medical research.

Prior to 1960, personal income followed a pattern of slow increase throughout the service area. Since that time, the economic growth rate has risen significantly due to the aggressive economic development programs of the state and county governments. However, the service area still has pockets of economically poor, with 14.2% of the families having an annual income of less than $4,500. In addition, the income level of approximately 21.5% of the service area's inhabitants barely exceeds the poverty line. Approximately 6.4% of all families in the service area receive public assistance or public welfare income.

The economic changes in the county are only now beginning to solve the long standing problems that have beset area residents. From the depression of the 1930's until the second half of the decade of the 1960s, the area has experienced a high rate of out-migration as people sought better opportunities elsewhere. This trend particularly characterized the lower economic and minority populations. Utopia County Community College has attempted to address these problems by increasing the accessibility of educational opportunities and by enhancing economic development through an emphasis on technical education. This effort, however, is complicated by problems that are both historic and current. Traditionally, the state has ranked in the bottom half (39th) in percentage of youth pursuing some form of postsecondary education.

UCCC's main campus is located in Franklin--a more than 45 minute drive for most county residents. Public transportation is limited, and even for residents with access to private transportation, the commuting time and cost are formidable barriers. To overcome these geographic barriers, UCCC has opened three extension centers in the past two years. Through the cooperation of local citizens, housing accommodations are also available to students at nominal costs. Finally, a carpool matching service is provided.

The College's Student Body

Increasing 15% over the past three years, UCCC student body currently includes almost 2,400 credit course students; 70% are enrolled in the college's vocational and technical division and the remaining 30% in the general education (transfer) division. In addition, the institution's continuing education programs annually enroll 1,800 non-credit students. Since 1980, the part-time student population has grown as a proportion of the institution's total credit enrollment (See Table 5).

Although in the college's early years, the majority of students were male, in the 18-22 year age group, and from white, middle class families', the current UCCC student body is quite diverse. The racial minority population is well represented within the student body. While 19% of the county residents are black, Hispanic, or Asian, 25% of the student body consists of individuals from these minority groups.

College officials, over the years, have given priority to the recruitment of minority students and to the provision of special interest programs. For example, special support has been allocated to sponsor non-traditional courses for women, and a Center for Displaced Homemakers and Reentry Women will be established shortly with federal, state, and local funds. As a result, the male/female ratio has shifted dramatically from the 1980 ratio of nearly 2:1 males to 1:1 for the current year.

TABLE 5
Student Profile (Credit Students)

	Current Year	1980
A. Sex		
Male	50%	64%
Female	50%	36%
B. Race		
Black	19%	28%
White	75%	71%
Other	6%	1%
C. Enrollment Status		
Full-time	53%	60%
Part-time	47%	40%
D. Average Age		
Male	25	25
Female	27	23
Average	26	23
E. Veterans Enrollment	16%	18%
F. Attrition Rate	37%	31%
G. Transfer-Percentage	21%	29%
H. Continuing in Higher Education	25%	27%

Similar efforts in outreach, recruitment, and program development have been made for he handicapped and the elderly. UCCC is the adult basic and general education center for the southern portion of the state. Also, programs stressing re-entry programs for the elderly have been emphasized in the Division of Continuing Education and Community Services.

Seventy-nine percent of UCCC students are county residents, and 38% of these students have low incomes. Moreover, 34% of UCCC students are classified as having special educational needs.

A variety of programs are offered by UCCC to meet the special needs of its students. With 63% of all associate degree students reading below the ninth grade level, 54.7% of all entering students enroll in developmental English or math courses. At least 72% of the students work and/or receive financial assistance through established college programs.

A series of controversies has surrounded UCCC's attempts to meet the needs of non-traditional and minority group students. For example, the local newspaper, *The Utopia Crier*, ran a series of editorials expressing disapproval ". . . of UCCC's attempt to finance, at the taxpayers' expense, so-called college programs for students unprepared for college level work." Public concern has also been fuelled by a perception that the college's academic standards were being lowered.

Utopia County Community College students are typically hard working and ambitious. Most are vocationally oriented; approximately two-thirds seek admission into the vocational and technical program leading to an Associate of Applied Science (AAS) degree. However, as many as 40% of the AAS students switch to the one-year certificate program by the end of their first semester.

While pleased with increased student interest in vocational-technical programs, college officials and the Board of Trustees are concerned about the 62% attrition rate from the college transfer (Associate of Arts) program and the irregular attendance patterns of many students who take as many as five to six years to complete a two-year program.

As reflected in Table 6, the academic quality of UCCC programs is one of the primary reasons given by students for selecting the college. Not surprisingly, job placement of its graduates is another significant reason the college attracts students.

TABLE 6

Main Reason for Selecting the College

	Current Year 1980	
Academic Quality in My Program	23.5%	23.2%
Courses Offered	28.9%	23.6%
Close to Home	17.5%	21.0%
Academic Reputation-General	10.0%	15.2%
Costs	9.1%	11.2%
Job Placement	11.0%	5.8%

A recent study of the college's graduates indicated that of those employed, 85.4% were working in jobs related to their major field of study or had continued their education. In general, 91% of the graduates surveyed were satisfied with the services and programs of the college. The highest rated college services were faculty advisement (89.4%), curriculum content (88.2%), quality of instruction (84.3%), food service (51.2%). student activities (48.2%) and library (43.5%).

The College's Organization and Staff

The college transfer program was originally the primary focus of UCCC. Approximately twelve years ago, under the leadership of a dynamic new president, the institution moved toward becoming a comprehensive college, offering two-year vocational-technical programs as well as continuing education and community service programs.

The educational programs and faculty of UCCC were recently organized into four divisions: General Education, Vocational and Technical Science, Continuing Education, and Student Services. The college transfer programs are administered by the Division of General Education, while all technical degree programs are a part of the Division of Vocational-Technical Science. providing limited services, the Division of Continuing Education offers non-degree programs in vocational and cultural areas. The Student Services Division is responsible for admissions, student records, financial aid, counseling, and student activities. Each of these four divisions is headed by a chairman who is responsible to the Dean of the College.

Currently, a few staff members expressed the opinion that the college's present organizational structure by division is inequitable. For example, faculty members in the Vocational and Technical Division typically have very small classes, while General Education faculty have their classrooms filled to capacity. Several faculty members have introduced resolutions in the Faculty Senate calling for an organizational structure that will distribute the workload more satisfactorily.

The prevailing faculty philosophy at UCCC is reflected in a document drawn up by a faculty group at a recent staff development seminar. The following educational principles were accepted as the "... operational basis for developing healthy and effective faculty-administrator relationships..."

- Utopia County Community College has one goal: the best possible education for its students
- Each member of the faculty has a unique contribution to make in the accomplishment of this common goal.
- In a democratic society it can be expected that the membersof any college faculty will desire to participate indecision-making that affects their welfare and the fulfillment of the purposes to which their effort is directed.
- Effective participation and wise decision depends upon knowledge, experience, and a sense of obligation on the part of all concerned.
- Realistic, responsible requests, formulated after careful consideration of resources and other pertinent data, are requisites for confidence and effective working relationships
- The president of the college, the institutional officers and the division heads cannot abdicate their individual responsibility for making decisions
- Responsible members of a profession can be expected to make the same decisions, assuming equal knowledge of facts and basic data.

UCCC offers students more than just academic programs. Utopia County Community College has a well-run counseling and developmental studies center that is respected among two-year

colleges. There are a number of achievement and aptitude testing programs provided throughout the year and throughout a student's program of studies. In addition, students are always welcome to the center for personal guidance and counseling that is staffed with seven professional counselors, six men and one woman. In the field of sports, the college also has an excellent reputation. UCCC's athletic teams take part in a number of state and regional competitions and have great success in comparison with most colleges. Students seem to like sports and are very interested in competitive intercollegiate sports. Many of the college's out-of-country and out-of-state students are attracted to UCCC because of the reputation of its athletic programs. Recently, some intramural programs have been initiated.

The College's Finances

Utopia County Community College receives its non-capital, unrestricted funding from four sources: state and local appropriations, student tuition and fees, and revenues from auxiliary enterprises. State monies have decreased somewhat as a percentage of the total budget for the past five years. Given current and projected state economic conditions, college officials expect these monies to continue to decrease in the future. Within the last three years, the State has imposed three mid-year budget cuts (i.e., 5%, 6%, and 4%) because of the declining revenues. During the same time, however, student FTE enrollment increased 15%. Last year, the operating budget for Academic Affairs was frozen at the previous year's level so that an associate degree computer program could be offered in response to overwhelming community demand. In that same year, however, the college experienced a 5% increase in enrollment. The following table shows a comparison of the percentage of total revenue from three of the sources for the current year and 1980. The state also allocates to the institution portions of capital bond revenues for equipment purchases. However, again because of declining state revenues, the institution has received decreasing amounts of these monies for the last two years.

TABLE 7
Major College Funding Sources as Percentage of Total Revenues

Year	State Appropriations	Local Appropriations	Tuition and Fees
1980	65%	7%	22%
Current Year	61%	7%	28%

UCCC receives fiscal support from two counties, which has accounted for 7% of the total annual budget during the last five years. These monies are not expected to increase in the near future as the counties struggle to replace lost federal monies and to maintain basic governmental services to citizens.

As a percentage of the total budget, funds from tuition and fees, have increased over the past five years, due to enrollment increases. In addition, revenues from auxiliary enterprises are expected to increase slightly over the next five-year period, but only contribute about 3% to the total budget. As state and local appropriations continue to decrease and operating costs continue to rise, the institution will be faced with the need to increase revenues from these remaining two sources.

The college has historically made a commitment to seek external funds. Restricted monies come to the college from federal sources and from the Utopia Education Foundation. Last year, the institution was awarded $1 million in restricted federal funds in addition to $540,000 in federal student financial aid.

The other external source of funds available to the institution are those that come from a college-related foundation. The foundation currently has assets of $.60,000 raised primarily

through community fund-raising activities. These monies are almost entirely restricted to scholarships. The foundation has no endowment.

UCCC'S PLANNING PROBLEM

The President of UCCC has become increasingly concerned about the changing nature of the college's environment. As he surveyed the shifts in the composition of the college's student body and the growing instability of the institution's financial base, he began to fear that the institutional goals and objectives were not reflective of changes in the college's external environment. He has discovered that the members of his cabinet share his concerns and uneasiness regarding the responsiveness of UCCC to the changing environment. The college's chief administrative officers unanimously agreed that the institution's existing annual planning efforts did not facilitate the identification and incorporation of environmental information into the formulation of organizational objectives.

Accordingly, the President asked the college's Executive Vice-President to explore the possibility of developing a more comprehensive, environmentally responsive planning process. After some investigation and consultation with other members of the administrative staff, the Executive Vice-President engaged a group of management consultants to assist him in this task. The consultant group, after first reviewing the college's existing planning process, recommended that UCCC use the ED QUEST process as a starting point in the development of a strategic planning effort. The college's administration accepted the recommendation and, after assessing the planning expertise of the college's staff, decided to engage the consultant group in the design of the process and in the formulation of the strategic plan. In addition, the consultants were responsible for training one or more members of the planning and institutional research offices in the techniques used in the ED QUEST process.

PREPARATION FOR ED QUEST

Prior to the first ED QUEST session, the President, upon the recommendation of his cabinet, appointed nine members of the ED QUEST planning team, including fifteen of the college's administrative and instructional staff, including himself. The functional areas represented on the team were instruction, continuing education and community service, student services, institutional research, institutional advancement, and library services.

Concurrently, the consultant group compiled the *Future Prospect Notebook*, consisting of information and forecasts about environmental trends, issues, and developments which might have impact on the college's future (see Appendix A). Materials were obtained not only from education sources (e.g., *Chronicle of Higher Education, Education Today, Change, Community College Journal*, etc.), but also from readily accessible general sources (e.g., *US News and World Report, Newsweek, Business Week, New York Times, Atlanta Journal*, etc.). A number of information items were obtained from "fringe" publications (e.g., *Mother Jones, Leading Edge, Rolling Stone*, etc.) and periodicals covering developments in the four major areas--social, technical, economic and political (e.g., *Working Woman, American Demographics, High Technology, Barrons, Computer World, Washington Monthly)*. To scan for possible information on unusual and unexpected developments, a wide ranging search of future-focused journals and newsletters was undertaken, including The *Futurist, Futuristics, What's Next, Issue Management Newsletter, Futures* and *Trend Digest.*

Much of the information included in the notebook was obtained from materials and data bases accessible to the consultants. However, data on variables descriptive of UCCC's internal environment (e.g., enrollment, revenue, etc.) were also included. This latter category of data was collected by UCCC's institutional research office.

The intent of the *Future Prospect Notebook* was to stimulate readers to identify possible future changes in the environment (i.e., trends, events, or issues) that would affect the college's future. The material contained in the notebook created an "information gestalt," within which individuals could begin to see patterns of change in the external environment. Consequently, the consultants organized the notebook materials to facilitate rapid and complete understanding of the the information. Where feasible, statistical information was synthesized into charts or tables,and abstracts were prepared for lengthy articles. Attention was given to selecting articles with clarity of presentation and a minimum of highly specialized and technical terminology.

The consultants also prepared a tentative agenda for each of the two ED QUEST sessions (shown in Figure 20) that was reviewed and approved by the administration. After the ED QUEST team members had been appointed and the *Future Prospect Notebook* had been prepared, the consultant group met with the team to orient them to the ED QUEST process and to explain the Delphi process. At the end of the meeting, the Futures Prospect Notebook was distributed to each team member along with a copy of the Round One (R1) questionnaire of the Delphi (see Figure 5).

In the intervening month, the members of the ED QUEST team, using the *Future Prospect Notebook* and information gathered individually, completed and returned the first round of the Delphi to the consultants.

The information from R1 was used to prepare the R2 questionnaire (see Appendix B). The R1 trend and event were edited and, in a number of instances, reworded to improve clarity. For example, one member of the team said that an important trend was the changing student-body profile. The consultants, mindful that the group might want to monitor this trend, rewrote the trend statement as several statements (i.e., the percentage of part-time students over twenty-five and the percentage of black and Asian students).

The consultant group added a number of forecast statements to the questionnaire, because the trends and events identified in R1 were not sufficiently comprehensive. Specifically, the team members had identified many trends and events pertaining to education, technology and the economy, but few items from the social and political sectors of the environment.

When completed, the two-part R2 questionnaire was distributed to each member of the ED QUEST team. On the first part, team members forecasted trend levels at two points in time, assuming a present level equivalent to 100 and assessed the positive or negative importance to the college's future of a series of trend statements using a scale of 0 (no importance) to 10 (major importance). The second part of the questionnaire contained a series of statements describing a possible future event. For every event, each team member was asked to provide an estimate of the probability that the event would occur at some time within the next decade and, assuming the event did occur, an estimate of its positive or negative impact using a scale of 0 (no impact) to 10 (high impact).

The consultants tabulated the results and prepared two lists. The first, a master list, contained all the trends and events statements included in the R2 questionnaire. Median estimates of level and mean estimates of consequence were used to identify critical trends, as were the median probabilities and mean impacts of events (see Figure 21). The second list of critical trends and events included statements with at least an average score of six. Two charts were also created--one showing the importance of each trend according to the four categories of high, strong, moderate, and low//none (see Figure 22) and the other categorizing the events according to their probability of occurrence (i.e., high, moderate, and low) and impact (i.e., high, moderate, and low) (see Figure 23).

TRENDS				
DESCRIPTION	LEVEL OF TREND IN 1992	1997	CONSEQUENCES Positive	Negative
T-6. Annual number of manufacturing jobs moving to the developing countries (i.e. Mexico, Korea, etc.) from the U.S.	110	120	2.0	6.0
T-8. Number of new jobs annually created by industrial development and expansion in the state.	108	116	6.5	2.0
T-12. Number of persons in the state's labor force employed in the service sector.	90	80	3.6	6.1
T-23. Number of industries in the southern U.S. using robots.	110	118	7.3	3.0
T-24. Number of industries in the state using computers with optional memory and user friendly software.	120	130	6.1	1.9
T-25. Level of automation used in U.S. offices.	118	125	6.5	2.2
T-26. Number of jobs in U.S. business and industry requiring a basic knowledge of the use of computers.	123	140	7.7	2.0
T-30. Level of job skills required for entry-level employment by U.S. businesses and industry.	110	115	7.9	1.5
T-31. Number of new hires by U.S. business and industry who possess general skills and knowledge which can be used across several jobs.	110	120	6.0	2.4
T-35. Level of demand by business and industry for electronics technicians in the state.	113	120	6.6	1.1
T-36. The economic worth of an associate degree in the U.S. labor market.	109	107	6.3	2.5
T-38. Number of adults 24 yewars of age or older in retraining programs offered through the state's two-year technical colleges.	115	120	8.6	1.2
T-42. Amount of money annually allocated for employee training by U.S. corporations.	105	110	8.1	2.3

Figure : CRITICAL TRENDS AND HIGH IMPACT EVENTS

DESCRIPTION	LEVEL OF TREND IN 1992	1997	CONSEQUENCES Positive	Negative
T-46. Number of organizations outside the U.S. educational system (i.e. corporations, private job training contractors, etc.) offering technical education accepted for college credit.	110	115	2.6	8.0
T-47. Number of four-year colleges in the U.S. offering technical programs at the baccalaureate level.	110	120	1.9	6.6
T-48. Competition in U. S. among two-year colleges, four-year colleges, private-for-profit post-secondary institutions, and the military to recruit entrants from persons 17-21 years of age.	110	120	2.1	7.1
*T-52. Number of all students enrolled in technical education programs in the state who are enrolled in at least one developmental course.	105	101	7.0	5.8
T-60. Number of U.S. undergraduate college students required to own personal computers for use in their college studies.	118	130	6.1	2.4
*T-63. Level of pressure from federal and state government for accountability in higher education.	119	131	3.6	6.5
*T-67. Amount of annual revenue of the state's two-year technical colleges derived from JTPA.	105	105	6.5	2.3

Figure 21 continued: **CRITICAL TRENDS AND HIGH IMPACT EVENTS**

NAME OF ORGANIZATION: Utopia Community College

CATEGORY	POSITIVE	NEGATIVE
High (8.0-10)	T-38, T-42	T-46
Strong (6.0-7.9)	T-8, T-23, T-24, T-25, T-26, T-30, T-31, T-35, T-36, T-49, T-52, T-60	T-6, T-12, T-47, T-48
Moderate (3.0-5.9)	T-2, T-5, T-7, T-10, T-12, T-13, T-14, T-15, T-16, T-17, T-18, T-20, T-21, T-22, T-27, T-28, T-29, T-32, T-33, T-34, T-39, T-40, T-41, T-43, T-44, T-45, T-51, T-52, T-53, T-54, T-55. T-56, T-63, T-64, T-67, T-70	T-1, T-2, T-3, T-4, T-7, T-10, T-11, T-14, T-15, T-16, T-18, T-19, T-20, T-23, T-30, T-33, T-37, T-39, T-40, T-44, T-49, T-52, T-55, T-57, T-58, T-60, T-61, T-63, T-64, T-65, T-66, T-69, T-70
	T-1, T-3, T-4, T-6, T-11, T-19, T-37, T-46, T-48, T-50, T-57, T-58, T-59, T-61, T-62, T-65, T-66, T-68, T-69	T-5, T-8, T-13, T-17, T-21, T-22, T-24, T-25, T-26, T-28, T-29, T-31, T-32, T-34, T-35, T-36, T-38, T-41, T-42, T-43, T-45, T-50, T-51, T-53, T-54, T-56, T-62, T-67, T-68

Figure 22: **TREND CONSEQUENCES**

NAME OF ORGANIZATION: Utopia Community College

PROBABILITY	IMPACT					
	HIGH (6.0-10)	MODERATE (3.0-5.9)	LOW/NONE (0-2.9)	HIGH (6.0-10)	MODERATE (3.0-5.9)	LOW/NONE (0-2.9)
HIGH (.65-1.00)	E-21, E-35,	E-13			E-13, E-50	E-[illegible], E-35, E-49
MODERATE (.36-.64)	E-3, E-11, E-18, E-20	E-7, E-12, E-14, E-16, E-17, E-27 E-28, E-29, E-32, E-33, E-47, E-48, E-51, E-59, E-60	E-4, E-8, E-22, E-23, E-42, E-43, E-45	E-4, E-7, E-33, E-42 E-43, E-47, E-48, E-51	E-8, E-17, E-18, E-22, E-29, E-32 E-45	E-3, E-1, E-12, E-14, E-16, E-20, E-27, E-28, E-59, E-60
LOW (0 -.35)	E-2, E-5, E-30, E-56, E-57	E-1, E-9, E-10. E-19, E-24, E-25 E-26, E-31, E-36 E-38, E-39, E-41, E-44, E-52, E-53, E-54	E-6, E-15, E-34, E-37, E-40, E-46 E-55, E-58	E-6, E-26, E-37, E-40, E-55, E-58	E-9, E-10, E-15, E-34, E-36, E-38, E-39,E-46, E-53, E-54	E-1, E-2, E-5, E-19, E-24, E-25 E-30, E-31, E-41, E-44, E-52, E-56, E-57

Figure 23: PROBABILITY/IMPACT MATRIX

THE FIRST ED QUEST SESSION

The consultants began the first session by reviewing the session's agenda and objectives and by dicussing the Delphi survey results. Team members had the opportunity to raise any questions regarding the validity of the group's estimate for any of the trends or events. Arguments were presented for either adding or deleting a trend or event from the "Critical Importance and High Impact List." Although none was deleted, a number of trends and events were added to the list.

For example, the team's median estimate of the consequences of the pressure for accountability in higher education was 4.5. Several members believed that the estimate was too low and revealed that recently introduced state legislation, not covered by the media, would require all public two-year and four-year colleges to annually provide information on attrition and drop-out rates among students to the state's Office of the Budget. This information was to be used in the state formulas to determine annual institutional budget allocations. In light of this information, the group reestimated the consequence of the trend as 6.5. It was, therefore, added to the critical trends and events list.

The next major group activity was the completion of a cross-impact matrix to determine the interrelationship of each event to each of the trends and other events. In order to use the time most effectively, four groups were formed and each group was assigned a specific number of events to assess. Each cross impact estimate was determined by an informal poll. When individual estimates varied widely, discussion ensued and members reassessed their original estimates. During this activity, the facilitators moved from group to group answering questions, clarifying the nature of the task and ensuring that all group members participated in the discussion.

Each group completed its cross-impact assessment form using the scale of +3 to -3 to show, should the event occur, the increase or decrease of the significance of a trend to the college (event-to-trend), or the probability of the other events (event-to-event). When each group had completed their assigned matrix, the results were tabulated algebraically for each cell, and absolute values were obtained for each row and column. The information for all groups was recorded on a large matrix drawn on newsprint. The remaining time for tho activity was spent identifying and discussing those events that appeared to be significant and forceful "actors" in the college's future, were they to occur. Figure 24 shows an abbreviated version of the tabulated matrix.

Focusing on the critical trends and events, the planning team was divided into three groups to assess the changes that might occur in UCCC's mission. Each group considered the possible impact of the trends and events on the present mission at UCCC, related to one of the three mission components (i.e., student/clients serviced, needs fulfilled, and programs/services offered). The objective of this activity was to identify the change in circumstances that could be brought about between the present and the future, should the critical trends materialize and the future events occur (see Figure 25). Each group recorded its assessment on newsprint and presented their assessments to the entire team for acceptance or modification. Once all the presentations of assessments were completed, each group reconvened to discuss the possible future changes in UCCC's mission.

NAME OF ORGANIZATION: Utopia County Community College

	EVENT	Probability	IMPACTED EVENTS									
			E-2	E-3	E-5	E-9	E-18	E-21	E-26	Absol. Impact		
			1	2	3	4	5	6	7	8	9	10
1	E-2	.25		0	+1	3	-1	-3	-1	19		
2	E-3	.40	0		0	+15	-18	-2	0	35		
3	E-5	.25	0	0		-18	-4	-3	0	25		
4	E-9	.10	0	+5	+7		-9	-3	-5	29		
5	E-18	.60	0	+20	+8	+18		-7	+5	58		
6	E-21	.75	-4	-5	+6	-11	+2		+4	32		
7	E-26	.35	0	-1	-2	-8	0	-3		14		
8												
9												
10												

Figure 24: SUMMARY OF CROSS-IMPACT ASSESSMENT

PRESENT CONDITIONS AT UCCC

A. STUDENTS/CLIENTS

1. Students (e.g., high school graduates, upgrades, etc.)
2. Area employers
3. Public/non-profit organizations
4. Community groups
5. Displaced workers
6. UCCC's staff
7. Adult education students

B. NEEDS SATISFIED

1. Entry level occupational/job skills
2. Upgraded occupational/job skills
3. New occupational/job skills
4. Basic educational skills and/or credentials (e.g., reading, GED, etc.)
5. Counseling assistance/information (e.g., educational objectives, career path, educational competencies
6. Avocational interests

C. PROGRAMS/SERVICES

1. On-campus credit instruction
2. Off-campus credit instruction
3. On-campus non-credit instruction
4. Off-campus non-credit instruction
5. In-plant training
6. Student support services (e.g., placement, counseling, etc)
7. Job training and partnership act (JTP A)
8. Conference facilities
9. Technical assistance/technology transfer

Figure 25: ELEMENTS OF UCCC'S PRESENT MISSION

FUTURE CHANGES AT UCCC

A. CLIENTS

1. High school graduates enrolling in UCCC because of increase in loss of financial aid at four-year colleges
2. Increase in students interested in small business management
3. Increase in "recycled" students ("grads", "alumni")
4. Increase in "non-mobile" students
5. Increase in "traditional"transfer students
6. Increase in number of vocational education center graduates desiring advanced placement credit
7. Increase in other types of trainer/educators

B. NEEDS

1. Need more assessment for displaced workers
2. Need more information on markets and application of new technology for local industry
3. Nedd increased emphasis on basic skills
4. Need problem-solving competencies
5. Need more orientation assistance or displaced workers to educational/learning environment
6. Need more integration of career counseling with development of new job skills
7. Need more counseling assistance by all segments of population

C. SERVICES

1. Establish services to teachers and trainers
2. Establish two-way video/instructional services to improve educational delivery to off-campus students
3. Increase service in off-campus credit and non-credit institutions
4. Increase service to provide technical assistance/technology transfer via teleconferencing

Figure 25 continued: **ELEMENTS OF UCCC'S MISSION**

Next, the planning team identified key indicators of UCCC's performance. Initially, a list of 32 indicators was developed. The consultants led a discussion of the relative importance of each indicator to institutional performance and asked team members to individually select what they believed to be the 10 most critical indicators from this list. When the results were tabulated, 12 indicators were identified as being the most significant. Prior to finalizing this list, members of the team were given an opportunity to question the results of the assessment. Figure 26 shows the indicators most frequently selected.

1. Curriculum Enrollment (Credit Hours Generated)
2. Continuing Education Enrollment (Contact Hours Generated)
3. Student/Faculty Ratio
4. Cost per Credit Hour
5. Graduate Placement Rate
6. Student Retention Rate
7. State Government Funds
8. Local Government Funds
9. Federal Government Funds
10. Institutional Expenditures
11. Full-time/Part-time Staff Ratio
12. Annual Number of Graduates

Figure 26: **INDICATORS OF INSTITUTIONAL PERFORMANCE**

KEY INDICATORS / TRENDS/EVENTS	Curr. Enrollment (Cr. Hrs.)	Cont. Enrollment (Cr. Hrs.)	Student/Faculty ratio	Cost per credit hr.	Placement rate	Retention rate	State funds	Local funds	Federal funds	Expenditures	FT/PT staff ratio	Number of graduates	Total Positive/Negative	Absolute impact		
T-2	+7	+5	0	+2	0	+4	+3	0	+5	-7	+9	0	35/7	42		
T-7	+5	+5	0	+2	+2	-3	-9	-2	-8	0	+5	0	19/19	38		
T-18	+5	+6	+3	-2	+9	+2	+3	+4	0	+4	-2	+4	40/4	44		
T-25	0	0	+3	+3	0	0	-7	-6	-2	0	-3	0	6/16	22		
E-5	+6	+5	0	+4	+8	-2	0	0	-2	+5	+7	+4	39/2	41		
E-8	-5	0	-3	+4	+6	+6	0	+2	0	+2	0	+3	20/8	28		
E-14	-4	-9	-6	+6	-8	+7	-7	-7	-5	+6	+5	-4	24/50	74		
E-22	-5	0	0	-6	0	-6	0	-6	-8	-8	-5	-4	0/48	48		
T-8	+7	+5	0	+2	0	+4	+3	0	+5	-7	+9	0	35/7	42		
T-30	+5	+5	0	+2	+2	-3	-9	-2	-8	0	+5	0	19/19	38		
T-36	+5	+6	+3	-2	+9	+2	+3	+4	0	+4	-2	+4	40/4	44		
T-60	0	0	+3	+3	0	0	-7	-6	-2	0	-3	0	6/16	22		
E-3	+6	+5	0	+4	+8	-2	0	0	-2	+5	+7	+4	39/2	41		
E-21	-5	0	-3	+4	+6	+6	0	+2	0	+2	0	+3	20/8	28		
E-33	-4	-9	-6	+6	-8	+7	-7	-7	-5	+6	+5	-4	24/50	74		
E-40	-5	0	0	-6	0	-6	0	-6	-8	-8	-5	-4	0/48	48		

Figure 27: IMPACT ON KEY INDICATORS (Abbreviated Version)

Once the list of key indicators had been finalized, the group assessed the impact of the critical trends and high impact events upon the indicators. The consultants divided the planning team into two groups and assigned each group six indicators. Using a scale of +10 to - 10, each group assessed the positive or negative impacts of each trend and event upon each indicator, using a group process of tall-estimate decision-making. When the assessment was completed, the consultants tallied the results showing the positive, negative and absolute impact of each trend and event on the entire set of indicators. Figure 27 shows an abbreviated version of this tallied grid.

The team then proceeded to develop a list of the most significant institutional strengths and weaknesses. Again, a preliminary list of strengths and weaknesses created from the perceptions of the participants in the ED QUEST process was reduced to the list shown in Figure 28. The completion of the identification of the institution's strengths and weaknesses ended the UCCC's planning team first ED QUEST session.

INTERIM PERIOD

During the interim period between the first and second ED QUEST session, the consultants developed a series of scenarios showing the alternative institutional environments that UCCC might have to contend with in the future. These scenarios were constructed using the planning team's assessments from the first session, specifically the list of critical trends and events, the assessment of change in the college's mission, the assessment of changes in the organization's performance indicators, and the cross-impact matrix.

The consultants began the development of each scenario by identifying from either the cross-impact matrix or the key impact assessment an event that was selected by the team as potentially having a powerful impact. Reviewing the cross-impact matrix, the consultants identified the other events (and trends) positively impacted by the "actor" event. The interrelationships between these events, as indicated by their impact values, were analyzed to determine their "net" impacts. For example, if the positive impacts of "actor" event A on events B, C and D were 3, 2, and 4 respectively, but events B and D negatively impacted event C at the level of -3 and -4; it was concluded that event C would probably not occur. Using a form of impact-networking, the consultants began to link the "actor" event to other events and trends that it impacted. Assuming that the impacted events from the first order impacts now assumed the role of actor events, these first order impacts were linked to the events and trends they impacted by identifying the event set for each actor and determining the net impact amounts within each set. This process was repeated until the analysts decided the scenario was sufficiently "rich" in identifying the salient factors in that particular future. When the impact network was complete, it was written in the form of a scenario and critiqued by members of the team. The scenario was edited to ensure readability, plausibility, and internal validity.

Five scenarios prepared for the UCCC team's analysis are contained in Appendix D of this manual. The set of the scenarios was distributed to each member of the UCCC planning team to be read prior to the next ED QUEST session.

Using the strategic option matrix and a scale of +10 (greatly enhance) to -10 (greatly diminish), each group then assessed the impact of each of the options on each of the school's strengths and weaknesses that were identified in the previous ED QUEST session. (See Figures 31a and 31b). The optimal strategic options were identified by algebraically summing the rows on each matrix to determine which options enhanced the college's strengths and diminished the college's weaknesses. Of the options in Figure 32 , the ones designated by an asterisk were selected by the UCCC team for implementation for the particular scenario.

A. STRENGTHS

1. Attractive campus
2. Dedicate Faculty
6. Frontrunner in Innovation, etc.
7. Strong engineering tech. program
13. Flexibility in programming
5. Talented personnel
14. Caring environment
17. Developmental Education
23. Strong and capable leadership
18. Courses tailored to industry
28. Role in economic development

B. WEAKNESSES

42. Not seen as higher education
31. "Fine for somebody else's child"
22. Insufficient funding
4. Too few transferable credits
3. Too much use of adjunct faculty
9. No consistent funding pattern
36. Lack of residence halls
14. No time for faculty to develop new courses/programs
8. Not enough up-to-date training equipment
32. Compensation system for adjunct faculty does not allow UCCC to demand competency

Figure 28: **MAJOR STRENGTHS/WEAKNESSES OF UCCC**

NOTE: Item numbers are from the original list.

A. THE HIGH TECH IMPERATIVE

1. Average faculty salary up
2. More emphasis on developmental; longer duration for students
3. More full time faculty in technical programs
4. Fewer full-time faculty in non-technical programs
5. Dollar drain for equipment
6. Fewer students (selectively in admissions)
7. Creative individualized scheduling (as opposed to "lock-step" approach)
8. Interdepartmental stress, competition
9. Specialization across all colleges
10. Technological literacy for all
12. Heavy faculty training regarding technological literacy, how to teach
13. Fewer, broader programs of study--with follow-up specialized training
15. Focus on competence-based teaching--be efficient and effective (to fit more into less time)
17. More students

B. THE ECONOMIC MALAISE

1. More part-time instructors
2. Large increase in headcount--moderate increase in FTE
3. Large increase in short-term skills training courses
4. Significant increase in Federal support. with more control, accompained by reductions in state funding
5. Lower county budgets
6. Significant retrenchment in support areas of budget
7. Higher skilled graduates leave service area
8. Development of short-term training for cottage industries
9. Expansion of JLTPA staff and funding
10. Building programs grind to a halt
11. Increase in high school student enrollment
12. Increased emphasis on job placement both inside and outside service area
13. Closer relations with industries for joint survival
14. Development of new programs linked to replacement
15. Greater percent of students receive financial aid
16. Increas in Developmental Studies enrollment
17. Diminished credibility with four-year institutions

Figure 29: **IMPLICATIONS OF SELECTED SCENARIOS FOR UCCC**

THE SECOND ED QUEST SESSION

The consultants began the second session by reviewing the objectives for the ED QUEST process at UCCC and the outcomes of the initial session. After a review of each scenario and its primary characteristics, the planning team was divided into four groups Each group was assigned a scenario and was instructed to analyze it in terms of plausibility and the specific implications for the college. To assess the scenario's implications, each team was to determine

how the institution would be affected if it did nothing to respond to that change? The consultants explained that the team needed to simulate impacts in order to identify the specific aspect of the institution's operations or mission that could be affected. They also warned the participants to avoid creating a strategy to respond to the environmental conditions described in the scenario before completing the assessment of implications.

During the analysis, a member of each group recorded the implications identified by the group on newsprint. After all groups had completed the scenario review, each group reported back to the entire team, and the other members of the planning team were encouraged to comment on the analysis and to suggest additional implications. To illustrate, Figure 29 lists the implications identified by the UCCC team for two of these scenarios: The High Tech Imperative and the Economic Malaise.

After the ED QUEST team finalized the list of implications for each scenario, the small groups reconvened to develop a preliminary list of strategic options based on the implications previously identified. In instances where the list contains strategic options that were more operational in nature, statements were revised or combined to reflect a more strategic thrust. The preliminary list of strategic options developed for one of the scenarios is shown in Figure 30.

1. Enhance programs/services image of institution to emphasize value of people and offset low morale which is likely per this scenario.
2. Encourage governmental entities to establish a millage basis for local support.
3. Expand the programs and services to handle retraining needs of community.
4. Improve quality of part-time instruction trhough better pay, administrative support and increased respect for adjunct faculty.
5. Streamline the core math program, resulting in fewer courses per quarter.
6. Build closer ties among developmental studies, the curricula, and the math department to assure efficiency in instructional delivery.
7. Provide increased support for all courses which contribute to literacy, communications skills, and cultural sophistication.
8. Assume responsibility, as a part of the states' two-year college system, for economic development in this region.
9. Increase size of developmental education faculty/staff, as this division becomes largest on campus.
10. Establish long-term retrenchment in terms of library materials, space, services (as telecommunications)
11. Increase number of short-term highly specialized courses offered in industrial locations.
12. Extend and expand placemnt service to assist dislocated workers support-area.
13. Improve the supervision and job performance of part-time instructors.
14. Improve ability to obtain state and local funds for puchase of up-to-date equipment.
15. Revise the college's curriculum by eliminating out-dated degree programs and increasing high uality/high tech programs.
16. Increase emphasis on broader math/reasoning/problem-solving general education program.
17. Establish a resource center equipped with microcomputers, books, audio/video cassettes amd clerical support to encourage establishment of small business incubator program.
18. Develop a technological arts major within the college to educate technical generalists.
19. Emphasize generic "success skills" in the curriculum.
20. Develop computer resource center to support area business and industries change to high-tech.

Figure 30: PRELIMINARY STRETEGIC OPTIONS FOR THE ECONOMIC MALAISE

Figure 31a: ORGANIZATIONAL STRENGTHS
(Organizational Strengths, Abbreviated Version)

STRATEG ES	STRENGTHS								
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	SUM
1. Establish computer resources	+6	+1	+9	+8	+3	+8	+6	0	+43
2. Upgrade quality of Math, Human Relations, and Communications	+9	+10	+9	-1	+9	-4	+10	+3	+47
3. Strong program in faculty development	+2	+9	+9	+1	+10	-8	+2	+2	+27
4. Contractual arrangment with business/ industry	0	+10	+8	-6	+2	+10	+9	0	+36
5. Create small business incubator program	+9	-1	-1	+2	+7	+8	+7	0	+31
6. New role/status for part-time faculty	+4	+2	+2	+9	-5	+6	+2	+4	+24
7. Establish Technical Comm. curriculum	+5	+10	-1	+6	+9	+6	-3	0	+32
8. Develop "Technological Arts" major	+4	+10	+9	+6	-2	+9	+10	+4	+50
9. Broaden math/reasoning/general education program	+2	+8	+8	-2	+9	+9	+10	+2	+53
10. Provide all training needs for local business/ industry	0	+9	-1	+10	+9	+10	+8	0	+45

Figure 2'b: STRATEGIC OPTION IMPACT MATRIX
(Organizational Weaknesses, Abbreviated Version)

STRATEGIES	WEAKNESSES								
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	SUM
1. Establish computer resources	-10	-6	-7	-3	+5	0	+5	-10	-26
2. Upgrade quality of Math, Human Relations, and Communications	0	-9	-1	+1	+1	-1	-10	-10	-29
3. Strengthen program in faculty development	+2	10	+2	-4	+8	-4	-4	+3	-7
4. Make contractual arrangement with business /industry	-8	+6	-10	-10	+6	+10	-1	+4	-3
5. Create small business incubator program	-4	-4	-4	-4	-10	+8	-10	+4	-24
6. Create new role/status for part/time faculty	0	-10	+2	+8	+5	-8	+2	-5	-6
7. Establish Technical Communication curriculum	+5	+2	-6	+2	-6	+4	+3	-5	-1
8. Develop "Technological Arts" major	-3	+8	+8	-8	-7	-4	0	+5	-1
9. Broaden math/reasoning/general education program	-2	-4	-9	+7	-5	-3	-8	+7	-17
10. Provide all training needs for local business/industry	+3	+4	-4	-10	-4	+4	-5	-2	-14

FOLLOW-UP ACTIVITIES

Based on the outcomes of UCCC's ED QUEST process, follow-up activities began at the President's first cabinet meeting following the second session. Action planning committees were formed to develop detailed plans for each strategy. The administrator whose job responsibilities were most closely related to the focus of a particular action committee was assigned that committee., and each committee's activities were monitored by the Executive Vice-President. In addition, each committee was required to periodically report back to the President and cabinet on the progress made in implementing the option.

For example, the college's Director of Computer Services chaired the committee assigned the task of developing a plan for establishing a computer resource center. This committee consisted of several faculty members from the computer science department and the Assistant Director of Continuing Education. Once the committee had developed and secured administrative approval for the strategic plan, each member of the committee assumed responsibility for accomplishing specific tasks, such as procuring hardware and software, developing short-term training programs, and marketing the services offered by the center.

Thus, the ED QUEST process at UCCC as an initial approach to strategic planning became an impetus for the college to begin adapting to its environment, by first scanning the environment for emerging change. During the year subsequent to the ED QUEST session, a number of activities were undertaken based upon the strategic options chosen for implementation. The college secured a grant from a local foundation and established a regional computer resource center. The center provided technical assistance to microcomputer users internally as well as to individuals and organizations in the community interested in using the technology.

The Division of Continuing Education also took two initiatives to capitalize on the growing entrepreneurial trend in society. A Center for Small Business Development was planned and a $150,000 federal grant proposal, was submitted to and approved by the Small Business Administration. Working with the state office of Economic and Industrial Development, the Division was provided space in a building adjacent to the campus for incubation of new small business ventures.

Finally, the chief academic officer of UCCC appointed a committee of faculty and academic administrators to recommend major revisions in the college's curriculum. Specifically, the committee was to develop methods and strategies for infusing more problem-solving reasoning skill education into the institution's curricular programs.

Overall, the ED QUEST process, as an initial futures planning technique, has been a valuable impetus for innovation and action planning at Utopia County Community College.

PART FOUR

INSTITUTIONALIZING ENVIRONMENTAL SCANNING IN THE STRATEGIC MANAGEMENT PROCESS

INTRODUCTION

ED QUEST is designed to facilitate a relatively quick analysis of the external environment and to enable the organization to clarify its future, define its options and "get out in front" of anticipate changes in the environment. However, for the organization to develop the capacity to deal proactively with its environment, the process must be institutionalized. In other words, an on-going environmental scanning system must be created to supplement and continuously update the set of critical trends and events developed in the initial ED QUEST process.

In this section, the process of establishing an on-going environmental scanning program is detailed. Morrison (1987) has described how to develop an on-going environmental scanning program and the initial steps an organization may take in developing such a program. These steps include developing a program structure and a comprehensive taxonomy with an electronic filing system, identifying and assigning information resources, securing scanners, and training scanners and abstract .

GETTING STARTED

As we discussed in Part One, the ED QUEST team facilitator is responsible for producing the *Future Prospects Notebook*. In essence, this notebook consists of a literature review of readily available information resources readily available. However, the extent of the review is dependent upon the amount of time that the facilitator has available. An on-going environmental scanning program overcomes this dependency by having a number of people regularly review information sources--the more scanners, the greater the number of information resources that can be used. Therefore, one of the first steps in institutionalizing the environmental scanning system is recruit volunteers to perform scanning.

One approach consists of offering a half-day planning workshop focusing on strategic planning models. This would include the ED QUEST model and would focus on the use of environmental scanning information in planning activities for the institution and for its constituent parts, including program planning within individual departments or functional areas. A major part of the workshop would be an exercise in the identification and evaluation of critical trends and emerging issues. This exercise would enable participants to bring their individual knowledge of the external environment to a discussion, which could result in expanding the event and trend set developed during the first ED QUEST activity. Moreover, this workshop should generate enthusiasm for establishing a system for systematically seeking indications of change in the external environment.

DEVELOPING PROGRAM STRUCTURE

Using a simple structure, the ED QUEST team facilitator would chair the scanning committee, consisting of the ED QUEST team members and other interested individuals. In addition, the facilitator would assign information sources to each scanner and would be responsible for collecting and filing scanning abstracts. Periodically, perhaps bimonthly or quarterly, the ED QUEST team would meet as a scanning evaluation committee to sort, sift, and evaluate the significance of the abstracts. Each meeting would conclude with additions to the trend or event set and perhaps with updated information on trends and events already in the set.

DEVELOPING THE SCANNING TAXONOMY

The trends and events identified in the initial ED QUEST activity and in the workshop for volunteer scanners may be used to develop the beginnings of a scanning taxonomy, so that every possible item resulting from scanning has a logical place to be classified. The taxonomy depicted in Figure 33 has two objectives: (1) to provide a comprehensive set of categories within which related materials can be filed, and, (2) to provide a numbering method for every piece of information collected, as well as for the specific trends and events identified (or created) within these categories. Note that there are six categories in the taxonomy--demographic, social, technological, economic, political, and environmental. Their relationship to the organization is classified in both external (international, national, regional) and internal categories (i.e., education), and each resulting "cell" is numbered. For example, an important discussion of regional migration would be assigned to Category 1.3, while a change in the regulations defining eligibility for federally funded student financial aid would be assigned to Category 5.2.

This numbering system may then be used in the next Delphi conducted by the ED QUEST team. Each question in the Delphi can be numbered according to its classification in the taxonomy, facilitating quick retrieval of the source document from which the trend or event was drawn and enabling a quick update of the historical information the team may wish to add to the Delphi question in succeeding years. Boucher and Morrison (in press) recommend refining this system by adding three digits to the category numbers. The third digit would be assigned using the following code:

1 =A trend, including historical or forecasted data

2 =An event that the author of the source document had identified as having some chance of occurring in the future

3 =A policy proposal or suggestion offered in the source document as a means of improving some condition, current or prospective

4 =A miscellaneous piece of information, not one of the preceding types, but nevertheless of potential value in the Delphi, either now or next year

The last two digits would be assigned in serial order (00 - 99) to each item entered into the taxonomy. Thus, an item coded 3.4.2.02 could be identified as the second event that concerned a specific potential development in educational technology.

An alternative approach would be to adopt or modify a taxonomy used by another organization (e.g., United Way of America; see Figure 34). The United Way taxonomy is particularly useful because educational organizations can now access the United Way environmental scanning data base. Accessed through United Way's Human Care Network, this data base is a nationwide telecommunications network for not-for-profit organizations and includes abstracts from scanners throughout the country. Some of these scanners are in colleges and universities on a sub-network maintained by United Way for higher education. By using the same taxonomy, it is possible to access the United Way data base as well as contribute to it. Using this data base, however, requires telecommunications capability and access to an electronic filing system.

Figure 34: United Way Environmental Scanning Taxonomy.

File	File Name	Related Subjects
S—Social		
S-1	Population Size/ Composition	U.S. Population Growth/Size (includes projections, baby boom, baby boomlet)
		Aging Population
		Population Age Distribution
		Birth Rate/Longevity
		Death Rate/Longevity
		Elderly
		Children
		Veterans
		Baby Boomers
		Teenagers
S-2	Population Migration/ Mobility	Regional Migration
		Rural/Urban Movement
		Immigration to U.S.
		Immigrants
S-3	Families/ Households	Household Formation
		Household/Family Size
		Marriage
		Divorce
		Single-Parent Families
		Teen Pregnancy
		Child Welfare (includes relative well-being of children; missing children)
		Child Day Care
S-4	Demographic Overviews	Demographic Overview
S-5	Cities	Urban Demography
		Urban Futures
S-6	Minorities	Minorities
		Blacks
		Asians
		American Indians
		Hispanics
S-7	Women's Roles	Women's Roles
S-8	Health	Health Care Delivery Systems (includes self-help, hospitals, alternative sites)
		Health Care Costs
		Health Care Personnel
		Physical Health/Disease
		Mental Health
		Developmental Disability
		Alcohol and Drugs
		Infant Mortality
		Medical Technology (includes pharmaceuticals)
S-9	Education	School Enrollment (includes projections)
		Preschool Education
		Elementary Schools
		High Schools
		Higher Education
		Support for Public Education
		Teaching/Teachers
		School Problems (includes dropout, discipline, truancy)
		Educational Quality
		Literacy/Illiteracy
		Computers in Education
		Educational Policy
		Alternative/Continuing Education
S-10	Crime	Violent Crime (includes family abuse, terrorism)
		Nonviolent Crime
		Crime Rates
		Prisons
		Youth Gangs
		Crime Deterrence/Prevention
S-11	Values/Attitudes	National Public Concerns (includes public mood, satisfaction, attitudes on major issues, confidence in institutions)
		American Value Systems (includes liberalism, conservatism)
		Generational Values
		Social Transformation
		Social Movements (includes peace, women's, environmental, civil rights)
S-12	Life-Styles	Youth/Teenage Life-Styles
		Alternative Life-Styles (includes gays, cohabitation)
		Alternative Family Life-styles (includes working couples)
		Young Adult Life-Styles
		Retirement
S-13	Religion	Religious Adherence (includes belief levels, church attendance, spirituality)
		Religious Political Activism
		Religious Denominations
		Religious Fundamentalism
		Alternative Religions
R—Regions		
R-1	Regional Demographics	Regional Population Size (includes projections, state populations, city populations)
		Northeast: New England, Middle Atlantic
		North Central: East North Central, West North Central
		Midwest
		South: South Atlantic, East South Central, West South Central
		West: Pacific Mountain
		Sunbelt
		Frostbelt
		Rustbelt
R-2	Regional Economics	Regional Economics (includes business growth)
		Regional Employment

continued

Figure 34 (Cont.)

File	File Name	Related Subjects
FS—Forecast Summaries		
FS-1	1980s Forecast Summaries	1980s Forecast Summaries
FS-2	1980s and Beyond Forecast Summaries	1980s and Beyond Forecast Summaries
P—Political		
P-1	White House	Reagan Policies/Initiatives
P-2	Congress	Congressional Initiatives Congressional Representation
P-3	Federal Courts	Supreme Court U.S. District Courts
P-4	Electorate	Political Parties Political Participation Political Conservatism/Liberalism Baby Boom: Political Influence
P-5	Single-Interest Groups	Single-Interest Groups
P-6	Government Revenues	Federal Taxes State and Local Taxes Federal Tax Reform
P-7	Government Expenditures	Federal Expenditures/Deficit State and Local Government Expenditures Social Security Federal Human Service Expenditures
P-8	New Federalism	Federal Block Grants Private-Sector Initiatives Federal Social Policy/New Federalism
P-9	Government Regulation	Government Regulation
P-10	Litigation	Litigation
T—Technological		
T-1	Technological Overviews	Technological Overviews Human Impact of Technology High-Tech Futures
T-2	Computers	Computer Use (includes computer literacy) Electronic Information Distribution (includes videotex, banking and shopping at home, databases, networking, electronic meetings) Artificial Intelligence
T-3	Microelectronics	Microelectronics
T-4	Telecommunications	TV (includes cable, direct broadcasts satellites) Fiber Optics Telephone (includes mobile phone, videophones)
T-5	Automation/ Robotics	Robots Automation
T-6	Biotechnology	Biotechnology
T-7	Advanced Materials	Advanced Materials
T-8	Research and Development	Research and Development
T-9	High-Tech Workplace/ Work Force	High-Tech Work-Force Size/Composition High-Tech Jobs (includes types, outlook) High-Tech Workplace Education for High Technology High-Tech Unemployment/Job Loss
PH—Philanthropy		
PH-1	United Way Competitors/Critics	Alternative Federated Funds Court Litigation/Rulings on Charities (includes payroll deduction challenges) Public-Sector Fund Raising (includes government and public schools)
PH-2	United Way-Labor Relationships	UWA Labor Policy
PH-3	Corporate Philanthropy	Corporate Contributions Policy Levels of Corporate Giving Corporate Social Responsibility
PH-4	Donor Choice	Donor Option Plans Donor Decision Making
PH-5	Levels/Patterns of Giving	Levels/Patterns of Giving
PH-6	Nonprofit Supplemental Fund Raising	Nonprofit Profit-Making Businesses Nonprofit Mail Campaigns Conflict: Nonprofit v. For-Profit
PH-7	Voluntarism	Voluntarism
PH-8	Youth and Voluntarism	Youth and Voluntarism
PH-9	Private Foundations	Private Foundations
PH-10	International Philanthropy	International Philanthropy
P-11	Charitable Regulation/ Obstacles	CFC Regulations Tax Policy Affecting Nonprofits Charitable Registration/Reporting Donor Regulation Nonprofit Expense Regulations
PH-12	Overviews on Philanthropy	Overviews on Philanthropy
PH-13	Philanthropic Employment	Philanthropic Employment
PH-14	United Way Issues	United Way Allocations Process United Way Funding Controversies

continued

Figure 34 (Cont.)

File	File Name	Related Subjects
E—Economic		
E-1	U.S. Economic Growth/Decline	Economic Growth/Decline (includes forecasts)
		Economic Cycles
		Gross National Product (GNP)
		Economic/Monetary Policy
		U.S. National Debt
		Capital Investment in U.S.
		Underground Economy
		Economic Development/ Revitalization
E-2	Global Economy	Global Economy
		U.S. Foreign Trade Balance
		Global Population
		Foreign Investment in U.S.
		International Debt
		World Productivity
		Protectionism in U.S.
		Global Regional Conflicts
		International Labor Force
		Global Regions
		Foreign Technology
E-3	Industrial Development/ Business Growth	Industrial Growth and Decline
		Business/Industrial Futures
		Corporate Profits
		New Businesses/Entrepreneurship
		Minority Businesses
		Agricultural Growth/Decline
E-4	Productivity	Productivity
E-5	Economic Structural Change	Economic Structural Change
E-6	Employment/ Labor Force	Labor Force Composition (includes aging labor force, minorities, women)
		Labor Force Size
		Economic Sector Employment
		Affirmative Action/Equal Opportunity Employment
		Foreign Workers in U.S.
		Employment by Firm Size
E-7	Unemployment	Unemployment
		Job Training/Retraining
E-8	Women: Employment/ Income	Women in the Labor Force (includes specific job participation)
		Pay Equity/Pensions for Women
		Working Mothers
		Women's Income/Earnings
		Job Outlook for Women
E-9	Occupations	Occupational Participation
		Occupational Outlook
E-10	Changing Workplace/ Work Force	Changing/Future World of Work (includes changing employee attitudes, baby boom workers, work ethic)
		Alternative Work Schedules (includes flexitime, job sharing, moonlighting, part-time work)
		Worker Participation
		New Management Styles (includes Japanese management, corporate excellence)
		Work at Home
		Alternative Work Arrangements (includes employee leasing, job shopping, temporary employment)
E-11	Organized Labor	Labor Issues/Policies (includes guaranteed employment)
		Union Size/Membership
		Labor Agreements
		Labor Management Relationships
E-12	Personal Income/ Expenditures	U.S. Income Distribution (includes declining middle class)
		U.S. Income Levels (includes per capita, household, and family incomes; dual-income families)
		U.S. Personal Expenditures (includes personal debt)
		Employment Wages
		Employment Benefits
E-13	Inflation/CPI	Inflation/Consumer Price Index
E-14	Poverty	Poverty Rates/Forecasts (includes separate groups living under poverty)
		Public Policy/Response to Poverty
		Hunger
E-15	Public Assistance	Public Assistance
E-16	Housing/Homeless	Home Ownership (includes housing types; mobile homes, single family homes, condominiums)
		Housing Costs/Quality
		Public Housing
		Alternative Housing
		Homelessness
E-17	Transportation	Public Transportation
E-18	Consumerism	Consumerism
E-19	Resources/ Environment	Energy (includes supply, consumption, conservation)
		Water
		U.S. Infrastructure
		Agricultural/Forest Resources
		Environmental Pollution (includes hazardous-waste disposal)
		Work Environment

File	File Name	Related Subjects
PH—Philanthropy		
PH-1	United Way Competitors/Critics	Alternative Federated Funds Court Litigation/Rulings on Charities (includes payroll deduction challenges) Public-Sector Fund Raising (includes government and public schools)
PH-2	United Way-Labor Relationships	UWA Labor Policy
PH-3	Corporate Philanthropy	Corporate Contributions Policy Levels of Corporate Giving Corporate Social Responsibility
PH-4	Donor Choice	Donor Option Plans Donor Decision Making
PH-5	Levels/Patterns of Giving	Levels/Patterns of Giving
PH-6	Nonprofit Supplemental Fund Raising	Nonprofit Profit-Making Businesses Nonprofit Mail Campaigns Conflict: Nonprofit v. For-Profit
PH-7	Voluntarism	Voluntarism
PH-8	Youth and Voluntarism	Youth and Voluntarism
PH-9	Private Foundations	Private Foundations
PH-10	International Philanthropy	International Philanthropy
P-11	Charitable Regulation/ Obstacles	CFC Regulations Tax Policy Affecting Nonprofits Charitable Registration/Reporting Donor Regulation Nonprofit Expense Regulations
PH-12	Overviews on Philanthropy	Overviews on Philanthropy
PH-13	Philanthropic Employment	Philanthropic Employment
PH-14	United Way Issues	United Way Allocations Process United Way Funding Controversies

CATEGORY OF DEVELOPMENT	BEARING ON			
	EXTERNAL			INTERNAL
	International	National	Regional	
1. Demographic	1.1	1.2	1.3	1.4
2. Social	2.1	2.2	2.3	2.4
3. Technological	3.1	3.2	3.3	3.4
4. Economic	4.1	4.2	4.3	4.4
5. Political, Legal and Regulatory	5.1	5.2	5.3	5.4
6. Environmental	6.1	6.2	6.3	6.4

FIGURE 33

ENVIRONMENTAL SCANNING TAXONOMY

Source: Adapted from Boucher and Morrison (in press)

ORGANIZING THE FILES ELECTRONICALLY

Utilizing computers, electronic files facilitate review, referral and updating. Moreover, through using an electronic filing system, it is easier to develop consortium relationships with similar institutions or with institutions in the same geographic area. One electronic system that should be investigated is the one used by United Way, Prudential, and United Airlines (Mist Plus, a software program produced and marketed by Micro-Computer Information Support Tools, New Era Technologies Incorporated, Washington, D.C.). The scanning program at the University of Minnesota uses dBase II. Given the computer support system available in many educational organizations, it is recommended that the specific filing system be developed from existing commercial software (dBase II, Lotus 1-2-3, etc.).

IDENTIFYING LITERATURE SOURCES AND DATA BASES

Information sources include newspapers, magazines, journals, TV and radio programs, conferences, and so forth. The important selection criterion is diversity. For example, it would be important to include major newspapers representing different parts of the country (e.g., *The New York Times, The Wall Street Journal, The Miami Herald, The Chicago Tribune, The Los Angeles Times, The Christian Science Monitor,* and *USA Today). The Chronicle of Higher Education* and *Education Week* focus on education. There are a number of magazines/journals which provide good scanning information in a variety of areas. For example, in the social/demographic area, there are *American Demographics and Public Opinion.* In the technological sector, there are *High Technology, Datamation, BYTE, Computer World, Discover,* and *Information World.* In the economic sector, there are *Business Week, The Economist, Fortune, Forbes. Money, Inc.,* and *The Monthly Labor Review.* In the political sector, there are *New Republic, The National Review, The National Journal, and Mother Jones.* Magazines and journals that spread across these sectors include *Vital Speeches of the Day, Across the Board, Naisbit Trend Letter, Kiplinger Washington Letter, Time, Newsweek, U.S. News* and *World Report,* and *The Futurist.* Morrison, Renfro, and Boucher (1984) identify a number of other information resources, including those used by the ACLI Trend Analysis Program and the ERIC Clearinghouse on Higher Education.

In addition to those resources commercially available, a number of government agencies publish trend data, many times at little or no cost. For example, GAO Reports may be obtained from the U.S. General Accounting Office, Document Handling and Information Services Facility, P. O. Box 6015, Gaithersburg, MD 20877, phone 202 275-6241. NCES reports are available from NCES, Washington, D.C. Periodic Rand reports may be obtained from The Rand Corporation, Publications Department, 1700 Main Street, P.O. Box 2138, Santa Monica, CA 90406-2138.

ASSIGNING SCANNERS INFORMATION RESOURCES

Assigning scanners specific materials for regular review and analysis provides a measure of confidence that most "blips" on the radar screen will be spotted. A suggested procedure for assigning information resources is first to ascertain what materials, conferences, and so forth, are regularly read or attended by scanners. The list of materials regularly read by scanners should be compared to the list of important information resources identified in the above activity. If at all possible, scanners should be assigned material that they already regularly review. It is likely that there will be material that is not regularly read; in such cases, it is recommended that scanners be asked to volunteer to read those resources. Moreover, the scanning committee chair should institute a procedure to "spot check" how well the information resources are being reviewed. If there are many scanners, it is advisable to build in redundancy by having two or more scanners review the same information resource.

TRAINING SCANNERS

Scanners need orientation and training in scanning and in reporting information via abstracts. Scanners should keep in mind that they are scanning to anticipate social, economic, technological and legislative/regulatory changes in order to facilitate planning and policy formulation; therefore they should seek signals that indicate departures from expected futures. Specifically, when scanning their assigned materials, they should ask themselves if the items:

1. represent events, trends, developments, or ideas never before encountered
2. contradict previous assumptions or beliefs about what seems to be happening
3. represent new twists to old arguments
4. can be linked to other abstracts previously written or seen
5. discuss new patents, inventions, and/or research results
6. have implications for the long-range program or management of the institution
7. contain polls or forecasts

TRAINING ABSTRACTORS

It would be ideal if scanners would also serve as abstractors. However, one or two student assistants may need to be employed for this task. Irrespective of who does the abstracting, all scanners and institutional research staff personnel should be trained to write abstracts.

The lead sentence of an abstract should be a response to this question: "If I had only a few minutes to describe this article to a friend, what would I say?" What is the most important idea or event that indicates change? The response to this question should be followed by a one paragraph explanation. Whenever possible, statistical data should be included. The summary should be limited to no more than one-half page of single-spaced, typewritten copy.

Each abstract should have an implications section responding to the question, "How will the information in this article affect this institution's programs or management?" The author should include a list of those emerging issues suggested by the article, a description of future events occurring as a result of the trend identified by the article, and/or an identification of issue stakeholders if they are not listed in the article.

Speculation about implications is a part of the scanning and abstracting process. Here the abstractor tries to determine an item's potential for affecting other facets of the social environment and/or the institution. There are no "right" answers. Note, however, that some articles may offer no implications that are immediately apparent. The scanning committee, with the benefit of related abstracts from other scanners, may be able to detect implications that a single monitor cannot.

CONDUCTING A SCANNING COMMITTEE MEETING

A scanning committee meeting should be held every two to three months to handle the approximately 70-100 abstracts that would probably come in during that period. Several approaches could be used to prepare for a scanning committee meeting. For example, at the Georgia Center for Continuing Education, the chair segregates abstracts according to subject area (i.e., all those concerning office automation go into one pile, employee compensation go into another, and those difficult to assign, into a miscellaneous pile). Each member of the committee is assigned a particular packet of abstracts to review in detail. All members read the entire selection of abstracts received, but are requested to come to the meeting with a list of trends and potential issues derived from those abstracts in their packet that are new. They are expected to examine how these trends and issues relate to or conflict with other trend areas identified previously (Morrison, Simpson and McGinty, 1987).

An alternative approach is for each member to review all scanning abstracts and come to the meeting prepared to sort them into three categories: "winners," "losers," and "middle-of-the-roaders." Irrespective of the approach used, the meeting itself may last from two to three hours, including a round robin, with each person reporting his/her subject area, and a free-for-all discussion. The end result should be a list and brief description of 15 or so trends, possible events, and emerging issues that appear important to consider in the annual ED QUEST exercise.

USING SCANNING NEWSLETTERS

A scanning newsletter can serve to bring important new trends and events to the attention of all members of the institution and, at the same time, provide recognition for the efforts of volunteer scanners. Certainly the trends and events identified between ED QUEST sessions in scanning committee meetings should be included in the newsletter. This newsletter could be a "stand alone" or could be included as an insert in one of the regularly published institutional newsletters. The newsletter, whether stand alone or insert, should have a logo, be "jazzy," printed on colored paper, and have special boxes labeled, "Wild Speculations." The important point is to avoid anointing speculations, but to recognize that the purpose of the newsletter is to print items that have implications for the institution.

USING ISSUE BRIEFS

After reviewing abstracts at the scanning committee meeting, the committee should be able to identify those 15-25 or so trends, events, and emerging issues that are important to monitor. An in-depth analysis of a particular item may be needed. The CEO may wish to commission an issue brief on the item, to be written by a member of the ED QUEST team, an administrative staffer, a staff member in the research and evaluation office, or a faculty member. A recommended format for an issue brief is:

- What is the issue?
- What do we know about it?
- What are the implications?
- What should the organization do?

CONCLUSION

ED QUEST is a systematic, intensive, and relatively inexpensive way to focus quickly on strategic areas for which more detailed planning and analysis would be beneficial. Through participating in the process, senior leaders develop a shared understanding of high priority issues and a view of the dynamics of the changing environment of the institution. Participating in the ED QUEST process facilitates team building, focuses attention of decision makers upon the longer-term future, and assures that the strategic options developed from the process have the authority from top management.

To provide a continuous, objective, complete, and detailed analysis of the external environment, the institution should develop a systematic environmental scanning and forecasting system. If important information about the external environment is not available to the ED QUEST team, or if this information is not given an opportunity to be articulated, it will not be included in ED QUEST deliberations. Consequently, the results of the ED QUEST process will suffer. However, with an ongoing environmental scanning system, the quality of the information that goes into the ED QUEST Futures Prospects Notebook will be greatly improved, thereby enhancing the quality of the analysis of the ED QUEST team. As importantly, since members of the ED QUEST team should be involved as scanners and as members of the scanning committee on a continuous basis, they will increase their orientation to the future and will become more proficient participants in the yearly ED QUEST planning exercise. Incorporating ED QUEST in a systematic environmental scanning system process should enable decision makers to anticipate what is happening in the state, region, nation, and world, and, correspondingly, to plan more effectively.

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Appendix A: Future Prospects Notebook

FUTURE PROSPECTS NOTEBOOK

Some Possible Trends Which

May Impact Technical Education

The purpose of this notebook is to stimulate your thinking about the future. The information included in the notebook will assist you in identifying possible trends and events that may impact the future direction of Utopia County Community College.

The articles, charts, graphs and lists are only meant to suggest possible trends and events. Each ED QUEST team member is encouraged to identify other trends and events which represent important changes in the college's environment.

SOCIAL

A Guru for Women over 40

Frances Lear launches a new magazine for a neglected generation

Cheek resting gently on folded arms, the attractive, dark-eyed woman stares from the page with that familiar cover-girl gaze. But wait. Aren't those wrinkles on her forehead? And creases in her cheek? "At last!" declares the cover line. "A magazine for the woman who wasn't born yesterday." At last, indeed. After a tempestuous 2½-year start-up that had Manhattan media circles sniffing with disdain, readers this week will see the first issue of *Lear's*. The brainchild and namesake of Frances Lear, former wife of Hollywood Producer Norman Lear, the new magazine is dedicated to the proposition that "women over 40—yesterday's 'mad housewives'—are today's sanest, most creative, most interesting Americans."

In 1985, as her 30-year marriage was falling apart (she has two grown children), Lear decided to move to New York City to pursue an idea for a magazine. Bolstered by her $112 million divorce settlement, she has committed $25 million to the project. "I plan to make money," she says firmly, sitting in her cluttered Park Avenue office. "If it doesn't make money on scheduie, we won't continue it." Behind that calculus, however, lies a crusade. After years of watching women get pushed aside at an age when many men reach their prime, Lear, 64, wants to change the way women over 40 perceive themselves and are perceived by others.

"Personally, professionally and creatively, these may well be the best three years of my life," she enthuses. "I am experiencing a rebirth." Such themes—independence, job fulfillment and spiritual renewal—are central elements of *Lear's*. Divided into five sections, including "Pleasures" and "Self Center," the premiere issue features an interview with Philippine President Corazon Aquino and original fiction by Doris Lessing. There are also inspirational profiles of half a dozen exemplars of the *Lear's* woman, a combination of elegance, success and self-awareness. Most revolutionary are the fashion pages, which feature models ranging from 33 to 60. "We are breaking the perception that age is dowdy," says Fashion and Beauty Director China Machado, 58, once of *Harper's Bazaar*. The only problem she notes is with the "male photogs . . . The poor guys are taking some time to adjust."

ARMEN KACHATURIAN

Reborn as an editor: Lear in her New York City office; the first issue

So did the editorial and advertising communities. When Lear set out, media types fed on her large fees for articles and dined out on her atrocities: editorial meetings attended by her masseuse, hairdresser and manicurist; mercurial changes of mind; an interview with a job applicant at which Lear announced that if she had such a résumé she would consider committing suicide. But it went both ways. One early employee remembers an army of consultants, "men with boiled-out faces who said 'gals' and complained about 'old women.' So you see what the attitude was and how she had to fight." Isolde Motley, who was wooed from an editorship at *Arts & Antiques* and then fired before she even started working, nonetheless remains sympathetic. "I never met an entrepreneurial publisher who wasn't an egocentric maniac," Motley says. "She has a lot of guts and a great sense of mission."

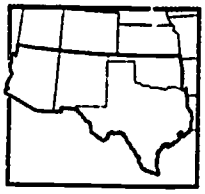
Lear is a manic-depressive and reports she is on lithium to control the condition. But she does not blame her disorder for the magazine's stormy evolution. "In the beginning, there was a lack of experience on my part," she concedes. "It was difficult for me to make important decisions." According to several on the 35-member staff, she settled down as the magazine neared takeoff. Initially a bimonthly with a 200,000 circulation, it is supposed to go monthly by 1990 and ultimately grow to 1 million subscribers. Can it? Executive Vice President Marc Liu reports that direct-mail solicitations have brought a high 5% return rate. The first issue contains 77 pages of paid advertising, including such blue chips as Cadillac, BMW and Volvo. And, of course, there are the current census projections: by 1990, more adult women will be over 40 than under. Says George Hunt, ad manager for Chrysler: "They've got it all together for the over-35, upscale woman."

Lear believes she has barely begun, with the magazine and with what she considers the start of the second half of her life. She is already considering expanding into retailing. "These women require different services: makeup, clothing," she says. "I would like to be the guru for women over 40." So far, she has the field to herself. *—By Laurence Zuckerman. Reported by Kathleen Brady and Martha Smilgis/New York*

DEMOGRAPHIC FORECASTS

by Thomas Exter

THE SOUTHWEST



The Southwest region—Arizona, New Mexico, Oklahoma, and Texas—grew faster than any other region between 1970 and 1984. But between now and 2010 the region should slip into second place behind the Far West. The region's population should increase by 36 percent from 25 million in 1988 to 34 million in 2010.

The number of people aged 65 or older in the Southwest should increase by fully 62 percent between 1988 and 2010, as the population ages and as the region continues to attract older migrants. In contrast, the number of people under age 20 should increase by only 26 percent, a slower-than-average rate. The working-age population, aged 20 to 64, should increase by 36 percent, equal to the growth rate of the total population in the region.

Contrary to the national trend of a declining share of workers in manufacturing, the Southwest should see a stable 12 percent of its workforce in that sector through 2010. The region gained over half a million manufacturing jobs between 1970 and 1988. By 2010, the region should gain another half million factory jobs. Services employment is expected to maintain its 22 percent share while growing from 2.9 million to 3.9 million jobs. For each new factory job, two jobs in the services sector will emerge.

These trends will help the two major energy states in the region (Texas and Oklahoma) through their transition away from dependency on oil-related jobs.

The number of households in the region should increase by 48 percent between 1988 and 2010, slightly faster than the population because household size is falling. With 9 million households today, the Southwest will have 13.6 million households in 2010.

Average household income is expected to grow by 19 percent from $32,200 to $38,200 between 1988 and 2010, after accounting for inflation. As the second fastest growing region, the Southwest can count on favorable demographic trends to continue its economic expansion.

Behind the Numbers These projections are based on Woods & Poole Economics' forecasting model which incorporates 280 economic and demographic variables for all counties of the United States. The model first projects employment change and then translates employment change into population change. The population projections for counties, states, and regions are consistent with a rate of national population growth that falls between the Census Bureau's middle and highest series population projections. For more information, contact Martin K Holdrich, Woods & Poole Economics, 1794 Columbia Road, NW, Washington, DC 20009; telephone (202) 332-7111.

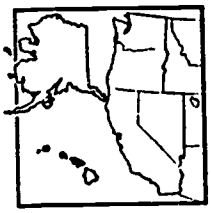
THE SOUTHWEST REGION: 1988–2010

(in thousands)	*1988*	*1990*	*1995*	*2000*	*2010*
Total population	25,388	26,080	28,101	30,334	34,469
Age 0–19	7,862	8,012	8,602	9,247	9,929
Age 20–64	14,755	15,145	16,207	17,499	20,057
Age 65 and older	2,771	2,923	3,292	3,588	4,482
Total employment	12,857	13,372	14,612	15,904	17,731
Manufacturing	1,521	1,584	1,738	1,893	2,076
Services	2,878	2,991	3,263	3,522	3,905
All other	8,458	8,797	9,611	10,489	11,750
Households	9,138	9,415	10,291	11,231	13,562
Household size	2.70	2.69	2.65	2.61	2.44
Average income *(1982 dollars)*	$32,198	$32,920	$34,444	$36,422	$38,176

DEMOGRAPHIC FORECASTS

by Thomas Exter

THE FAR WEST



The future promises more growth for the Far West than for any other region. Between 1988 and 2010, the region should gain 14 million residents, an increase of 38 percent. The six states that make up the Far West—Alaska, California, Hawaii, Nevada, Oregon, and Washington—should account for 26 percent of the nation's population growth during the next 22 years.

The Far West should gain one new manufacturing job for every three gained nationwide. Manufacturing employment should grow by 29 percent in the Far West, more than double the expected 13 percent national growth in manufacturing jobs. Most of the Far West's 837,000 new manufacturing jobs will be in small shops and factories, the kind that have absorbed the bulk of recent manufacturing job growth. The Far West stands out as the region of opportunity for a new generation of entrepreneurs.

Service jobs, the fastest growing employment sector, should increase by 2.2 million in the Far West, a 39 percent increase between 1988 and 2010. The region will gain one new service sector job for every five gained nationwide. Only the Mideast region (Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania), among the eight regions as defined by the Commerce Department's Bureau of Economic Analysis, will gain more new service-sector workers.

Households in the Far West should grow even faster than population as average household size drops from 2.6 people to 2.39 people. By 2010, the Far West should have gained 6.8 million new households, an increase of 48 percent over 22 years.

Among three broad age groups in the Far West, the fastest growing should be those aged 65 and older. That group should increase by 57 percent in the next 22 years, compared with a 37 percent gain among 20-to-64-year-olds. This will lower the ratio of working-age adults to elderly from 5.5 to 4.8. The number of people under age 20 should increase by one-third, from 11 million to 14 million.

Behind the Numbers These projections are based on Woods & Poole Economics' forecasting model which incorporates 280 economic and demographic variables for all counties of the United States. The model first projects employment change and then translates employment change into population change. The population projections for counties, states, and regions are consistent with a rate of national population growth that falls between the Census Bureau's middle and highest series population projections. For more information, contact Martin K. Holdrich, Woods & Poole Economics, 1794 Columbia Road, NW, Washington, DC 20009, telephone (202) 332-7111.

THE FAR WEST REGION: 1988-2010*

In thousands	1988	1990	1995	2000	2010
Total population	37,821	39,479	43,289	46,609	52,192
Age 0–19	10,723	11,124	12,239	13,208	14,270
Age 20-64	22,906	23,888	25,990	27,941	31,338
Age 65 and older	4,192	4,467	5,060	5,460	6,584
Total employment	20,469	21,337	23,364	25,271	27,501
Manufacturing	2,887	3,001	3,269	3,529	3,721
Services	5,639	5,947	6,669	7,243	7,855
All other	11,943	12,389	13,426	14,499	15,925
Households	14,133	14,773	16,369	17,754	20,976
Household size	2.60	2.60	2.56	2.53	2.39
Average income (1982 dollars)	$36,587	$36,697	$37,309	$38,771	$39,009

* *The Far West includes Alaska, California, Hawaii, Nevada, Oregon, and Washington*

DEMOGRAPHIC FORECASTS

by Thomas Exter

THE MIDEAST REGION

The Mideast region—defined as New York, New Jersey, Pennsylvania, Delaware, Maryland, and the District of Columbia—is struggling to regain its momentum. The region showed the smallest percentage gain in population among the eight Bureau of Economic Analysis regions between 1970 and 1984. Between 1988 and 2010, the region should gain 4.6 million people, barely 10.5 percent above its 1988 population of 44 million. Only the Great Lakes region is projected to grow more slowly.

One Mideast worker in five had a manufacturing job in 1970. This year only 16 percent of the region's jobs are in manufacturing. By 2010 manufacturing employment should fall to 12 percent of the region's total. Overall, such jobs are expected to decline 6 percent, from 3.6 million in 1988 to 3.4 million in 2010. The total number of jobs in the region, however, should grow by 20 percent from 23 million to 28 million.

The driving force for employment growth in the Mideast is the services sector. In fact, the Mideast should lead all the regions in service-sector job growth, with an increase of 46 percent by 2010. In the region, two out of every three new jobs gained between 1988 and 2010 will be in the service sector.

Between now and 2010 the number of people aged 65 and older should grow by 16 percent, a gain of nearly 1 million. The population under age 20 and aged 20 to 64 should increase by 10 percent each. With an expected 20 percent growth in employment, the region may have to import workers, or lure the retired back into the labor force.

The number of households in the Mideast region should grow faster than the population as average household size drops from 2.65 people per household to 2.41. A gain of 3 million households means the region's housholds will increase by 19 percent between 1988 and 2010.

The Mideast region's population and employment is diverse. Despite a slow-growing population, business opportunities will be plentiful there as the region adjusts to new economic realities.

Behind the Numbers These projections are based on Woods & Poole Economics' forecasting model which incorporates 280 economic and demographic variables for all counties of the United States. The model first projects employment change and then translates employment change into population change. The population projections for counties, states, and regions are consistent with a rate of national population growth that falls between the Census Bureau's middle and highest series population projections. For more information, contact Martin K. Hohlrich, Woods & Poole Economics, 1794 Columbia Road, NW, Washington, DC 20009; telephone (202) 332-7111

THE MIDEAST REGION: 1988–2010

(in thousands)	*1988*	*1990*	*1995*	*2000*	*2010*
Total population	43,539	44,109	45,360	46,442	48,122
Age 0–19	12,099	12,173	12,693	13,105	13,261
Age 20–64	25,714	26,059	26,552	27,131	28,218
Age 65 and older	5,725	5,877	6,115	6,207	6,643
Total employment	23,246	23,838	25,193	26,525	27,799
Manufacturing	3,618	3,614	3,598	3,599	3,415
Services	6,719	7,063	7,906	8,663	9,840
All other	12,909	13,161	13,689	14,263	14,544
Households	15,950	16,184	16,819	17,340	18,908
Household size	2.65	2.64	2.60	2.57	2.41
Average income *(1982 dollars)*	$38,017	$38,552	$40,075	$42,388	$44,086

FAMILY STYLES

About half of all families have children under 18 at home.
For 75 percent of these families, the householder is between the ages of 25 and 44.

(family households in 1987 by type and age of head of household; in thousands)

		married couples				female-headed families				male-headed families			
	total	all	children under 6	children under 18	no children	all	children under 6	children under 18	no children	all	children under 6	children under 18	no children
AGE OF HEAD													
All ages	64,491	51,537	11,966	24,645	26,892	10,445	2,414	6,297	4,147	2,510	294	955	1,554
< 25	2,939	1,858	914	940	917	843	696	735	108	238	81	85	153
25–34	15,112	11,878	7,004	8,790	3,088	2,717	1,345	2,561	155	517	122	231	287
35–44	15,475	12,156	3,556	9,960	2,196	2,675	344	2,189	486	644	68	425	219
45–54	10,998	8,947	413	3,970	4,977	1,614	26	683	931	437	19	171	266
55–64	9,738	8,240	64	847	7,393	1,196	3	115	1,082	301	2	34	267
65–74	6,937	5,935	9	125	5,811	772	–	11	761	230	–	6	224
75+	3,292	2,522	5	13	2,510	628	–	3	625	142	3	3	138
PERCENT DISTRIBUTION													
All ages	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
< 25	4.6	3.6	7.6	3.8	3.4	8.1	28.9	11.7	2.6	9.5	27.5	8.9	9.8
25–34	23.4	23.0	58.5	35.7	11.5	26.0	55.7	40.7	3.7	20.6	41.4	24.1	18.4
35–44	24.0	23.6	29.7	40.4	8.2	25.6	14.3	34.8	11.7	25.7	23.3	44.5	14.1
45–54	17.1	17.4	3.4	16.1	18.5	15.5	1.1	10.8	22.4	17.4	6.4	17.9	17.1
55–64	15.1	16.0	0.5	3.4	27.5	11.5	0.1	1.8	26.1	12.0	0.5	3.6	17.2
65–74	10.8	11.5	0.1	0.5	21.6	7.4	–	0.2	18.3	9.2	–	0.6	14.4
75+	5.1	4.9	0.0	0.1	9.3	6.0	–	0.1	15.1	5.6	0.9	0.4	8.9

Note: Columns may not sum to 100 percent due to rounding

Source: 1987 Current Population Survey

1988 American Demographics

BLACK HOUSEHOLDS

EGALITARIAN BONUS

If black household composition and incomes matched the household composition and incomes of all American households in 1995, over $111 billion would be added to the national economy.

(black households by type, average household income by type of household, and aggregate income if black household types and income distribution remain in their current pattern, and if both household type and incomes match the national distributions, 1995)

	total	FAMILY			NONFAMILY	
		married couple	male householder	female householder	male householder	female householder
1995 BLACK HOUSEHOLDS *(in thousands)*						
Projection based on current black household type distribution*	11,575	4,313	417	3,624	1,504	1,717
Projection based on current national household type distribution**	11,071	6,541	293	1,347	1,309	1,581
1986 AVERAGE HOUSEHOLD INCOME						
Black household income	—	$30,624	$24,433	$13,666	$15,731	$10,231
All races household income	—	$38,752	$31,040	$18,692	$24,181	$15,651
1995 AGGREGATE INCOME OF BLACK HOUSEHOLDS *(in millions of 1986 dollars)*						
Projection based on current black household type and income distribution*	$233,019	$132,081	$10,188	$49,525	$23,659	$17,566
Projection based on current national household type and income distribution**	$344,144	$253,476	$9,094	$25,178	$31,652	$24,744
Aggregate change	$111,125	$121,395	($1,094)	($24,347)	$7,993	$7,178

*1987 black household headship rates applied to Census Bureau's projection of black population.
**1987 national household headship rates applied to Census Bureau's projection of black population.
Source: Authors' calculations based on "Projections of the Population of the United States by Age, Race, and Sex: 1983 to 2080," U.S. Bureau of the Census, Series P-25, No. 952, 1984; 1987 Current Population Survey, U.S. Bureau of the Census.

THE ROAD TO THE TOP

Most CEOs of America's largest corporations come from affluent families.

CLASS CONSCIOUSNESS

Chief executive officers are four times more likely to have grown up in upper or upper-middle class households than the typical American of the same age.

(percent of Americans and of 243 large-company CEOs who grew up in households in each social class)	background of all Americans	background of today's CEOs
Upper-upper class	<1%	4%
Lower-upper class	1	4
Upper-middle class	13	56
Lower-middle class	32	18
Upper-lower class	38	16
Lower-lower class	16	2

Source: Today's CEOs from authors' estimates, fall 1988. All Americans as reported in Social Class in America *by W. Lloyd Warner, Marcha Meeker, and Kenneth Eells, Chicago Science Research Associates, 1949.*

A CLASS ACT

The upper-middle class provides America with most of its business leaders.

(class background of 243 large-company CEOs by industry, in percent)	social class					
	upper-upper	lower-upper	upper-middle	lower-middle	upper-lower	lower-lower
Manufacturing	2%	2%	58%	23%	13%	2%
Banking	7	4	62	11	13	3
Utilities	2	—	38	29	29	2
Retailing	12	6	53	18	12	—
Wholesaling	—	—	40	40	20	—
Service industries	—	7	71	12	10	—
Food products	9	9	72	10	—	—
Medical products	—	—	50	25	25	—
Transportation	—	—	67	22	11	—
All CEOs	4	4	56	18	16	2

Source: Authors' estimates, fall 1988.

An AARP phone bank in Des Moines seeks new political activists: "We're powerful!"

Potential recruits: AARP

Nation

Gray Power!

AARP emerges as the nation's most powerful special-interest lobby

An older woman strides confidently through the local headquarters of the American Association for Retired Persons and looks straight at the television camera. "AARP's 27 million members believe that together, we can make a difference," she says. "We'll make sure you know what the candidates say—and what they don't say—about issues." Her tone is sweetly reasonable. But just to make sure those video-dazed viewers in Iowa and New Hampshire sit up and listen, she shakes her spectacles at them and adds, "If you think you've seen it all, you ain't seen nothin' yet."

Blunt and a tad belligerent, America's senior citizens are suddenly flexing their biceps in presidential politics. Flush from a Capitol Hill victory that protected Social Security increases from the budget ax, the Gray Lobby has turned its muscle to states where early contests will winnow the field of presidential candidates. Across the country, campaign operatives report that no other group has emerged in this election cycle with such unexpected force. "Any candidate who wants to win in 1988 is not going to mess with the old folks," says Thomas Kiley, an adviser to Michael Dukakis.

Until this election, AARP had not focused on presidential politics. But now the organization is launching an $8 million get-out-the-vote effort, running a $400,000 television ad campaign, sponsoring candidate debates in Iowa that are beamed by satellite to other states, holding workshops for activists and organizing mass mailings that will hit a million households by Election Day. In doing so, it has made the sanctity of Social Security and the expensive dream of Government-sponsored long-term health care top issues on the 1988 agenda.

Candidates, knowing that senior citizens flock to the polls with a vengeance, have responded with a gusher of saccharine rhetoric. "If we can get a man to the moon, we ought to be able to get dentures to people who built our society," went a sample line from Democrat Paul Simon at AARP's Iowa debate. The 1,000 gray-haired activists in attendance applauded noisily. On the way out, Wally Wakefield, a retired salesman from West Des Moines, couldn't help gloating. "They came because of us," he said. "We're powerful."

Founded in 1958 mainly to provide insurance for retirees, AARP is now the nation's largest special-interest group. "Join the Association that's bigger than most countries," boasted a recent magazine ad. This elderly behemoth, nearly twice the size of the AFL-CIO, continues to grow by about 8,000 new dues payers a day. One out of nine Americans belongs, paying a $5 annual fee. AARP offers drug and travel discounts, runs the nation's largest group-health-insurance program and a credit union. In addition, its savvy media operation includes *Modern Maturity*, the nation's third highest circulation magazine; a wire service that provides newspapers with "unbiased reporting" on elderly issues; and a weekly television series.

Emerging Issues

CONGRESSIONAL INSTITUTE FOR THE FUTURE

EARLY SIGNALS OF CHANGE

Issue: ELDERLY
Date: SEPTEMBER 1987

SERVICE CREDIT BANKS: ADDITIONAL SERVICES FOR TOMORROW'S ELDERLY

By 2000, 16 million elderly will need some assistance because of a chronic condition.

As an increasingly large proportion of America's population reaches ages beyond 60, 70, and 80, public policymakers will face an enormous health care challenge. Seniors who are plagued with chronic, as opposed to catastrophic, illnesses will need long-term care. And public policymakers will be searching for ways to provide inexpensive, humane care for those seniors.

Many elderly people with chronic medical problems need only limited assistance with essential, daily activities — such as meal preparation, household chores, personal hygiene, and transportation — to remain largely self-sufficient. Often this in-home care enables elderly individuals to remain independent.

Lack of in-home care often forces elderly people who need only limited assistance to enter a full-care nursing home. For many elderly, institutionalization causes severe personal suffering while heaping additional costs onto an already overburdened health care system. Pessimistic forecasts warn that the soaring costs of securing daily care could wipe out the personal savings of millions of elderly Americans, while the costs of publicly providing services could severely strain the government's health care system.

The nursing home population is expected to reach 2.2 million by 2000.

A number of states have responded to the challenge of providing services to the elderly through an innovative program, called "service credit," which combines elements of the barter system and volunteerism.

Service credit programs are built upon a unique exchange: individuals perform service in exchange for service credits. These individuals (or people whom the original volunteers designate) may redeem the credits for similar services at a later date. Service credit programs offer incentives for volunteerism with a method similar to that used by blood banks.

Proponents of service credit systems are optimistic about these programs because they tap a valuable resource in the U.S. — volunteers. Roughly half of the U.S. population was engaged in some type of volunteer work in 1985, doing the equivalent of $110 billion worth of work.

A number of states have responded to the challenge of providing services to the elderly through "service credit," which combines elements of the barter system and volunteerism.

Many policy makers believe a system of credit for service would draw an even greater portion of the population into volunteer work. And by harnessing this resource of volunteers many elderly would be able to remain in their own homes, thus reducing demands on the nation's health care system.

Key demographic, technological, and economic trends suggests that service credit programs could become essential tools to provide services to the nation's elderly.

TRENDS

Americans are living longer and the number of seniors is increasing. Since the beginning of this century, life expectancy has increased 27 years and is now 78.3 years for women and 71.1 years for men. Better nutrition and advances in medical technologies are expected to push life expectancy rates even higher.

The number of elderly who need assistance with daily activities is increasing. In 1980, chronic health conditions limited the daily activities of 11 million elderly. By 2000, 16 million elderly will need some assistance because of a chronic condition, and by 2020, the number could jump to 23 million.

Costs of care are escalating. By 1990, costs of routine health care procedures and expensive, new lifesaving equipment are expected to total 12 percent of the GNP. And care for veterans is expected to add to total costs. Services to 9 million veterans could push costs to $15 billion, up from $8.3 billion in 1985.

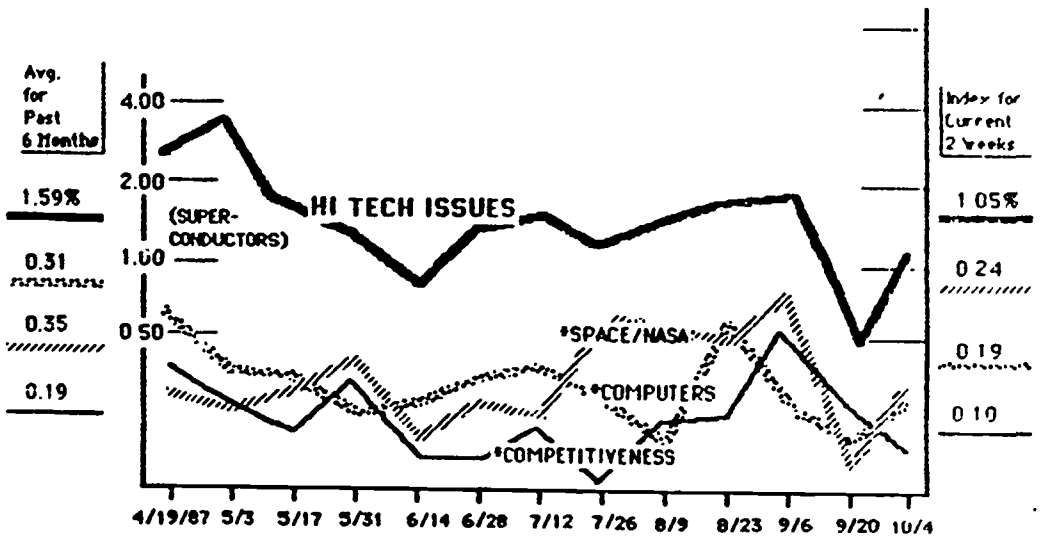
Many elderly people with chronic medical problems need only limited assistance with essential, daily activities to remain largely self-sufficient

Demand for nursing home care is increasing. The nursing home population is expected to reach 2.2 million by 2000. And to meet the estimated demand, nearly one nursing home would have to be built each day for the next 20 years.

Cost containment efforts are forcing hospitals to discharge people who may still need

TECHNOLOGICAL

Issues by Sector: HI TECH



ACTIVE ISSUES

Space issues are coming back after the Challenger disaster with positive vibes, beginning with the release of the Sally RIDE report in August. Current coverage focuses on the superiority of the foreign space programs, especially the Soviet and European Consortium programs, vis-a-vis NASA'S current initiatives. Overall Hi Tech issues are still down. Computer coverage, despite important new product lines by most of the major producers, is falling. The copyright lawsuit between IBM and FUJITSU was significant for the precedent set, and repercussions will be felt for many years, but the amount of coverage was moderate. The TOSHIBA-scam, involving sale of sensitive technology to the Soviets, peaked in July when the story broke but could presage a later rise in East-West trade issues.

MAJOR TRENDS

Superconductivity and the supercollider are the hot new issues in the hi tech sector. Both experience periods of intermittent peaks and valleys as new developments garner headlines then rapidly become old. Supercollider coverage has focused on the competition among states to grab the lucrative contract to build the world's most powerful atom smasher. When completed, the project will provide powerful incentive for competitive gains in global hi tech research. The numbers show that media coverage of hi tech issues rise and fall together - that is, there seems to be periods where hi tech issues feed on each other to grab media interest and then jointly fall as new events pall. This is a very unusual media pattern suggesting that the Hi Tech beat is not organized as one unit.

ON THE HORIZON

The Soviets are forcing our hand in the space industry much as they did in the Sputnik era. The Challenger tragedy of '86 left the US program in the dust as the Soviets were building an efficient and gutsy space exploration agenda. The RIDE report outlined future requirements for the US program to regain an edge. Her thesis was basic: The US must define goals and commit more money to get back in the driver's seat. The London Economist 10/3 says, "The benefits of space cannot be measured in terms of today's economy, because space promises eventually to create a new one." Mars, the solar system's only other inhabitable planet, is the next big target. In view of the very high cost, joint US-Soviet cooperation may be in order if a stable arms relationship can be achieved.

COVER STORIES

Fast and Smart

Designers race to build the supercomputers of the future

The computer at the University of Illinois is simulating something that no one saw: the evolution of the universe in the aftermath of the Big Bang. Re-creating conditions that may have prevailed billions of years ago, the computer reveals on a remote screen how massive clouds of subatomic particles, tugged by their own gravity, might have coalesced into filaments and flattened disks. The vivid reds, greens and blues of the shapes are not merely decorative but represent the various densities of the first large structures as they emerged from primordial chaos in the near vacuum of space.

At the Massachusetts Institute of Technology, another computer is struggling to learn what any three-year-old child already knows: the difference between a cup and a saucer. What the youngster sees at a glance, the computer must be taught, painstakingly, one step at a time. First it must comprehend the concept of an object, a physical thing distinguished from the space around it by edges and surfaces. Then it must grasp the essential attributes of cupness: the handle, the leakproof central cavity, the stable base. Finally, it must deal with the exceptions, like the foam-plastic cup whose heat-insulating properties are so good that it does not need a handle.

These experiments illustrate the paradox at the heart of today's computer science. The most powerful computing machines—giant number crunchers possessed of speed and storage capacities beyond human comprehension—are essentially dumb brutes with no more intellectual depth than a light bulb. At the other extreme are computers that have begun to exhibit the first glimmers of human-like reasoning, but only within the confines of narrowly defined tasks.

For 40 years scientists have labored to make headway at these two frontiers of computer research. One group, working with the lightning-fast machines known as supercomputers, is always pushing for more raw power, more blazing speed. The other group, writing programs that show the rudiments of artificial intelligence, explores the mysteries of human thought. Each of these two grand scientific enterprises, backed by billions of research dollars and blessed with some of the century's best minds, has proceeded as if the other did not exist.

TIME
3-28-88

But there are signs that the two broad avenues of computer research may be starting to converge, that today's most advanced machines may someday evolve into electronic brains that are not just incredibly fast but smart as well. The quest has been taken up by almost every major nation. And no wonder: the potential rewards—in industrial productivity, scientific research and national security—are staggering. Grown men glow with childlike excitement when they describe robots that will see their way around a factory, typewriters that will take dictation, defense systems that will make the world safe from nuclear arms.

The two fields of computer research are at different stages in their life cycles. Artificial intelligence is just getting started: the first commercial projects appeared less than five years ago, and are now finding widespread application (see following ...). The supercomputer manufacturers, on the other hand, having supplied high-speed processors to government labs and intelligence agencies for a quarter-century, are now experiencing a growth so explosive that it has taken even the most optimistic industry leaders by surprise. Sales of the machines, which cost $5 million to $25 million each, have increased 25% a year or more over the past decade, and in 1988 will pass the $1 billion-a-year mark for the first time.

Some 300 supercomputers now work at tasks as diverse as ferreting out oil deposits, analyzing muscle structures and creating special effects for Hollywood films. With the spread of supercomputer networks, high-speed computing power is available to anyone with a personal computer and a telephone hookup. "The world will never be the same," says Doyle Knight, director of the John von Neumann National Computer Center in Princeton, N.J. "Soon every industry, every science, every walk of life will in some way be touched by supercomputing."

Speed and power are what distinguish supercomputers from their humbler cousins. In the early days of the industry, speed was measured in thousands of FLOPS, an acronym for floating-point operations per second, in which the decimal point is moved in very large and small numbers. Today's largest machines are measured in gigaFLOPS, or billions of operations a second. Tomorrow's will be measured in teraFLOPS, trillions of operations a second. A single supercomputer going at teraFLOPS speed will have the power of 10 million personal computers working at full throttle.

The most powerful supercomputers are surprisingly small and sleek, some not much bigger than a California hot tub. But looks can be deceiving. Supercomputers often squeeze out the last bit of processing speed by shrinking the distance electrons have to travel within their wiring. They are tightly packed workhorses that require a whole array of supporting equipment. Some employ full-size mainframe computers just to shuttle programs in and out of their processing units. The machines may be connected, by cable or satellite, to hundreds of remote terminals that can transform raw numerical output into stunning 3-D graphics. They often need industrial-size refrigeration units to keep the rush of electronic signals within them from melting down their circuitry. The thermal output of the University of Minnesota's supercomputers is used to heat a garage.

EARNING DEGREES VIA SATELLITE

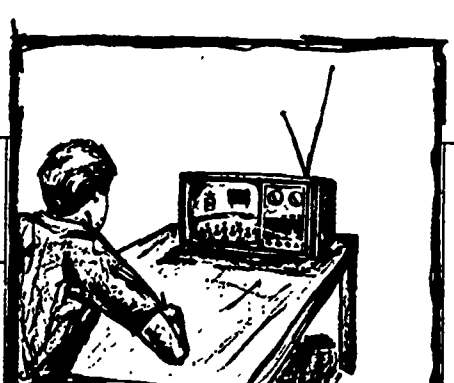
Several major universities and corporations have teamed up to create the nation's first "electronic university." Claiming neither a campus nor a regular faculty, the National Technological University (NTU), based in Fort Collins, Colo., broadcasts graduate-level courses via satellite to some 1200 working engineers and scientists at more than 80 corporate sites, and offers advanced degrees in various areas.

Continuing technical education is often cited as a must for maintaining America's international competitiveness. Yet more than 70% of today's new college graduates in engineering, lured by the brisk demand in industry and attractive starting salaries, choose to go to work rather than take on graduate studies; once on the job, most engineers do not return to school.

The private, nonprofit NTU, which has been operating since 1984, could help solve the problem by bringing "high-quality education to working engineers," says president Lionel V. Baldwin. NTU now awards master's degrees in computer science, electrical engineering, engineering management, and manufacturing systems; full accreditation by the North Central Association of Colleges and Schools is expected by August.

NTU classes are broadcast over two channels, 14-16 hours a day, on GTE Spacenet's G-Star I satellite; the 150 courses are drawn from 22 member universities, including Boston University, Georgia Tech, and Purdue. Seven of the universities can transmit (uplink) their courses directly to the satellite for nationwide broadcast; the other schools videotape their courses and mail them to one of the seven uplinks. About a third of the broadcasts are "live-interactive." The rest are delayed broadcasts of live classes.

Companies subscribe to the network for a one-time fee of $65,000–$260,000, depending on the number of employees; the fee provides permanent access to NTU's regular courses and special programming at all company sites. There is no charge to the student. Corporate subscribers now include AT&T, DEC GE, IBM, DuPont, Honeywell, and K dak. Future broadcasts over the network will include guest lectures by industry scientists.



PAUL WEBSTER

Students can view the videotapes at their convenience, and can replay the tape as needed; if they still have questions, they can call the professor. Tests and homework are exchanged through the mail for grading and review.

"Without NTU, I could not have pursued a master's degree," says Michael Reiss, a computer analyst at NCR (Cambridge, Ohio). "The nearest school is an hour and a half away." Reiss received a master's in computer engineering at NTU's first commencement last November. With courses from Northeastern University (Boston) and the University of Minnesota (Minneapolis), Reiss earned his degree without leaving Cambridge or disrupting his work at NCR. □ —*Salvatore Salamone*

VOICE COMPRESSION FOR DIGITAL NETWORKS

The nation's telephone network, originally an analog system designed to carry only voice signals, is now shifting to a digital system suited to all types of traffic—from computer data to digitized video and voice. Digital networks promise improved efficiency and greater reliability, but digitized voice typically requires faster and more expensive communications channels than its analog counterpart. Consequently, telephone companies are turning to digital compression techniques that reduce bandwidth requirements without a significant loss of voice quality.

The digitizing of telephone voice signals has been done commercially since 1962, using a technique called pulse code modulation (PCM). The PCM method used for telephone transmissions samples the analog signals 8000 times a second and encodes each sample into an 8-bit word. This level of PCM produces high-quality voice signals, but the technique requires a 64-kilobit-per-second transmission channel.

However, a recent refinement called adaptive differential PCM (ADPCM) cuts the transmission rate in half by exploiting the predictable behavior of analog speech signals. Special algorithms use that predictability to reduce each 8-bit PCM word to a 4-bit ADPCM word, taking into account such factors as the prior sample value and the predicted value of the next sample. Although the technique doesn't allow digitized voice to travel over ordinary analog phone lines (which can handle just 9.6 kilobits per second), it does double the number of channels that can be carried on a high-capacity line.

ADPCM has been adopted for digital voice transmissions by the Consultative Committee on International Telegraphy and Telephony (CCITT), the international standards-making body for telephone communications; suppliers such as AT&T Network Systems and M/A-COM Telecommunications have already announced ADPCM products.

CCITT's adoption of the techniques resulted from its investigation of ADPCM's voice quality. Telephone users in seven countries listened to ADPCM speech in their native tongues and rated it in comparison with PCM speech. Henri G. Suyderhoud, a principle scientist at Comsat Laboratories (Clarksburg, Md.) who worked on the evaluation, reports that "ADPCM scored slightly below the standard PCM. But in terms of general performance, the difference would not be perceptible to the general public."

Many digital switches installed today can handle only conventional PCM signals, so they may have to be transcoded several times from ADPCM to PCM and back as they travel through the network. Fortunately, multiple transcodings result in only minor degradation of the voice quality, most of it due to rounding-off errors in the initial conversion of analog signals into the ADPCM format. Once digitized, subsequent errors can be detected and corrected by digital signal processing.

Significant degradation can creep in, however, when networks require intermediate analog transmission links—for example, if two digital fiber optic trunks are connected via a microwave radio link carrying voice in analog form. Several analog-to-digital conversions can cause noticeable deterioration in speech quality. Fortunately, this problem will gradually disappear as public networks convert to all-digital transmission. □ —*Terry Foldt*

ECONOMIC

THE PUBLIC PULSE

Roper's authoritative report on what Americans are thinking, doing and buying

Volume 3, Number 1

January 1988

Public Policy, Politics, and American Business:
30 Key Trends Shaping The New Corporate Context

In this special issue of The Public Pulse, *we put forth our forecast of 30 major trends shaping the public policy environment for American business as we enter the early 1990s. These are the trends with true staying power—the harbingers of the new economic and political landscape in which American business will operate in the decade ahead. They are based on our interpretation, judgment—and, on occasion, speculation—about public opinion data that we have been collecting and monitoring over the years.*

The Synergistic Environment

American business should prepare itself for a public policy environment that will be dramatically different from the one that characterized the Reagan years. The hallmark of the new corporate context will be *synergy*—cooperative action among business, government, and labor to address the fundamental social and economic problems facing the nation.

The mood of the American people during the Reagan era was unabashedly pro-business. Entrepreneurship and the competitive spirit were "in"; "big government" (at least rhetorically) and labor unions were "out." In many key areas, business took the lead in setting the public policy agenda.

But much has changed. One of the more ironic legacies of the Reagan Administration, given its ideological commitment to scaling back government, was the *restoration* of public faith in our political institutions and leaders. As President, Reagan helped the American people put such disturbing memories as Watergate and Vietnam behind them.

Labor was certainly chastened during the Reagan era, but the tide could be turning. What was once seen as "zapping" the unions is increasingly perceived as taking advantage of workers. Issues of fairness will become more important.

These developments spell the end of the primacy that business enjoyed through the mid-1980s. Instead of a return to an adversarial relationship among business, government, and labor, however, another factor suggests that greater *cooperation* will prevail in the future. Americans are more and more aware of the international competitive challenges confronting us, and this growing awareness tends to pull the nation together.

The emerging synergistic environment for public policy will entail a reorientation of the traditional ways that business, government, and labor deal with one another. The public will scrutinize the efforts made by *all* these parties in defining a new national partnership; the onus will be on business to cooperate.

Resurgence Of Public Activism

Hand-in-hand with the quest to define a new public policy environment will go an appreciable increase in public activism. Americans are going to become more *involved* in the policy-making process, in a variety of ways.

The early to mid-1980s were, in retrospect, a relatively quiescent period. Especially after the recession of 1982, Americans focused most intently on their personal fortunes in the expanding economy and on their rediscovered sense of national pride. Compared to the tumult of the late 1960s or the uncertainties of the 1970s, it was a time to relax a bit.

Now, however, public concerns about a range of economic and social problems—from AIDS to the environment, from educational policy to public health issues—are rising. The indications are that these mounting concerns will bring with them a new wave of social activism.

Not the mass-movement activism akin to the Civil Rights movement. Or the single-issue activism that characterized the anti-Vietnam war demonstrations. Instead, the next wave of public activism will be both *limited* in the numbers of people involved, because Americans have only enough time for a few such commitments, and *multiplex* in terms of the number of issues acted on. A short list of future "activist" issues: daycare, certain environmental problems, health insurance, AIDS, primary and secondary education, substance abuse, the homeless.

Business will not necessarily be the *target* of this renewed activism as much as it will be compelled to join as a *partner* in formulating new policies. And government will not be so much the *paymaster* as it was in the past as it will be a *facilitator*.

Aided by sophisticated direct mail and telemarketing techniques, issue-specific lobbying groups—supported primarily by citizens' contributions—will thrive in this environment. If Americans cannot commit much of their time to their favorite causes, they will be committing more of their money.

Problematic Profits Plague Business

The problem with business profits is that they are *always* too high—or at least that is how Americans perceive them.

Despite the pro-business mood of the Reagan years, there was little if any "profit worship" among the American people. To the contrary, the public demonstrated time and again its misunderstanding—or disbelief—of the true level of business profits and its innate suspicions of the ways those profits are used.

Part of the explanation is straightforward self-interest. As wage earners, the vast majority of Americans do not *directly* reap the rewards of a profitable enterprise. Very few receive dividend payments. Even fewer now participate in profit-sharing plans. Profits, they think, come straight out of their salaries. (These attitudes, however, might change as profit-sharing plans spread.)

Business itself exacerbates the problem. When talking finance, corporate leaders speak to Wall Street, *not* Main Street. Average Americans hear of a 25% increase in profitability and think that the company makes 25¢ on every dollar in sales. As consumers, they believe such a "take" is unconscionable.

The fact is that most Americans remain woefully misinformed about the fundamentals of business economics. And the danger is that such misconceptions *can* leave business vulnerable, particularly when the economy is less than robust.

Individual businesses themselves, of course, must think first of *real* profits, not *perceived* ones. That is the nature of free enterprise. But the business community as a whole confronts a massive public relations challenge: Educating the public about the true level and primary uses of profits in a modern economy—as well as the social desirability of them.

Intervention To Supplant Deregulation

One of the hallmarks of the late 1970s and early 1980s was the deregulation of business. Entire industries—from airlines to financial services, telecommunications to the oil industry—saw their competitive environment radically altered by the lifting of government controls.

As consumers, Americans tend to support deregulation as long as prices decline. But as voters, they are *not* wedded to the principle of deregulation. In many vital areas concerning business—for example, toxic waste disposal, personal privacy issues, workplace safety—people desire even stricter government rules, because they don't trust business to do it on its own.

The regulatory environment of the future will, in crucial respects, be unlike that of the past. The word *regulation* might become something of a misnomer; it is too broad and all-encompassing. Instead, its replacement might be government *interventionism*: the willingness and ability to enact rules on a more event-specific, case-by-case basis. The New Deal belief that government can oversee all aspects of business—in practically any business—has been largely replaced by a more pragmatic, limited approach.

This new orientation means that all industries will *not* be treated as equals. Look for more government intervention in airlines (safety/service concerns); financial services (instability, costs); electric utilities (nuclear problems); chemicals (toxicity).

Support For Business Tax Incentives

Americans' suspicions about profits and their desires, in some instances, for more government intervention do *not* keep them from favoring pro-business policies. A case in point is public attitudes toward the use of tax incentives.

Vast majorities have long supported the use of tax incentives to encourage businesses to invest in new plant and equipment. And Americans also like the idea of giving tax breaks to business in order to stimulate employment. They have always preferred having the private sector absorb the unemployed as opposed to creating direct public sector jobs, and this tilt toward the private sector is becoming more lopsided. Today, nearly two-thirds of the public say that the tax system should be used to promote business expansion (thus providing jobs) or to encourage business to hire the unemployed.

Voters see the tax system as an *activist* vehicle for promoting certain social and economic goals. They are certainly *not* ardent free marketers, believing that the economy—if left alone—will by itself generate high levels of investment and full employment.

American business, in other words, can pay scant attention to the recent vogue among policy makers for a "neutral" tax system. The Internal Revenue Code will again become a central battleground for competing political and economic interests.

Future Reform Of 1986 Tax Reform

There was little solid support among the American people for the Tax Reform Act of 1986 when it passed, and there are few if any indications that support for it has built substantially since then. Result: Future "reform" of the newly reformed tax system.

Two forces will propel more tinkering with the tax code. First, as the favorable attitudes toward business tax incentives illustrate, people are *not* convinced that the tax system is merely a way for the government to collect revenue. Despite the theoretical appeal of a simplified tax code, Americans indicate that taxes *can* be a means to accomplish worthwhile public objectives.

Second, the new two-bracket structure for personal income taxes that the 1986 Act installed runs against the public's desire for fairness. Americans stick to the notion that affluent individuals should bear *proportionately* more of the national tax burden via a progressive, multi-tiered tax system—despite the fact that certain tax reformers proclaimed the opposite.

The reintroduction of higher tax rates for the wealthy is probably in the offing. And the reinstatement of industry- and event-specific incentives is likely, too.

Why Government Waste Won't Go Away

Actually, it's not government waste itself that refuses to disappear; it's the American people's *perception* of waste in the public sector that is so intransigent.

The public has an extraordinarily exaggerated notion of the inefficiencies in the public sector—and thus of the tax dollars that could be saved by cutting back on government. When we asked people how much, out of every $100 collected in Social Security taxes, went to pay administrative costs, the astounding answer was $52. The real figure, according to the Social Security

Administration, is only a little more than a dollar.

Social Security is probably *the* most popular entitlement program among Americans. Imagine what they think about the inefficiencies in other, less popular programs.

This exaggerated notion also explains why people usually want the government to spend more on *specific* programs but, at the same time, want the government *generally* to spend less. They think that taxpayers can receive many more benefits if only the government would trim its fat.

For the past twenty years, political rhetoric has exaggerated the problems of waste in government. In this area, the public believes what it hears. Nothing will change until political leaders themselves stop bashing the public sector—and simply make the point that our government is not so badly inefficient after all.

Congress To Move On Benefits Laws

Pressure in Congress for Federally-mandated employee benefits—primarily targeted at two-income families—will grow more intense. The reason is straightforward: The workplace is not keeping up with massive social changes.

Two-income households, which are fast-growing pluralities in many Congressional districts, are facing a veritable crisis. Most families today *need* two incomes to maintain an adequate living standard. But *earning* two incomes in today's workplace often means sacrificing even more fundamental family values. Something has to give—and it won't be the family.

The focus is currently on mandatory, but unpaid, maternity and paternity leaves. Calls for *paid* leaves will become increasingly popular. The daycare system, already in crisis, is the next logical target for legislative action. Further down the road, a shorter work week, flexible job scheduling, and the increased resort to homework are all possibilities.

The baby boom generation—today's young parents—is not only the largest in our society; it is also highly educated. It can become a potent political force, and "family issues"—seen from the perspective of two-income households—will be an important unifying factor. Some companies have had the savvy to adapt to this new social reality; others will have little choice.

The Next Major Social Program: Public Catastrophic Health Insurance

Americans' top personal financial worry—easily outdistancing most others—is being able to pay medical bills in the event of a serious, prolonged illness. That, no doubt, is why majorities favor *some* form of publicly provided catastrophic health insurance coverage—at the very least for everyone aged 65 and over.

But such a plan, while possibly universal in *scope*, should not carry universally similar *premiums*. Americans vote overwhelming for a system that would allocate premium payments based on income, with affluent individuals paying a higher premium than less affluent ones. The margin in favor of a progressive premium schedule is better than three-to-one—and is unlikely to change in the future.

As with the tax code, the public thinks wealthy people can *and should* pay more than others.

Acceptable Reform Of Social Security

The principle of progressivity works the same way for benefits as it does for payments (whether taxes or insurance premiums). If the much-discussed reform of the Social Security system eventually comes, it will probably entail the more widespread use of means tests for recipients.

Some predict that the Social Security system faces financial disaster; others contend that a surplus is on the horizon, thanks to the baby boomers' move into their prime earning years. Whatever the scenario or the time frame, the popularity of trimming costs by cutting back on *some* recipients' benefits will grow.

The universal nature of Social Security benefits, in other words, could be curtailed. Already these benefits are partially treated as taxable income. Tomorrow they may be *fully* taxable.

And in the future, individuals whose income surpasses a set ceiling may no longer receive benefits at all—just as, today, the portion of salaries above a certain level are not subject to the Social Security tax. So while all workers will continue contributing to Social Security, not all will receive benefits from it—and then the political battles will center on the proper "cut-off" point.

In The "Information Age," Concern About Personal Privacy Will Deepen

Americans are not a "luddite" people—never have been, never will be. Far from fleeing technology or fearing its impact, they generally look upon technical progress as the key to economic success and a rising standard of living.

Usage of computers, of course, is up, and attitudes toward them are growing more favorable as greater numbers get "hands-on" experience. The PC *has* spawned a revolution in how people perceive this most powerful, yet manageable, technology.

Furthermore, people think that business or government has the right to know much about the private lives of *prospective* employees. Past employment record, general state of health, any *current* drinking or drug problems, prison record, any history of serious illness: these are only some of the areas (most of which could affect job performance) in which employers have the right to personal data. Personal credit rating, religion, and any *past* drug/drinking problems should not be revealed, say the public.

At the same time, however, fundamental concerns persist about *how* computers can be used to obtain personal information. Big majorities reject the use of centralized data banks to get such information, saying instead that businesses should obtain it only from the individual directly. And people are worried that new interactive electronic technologies—two-way cable TV or commercial databases and networks for computers—open up too many possibilities for abuse.

In part these concerns simply reflect Americans' suspicions of "bigness": the potential power that "big business" and "big government" can have over their lives. But also, these worries express a deeper political problem: Who should *control* information flows in the "information age"?

Until now, these privacy issues have stayed pretty much on the back burner. As we move further into the "information age," however, they will assume vastly greater significance.

Progress Ahead On Liability Crisis

Virtually every manufacturer, marketer, and service provider—in both the private and public sectors—must now consider the possibility of crippling liability claims before taking what was once just a routine step.

The public is aware of the crisis and believes, moreover, that it *is* a crisis. This realization in itself is a significant victory for those business interests who are pushing some form of legislative reform. Far from cheering on those plaintiffs who win millions of dollars in settlements, Americans believe that the situation has gotten out of hand and that *something* should be done.

But there is little if any desire for a *radical* change in the present system. People think that the court system in general, and the right to sue in particular, constitutes an important popular defense. They see it as a check against big business and big government, an institution in which they can directly participate. Because of this, they want no major curtailment of individual rights under the liability laws.

Instead, Americans would set some limits on the amount of jury awards in liability cases. Large majorities would place ceilings on awards for pain and suffering, punitive damages, medical expenses, and lost income—and there is little reason to suspect that this sentiment will change.

The problem, however, is determining just what those award limits should be. People really do not have an idea about appropriate limits in liability cases. They would leave this decision to the legislature and the experts.

The liability crisis is now very much on the public agenda, which in itself is a sign of progress. More progress lies ahead.

Environmental Issues Will Assume Greater Political Importance

Contrary to the expectations of many analysts, public attention to environmental issues has *not* peaked; it is still gathering momentum. In fact, public attitudes toward a wide variety of environmental issues today point to a steady growth of the power of environmental movements in the future.

Worries about fundamental "quality-of-life" matters—air and water pollution, how to dispose of community garbage—are high and rising. They spill over into health issues: Nearly two-thirds of Americans, for instance, are concerned about possible contamination of their drinking water. The fact that these issues are so *basic* gives the environmental movement its vast potential.

Then there are the problems that are less comprehensible to Americans, but seemingly more threatening—toxic or nuclear waste disposal, for example. People are distrustful about business's willingness and ability to find the answers.

But there is no consensus among the public about *whose* problems these are. Who is to blame? Business? Government? The American people and their local communities? It remains unclear as to who should pay the bills.

Most likely, the solutions for these environmental challenges will affect *all* parties: business, government, *and* communities. The better prepared they are in advance, the better off they will be when environmentalism reaches its zenith.

Business And Education: A Stronger Partnership In The Future

There is a pervasive concern in the United States about the quality—indeed, *competence*—of our educational system. Although the public's worries are sometimes exaggerated, they are nevertheless held deeply by a majority. Perhaps there is no real *crisis* in the schools, but Americans *fear* there is.

The problems, it would appear, are myriad. American students seem to fare poorly in mathematics and the sciences compared to students in competitor nations, notably the Far East. Their reading and writing skills are thought to have atrophied compared to previous generations of students. Public school teachers are poorly paid and no longer held in high social esteem.

Business will be called upon to do more—which will present both challenges and opportunities. Already, of course, business exerts a significant, but essentially passive, influence on educational curricula simply through its hiring practices. In coming years, the climate will be ripe for a more *active* business role in the educational system.

Americans heartily endorse corporate philanthropy toward the school system: donations of money, computers and other technologies, staff time for teaching purposes. In part, perhaps, they simply want business—and not themselves—to pay.

Yet they are also willing to make trade-offs. They would allow, for instance, companies to sponsor high school classes on the merits of the free enterprise system and "the need for business profits." They approve of having company employees teach part-time in the school system. They would welcome assistance from the business community in improving the technical skills of today's students.

And business has an immediate stake in spurring educational progress. Education is one key, of course, to greater competitiveness. The problem of functional illiteracy, moreover, affects business directly in the workplace *and* in the marketplace.

All told, the public believes that the good effects of corporate involvement in the school system easily outweigh the bad effects. Business can reap a public relations harvest of good will by helping to meet some of the challenges in public education. It may also obtain better trained workers and a citizenry better informed about business fundamentals as well.

Another Energy Crisis In The 1990s?

Americans are growing more nervous about the possibility of another serious energy crisis while, in a seeming contradiction, they have less and less confidence in alternatives for imported oil. The implication? *If* a crisis erupts, the public policy consensus for dealing with it will be fragile—maybe nonexistent.

Energy today is decidedly a "back-burner" issue. People are not thinking much about conservation anymore, mainly because the price of oil has dropped so dramatically since its peak in the early 1980s. Americans are driving bigger cars again; they keep their homes warmer than they did during the second oil crisis.

But some things, of course, have changed. Automobiles are much more fuel efficient—hardly the gas guzzlers of the 1960s. Home appliances, too, have improved measurably in this regard.

And if only subconsciously, Americans' behavior is quite different than it once was. Today's norm, when it comes to energy usage, is closer to what it was in the 1970s than to the relative profligacy of the 1960s. The first two oil crises *did* modify Americans' lifestyles.

Even so, the public increasingly suspects that the "cheap" oil of the mid-1980s will not last. What will happen if the price explodes again? First, blame will be laid at the door of the OPEC nations—*and* the oil companies. Second, because there is no policy consensus on alternatives, the energy industry will find itself trying to build consensus again in the *midst* of a crisis.

More Setbacks For Nuclear Power

It might be premature to write the epitaph for the American nuclear power industry, but the future probably holds more bad news than good.

Public worries about and opposition to nuclear power plants are high and rising. There is growing willingness to shut down existing nuclear plants, much less build new ones. And the financial travails of certain utility companies, caused mainly by nuclear projects gone awry, have further deepened the shadows.

Nothing suggests that this trend is being reversed. Only another severe energy crisis may change the picture for nuclear power—and, then, forceful government support will be needed.

Trade Tensions To Grow Further

Despite the precipitous decline of the dollar since its peak in early 1985, the American trade deficit has refused to disappear. While some improvement is inevitable, the deficit has become structural—not easily susceptible to an exchange rate "fix."

Americans are not well versed in the intricacies of international economics and probably never will be. But when it comes to a simple choice between low prices for imported products and more jobs in the United States, their answer is loud and clear: more jobs. As long as the general unemployment level stays low, the cries for greater protectionism will be relatively faint and rather isolated. Should unemployment rise significantly, these cries could easily become a crescendo.

The current consensus, however, is that the origin of *most* American trade problems lies here at home. There is a widespread perception that American business has just not tried hard enough: that there has not been enough investment, enough research and development, enough quality control. The first steps to correct the deficit need to be taken in *this* country.

But belief is growing that our foreign competitors—or some of them, at least—are not playing by the rules. In part this reflects Americans' views, as workers, on international wage disparities: Is it "fair" to pay a worker, even if in the Third World, a dollar an hour? This belief has also been produced by stories of foreign countries protecting their markets from U.S. competition, of foreign companies dumping their products here, and so on.

Perhaps the U.S. trade deficit will somehow correct itself. If it *doesn't*, however, the American people will be prepared to take a harder line on trade issues. And the theme they will support is *"America first."*

Mounting Frustration With Japan

Not surprisingly, Japan is highly vulnerable to Americans' wrath over global economic trends. As the world's second largest economy, it is our major economic rival—and an extraordinarily competent one at that. But there is a more fundamental reason for a potential rift between the countries. Quite simply, Americans have no real "feel" for Japanese culture: their attitudes, values, lifestyles, ways of doing business.

Deservedly or not, Japan has received much bad publicity in the U.S. press, and these stories have influenced the American public. Trade disputes, of course, are by far the most important, but there have been others. Theft of trade secrets, alleged patent infringements, illicit sales to the Soviet Union: reports like these compound the trade tensions, adding the perception of duplicity to many Japanese actions.

The cultural impasse is perhaps more profound and intractable. At the risk of oversimplification, Americans are an *open* people and have been so for most of their history. The Japanese are a *closed* society, by both tradition and circumstance. Americans thus see their open market being flooded by Japanese goods, while suspecting the Japanese market is essentially closed by an array of institutional, legislative, and cultural barriers.

True, Americans cannot be said to have made much of an effort to get to know and understand the Japanese. The proportion of U.S. citizens who can speak their language is almost nonexistent. Exhibitions of Japanese art, music, and film help, but they are hardly the answer.

The Japanese, however, risk being viewed as consummately arrogant. While their economic successes are undeniable, their apparent complacency—even smugness—about American sensibilities is becoming harder to ignore. Japan may soon face a massive public relations challenge in this country; *post facto* damage-control strategies will no longer suffice.

Right now, Japan is considered a solid friend of the United States. But the potential for serious strains in the relationship is just below the surface. Japanese companies may want to play a more *proactive* role in increasing mutual understanding—now.

Troubles In South Africa May Affect Bottom Line In U.S.

The enduring tensions in South Africa bounce in and out of the headlines of U.S. papers, depending on events. The long-term trend in American public opinion, however, is more stable.

Americans are becoming more opinionated about the situation in South Africa, and their beliefs are growing more critical of the white-controlled regime. While few here will march in protest against *apartheid*, that system's distastefulness, to the average American, is increasingly pronounced.

The campaigns against U.S. business investment in South Africa may have run much of their course. But now a new possibility arises: *consumer* dissatisfaction with products or companies "tainted" by a South African connection. Mass boycotts are quite unlikely, but there is a "window of opportunity" for anti-*apartheid* groups to influence consumer choices by publicizing lists of "unacceptable" products. South Africa is *still* an issue.

AIDS: Preoccupation, Not Paranoia

The spread of AIDS has sparked conflicting emotions among the American people. On the one hand, people voice compassion for the victims and a display strong determination to find a cure. On the other, some latent antipathies toward certain "high-risk" groups are moving out into the open.

Public awareness of AIDS is virtually universal; understanding of how the virus is transmitted is actually quite good. While there is always room for more and better education, the level of misinformation—at least of the kind that can breed hysteria—is surprisingly low.

Americans believe that AIDS is the greatest health threat facing the nation today, and they are calling for an intensive effort to address it. They rank it at the top of their list of priorities for government action, desiring—among other things—more government money to be spent on research. They favor selective mandatory tests for the AIDS virus, mainly among high-risk groups. They want steps to be taken *now*.

And despite some well-publicized cases to the contrary, the public does *not* consider AIDS victims to be lepers. Quarantines are not the answer. Most people say that victims deserve compassion, assistance, and dignity.

Yet, in addition to these measured responses, the AIDS tragedy is bringing out undercurrents of prejudice against the high risk groups. There is no love lost between Americans and intravenous drug users; AIDS has only magnified this tension. But the homosexual community, which had gained increasing visibility if not social acceptance since the 1970s, may in the future face more overt rejection. Ironically, AIDS has made some Americans more comfortable saying what they always thought: that they don't really like homosexuality.

While it remains an open question, there is a definite risk of growing social intolerance in the future. The risk is not so much one of persecution of *individuals*, but, rather, a growing majority consensus that minority *group* lifestyles will *have* to change because of the social health threat that AIDS represents.

Crime: The Paranoid Reaction

The crime problem *always* worries Americans. That's pretty much a given fact about our national psyche. Today, as in the past, crime ranks right at the top of public concerns.

There is, however, an odd disjuncture in Americans' feelings about crime. They think it is an omnipresent and insoluble problem in the country at large. But strangely enough, crime is never much of a concern for people *in their own neighborhoods*. In other words, it is a fearful, terrible world "out there;" thank goodness *we* don't have those problems here on Main Street.

It is true that crime levels in the United States are much higher than in many other countries; it is *not* our intention to belittle the nature of the crime problem here. Violence, it has been said, also follows cultural proclivities, and crime in America might well be our individualistic way of expressing it.

Americans are obsessed by crime. They abhor it—out of all proportion to its actual occurrence. Whether out of paranoia or not, Americans instinctively respond to calls for law and order.

Homeless Hit The Nation's Conscience

The problem of homelessness strikes a deep chord with the American public. After all, the United States is a nation of homeowners *par excellence*—a country in which home ownership is a vital component of the American Dream. The sight of men, women, and children living on the street wrenches the heart and stirs uncompromising compassion.

Social Darwinian explanations do not convince people. Arguments about institutionalization versus deinstitutionalization are generally beyond their grasp. Finding a villain to blame is, in this case, a waste of time.

The problem of homelessness is one area where voters will support vastly increased government spending. Money may not be the sole solution, but—to a people used to making monthly mortgage payments—it certainly must help.

Americans' Love/Hate Relationship With The Media

Americans have a love/hate relationship with the media, and, as with most complex relationships, it is frequently misunderstood. Even professionals—whether the media itself or "outsiders" who deal with the media regularly—have misconceptions about the way the press is regarded by the public.

Two widespread mistakes: "Everybody hates the press" and "everybody thinks it is inaccurate." Both notions are patently false. Americans' appetite for news is insatiable and growing, which alone encourages a favorable view of the media. But more important, vast majorities think the press is *credible* and trust the believability of the news accounts they receive.

At the same time, however, the media is often seen as *insensitive*. Interviews with the grieving widow and all those literal *post mortems:* such uncouth coverage invades the individual's right of privacy. Perhaps it is stories like these that convince people the media cannot—and would not—keep a secret, even if the national interest depended on it. There is significant popular support, for example, for censorship or news "black-outs" in time of war.

If one word could characterize Americans' attitudes toward the press, it might be *ambivalence*. People depend on the media and find it usually believable, but they do not completely trust it.

The most germane question for the future concerns the media's own behavior. Vietnam and Watergate thrust journalists into their own media limelight. Journalism became a much more exciting and dramatic profession, and journalists became stars in their own right. The press, as the "Fourth Estate," even came to overshadow government, business, and labor.

As many responsible journalists themselves have recognized, there is a risk of growing arrogance: the feeling, within the media itself, that *it*—and not the people—"make or break" policies and personalities in the other three institutions. That the media is somehow the *only* expression of the popular will.

Will there be a cyclical swing—a growth in public faith in government, business, and labor, while the popularity of the media falls? All we can say is that, whatever happens, media professionals themselves will be at the center of any change.

Wanted: Experienced Political Leaders

It took a decade and a half for the stigma of Watergate to fade away, but it has happened. For politicians, prior experience in the public sector is once again a plus.

Watergate and Vietnam fundamentally shook Americans' faith in government and the type of people who run it. The policy mistakes of Vietnam convinced people that many politicians were bunglers, the Watergate hearings that many were crooks. All in all, the images were most unflattering.

The vogue in the 1970s and early 1980s was to "run against Washington." Americans were angered by the entire Washington crowd and wanted to "turn the bums out." Some candidates simply catered to this sentiment, while others used it to push a broader program of scaling back government. Whatever the case, the *less* political experience a candidate had, the better.

Now the tide has turned. Americans' faith in public institutions has been largely, if not completely, restored. President Reagan himself made it easy to *like* politicians as individuals and, generally, to respect them.

The most important result of this change in public attitudes will be that candidates once again run *for* office rather than *against* government. Political experience will help, but whether it gives an individual candidate a competitive edge will be, as they say, a matter of record.

Labor/Management Relations: The Rise Of "Social Capitalism"

Organized labor had a tough time during the Reagan era. His Administration began with the breaking of the air traffic controllers' strike, to public acclaim. Since then, labor unions have been fighting a rearguard action to maintain a semblance of influence.

Some of labor's problems, like declining membership, are probably intractable. Their concentration in weak smokestack industries is a big part of the problem. Their general failure to make inroads into the white collar workforce is also significant.

Then there is the institutional side. Too often, labor unions are hierarchical, bureaucratic, unresponsive to their constituents' needs. They can be profoundly at odds with—even an obstacle to—Americans' quest for greater *individual* control in the workplace, to their demand for more *flexibility*.

Whatever the causes of labor's dilemma, the fact is that labor made most of the sacrifices during the Reagan era. The best example of this was the proliferation of "give-back" schemes, in which workers took pay cuts to help boost competitiveness.

But the day of the "give-back" is over. During the economic boom years of the mid-1980s, top management was seen as prospering much more than the ordinary employee. Also, *middle* management suffered heavily from lay-offs as many companies trimmed costs. In the public's conception of fairness, it is time for the "average" employee—white or blue collar—to benefit.

Business will be asked to give more in the post-Reagan era. Precisely *how* it will give remains an open question, but a likely avenue is through various profit-sharing plans: ESOPs, 401(k) plans, and so on. The trend will be toward a new kind of *social capitalism*, in which employees directly participate.

New Era In Soviet-American Relations

From the "evil empire" to comradery with "Gorby": the course of Soviet-American relations took some sharp turns during the Reagan years. More change lies ahead.

Despite Gorbachev's attractiveness to Western audiences, his personality is *not* the key. There is much in the Gorbachev program for internal Soviet reforms that appeals to Americans; it seems to have a kind of entrepreneurial spirit, Russian-style. But whether this program succeeds in the long run is very much open to doubt. In Russian history, bureaucracy has been the *given* and economic efficiency the dependent variable—and bureaucratic interference with efficiency was largely beside the point. Gorbachev is taking on more than entrenched bureaucrats and party hacks; he is also fighting centuries of Russian tradition.

In the West, the initial panicky reaction to the Soviet invasion of Afghanistan has completely disappeared; Western analysts finally acknowledge that war to be the quagmire, for the Soviets, that it's always been. Although suspicions persist, the Russians are no longer seen by the American public as being *everywhere* on the offensive.

More important, the American people are finally coming to psychological terms with their loss of invulnerability. It wasn't until the Soviets achieved virtual nuclear parity with the United States in the 1970s that the American heartland could be truly devastated by a foe. Two centuries of American security, provided mainly by geography, came to an end then. It has taken the public a while to understand the consequences.

But Americans' psychological adjustment to a more perilous world is largely complete. There is a new sense of *tempered* security—not invulnerability, but not defenselessness either. They now see the Soviet Union for what it is: our implacable *rival* that competes with us for power and influence around the world, not really our enemy.

The implications? First, the impetus—at least in the United States—for further arms reductions will continue. The stage *is* set for serious negotiation about strategic nuclear forces.

Second, *if* Gorbachev's internal economic reforms succeed, trade with the Soviet Union will open up. Exporters of consumer goods, in particular, might have much to gain.

Star Wars A Victim Of New Detente?

The future of the Strategic Defense Initiative, or "Star Wars," is becoming increasingly tenuous. While the plan appeals to Americans' imagination—the promise of a homeland shielded from nuclear attack is a powerful one—public desire for negotiations with the Soviet Union is strong and growing.

Public attitudes toward the program have been shifting—especially after the Reagan-Gorbachev summit that produced the INF treaty. Whereas once a majority of Americans thought the system should be built, it has become a toss-up between the number supporting and opposing its construction. More important, a convincing majority would prefer to negotiate further arms reduction agreements with the Soviet Union even if this prevents the United States from building SDI.

Star Wars is a chip that might be bargained away.

Persian Policy: "Make Our Day!"

Iran is foreign enemy #1 for the American public. There are other countries that are unfriendly to the United States, to be sure, but *none* are considered by Americans to be outright enemies—not even the Soviet Union, Vietnam, or Libya. Only Iran.

Public rancor toward Iran is very broad, cutting across all groups of Americans. And, after the prolonged suffering of the American embassy hostages in 1979 to 1981, the failure of the rescue mission in the summer of 1980, the Iranian-inspired bombing of U.S. Marine headquarters in Beirut, and Iranian sponsorship of international terrorism, among other things, this animosity is extremely deep as well.

Americans may not be spoiling for a fight, but one thing is certain: They are in no mood to sit back and tolerate more Iranian threats. The Persian Gulf—indeed, the entire Middle East—will long remain a source of tension and conflict in the world. If Iran provokes the United States again, Americans seem ready to teach that country a lesson.

So Who Cares About Nicaragua?

Hardly anyone, really. While American political elites have battled passionately for the "freedom fighters" or for "non-interventionism" in Central America, the response of the public has been a big, collective yawn. Odd how our leaders have invested so much time and energy arguing over a country with a population the size of the Washington metropolitan area. Or perhaps this explains it.

One development, however, could change public attitudes: the commitment of U.S. troops to the region. People would then pay attention—mainly because they tend to oppose such a move.

The Nation's Mood: The New Reality

During the mid-1980s, Americans felt great about themselves, their prospects, and their country. The peak of the Reagan era, to exaggerate only mildly, was marked by public euphoria and a kind of zealous boosterism.

Partly this was a psychological reaction to the troubles of the 1970s. After Watergate, Vietnam, OPEC, Iran, high inflation, soaring interest rates, and other problems, Americans felt a deep need to put such disturbing memories behind them. Ronald Reagan—with his cheerful brand of personal optimism—helped accomplish that goal.

But this euphoric public mood was, in its latter stages, becoming curiously divorced from economic realities. For instance, consumers' real incomes, after adjusting for inflation, did not make the heady progress that their psychological mood might have suggested. Developments in the stock market illustrated precisely the same point: The unprecedented bull market of the 1980s did not take its clues from trends in the general economy, such as GNP growth, but from its own euphoric optimism. That bubble burst dramatically, of course, on October 19, 1987.

What lies ahead? First, the "go-go" years of the mid-1980s are now over, both on Wall Street and on Main Street. If the stock market crash in itself did not decisively change the face of the American economy, at the very least it changed people's *perceptions* of the economy. Americans are much more sober today about their own—and their country's—economic prospects, and it is highly unlikely that they will go on a psychological binge again any time soon.

Yet in one important sense, a legacy of the mid-1980s will endure. There is a renewed national determination to make things *work*, and a fundamental confidence in our institutions and our leaders that was so sorely lacking in the 1970s. The new reality is not nearly as cheerful as it appeared during the height of the Reagan era, but, even so, people are no longer cowed.

After euphoria comes relative austerity—a sobering-up period. For public affairs professionals, this new mood means it would be unwise to relax too much. More than in the past, it becomes crucial to *anticipate* the tides of public opinion rather than just react to them. For business generally, it raises a challenge to play a vital role in a national *partnership*, with government and labor, to correct our nation's economic problems.

IT'S TIME FOR AMERICA

THE MESSAGE OF THE CRASH IS CLEAR: AMERICANS HAVE SPENT TOO MUCH, BORROWED

TO WAKE UP

TOO MUCH, AND IMPORTED TOO MUCH. NOW IT HAS TO STOP

"This year, real disposable income will have increased by only 0.8%, but consumer expenditures will have risen 2.2%.... Households have ignored flat income growth."
—Data Resources Inc., *Review of the U.S. Economy*, Oct. 1, 1987

The catchphrase of the hour is that America is living beyond its means. The expression is used so much by politicians, economists, and editorial writers that it is depreciating faster than the dollar. But there's no way around it. It tells the story. How else can we read the Data Resources numbers, which show Americans increasing their spending this year almost three times as fast as their aftertax income? What's more, as a nation, the U.S. has been doing the same thing throughout the 1980s. For years the country has been consuming more than it produces, making up the difference by borrowing from abroad. It can't go on. The stock market tumble from Aug. 25 to Oct. 19, which destroyed $1 trillion in paper wealth, is but the first step in a process that must sober the nation.

At some point in the next few years the U.S. will have to throw its amazing dream machine into reverse and start paying its bills. Inevitably, this will mean a reduction in the U.S. standard of living as Americans are forced to produce more than they consume to service a soaring foreign debt (page 164). Per capita income may keep rising but more slowly than in the past. The trade account will lurch toward balance or even surplus in the 1990s. But in the meantime, Americans will receive less for their exports because the dollar will fall much more before those wares are competitive. And pressures to reduce the federal deficit will tighten the lid on defense spending and force the U.S. to rethink its long-standing role as military hegemon of the non-communist world (page 170).

Put aside the $2.4 trillion national debt, most of which Americans owe themselves. What is more urgent is the $400 billion that the U.S. now owes the rest of the world—a net investment deficit that will reach $1 trillion by the early 1990s if it keeps growing at the current pace (page 160).

FLATTENING INCOMES. At that level, interest and other payments to foreigners would exceed $50 billion a year, or 1% of the gross national product. Olivier J. Blanchard of the Massachusetts Institute of Technology estimates that the U.S. will need to run a trade surplus for many years to get its foreign accounts into balance, and this will mean "a permanent decrease in U.S. consumption." William H. Branson of Princeton University sees "a swing of 1% of GNP out of consumption" and into exports in the early 1990s, or about $45 billion.

Foreigners may still see the U.S. as a safe place to invest their savings, but there is a limit to the rate at which they are willing to accumulate dollars. The point is fast approaching when they will want to be paid in U.S. goods and in larger pieces of U.S. business rather than take IOUs. Americans will simply have to "transfer resources to the rest of world," says Robert Solomon of the Brookings Institution.

The stock market has done the same arithmetic. No one sits down with a computer and tells the Dow Jones industrial average how much to fall or rise, but the 508-point market crash on Oct. 19 was a reluctant admission that there are no tricks left in the "voodoonomics" bone bag. The only way the nation could run triple-digit budget deficits year after year was by piling up huge debts abroad. So the budget deficit begat high real interest rates to attract foreign capital, and that made the dollar too strong. That in turn begat the trade deficit and helped wipe out 1 million jobs in manufacturing.

These "begats" were not the works of the Lord but the result of a mix of tight monetary and loose fiscal policy that has prevailed through most of the Reagan years. It got inflation under control, slowed the growth of government, provided running room for a five-year bull market, made a lot of people rich, and spurred the restructuring of U.S. industry. But the costs were formidably high and now must be faced.

The policy mix will have to be reversed. The sooner it is, the less onerous the foreign debt burden will be and the fewer the sacrifices Americans will end up making. Assuring the Japanese and West Germans that the U.S. can finance its own deficit—and eventually get rid of it—would do wonders for interest rates. It would also deprive these nations of an excuse for not stimulating their own economies and not assuming more of the burdens of economic leadership. And lower interest rates would help spur the rise in capital investment that the U.S. needs to become fully competitive again in the 1990s. Ultimately, that investment could pay off in greater productivity and economic growth.

But no one can plan on a growth miracle to solve the nation's problems. That was the false promise of supply-side voodoo. One way or another—through flat wages, higher import costs, lower government spending, perhaps higher taxes on consumption, or some combination of these—Americans will have to pay a price for a solvent economy.

By Norman Jonas in New York

CHART 6. Annual Rate of Growth of Real GNP (1982 dollars)

Percent Change

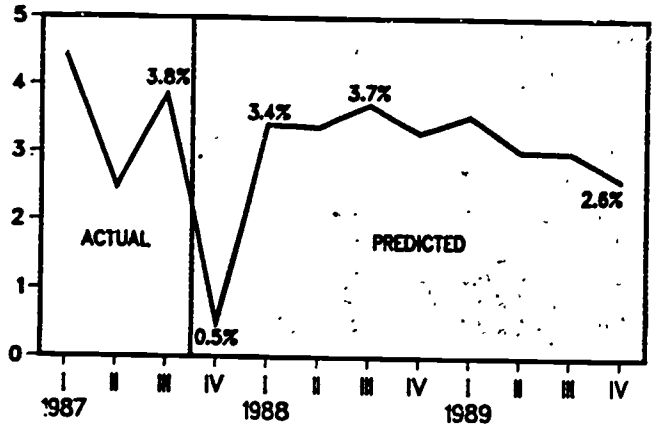


CHART 7. Civilian Unemployment Rate

Percent

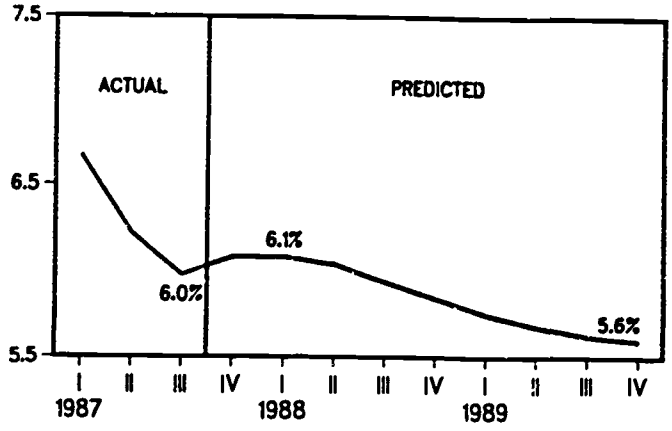


CHART 8. Inflation (Private Nonfarm Sector)

Percent Change

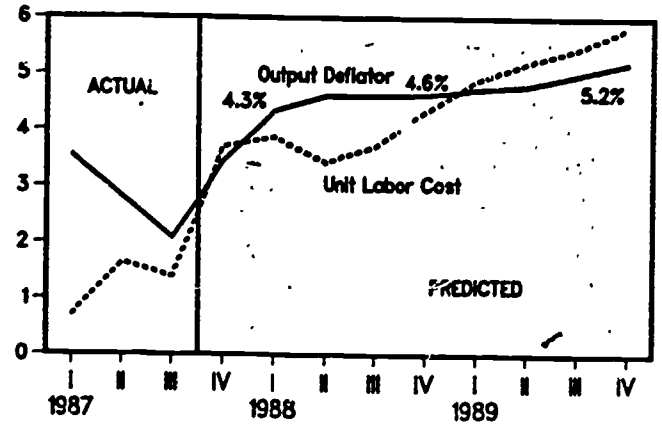


CHART 9. Inflation (Imports and Consumption)

Percent Change

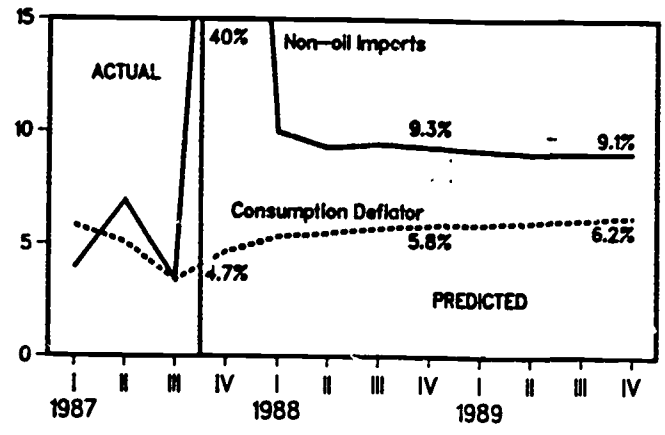


CHART 10. Interest Rates

Percent

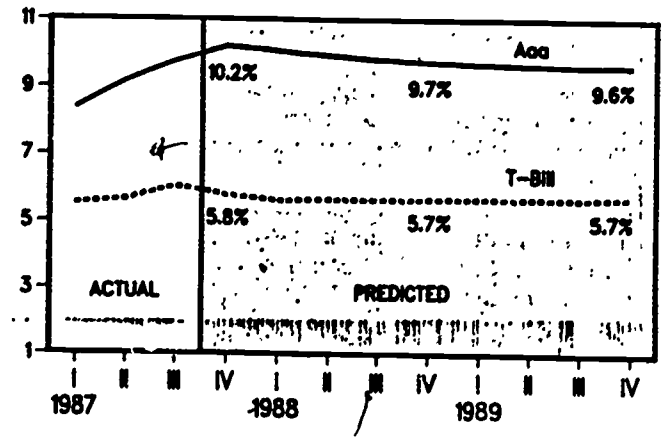
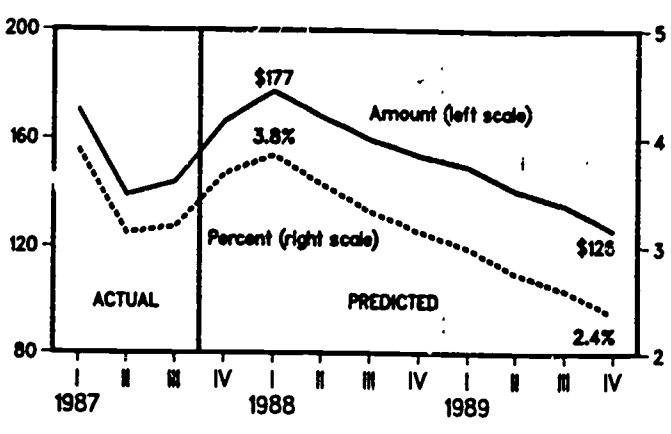


CHART 11. Federal Government Deficit, Amount and Percent of GNP

Billions of Dollars

Percent



The New Careerists

Workers are changing their minds about what it means to succeed at work, but managers still treat all workers as though the only goal is to climb the corporate ladder.

In fact, only a small group of the new career-oriented individuals, or "careerists," hold the traditional value of "getting ahead," according to C. Brooklyn Derr, associate professor of management at the University of Utah.

In his new book, *Managing the New Careerists*, Derr identifies five distinct career orientations among workers: getting ahead, getting secure, getting free, getting high, and getting balanced. Managers must recognize the differing values of the new careerists in order to improve job-worker matching, increase productivity, minimize political game playing, and reduce turnover, says Derr.

• **Getting ahead.** New careerists who value getting ahead are most likely to seek rapid advancement within an organization, making it to the top of the hierarchy. Managers may feel threatened by workers who seem too eager to climb to the top, or wary of the "flash-in-the-pan." But getting-ahead careerists are very hard working and reliable, says Derr.

"In some ways, managing these careerists is easy, because they tend to manage themselves, especially in the early phases," he says. "What may be difficult, especially for larger companies, is managing their high-potential future executives during mid-career."

One solution, says Derr, is to make sure the getting-ahead careerist is fully informed at the start about potential promotion in the organization. The manager might also try helping this careerist expand the definition of "success," since "for some getting-ahead people, even being 'number two' is seen as failure," Derr points out. Alternatives to promotion that still symbolize success could include bonuses, increased authority, or being asked to entertain important visitors.

• **Getting secure.** Many new careerists value security in their positions more than advancement or challenge. They tend to be loyal and competent, but they fear radical change and are most vulnerable to external changes such as dips in the market or changes in top management.

"Pay and raises are important signs of appreciation and job security, not as primary motivations in themselves, and a getting-secure employee will pay much more attention to benefits than a getting-ahead person will," says Derr. Tokens of appreciation such as a reserved parking place or new office furniture will also show getting-secure careerists that their steady performance and loyalty are valued. "In exchange, they

(continued on page 24)

THE SEVEN-UP COMPANY

"New careerists" all have different values that must be acknowledged and dealt with by managers. These values include getting secure, getting ahead, getting free, getting high, and getting balanced, says C. Brooklyn Derr.

GENERAL MOTORS

LONDON PICTURES SERVICE

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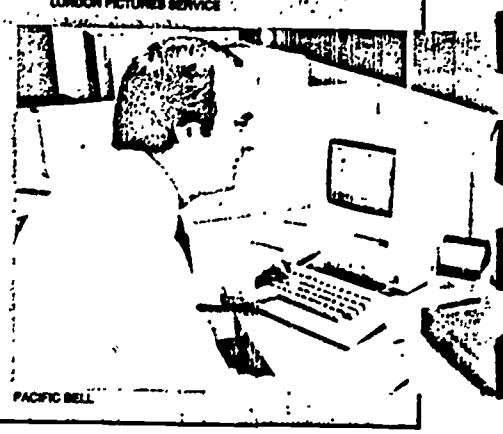


PACIFIC BELL

(continued from page 23)

are willing to work incredibly long hours and put the company's needs first," he says.

• **Getting free.** "Getting-free" careerists desire independence and the option to solve problems their own way. "They are hard to work with, impossible to work for, slippery as eels to supervise and manage, and infinitely resourceful at getting their own way," Derr says. Many of these new careerists are self-employed entrepreneurs who value autonomy — which "may be the most important emerging value among workers in the 1980s," he says.

Managers and getting-free workers have a natural antagonism for each other. But, Derr points out, creative managers can get the work they need by offering such options as contract work, which does not entail a long-term commitment from an individual who values freedom. Another strategy is to give the worker the project, deadline, and budget, and let him or her alone to get the job done.

• **Getting high.** A fourth group of new careerists value excitement and challenges in their work. They frequently need freedom to take on exciting work, but, unlike getting-free careerists, they will sacrifice freedom for an exciting project in a bureaucratic environment, such as the military. A potential problem is that the getting-high worker may be less concerned with making a problem come out just right than with the thrill of the challenge, Derr points out.

Like the getting-free careerists, getting-high workers are difficult to manage. They continually need new and interesting opportunities to test themselves. These workers may best be used as consultants or intrapreneurs.

"Not every organization can afford getting-high people," Derr says. "But those that depend on cutting-edge technology or innovative marketing to keep the jump on their competitors cannot afford to be without them."

• **Getting balanced.** A final group of new careerists give equal priority to non-work aspects of life, such as family, leisure, friends, and self-development. "Getting balanced is a relatively new phenomenon in the work force, especially in conspicuous numbers," Derr says. Though they are decisively career-oriented, getting-balanced workers insist that work remain in balance with relationships and self-development.

To the getting-balanced worker, organizations may seem like obstacles to overcome. The manager's task is to recognize the time and energy limitations that the getting-balanced worker has for work itself and to create a flexible environment within which that worker can provide high-quality work. Traditional awards are relatively ineffective, since the getting-balanced worker needs more than money to feel fulfilled. Programs and benefits that do work, says Derr, include job sharing, flextime, home work stations, on-site day care, and negotiable use of sick leave.

The key point that managers must remember is that all of these new careerists *are* career-oriented and are potentially of great value to an organization, even if they do not fit the traditional model of fast-track, high-potential workers. If mismanaged, these workers will be unproductive and may even engage in destructive organizational politics, warns Derr. "Well managed and rewarded for their unique strengths, they would become equally valuable, though in a different way, as the most promising young general managers," he concludes.

Source *Managing the New Careerists* by C. Brooklyn Derr. Jossey-Bass. 1986. 288 pages. Available from the Futurist Bookstore for $32.45 ($28.45 for Society members), including postage and handling.

ily see a connection. People are simply acting out their wholeness, their psychological completeness in the workplace. Specifically, three major work-force trends illustrate this point: the rise of an increased entrepreneurial spirit in today's best business environments; the employee's desire for individual autonomy, freedom, and involvement in his or her work; and the global move toward more responsible corporate and governmental behavior.

• **Entrepreneurial skills and actualization.** Entrepreneurial skills are now felt to be critical to American business success. Both "entrepreneurs" and "intrapreneurs" are currently best-seller buzz words. American business wants to recapture the quick-response style of its earliest days through company restructurings, through searching for entrepreneurial-type leaders, and through "skunk works" projects, in which small groups of intrapreneurs go off to smaller, sometimes hidden, facilities to create new products in more flexible offshoot venture groups.

Psychologists have found that entrepreneurs desire and enjoy problem-solving tasks, are highly resourceful, and have the ability to deal with ambiguous circumstances, delays, and uncertainty. My interviews with actualizing adults show their amazing similarity to entrepreneurs in both working habits and personal characteristics.

For example, entrepreneurs and actualizers both are gifted, creative people who desire autonomy in their work and the chance to achieve visible results, with "success" defined in more than merely monetary terms. Personal fulfillment, the opportunity to make a meaningful contribution to self and

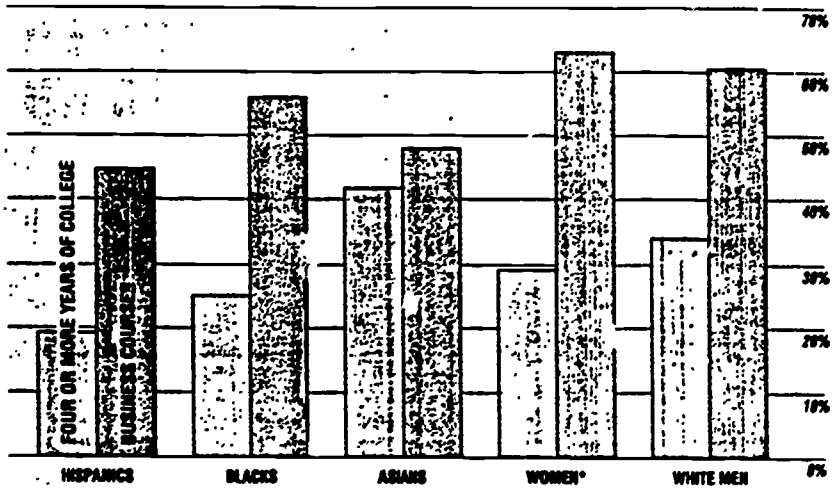
WHO'S THE BOSS?

The head honcho is still likely to be a white man, but women and minorities are catching up.

LEARNING THE TRADE

Asian business owners are most likely to have completed at least four years of college, but women owners are the best market for business courses, seminars, and workshops.

(percentage of business owners who have completed four years of college or more, or who have attended business courses, seminars, or workshops, by race, ethnicity, and gender, 1982)



* Women business owners may be of any race or ethnicity. Source: 1982 Characteristics of Business Owners, Bureau of the Census

SPREADING THE WEALTH

More than one-third of the businesses owned by women and one-fourth of the businesses owned by white men had a net income of less than $5,000 in 1982. About 10 percent of all business owners had a net loss.

(number of businesses by net income and characteristics of business owners, 1982)

	HISPANICS	BLACKS	ASIANS	WOMEN*	WHITE MEN
Total	248,141	339,239	255,642	2,884,450	6,856,665
Net loss	35,236	62,759	48,316	530,739	1,138,206
Less than $5,000	63,276	90,238	63,655	1,064,362	1,727,880
$5,000–$9,999	33,251	32,567	29,654	302,867	747,376
$10,000–$19,999	30,025	23,068	29,399	222,103	857,083
$20,000–$24,999	9,429	5,767	9,970	63,458	301,693
$25,000–$29,999	5,707	4,071	6,902	46,151	233,127
$30,000–$49,999	10,174	6,106	12,782	72,111	390,830
$50,000–$74,999	5,211	3,732	7,414	37,498	198,843
$75,000–$99,999	2,233	1,357	3,323	20,191	109,707
$100,000–$249,999	2,978	1,357	3,579	23,076	157,703
$250,000 or more	1,241	678	1,278	11,538	109,707

* Women business owners may be of any race or ethnicity.
Note: Totals do not add because of nonreporting. Source: 1982 Characteristics of Business Owners, Bureau of the Census.

POLITICAL

About Education

Fred M. Hechinger

NY Times 2-17-88

A war is shaping up between politicians and professionals over who should reform schools.

State-mandated school reforms are on a collision course with demands to give teachers and school administrators greater powers to decide how and what to teach. A classic war is shaping up between political and professional power. The battle is between those who believe schools can be improved through legislation and those who insist that the search for better schools must be led by teachers who know what students need.

Ten years ago, Arthur E. Wise, in his book, "Legislated Learning: The Bureaucratization of the American Classroom," wrote that politicians were creating a world of standardized testing rather than educational standards. Students, he said, were being processed rather than educated, and state legislatures were calling the shots.

Mr. Wise, who is director of the Center for the Study of the Teaching Profession of the Rand Corporation, reviews what has happened since then in an article, "Legislative Learning Revisited," in the January issue of Kappan, a journal for educators.

Ten years ago, he saw the beginning of an educational world in which "passive learners were being fed basic skills in bite-sized chunks to be regurgitated" on standardized tests. A decade later, he fears that the "bureaucratic hell" may have worsened.

The future, he says, "will be determined by local administrators and board members, who must decide whether they prefer standardized state control or client control, with an eye to what is best for individual children." Equal educational opportunity, he concedes, can be advanced by regulation; but the quality of education must be nurtured locally by qualified teachers.

This is how Mr. Wise views most legislative orders to elementary school teachers: "Don't teach everything, just teach the basics. Don't teach children to read, just teach reading skills. Don't teach children to write, just teach them to fill in the blanks. Don't teach them to think, just teach them to give the right answers."

More time for tests leaves less time for teaching. Then, children may do better on tests, even though they learn less.

Mr. Wise warns that faith in standardized tests leads to greater outside control: The tests of the National Assessment of Educational Progress, for example, are to be given greater power. (Since Mr. Wise wrote his critique, the Secretary of Education, William J. Bennett, has proposed nothing resembling a national high-school curriculum.)

As the bureaucratic and grassroots forces face each other, their conflict obscures the central issue: how to unleash the professional skills of teachers in ways that best serve the children. The reformers envision a relationship like that between patients and doctors, or clients and lawyers.

The quality of services delivered to students, Mr. Wise says, "depends on the capacity of the teacher to make appropriate decisions."

At a glance, the opposing forces seem unequally matched. On one side is the power of the state and the education bureaucracy, along with at least a part of the power of the purse.

But those on the other side of the battle lines have their assets: a growing public belief that good teachers can make children not only learn but want to learn; and actual examples of classrooms that prove that the belief is justified.

Demonstrations of success through imaginative teaching are more convincing than test scores inching up at snail's pace as a result of legislated standardization.

Reformers take courage from a number of developments.

The Coalition of Essential Schools, headed by Theodore Sizer, the former dean of the Graduate School of Education at Harvard, shows how to give the power to improve the schools to principals and teachers rather than to the states or to the education establishment.

The National Network for Educational Renewal, created by John I. Goodlad, a leading reformer, shows how collaboration between schools and colleges can raise standards in new ways.

The two teacher unions, the American Federation of Teachers and the National Education Association, are supporting grassroots reform.

The National Board for Professional Teaching Standards, an outgrowth of the 1986 report, "A Nation Prepared: Teachers for the 21st Century," by the Carnegie Forum on Education and the Economy, aims at giving teachers professional standing, like that enjoyed by physicians, lawyers and engineers.

In Indianapolis, eight teachers prevailed on the authorities to let them run their own elementary school, based in part on the theories of Howard Gardner, a psychologist at Harvard, which stress the concept of multiple intelligences. By seeking out the strengths of individual children and working as a team, the teachers focus on each child's capacity to succeed in different ways. Although the children study the regular academic subjects, they are also set free to explore and to excel in areas of their special intelligence. In addition, a school-wide theme, such as people's relationship to their environment, is introduced every nine weeks. Each child produces a personal project on the theme.

"I see lots of opportunities during the day for kids to to be good at something," said Kathleen M. Woods, who teaches first grade.

James A. Adams, superintendent of Indianapolis schools, says those teachers are given a chance "to create, develop, and explore in ways that most teachers never have."

The superintendent's office of Miami-Dade County has given schools the option to operate independently of the county bureaucracy, provided teachers can present acceptible action plans. Teachers may apply for waivers of union, state or even school board regulations

These more or less radical experiments have in common an attempt to extricate local schools — principals and teachers — from the clutches of bureaucratic controls.

For the moment, the forces facing each other are far from equal in power. The state's and education bureaucracies' powers are firmly entrenched. The reformers' power is mainly in their ideas. Their secret weapon, however, is a clientele — parents and employers of the schools' graduates — dissatisfied with the way things are.

For the moment, the only safe prediction is that hotly fought battles are ahead before the fate of the reform movement is decided.

CHARTING THE USA

Who gets 'star wars' money

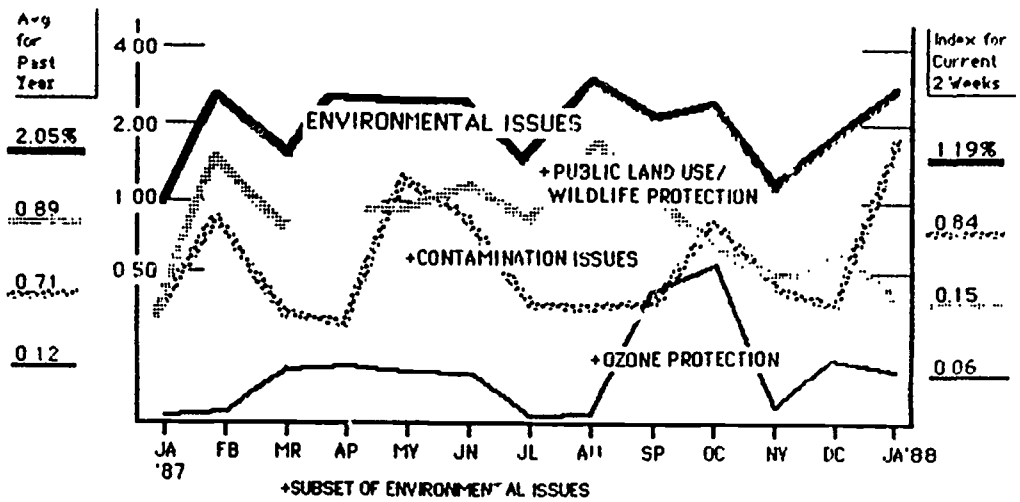
President Reagan's Strategic Defense Initiative — "star wars" — is in the research stage. Contracts for the past five years total $15 billion, says the Federation of American Scientists, which opposes SDI. Of that, 78% is going to corporations; 12% to federal labs; 8% to universities, government agencies and non-profit groups; and 2% to foreign contractors. Where the money goes in the USA:

State	Value of contracts	Rank
Alabama	$1,026,880,327	4
Alaska	1,988,983	33
Arizona	56,104,367	19
California	6,645,481,276	1
Colorado	751,164,558	6
Connecticut	134,617,533	15
Delaware	614,000	41
District of Columbia	72,949,307	18
Florida	198,023,806	12
Georgia	33,277,106	23
Hawaii	228,000	46
Illinois	47,876,975	20
Indiana	4,894,727	29
Iowa	514,085	43
Kansas	258,950	45
Kentucky	549,583	42
Louisiana	1,882,301	35
Maine	4,634,614	30
Maryland	227,155,070	11
Massachusetts	283,013,434	3
Michigan	6,338,948	28
Minnesota	83,918,938	16
Missouri	145,735,041	13
Montana	79,982	47
Nebraska	872,000	38
Nevada	1,897,700	35
New Hampshire	4,110,155	31
New Jersey	139,605,584	14
New Mexico	1,590,478,524	2
New York	323,367,596	9
North Carolina	33,674,696	22
Ohio	47,611,019	21
Oklahoma	19,390,527	24
Oregon	792,000	39
Pennsylvania	271,889,096	10
Rhode Island	1,934,100	34
South Carolina	749,842	40
Tennessee	19,026,284	25
Texas	519,055,429	7
Utah	79,578,794	17
Vermont	18,205,155	26
Virginia	329,224,710	8
Washington	789,717,419	5
West Virginia	506,000	44
Wisconsin	3,764,675	32
Wyoming	1,084,500	37
Trust Territories	17,381,202	27

No contracts: Arkansas, Idaho, Mississippi, North Dakota and South Dakota.

4

Issues by Sector: Environment



Major Trends

Despite a strong showing in mid-year, Environmental issues as a group did not deliver on their early promise to rise throughout 1987. Average monthly coverage was down over 12% from 1986. Waste, Contamination and the Ozone Layer remain potentially explosive issues able to command large chunks of space. Sensitivity of editors to events as an opportunity to exploit them remains high. But they have not yet become a daily concern of major media.

Active Issues

Two-thirds of all reporting on the environment in 1987 focused on land and water conservation — the traditional meat and potatoes of middle-class environmental activism. Over the years the total coverage of environmental issues hovered around 2% of normal news volume with land and water issues steadily taking a half or more. Last year they were up — and preempted other issues. Despite strong appeal, new threats like the emergence of the Ozone Layer got relatively small exposure — though what appeared was highly provocative. Waste and Contamination issues took 0.44% of national media coverage last year. They showed a slight rising trend, suggesting that editors are seeking out more news on this subject. By contrast coverage of chemical firms as a group as down, and no chemical firm was among the 20 most exposed in the year.

On the Horizon

The future of environmental issues lies in two distinct directions: The first is linkage with the nation's continually growing concern with Health. The second is the globalization of issues. Increasingly environmental issues feel the force of the "global-local" phenomenon. The most recent case is the Danish concern about workers' helping to clean up radiation from a U.S. nuclear-bomb accident in the Arctic Circle. Recent media coverage of Danish experience is playing back into the ongoing U.S. argument about government's liability for danger from radiation involved in defense work. While worry over loss of tropical rain forests in Brazil is not headline news, the latest news from the Ozone Hole always gets some space. Chernobyl and Bhopal established the "relevance" test: if the same event could happen here or touch people here, editors treat a foreign story as domestic news. The horizon of environmental coverage is now far wider than 5 years ago. In the long run, public interest is bound to rise.

EDUCATION

J. Mecca

TARGETED FORECAST

U.S. Department of Education • Office of Educational Research and Improvement

Center for Education Statistics

Contact: Debra E. Gerald
(202) 357-6581

September 1987

Higher Education Enrollment

This forecast of enrollment in institutions of higher education is part of a new series issued by the Center for Education Statistics (CES). The purpose is to develop 5-year projections of key education statistics and also highlight projected data for the coming school term. These forecasts are particularly targeted for individuals in business, industry, government, the media, and education whose work requires information on projected developments and trends affecting American education. Subsequent editions of Targeted Forecasts of Higher Education Enrollment will be published each year. Other Targeted Forecasts will be issued on graduates, earned degrees conferred, and instructional staff.

—Emerson J. Elliott, Director
Center for Education Statistics

Next 5 Years: Higher Education Enrollment Growth Slows

Highlights

1987 Higher Education Enrollment

- The Center for Education Statistics (CES) projects that this fall (1987) total enrollment in institutions of higher education will be down slightly from the 1986 level (0.8 percent).
- Although fewer full-time students are projected this fall (a decline of 2.1 percent), the Center forecasts an increase in the number of part-time students (1.0 percent over the previous year).
- Enrollments at 4- and 2-year institutions are each projected to decrease slightly (0.7 and 0.9 percent, respectively).
- Public college enrollment is forecast to decrease slightly (1.0 percent), while private college enrollment should remain stable.

5-Year Outlook

- Over the next 5 years (1987 through 1991), CES projects that total enrollment in the nation's colleges and universities will increase slightly from 1987 to 1989 (12.30 million to 12.36 million students) before declining to 12.20 million students by 1991. This decrease reflects the decline in the traditional college-age population. Although the 18- to 24-year-old population is projected to decline 7.0 percent over this period, total enrollment is expected to increase slightly in 1989 due to rising enrollment rates of 18- to 24-year-olds and increasing enrollments of female, older, and part-time students before declining in 1991.
- Enrollment at 4-year colleges will decline by 0.8 percent, from 7.70 million to 7.64 million. Enrollment at 2-year institutions will decrease 0.9 percent, from 4.60 million to 4.56 million.
- Public college enrollment in 1991 will be about the same as in 1987, while enrollment in private institutions is expected to decline 4.3 percent.
- Enrollments for each sex will decline—men by 0.5 percent, from 5.82 million to 5.79 million and women by 1.1 percent, from 6.48 million to 6.41 million.
- Full-time students will decrease 3.3 percent, from 7.00 million to 6.77 million. In contrast, part-time students will increase 2.5 percent, from 5.30 million to 5.43 million.
- Undergraduate enrollment will decline by 1.2 percent, from 10.55 million to 10.42 million. Graduate enrollment will increase 2.1 percent, from 1.46 million to 1.49 million, while first-professional enrollment will remain stable at 290,000.

CS 87-449

Learning Needs in a Changing World

The world is changing. This has been so ever since the beginning of humanity. What is new, however, is the high rate of this change, which has greatly reduced the time allowed for adaptation. We could almost say that the very concept of change has itself changed, due to an acceleration of history.

Remarkable breakthroughs in science and technology have led to an explosion of knowledge — and have contributed to an overflow of information. It is estimated that the total knowledge of mankind now doubles every seven or eight years. Over 2,000 new books are published *daily*. And it is not only the amount of information that has grown. The speed of its processing (1.2 billion operations per second in a Cray 2 computer), the stocking capacity (the equivalent of 275,000 pages on a small compact laser disc), and the ease and rapidity of access through telematics have totally transformed the servicing of knowledge.

The information revolution and the developments in high technologies such as artificial intelligence, biotechnology, new materials, and space technologies have one ingredient in common: knowledge. There is much less emphasis on natural resources or even capital. This transformation of society from a civilization based on raw materials, capital, and production to one based on human resources and knowledge is an irreversible development, with huge consequences for our learning systems.

What is needed is an overhauling of our learning systems. Our learning systems are geared toward maintenance and pattern reproduction and are not at ease with dynamic processes. They must be transformed to make them socioculturally relevant and capable of facing the challenges that change has brought about. We need "innovative learning" instead of "maintenance learning." Innovative learning calls for two prerequisites: participation and anticipation.

Some of the learning needs of the "society of knowledge" that is in the making and that will sooner or later include all parts of the world are:

- A reshaping of learning systems to favor innovation, participation, and anticipation in order to facilitate the tackling of the growing complexity that a society of knowledge entails.
- National programs for the eradication of illiteracy in the shortest time possible.
- A greater emphasis on research and development, particularly in areas that have a direct bearing on the understanding of the learning process.
- A concentration on high technology, especially in the case of less-developed countries, who must put aside what has been euphemistically called "appropriate" technology.
- The development of new criteria and parameters, as well as statistical norms and standards, to monitor achievements in the field of education and learning.
- The building-up of national, regional, and international information networks on learning.
- The launching of an international multidisciplinary research project on the learning process, involving industrialized and developing countries alike.
- A new understanding of the concept of "work," with a more intimate connection between employment, learning, and leisure.
- A novel approach to equity and social justice that would provide equal learning opportunities within and between countries.

Learning has become, more than ever before, a long-term process. Any reform of our learning systems must be worked out in terms of generations. We must achieve a thorough change all the way from preschool education to postgraduate studies, including the training of teachers and the production of new teaching materials. A period of 15 to 20 years is the minimum time required to transform an educational system.

A society of knowledge is one in which the frontiers between disciplines gradually crumble and where substance is sought at the interconnecting nodes. One of our learning challenges is to "unlearn" — to reduce the resistance to change of those involved with the learning profession.

A society of knowledge is also one that manages to overcome the "technological fix" and the supremacy of technocrats, so as to democratize the production and the use of the fruits of science and technology for the betterment of life. The survival of the human race, in a society of knowledge, will depend on its ability to bridge an ever-increasing human gap between knowledge and the manner in which it is used.

—Mahdi Elmandjra

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Future View, a regular feature in THE FUTURIST, is an editorial page giving various writers' opinions about the trends and likely events that will influence the future. Readers are invited to respond to these editorials or to submit their own to be considered for publication in THE FUTURIST. Send to: Managing Editor, THE FUTURIST, 4916 St. Elmo Avenue, Bethesda, Maryland 20814.

February 17, 1988 • The Chronicle of Higher Education • A7

Research Is a Key to Competitiveness, Leaders Agree

WASHINGTON

An overwhelming majority of business, university, and state leaders believe research and education are the keys to improving American competitiveness in world markets.

But many of those leaders believe the university-industry partnerships designed to make research and education more relevant to the needs of business will have little effect on the country's ability to compete.

Those are two of the findings of a survey, conducted by the National Governor's Association and the Conference Board, of 500 university officials, state officials responsible for science-and-technology policies, and senior research-and-development officers of technology companies.

The results of the survey were released by the National Science Foundation, which financed the project, in a report entitled *The Role of Science and Technology in Economic Competitiveness.*

The survey found that participants in cooperative research ventures between universities and industries generally believed that industry was not committing its "best and brightest" to such ventures.

Although business leaders had favorable opinions of cooperative programs, more than half of those surveyed believed they would not have a critical impact on U.S. competitiveness. Only one-quarter believed they would have a critical impact on the competitiveness of their companies.

In contrast, more than 80 per cent of the state officials and two-thirds of the university leaders believed such partnerships would have a critical impact on the country's economic competitiveness.

Both business and state leaders, however, agreed with university officials that more investment was needed to upgrade laboratory equipment and research buildings. They also agreed that improvements must be made in the quality of science, engineering, and mathematics education, and that colleges and universities must become better able to recruit and retain qualified faculty members.

Copies of the report may be obtained free from the Forms and Publications Office, National Science Foundation, Room 232, 1800 G Street, N.W., Washington 20550.

—KIM McDONALD

The Schools We Deserve

They would improve if we made them matter more by letting fewer students go to college

"illiam J. Bennett
Secretary of Education
Washington, D.C.

Dear Secretary Bennett:

You have written me—as well as many others, no doubt—asking for thoughts on the state of American education. You want some fresh ideas for a sequel to the 1983 report "A Nation At Risk." Fair enough. Writing is my business, and I'm happy to oblige with a few subversive views.

To be blunt, the reform so far has been tepid. Of course, there's huge variety, because control over the schools lies in states and nearly 16,000 school districts. Many of their reform efforts move in the right direction. Course requirements and standards are being toughened. Teachers are being paid more. But most changes remain cosmetic. We haven't yet faced the basic problem, which lies in public attitudes: since World War II we have felt that sending more students further in school would produce a better-educated society. We wanted to open college to everyone. We mistook schooling for education.

We get the schools we deserve, as historian Diane Ravitch has written. We have graduated more people with degrees, but the degrees have meant less—and sometimes they haven't meant anything. In a sense, mass mediocrity has been the policy. Today's most-needed education reform is to reverse that policy: to cut back on so-called "higher education" and to bolster high schools.

It's true that some test scores have recently risen. But evidence of educational shortcomings still abounds. Consider the experience of the New York Telephone Co. Applicants for its entry-level jobs, such as operators and clerks, must pass basic tests in vocabulary, numbers and problem-solving. In the first half of 1987, only 16 percent of 22,880 applicants passed. A study by Ravitch and Chester E. Finn Jr., a top official in your department, found that 17-year-old high-school students have huge gaps in their knowledge of history and literature. Only 32 percent knew that the Civil War occurred in the last half of the 19th century.

Unfortunately, the usual suggestions for improving the schools are unpromising. Democrats propose we spend more; the trouble is that we have been spending more. Per pupil spending (adjusted for inflation) has risen about 50 percent since 1969. Some Republicans embrace "vouchers," which would give parents funds for either public or private schools. Competing for students, it's argued, would reinvigorate public schools. Actually, vouchers might weaken the public schools by draining away the best students and most engaged parents. Support for public education could wane.

What's too easy and available cheapens in value. The point of cutting back on college is not to make it an elite experience. It's to improve both college and high school. High school remains the last basic education for most Americans. What states save by spending less on colleges should be used to raise salaries for public-school teachers. But money isn't the main problem. The pressing needs are to attract superior teachers and to create a climate in which students want to learn. Here's what I'd suggest:

1. The states should close 15 to 20 percent of their universities, colleges and community colleges. Almost anyone who wants to go to college can. All that's required is a high-school degree. Only elite state and private schools remain selective. Standards suffer. High school loses its relevance because students know they can go on to the next stage. Once in college, they're less prepared. The result is huge waste and personal disappointment. About half of college freshmen don't graduate.

2. The federal government should adopt academic requirements—minimum scores on standardized tests—for guaranteed college loans. States should raise tuitions at their colleges and universities. Subsidizing those who are unqualified or can afford to pay is senseless. Student tuition and fees at state schools average only 40 percent of those charged by private colleges and universities. Higher tuition revenues should be used to raise scholarships for needy, qualified students.

3. States should end the standard certification route for public-school teachers—a degree (or courses) from teachers colleges. To get better teachers requires a larger pool of candidates. Teachers should know more about what they teach: science, mathematics, English, history. We need tougher teacher-competency tests that anyone could take. Teachers colleges would then focus more on substance, less on teaching methods. These are vital, but should be taught by the schools. New teachers shouldn't be tossed into classrooms; they need better orientation courses and more time as assistants to experienced teachers.

Of course, these ideas won't be popular. Some may think them radical. They offend public sensibilities and many interest groups. College presidents don't want to shrink their colleges. Teachers usually don't welcome extra competition for their jobs or tougher standards. The trouble is that these problems don't fool our children. They recognize poor teachers. They know colleges are begging for students. They sense that society values schooling, not education.

It would be nice if all students liked school. That has never happened and probably never will. What's vital is that most students think education matters for their future. We are failing at that. The Ravitch-Finn study found that two-thirds of high-school seniors do an hour or less of homework a night. A survey by The Carnegie Foundation for the Advancement of Teaching asked high-school teachers to judge serious school problems. Student apathy was mentioned by more than two-thirds, student absenteeism by more than half and disruptive classroom behavior by about a third.

You cannot change the schools single-handedly. Power in our school system is decentralized. But you can prod people to think critically. We won't deserve the schools that we need until we shed some popular illusions. No one benefits from a system built on well-intentioned fictions. People ultimately discover whether they have the skills and knowledge they need in life. Degrees are meaningless if they don't signify real accomplishments. It's time we absorbed—and acted upon—that lesson.

Cradle-to-College Proposals for Tuition Payment

Special to The New York Times

BOSTON, Feb. 16 — Education officials in Massachusetts have devised a plan to encourage parents to start saving money early for their children's college education. They say it will serve as a model for other states.

The Massachusetts plan, developed by the staff of Gov. Michael S. Dukakis, is a variation on several programs for paying tuition in advance that were started by other states and by private schools in the last year to help families pay college costs. The programs have come into being as official concern rises over the fact that fewer middle-income families set aside money to pay for their children's college education.

Seven states have enacted tuition prepayment plans and several are considering them, but some of the plans have been criticized by educators as poor financial investments for the states and as limiting college choices. Some of the plans apply only to public institutions and most of them penalize students who attend colleges outside the home state.

Praise From Educators

The Massachusetts plan has drawn praise from several educators because it combines a savings program with a tuition guarantee. It calls for the Legislature to issue general obligation bonds, each worth a set percentage of tuition at a particular school. Parents could buy the bonds over the years before their children were ready for college. The bonds would be tax-exempt and available in denominations as low as $50. The parent would be guaranteed that the bonds would be worth the same fraction of tuition when the child entered college as at the time of purchase.

The state would publish an annual list of how much the bonds were worth toward tuition at each participating school. For example, a $100 savings bond might represent 1/10th of a year's tuition at a state college, 1/12th of a year at a public university, or 1/18th of a year at a medium-priced private college.

The Massachusetts plan, which has not yet been put into legislation, was inspired by a tuition guarantee program that has been approved in Michigan and an Illinois savings bond program that pays a premium if used for tuition at a private or public school in the state.

More than a dozen colleges offer their own tuition prepayment plans. These programs began to catch on in state legislatures last year after Michigan passed a plan that would allow the parents of a young child to pay several thousand dollars into a state-run trust and be guaranteed full tuition for the child at any of the state's public institutions.

The Michigan plan, adopted in December 1986, has not been put into effect, pending a tax ruling from the Internal Revenue Service. Also contingent on the ruling are prepayment tuition plans in Florida, Indiana, Maine and Tennessee. Wyoming has a plan in effect providing for the advance payment of tuition.

N.Y. Times 2-17-88

Times 2.17.88

Standardized Test Scores:

Voodoo Statistics for the Nation?

By EDWARD B. FISKE

Garrison Keillor, the folk humorist, has provoked many a smile by his description of the mythical town of Lake Wobegon as a place where the women are strong, the men good looking and "all the children are above average."

News Analysis

But looking closely at the results of the estimated 50 million standardized achievement tests taken by American schoolchildren every year, it seems that such fantasies are no longer a laughing matter.

For several years virtually every state education department, and even the most urbanized local school districts, have released standardized test scores showing that their children are reading, writing and calculating above the national average. Since this by definition is impossible, test makers and educators have been accused of playing statistical or educational shell games.

Last week Chester E. Finn Jr., the assistant United States Secretary of Education in charge of research, called both sides into his office to explore the issue. He concluded that the standardized test scores used to evaluate public schools were not always what they appeared to be.

'Lake Wobegon Effect'

What Mr. Finn described as the "Lake Wobegon effect" was first raised in a systematic way by Dr. John J. Cannell, a family physician in Beaver, W.Va., who was concerned about the problems of low self-esteem and depression he saw in many of his teen-age patients. "I noticed a discrepancy between their academic performance and the grade level to which they were assigned," he said.

When Dr. Cannell heard a report one day from his state's education department that schoolchildren in West Virginia, which has one of the highest illiteracy rates in the nation, were performing above the national average, his concern turned into anger.

He formed a nonprofit organization, Friends for Education Inc., and canvassed state education departments around the country. "We could not find any state that was below the national average," he said.

Participants in last week's meeting, called by Mr. Finn to explore Dr. Cannell's charges, said what struck them the most was that none of the two dozen people present, not even the test makers, took issue with his findings.

"There's no dispute that test scores are rising," said David G. Deffley, general manager of CTB/McGraw-Hill, publisher of the California Achievement Test and other tests. "The dispute comes about why."

Reasons for Effect

At least these four reasons are usually suggested:

¶Definitions of "average" are out of date. The major tests are first given to a scientific sample of students around the country. Their scores become the norms for determining whether those who follow are scored above, at or below the national average. But norms for many of these tests have not been re-set for six or seven years. Testers say that schools have been getting better and the average has been rising. Consequently, many stuoents who might otherwise now be scored "below average" are still "above average" compared with the early 1980's sample groups.

¶Schools pick tests that match their curriculums. This means that their students, unlike many of those in the sample, will find a close fit between the questions and what they have been taught.

¶Once teachers become familiar with the tests, they tend to alter their teach to anticipate what their students will encounter.

¶There are no industry standards on what students take the test. For the trial tests, many districts give the examinations to all students, including those with learning problems But many of the districts using the test exclude the scores of such students. "I find that reprehensible," said Mr. Finn.

Wide-Ranging Debate

Some explanations are themselves disputed, beginning with the assumption that schools have improved in the 1980's. Although primary school scores have risen, high school scores have not. The Educational Records Bureau, which specializes in testing students in private schools and in wealthy suburban districts, reports that scores at all grade levels have been "stable since 1979-80."

There is also debate over how far schools go to align their curriculums with the tests. Dr. Cannell charges that many schools are giving their students actual test items. Test makers acknowledge that some schools use the same form of the tests every year, but they argue that the outright "cheating" alleged by Dr. Cannell is not widespread.

When all is said and done, everyone seems to agree that the standardized testing in this country is structured so that, except in rare periods when student learning is on the decline, it is impossible to have a test where half of the students will be reported to be above average and half below.

Mr. Finn, who acknowledges he did not realize the full extent of the testing paradox, suggested that it would be a "fine idea" to hold any future meetings in the Chatterbox Cafe.

That's the place in Lake Wobegon that serves up Powdermilk Biscuits wholesome enough to "give shy persons the strength to get up and do what needs to be done."

NY Times 2-17-88

Dan B. Fleming

Teaching the Great Issues of the Future

Educators debate how the great issues of the future should be presented to students. U.S. textbooks "solve" the problem by avoiding these issues almost entirely.

One of the hottest battlegrounds in the ongoing debate over secondary education priorities is the place in the curriculum—if any—for the great issues of the future.

Differing schools of thought exist on this subject. Some believe that the study of the great books and ideas of the past is sufficient to build a solid base for students to cope with whatever happens in the future. Some want a focus on acquiring the basic skills from the 3 R's. Others want the spotlight on critical thinking skills. Still others view the school as a problem-solving laboratory and desire a curriculum built around pervasive and enduring issues that are facing the world today and will be with us for many decades to come—the great issues of the future.

Within education circles, there is debate not only over whether great issues of the future should be studied but also over how they should be presented. For example, Herbert I. London, author of *Why Are They Lying To Children?* and national chairman of the Visions of the Future education program of the Hudson Institute, charges that public school textbooks are "mistaken, misguided, and misleading prophets of doom."

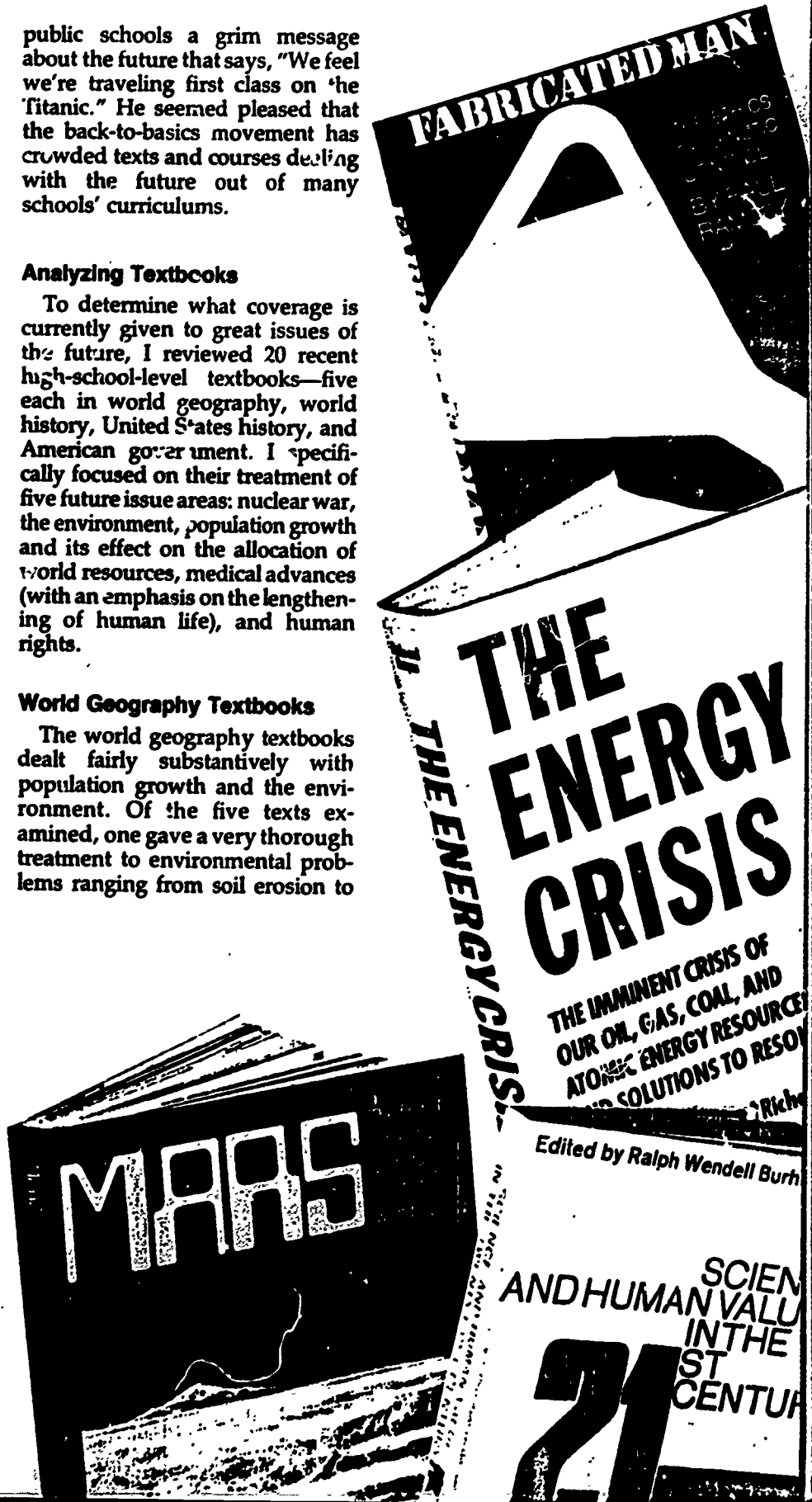
London was disturbed by what he perceived as the inaccurateness of reports such as *The Limits to Growth* issued by the Club of Rome in 1972 and the *Global 2000 Report* from the Carter administration in 1980. He suggests that reports such as these have given students in public schools a grim message about the future that says, "We feel we're traveling first class on the Titanic." He seemed pleased that the back-to-basics movement has crowded texts and courses dealing with the future out of many schools' curriculums.

Analyzing Textbooks

To determine what coverage is currently given to great issues of the future, I reviewed 20 recent high-school-level textbooks—five each in world geography, world history, United States history, and American government. I specifically focused on their treatment of five future issue areas: nuclear war, the environment, population growth and its effect on the allocation of world resources, medical advances (with an emphasis on the lengthening of human life), and human rights.

World Geography Textbooks

The world geography textbooks dealt fairly substantively with population growth and the environment. Of the five texts examined, one gave a very thorough treatment to environmental problems ranging from soil erosion to



"Students must rely on sources other than textbooks to obtain information on most of the great issues of the future."

oil spills and offered possible solutions to these problems. All of the books gave at least a brief mention to the future issue areas, with one being particularly positive and two rather pessimistic about the future.

Three of the books' references to population problems only presented the problem and then left it hanging. One was very positive, but raised questions as to its accuracy by making statements such as "Things are getting better for Mexico. They will be even better tomorrow." (This quotation, incidentally, illustrates the difficulty of evaluating optimism/pessimism. Differing outlooks offer constant pitfalls in such judgments.)

All five texts mentioned some advances in medical technology and the reduction of disease. The long-term implications of these changes, however, were not pursued.

World History Textbooks

A textbook for a world history course has the great challenge of trying to include events ranging from prehistoric times to the present in all areas of the world. As a result, it is not surprising that, of the five textbooks reviewed in world history, only one really devoted any significant coverage to all five future issue areas. All of the textbooks provided at least a perfunctory glimpse of population and environmental issues. The best overall coverage was given to human rights, particularly apartheid in South Africa.

The amount of space devoted to the five future issue areas ranged from a page or two in three of the books to 20 pages in one. The normal heading for these issues was a title such as "Challenges for Tomorrow."

It was difficult to classify the five textbooks as either optimistic or pessimistic. For some issues the tone was upbeat, such as for human rights and medical advances. But coverage of the population issue generally left one wondering what was going to happen next.

United States History Textbooks

Only one future issue area was given a thorough treatment in the five high-school-level United States history texts: that of human rights in the United States. This included rights for groups such as blacks, women, Hispanics, and Indians, with two books giving attention to the rights of the handicapped. None of the books offered much coverage on the nuclear arms race, but three briefly discussed environmental issues. The "graying of America" and population trends were generally ignored except as those trends related to minorities and the growth of the "sun belt." Medical technology and the issues surrounding it were given very little or no coverage.

Since U.S. history is usually a required course for all students, the weak coverage by course textbooks of the great issues of the future is of particular concern. Adding to this problem in both world and U.S. history courses is the fact that teachers often fail to reach the modern period at all, and so—even if a future issue area is included in the text—a class may never get to it.

American Government Textbooks

One future issue area was given lengthy coverage in all five books: human rights in the United States, primarily centering around the Bill of Rights. And four texts devoted a few pages to foreign policy deliberations related to controlling the arms race. But aside from these two future issues areas, virtually nothing else related to great issues of the future is dealt with at all, with the exception of two books providing some limited coverage of environmental issues.

Overall, with the exception of their very detailed coverage of civil-rights issues in the United States, the American government textbooks did not provide much information on great issues. This is particularly disappointing since the students using these textbooks are usually seniors and may never again have the chance to explore these issues in a formal academic setting.

Textbook Reform

Related to the debate on the coverage of the great issues are recent and heated attacks on the poor quality of textbooks used in public schools. As a result of these complaints, a number of state and national organizations have conducted studies to determine how public school textbooks can be strengthened.

California is leading the way in this movement, setting new standards requiring more "content and substance" in texts. Making the task more difficult for textbook publishers is the mandate by states such as California for "themes that broaden students' awareness of their own and other societies."

Based on the findings of this review, it is apparent that students must rely on sources other than textbooks to obtain information on most of the great issues of the future. If the textbook continues to dominate the content of the curriculum, as many believe it will, the problem of students with little academic future-orientation will grow.

About the Author

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Appendix B: R2 Delphi at Utopia County Community College

INTRODUCTION

One of the principal difficulties with conventional forecasting methods is that they are generally incapable of detecting unprecedented future events (e.g. surprises). Methods that attempt to identify potential surprise events provide decision-makers with the opportunity to explore the implications of alternative visions of the future and to initiate appropriate strategies in anticipation of those futures. In other words, such methods allow those involved in planning to create futures that happen for the organization and not just response to futures that happen to the organization.

The purpose of this questionnaire is to identify and assess those potential developments which could affect the future of Utopia County Community College. Specifically, this questionnaire is designed to elicit your judgments on the critical trends and future events that could have importance to the college's future. The time horizon is the next 10 years (i.e. 1987 to 1997). Although none of us can tell precisely the future that will materialize over the next 10 years, each of us has a reasonably clear idea of a set of patterns and a small range of possible deviations which create an image for us of the "most likely future." It is this image of the future that typically guides our decisions in formulating long-term strategic plans. Please keep this image of the "most likely future" in mind as you make your forecasts for the future in this questionnaire. The forecasts you provide should be a reflection of your expectations, not your preferences.

The questionnaire is divided into two parts. The first part is an evaluation of the importance for the college's future of selected trends. The second part is an evaluation of potential events which also may affect UCCC's future.

Move quickly through the questionnaire. Do not labor over any single answer. Your first impression is likely to be your best.

PART I - EVALUATION OF KEY TRENDS

In this section of the questionnaire you are being asked to forecast the level of selected trends and evaluate their consequences on the college should they materialize by 1997. In forecasting the level of the trends listed below, assume their present levels in 1986 are each 100. Then estimate their most likely levels at two points in the future -- 1992 and 1997. Please note: a trend's level can increase, decrease, or remain level as the future evolves. It is possible that a particular trend may first increase and then decrease or vice versa over the present level. Also, the level of a trend can go to zero, but not below it.

While we tend to think of a trend as having either positive or negative consequences, it is rare for a trend to have only positive or only negative consequences. Typically, both are present. Please estimate both the positive and the negative consequences for Utopia County Community College of each trend on the assumption that the forecast actually materializes by 1997. Use the scale of 0 to 10 in making your estimates, with these basic benchmarks:

0 = No Consequences
3 = Minor Consequences
5 = Moderate Consequences
7 = Major Consequences
10 = Revolutionary Consequences

The following example illustrates a typical response. The respondent's forecast of the trend's level will most likely increase by 25% in 1992 and 10% in 1997 over that of to lay (1986). The respondent also estimated that the trend would have major positive consequence (7) and a minor negative consequence (3).

EXAMPLE

TREND (Level in 1986 = 100)	LEVEL OF TREND IN ...		CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED	
	1992	1997	Positive	Negative
The number of women entering the supervising positions in business.	125	110	7	3

This part of the questionnaire is designed for you to spend an average of 60 seconds per trend. Once you've completed your estimates for all trends, please proceed to Part II.

Part I - Evaluation of Key Trends

TREND (Level . 1986 = 100)	LEVEL OF TREND IN ...		CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED	
	1992	1997	Positive	Negative
T-1. Number of persons living in or near urban areas of the state (Charlesto , Columbia, Greenville, etc.).				
T-2. Number of retirees annually immigrating to the state.				
T-3. The price of oil on the world market.				
T-4. Annual rate of inflation in the U.S.				
T-5. Amount of dollars American business and industry invested in high technology research and development.				
T-6. Annual number of manufacturing jobs moving to the developing countries (i.e., Mexico, Korea, etc.) from the U.S.				
T-7. Number of industries annually relocating from the frostbelt to the sunbelt.				
T-8. Number of new jobs annually created by industrial development and expansion in the state.				
T-9. Number of all Americans whose standard of living is below the poverty level.				
T-10. Number of persons in the state's labor force employed in the manufacturing sector.				

Part I - Evaluation of Key Trends

TREND (Level in 1986 = 100)	LEVEL OF TREND IN ...		CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED	
	1992	1997	Positive	Negative
T-11. Number of small family farms in the state.				
T-12. Number of persons in the state's labor force employed in the service sector.				
T-13. Number of small businesses being started annually in the state.				
T-14. Amount of U.S. Gross National Product derived from health care.				
T-15. Level of unemployment in the state's labor force.				
T-16. Level of unemployment in the U.S. textile industry.				
T-17. Number of women entering the U.S. job market.				
T-18. Number of young people 16-24 years old annually entering the workforce in the state.				
T-19. Number of minority youths 16 to 21 years of age annually unemployed.				
T-20. Number of persons who take early retirements prior to turning age 65.				
T-21. Number of all U.S. workers working a thirty-two (32) hour week.				

TREND (Level in 1986 = 100)	LEVEL OF TREND IN ...		CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED	
	1992	1997	Positive	Negative
T-22. Number of workers in the southeastern U.S. having flexible work schedules.				
T-23. Number of industries in the southern U.S. using robots.				
T-24. Number of industries in the state using computers with optional memory and user-friendly software.				
T-25. Level of automation used in U.S. offices.				
T-26. Number of jobs in U.S. business and industry requiring a basic knowledge of the use of computers.				
T-27. Number of U.S. households with a personal computer.				
T-28. Number of homes in the college's service area having a personal computer.				
T-29. Number of medical diagnosis done by health technologists using computerized processes.				
T-30. Level of job skills required for entry-level employment by U.S. businesses and industry.				
T-31. Number of new hires by U.S. business and industry who possess general skills and knowledge which can be used across several jobs.				

Part I - Evaluation of Key Trends

TREND (Level in 1986 = 100)	LEVEL OF TREND IN ...		CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED	
	1992	1997	Positive	Negative
T-32. Level of emphasis on job specialization within U.S. business and industry.				
T-33. Degree of specificity of the job skill training provided by the state's technical colleges.				
T-34. Level of demand for highly specialized technological workers in the state.				
T-35. Level of demand by business and industry for electronics technicians in the state.				
T-36. The economic worth of an associate degree in the U.S. labor market.				
T-37. Number of persons in the state 24 years of age or older who seek to upgrade their job skills by participating in adult education.				
T-38. Number of adults 24 years of age or older in retraining programs offered through the state's two-year technical colleges.				
T-39. Number of students enrolled in continuing education programs offered through the state technical education system as full-time students.				
T-40. Number of students in the state's technical colleges enrolled as part-time students.				

TREND (Level in 1986 = 100)	LEVEL OF TREND IN ...		CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED	
	1992	1997	Positive	Negative
T-41. Number of students in the state's technical colleges enrolled as full-time students.				
T-42. Amount of money annually allocated for employee training by U.S. corporations.				
T-43. Amount of money spent for the training of their employees by the state's business and industry.				
T-44. Number of industrial employees in the U.S. being trained "on-the-job" by their companies.				
T-45. Number of businesses and industries in the state contracting with local technical colleges to provide all training for their employees.				
T-46. Number of organizations outside the U.S. educational system (i.e., corporations, private job training contractors, etc.) offering technical education accepted for college credit.				
T-47. Number of four-year colleges in the U.S. offering technical programs at the baccalaureate level.				
T-48. Competition in U.S. among two-year colleges, four-year colleges, private-for-profit post-secondary institutions, and the military to recruit entrants from persons 17 to 21 years of age.				

TREND (Level in 1986 = 100)	LEVEL OF TREND IN ...		CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED	
	1992	1997	Positive	Negative
T-49. Number of high school graduates in the state who do not meet the state's standards for admission into a public four-year colleges.				
T-50. Educational level of students 17 to 21 years of age entering the state's technical colleges.				
T-51. Number of minority students enrolled in the state's technical colleges.				
T-52. Number of all students enrolled in technical education programs in the state who are enrolled in at least one developmental course.				
T-53. Number of students enrolled in associate degree and certificate level business programs offered by the state's technical colleges.				
T-54. Number of students enrolled in associate degree and certificate level technology programs offered by the state's technical colleges.				
T-55. Number of students enrolled in associate degree and certificate level industrial craft programs offered by the state's technical colleges.				

TREND (Level in 1986 = 100)	LEVEL OF TREND IN ...		CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED	
	1992	1997	Positive	Negative
T-56. Number of persons 24 years of age or older in the state who participate in some form of adult education (i.e., GED, Basic Education, Adult Literacy, etc.).				
T-57. Number of all eligible students in the state who consider higher education to be economically too costly for them.				
T-58. Number of U.S. students in institutions of higher education receiving federal student financial aid.				
T-59. Level of use of computers in U.S. higher education for both educational and administrative purposes.				
T-60. Number of U.S. undergraduate college students required to own personal computers for use in their college studies.				
T-61. Level of cost to state's technical colleges of upgrading instructional equipment.				
T-62. Importance of "hands-on" dimension of instructional programs in high technology fields.				
T-63. Level of pressure from federal and state government for accountability in higher education.				

TREND (Level in 1986 = 100)	LEVEL OF TREND IN ...		CONSEQUENCES IF FORECAST ACTUALLY MATERIALIZED	
	1992	1997	Positive	Negative
T-64. Level of financial and political support from state and local government for public two-year colleges in the state.				
T-65. Level of federal revenue-sharing funds available to support state and local government.				
T-66. Amount of federal grant monies received by two-year colleges in the U.S.				
T-67. Amount of annual revenues of the state's two-year technical colleges derived from JTPA.				
T-68. Amount of all state funds allocated to state's technical colleges available for new faculty positions.				
T-69. Amount of all state funds allocated to state's technical colleges available for professional development activities of existing faculty.				
T-70. Level of corporate and individual contributions to institutions of higher education across the U.S.				

PART II - EVALUATION OF FUTURE EVENTS

The second part of the questionnaire requires you to provide two judgments about each event listed. The first judgment concerns the probability of each event occurring during the period of 1987 to 1997. In the column labeled "PROBABILITY ..... etc.," write in the numerical estimate of how likely you believe the event is to occur in this ten-year period. Use a scale of 0 to 100, where "0" means "no likelihood of occurring at any point during the next 10 years" and "100" means "certain of occurring at some point in the next 10 years."

The second judgment concerns the impact of each event on Utopia County Community College should the event actually occur. In the column headed "IMPACT ..... etc.," enter the numbers that indicate your estimates as to both the events positive impact and negative impact in the appropriate column. Use the scale of 0 to 10 in making your estimate with these basic benchmarks:

0 = No Impact
3 = Minor Impact
5 = Moderate Impact
7 = Major Impact
10 = Revolutionary Impact

The following example illustrates a typical response. The respondent estimated that the event would have a low probability of occurring (25) and a moderate positive impact (5) and a minor negative impact (3).

EVENT	PROBABILITY OF OCCURRING BETWEEN 1987 AND 1997	IMPACT IF EVENT OCCURS	
		Positive	Negative
Federal government places restrictions on all corporate managers.	25	5	3

Move as quickly as possible from event to event. You should allow yourself about 45 seconds to provide all judgments on each event.

Part II - Evaluation of Future Events

EVENT	PROBABILITY OF OCCURRING BETWEEN 1987 and 1997	IMPACT IF EVENT OCCURS	
		Positive	Negative
E-1. The federal government implements a computerized career information data base available to all high school and college students.			
E-2. An effective and credible counseling model for matching a student's abilities with a curriculum's requirements is developed.			
E-3. Congress reinstates the G.I. Bill for education which includes increased benefits and can be used by reservists.			
E-4. All non-military government financial aid funds are cut by 50 percent.			
E-5. Large private corporations establish lucrative college student financial aid packages with follow-up employment.			
E-6. A major depression occurs in the U.S. with the national unemployment rate exceeding 15 percent for two consecutive years.			
E-7. Thirty (30) percent of the textile companies in the southeastern U.S. have either closed their door forever or have been bought by other textile companies.			
E-8. Seventy (70) percent of all automobiles sold in the U.S. are made and assembled outside of the country.			
E-9. Congress eliminates the minimum hourly wage.			
E10. Large employers (500 employees or more) are required to provide jobs for persons involuntarily unemployed in proportion to their number of employees and the number of job applicants.			
E-11. At least five million Americans are engaged in information service work at home using computers and communication devices.			
E-12. The four-day work week becomes standard in the U.S. with the length varying from 7 to 10 hours.			

Part II - Evaluation of Future Events

EVENT	PROBABILITY OF OCCURRING BETWEEN 1987 and 1997	IMPACT IF EVENT OCCURS	
		Positive	Negative
E-13. Microcomputers and word processors are being retailed in the U.S. which allow system commands and inquiry to be made by voice activation.			
E-14. The first completely automated manufacturing plant in the state opens in the upper part of S.C.			
E-15. An anti-technology movement more intense than any known to date emerges throughout the U.S. halt further automation of work and block certain lines of biological research.			
E-16. The first factory in space is established by the Soviet Union.			
E-17. The federal government reinstates the selective service draft.			
E-18. Eighty (80) percent of industrial production machinery in the U.S. is operated by numerical and computer commands.			
E-19. A composite developed from carbon-based fibers becomes a viable raw material for construction of airplanes and automobiles.			
E-20. Eighty (80) percent of industrial drafting in the U.S. is done with CAD equipment.			
E-21. Telecommunications links all the state technical colleges.			
E-22. A major regional conflict (e.g., Central America) erupts in which U.S. troops become directly involved.			
E-23. The U.S. experiences a dramatic flood of refugees from Mexico, Central and South America.			
E-24. Biological technologies are developed that facilitate rapid learning.			
E-25. Credible brainwave measures of cognitive skills are developed.			

Part II - Evaluation of Future Events

EVENT	PROBABILITY OF OCCURRING BETWEEN 1987 and 1997	IMPACT IF EVENT OCCURS	
		Positive	Negative
E-26. A national opinion poll reveals that over 40 percent of the public believe a general/liberal arts education is the best preparation for entering the job market.			
E-27. A Gallop poll indicates that 50 percent of the public believes that the fundamental processes of decision-making (i.e., critical thinking, problem solving, analytical thinking, etc.) are an important part of the skills taught under general education.			
E-28. The majority of four-year colleges and universities in the U.S. have established a minimum academic standard that all students must attain by the end of the sophomore year.			
E-29. The state's Commission on Higher Education issues a decision prohibiting unnecessary duplication of curriculum among four-year and two-year colleges.			
E-30. Students in the state are guaranteed almost automatic transfer from two-year to four-year colleges.			
E-31. Two-year colleges in the state now award the Bachelor of Technology degree.			
E-32. Most technical education curriculums in two-year colleges are undergoing major revisions every two-years.			
E-33. Public four-year colleges and universities in the state now articulate their primary institutional mission as supporting the economic development of the state.			
E-34. Public two-year colleges and universities in the state tailor their curriculum to provide education for employment.			
E-35. State business and industrial leaders call upon the two-year technical colleges to provide more and better occupational upgrading for employees.			
E-36. A major Fortune 500 company signs a contract with the state to implement a statewide computer training program to benefit unemployed citizens.			

EVENT	PROBABILITY OF OCCURRING BETWEEN 1987 and 1997	IMPACT IF EVENT OCCURS	
		Positive	Negative
E-37. The majority of industries in the U.S. have eliminated financial incentive programs for employees to continue their education.			
E-38. Forty (40) percent of all public two-year colleges offer a full range of associate degree programs via national educational computer network.			
E-39. The federal government establishes a free-access national education computer network that can be used by anyone from elementary school age to persons enrolled in graduate programs.			
E-40. Fifty (50) percent of all American homes are equipped with interactive TV systems.			
E-41. Public school teacher salaries are increased to the point where they are within 10 percent of comparable positions in industry.			
E-42. Part-time faculty members now constitute almost 70 percent of the instructional staff in the state's two-year colleges.			
E-43. The high cost of construction and plant operations have created a crisis for the majority of U.S. institutions of higher education.			
E-44. U.S. income taxes are revised to allow deductions of about $5.000 (1986 dollars) per student per year for college tuition.			
E-45. A U.S. district upheld the right of a graduate to receive punitive damages from a college upon proving the quality of education was inferior.			
E-46. A concept of malpractice is now applied to all professions including teaching.			
E-47. Quality educational programs versus educational access is the primary issue for two-year colleges.			
E-48. Management of most institutional functions and activities is centralized at the state level by the State Board for Technical and Comprehensive Education.			

EVENT	PROBABILITY OF OCCURRING BETWEEN 1987 and 1997	IMPACT IF EVENT OCCURS	
		Positive	Negative
E-49. The state legislature mandates the establishment of articulation policies and procedures among public schools, two-year colleges and four-year colleges.			
E-50. The state legislature mandates that all area vocational centers and two-year technical colleges articulate their educational program.			
E-51. An amendment to the U.S. Constitution limiting growth of the federal budget to a specific percentage of the GNP is approved.			
E-52. The federal government establishes a policy of paying college costs (e.g., tuition, room, board, etc.) in exchange for a federal work commitment which can be fulfilled by military service.			
E-53. Congress establishes a policy of pro-rating federal higher education aid to states based upon student improvement demonstrated on national college admissions exams (i.e., SAT, ACT, etc.).			
E-54. Congress mandates at least two years of national service (either civilian or military) for all 18 year olds.			
E-55. The federal government requires that an 800 SAT or comparable ACT score for persons to be eligible to receive federal student aid.			
E-56. Comprehensive federal legislation designed to reindustrialize the nation, and which includes support for technical education programs, is passed by Congress.			
E-57. Congress establishes a system, patterned after that for IRA's, that allows any worker to make tax deductible contributions to an "Individual Training Account" which the worker can draw on for tuition if laid off and in need of retraining.			
E-58. The federal government now requires that all federal grant funds awarded to institutions of post-secondary education be matched dollar for dollar.			

EVENT	PROBABILITY OF OCCURRING BETWEEN 1987 and 1997	IMPACT IF EVENT OCCURS	
		Positive	Negative
E-59. Communications satellites are used as an alternative form of educational delivery system.			
E-60. Complete artificial intelligence units capable of speaking several languages and responding to oral questions in a wide variety of subject areas are developed.			

Appendix C: Scenarios of the Future of Utopia County Community College

The Official Future

The period of 1985 to 1990 can be characterized as a "boom time" for Utopia County Community College. As the job market expanded vigorously for persons with computer skills and for those prepared for work in automated plants and offices, the long-standing emphasis by the college upon high-technology training has paid big dividends. The use of computers in business and education grew by 30%, and at least 7 out of every 10 homes in America were equipped with appliances and other equipment that in some way utilized a computer. The need for technicians to service this equipment grew at a steady pace. Expansion also occurred in the health care programs as area hospitals increasingly relied upon UCCC to provide them with technologists able to operate the sophisticated diagnostic equipment that was developed in the late 80s. In addition, entrepreneurial training offered by the college continued to find wide acceptance.

Enrollment at UCCC grew markedly as a result of the relevance of its programs and its success in job placement. Despite the reluctance of some legislators to enthusiastically support the college, UCCC met all tests of accountability and qualified for substantial funding under the state formula. Even a federal reduction in student financial aid worked to the college's advantage. Students who, with full financial aid support, might have gone to a four-year college or university now enrolled at UCCC. The result was not only a gain in enrollment but an increase in the academic level of the student body. Because of increases in state funding and student tuition revenues, the college was largely able to offset many of the declines in grant programs at the federal level. Likewise, more full-time faculty members were employed, thereby reversing an historic dependency upon a disproportionate number of adjunct faculty.

Another factor which favorably impacted UCCC was the considerable number of high school graduates who did not qualify for admission to a four-year college under the terms of the Educational Improvement Act of 1983. Many of those students attended UCCC, boosting enrollment. Of greater importance, however, was the fact that this situation afforded leverage for UCCC to request authorization to offer A.A. and A.S. programs. Approval of these programs was granted and the initial classes were accepted for the fall of 1988.

In the meantime, an external condition which has plagued the community for some time tended to stabilize during the late 1980s and continued past 1990. The textile industry, which suffered greatly from a high volume of foreign imports, benefited from trade restrictions imposed in 1986 and appeared to hold its own through the latter portion of the decade. This reversal had similar positive effects upon other industry in the area, thus creating an environment favorable to training and employment.

In short, the college flourished during the late 1980s and early 1990s.

The Surprise-Free Future

In the late 1980s and early 1990s, Utopia County Community College maintained a position, in terms of credibility and effectiveness, similar to that which characterized it at the beginning of the 80s.

While job demands for highly specialized technological workers burgeoned around much of the country, the same trend was substantially offset in the UCCC service area by a major reduction in industrial investment. The entire state, in fact, experienced an inability to attract new industry. At the same time, the service economy did not fully materialize in the region, at least not in terms of providing an abundance of high-tech job opportunities. The decline of the textile industry, which led to a 10% reduction in its work forces, did produce a number of adults seeking re-training. Because many of these displaced workers were not well prepared academically, they

did not translate into significant enrollment gains and, of those who did enroll, few graduated although there were some notable success stories.

Beginning in the latter part of 1988, the textile industry began to experience some stability as a result of: (1) modernization of manufacturing processes; (2) some diversification in product lines; and (3) limited trade restrictions imposed by the federal government. With this improvement in textiles, other industries in the area rebounded as well. Still, there was no general return to a "golden age" for manufacturing industries like textiles.

The fiscal environment in which UCCC operated was one of on-going strain. Costs of construction, plant operations, and educational support services continued to escalate rapidly. Funding from all levels of government became increasingly difficult to secure. County and state support monies, typically in short supply, were even less plentiful as a result of the industrial downturn and more agency competition for available dollars. A conservative fiscal mood still dominated much thinking at the federal level and, as a consequence, there was a significant reduction in grants to support special projects. Student financial aid programs, were substantially cut, severely reducing enrollments in high tuition institutions, while increasing enrollments in low tuition schools (UCCC and others).

There were a number of important "bright spots" for UCCC during this period. The college's commitment to high-technology training filled a need in industries introducing automated manufacturing processes. Use of computers in business and education grew markedly, while computer-assisted devices were found in a majority of homes. The need for technicians to operate and to service such equipment expanded steadily, and UCCC provided graduates to meet this demand. Enrollment of students in high-tech degree programs increased sharply and the Continuing Education Division made major contributions providing necessary short-term training (and re-training) for industrial workers. Adults enrolling in such programs represented a growing segment of the college's student community, more than off-setting the declining pool of high school graduates. As the operation of small businesses grew through the area, entrepreneurial training also remained an important strength of the college.

Because of these successes, UCCC was able to meet all tests of accountability, qualify for its share of available funds, and maintain its reputation for educational excellence.

The Technological Imperative Future

The continued spread of high technology throughout America's economy has contributed to the attention on technological education among the American people and policy-makers. Fueled by research advances, American technology is in the position of world dominance once again.

This technological comeback can be traced to the breakthroughs made in computer technology and artificial intelligence research during the late 1980s. Computer companies such as IBM, Apple, AT&T, and DEC survived the market "shakeout" of the mid 1980s, and moved quickly to introduce major technological advances in optical memory and voice input devices, microchip design, and component miniaturization. Of greater significance, strides were made in programming techniques and languages, creating a boom in the development and marketing of extremely user-friendly software.

As a result of these strides in computer technology, the computerization of American business, industry and human services continued to grow beyond its 1980 level, an increase of almost 30% during this period. Industrial automation has expanded annually at a rate of 5%. Almost all industrial drafting is now done with some form of CAD system and more of the manufacturing machinery is computer control led. The automation of offices has also continued at the same steady rate as in the early 1980s. Electric typewriters have been completely replaced by electronic typewriters and word processors.

Human services has also been impacted by the spread of automation and computerization. Technologists, using computerized processes, are playing an increasingly central role in the medical analysis and diagnosis of patients. Of all the human services, education has been the one that has seen the most dramatic changes resulting from the use of computers. Computers, using new forms of software developed by cognitive scientists, may truly become teacher surrogates. Teaching machines that can respond to both a student's answer and physiologic response are now being used in schools and colleges.

The pervasiveness of the new technology within American society can also be seen outside the classroom, office and factory. Data Resources, a market analysis firm specializing in the computer industry, estimates that over 50% of all United States households now have some form of computers. As the use of computers in homes, businesses and other areas of American life has continued to grow, the need for computer literacy has intensified. The curriculum of most high schools, two-year and four-year colleges reflect programs and courses designed to address this need.

The growing dependence of Americans on computers has had a major impact on technical education in two-year colleges across the country. Industry and business in the state have kept pace with other areas of the country in adopting the new technology. The number of industries using robots and other automated systems has increased by 5% annually. Most entry-level jobs have required increasingly higher levels of computer literacy. The need within the state for electronic technicians to maintain high-tech equipment has grown at an annual pace of 3%.

These technological changes are requiring many of the state's technical colleges to continually update much of their technical education curricula. The state's industry increasingly has called upon the technical colleges to provide more and better occupational upgrading for employees and persons entering the labor force.

The heightened interest in technical education has been a mixed blessing for two-year colleges. Rather than declining as predicted, program enrollments have stabilized because of the increased number of adults interested in "retooling" their occupational skills. Among recent high school graduates the interest in the technical education services offered by UCCC, continued to remain high, due to recent reductions in the number of vocational/occupational programs offered in the state's public secondary schools. The need to keep UCCC's staff abreast of the changes in the technology has prompted state policy-makers to provide increased state funds for professional development of existing faculty. In addition, after a "no hiring" period, limited funds are now available to staff new faculty positions.

However, the necessity of constant curriculum changes have placed a severe limitation on these efforts. The "hands-on" dimension of instructional programs in high tech fields assumes even greater importance than in the early 1980s. Moreover, the costs of upgrading instructional equipment have increased significantly over the levels of 1980. College administrators recognize the difficulty of securing adequate monies to purchase state-of-the-art laboratory equipment.

All in all, however, the period since 1985 has been one of growth in the state's two-year college system. It has been one in which the public and the leaders of the state's economic development effort have looked to institutions like UCCC for leadership in maintaining the pace of business and industry in adapting to the ever changing imperatives of the new technology.

The Neoclassic Future

A number of crippling blows struck Utopia County Community College between 1985 and 1990. The ultimate effect was a complete change in the college's basic mission, with resulting accelerated decline in political support and diminished status in the community.

During 1985, a panel informally tagged the "King Committee", appointed and strongly supported by the Governor, recommended that the state's two-year college system shift from a two-year post secondary/collegiate to a short-term job skills training emphasis. The committee's proposal found a variety of supporters, many with powerful self-interest motives, such as leaders in four-year colleges and politicians and new media personnel who had never accepted the state's two-year institutions as "colleges" in the first place. After a bitter fight, the State Legislature enacted, in May of 1986, a bill to implement that change.

Reduced, in effect, to a "trade school," UCCC officials attempted to make the most of their new circumstances. The economic environment in which the college operated, however, remained in the same downward spiral that had begun in the early 1980s. Industrial activity was in a state of decline, with increasing worker lay-offs and outright closings in a number of existing operations. Unemployment in the textile industry alone hit 20%. There was little expansion of existing plants and almost no new openings in the county. While UCCC was challenged to provide skills training to the increasingly large number of workers without jobs, there was virtually no opportunity for job placement . The much-heralded service economy had, at the same time, failed to produce the larger number of jobs that forecasters had predicted earlier.

Because much of the responsibility for high-technology training had been transferred from the two-year colleges to other institutions, opportunities to educate individuals for some of the emerging jobs were lost. This shift in responsibility occurred after UCCC had invested heavily in high-technology training programs. Enrollment at the college entered a period of sharp decline in the fall of 1987 and has continued to decline since that time.

Funding for UCCC reached a crisis in 1988. Difficulties in securing adequate fiscal support from all levels of government (local, state and federal) intensified. Suffering from a deteriorating image and unable, because of the severe industrial/economic crisis in its area, to meet the prescribed accountability tests, the college adopted a posture of deep retrenchment.

The Economic Malaise Future

America's last ten years can best be characterized as a period of economic malaise. Many of the present difficulties can be traced back to the economic problems that emerged during the late 1970s. Although America appeared to be well on her way to solving these problems during the first half of the 1980s, all the economic indicators parallel those of 1982.

As with most economic problems, the causes of the present situation are complex and varied. However, there is general consensus among most people that America's inability to solve the problem of a growing national debt is one of several major contributing factors. Another factor frequently cited by both the person in the street and the knowledgeable observer is the inability of America's industry to compete with that of foreign countries. The heightened manufacturing capability of foreign countries in such basic industries as textiles, steel and auto manufacturing presents every-increasing competition to a variety of American industries. Although Congress has periodically revised the United States trade policy, the federal government never successfully restricted foreign imports to the level of the early 1970s.

The textiles industry has been particularly hard hit. The number of plant closings and employee lay-offs is testimony to the continued difficulty that American textile manufacturers are having with foreign textile imports. Unemployment in the textile industry has reached almost 20%. Also, cheap foreign labor has caused more and more labor-intensive industries from America's frostbelt to relocate their plants in foreign countries, rather than in sunbelt states. Consequently, the economic development activities in southern states have not been successful in expanding the state's industrial base to offset any contractions in its job market. Many southern states find themselves with large numbers of unemployed adults who are not able to find new jobs in a static economy. Equally significant, many of these individuals are not trained to adequately function in the present economy.

Since the mid 1980s, state policy has encouraged these dislocated workers to retrain themselves. The state's system of two-year colleges has been a major vehicle for such retraining. The enrollment of adults in retraining programs has been and continues to be an expanding segment of the continuing education market of these colleges. More than 60% of the evening students enrolled in two-year colleges are enrolled on a part-time basis. Significant numbers of those who are unemployed adult students enter the college for retraining with poor learning, reasoning, and communication skills. The needs of these students, along with those of the students who traditionally have enrolled in UCCC's programs, have placed severe strain on such support services as counseling and developmental education. A recent survey of the state's two-year colleges reveal that 3 out of every 4 students are taking at least one developmental course.

The new economic realities have also affected UCCC in a number of other ways. State revenues have been reduced due to the decline in the state's textile industry and its inability to attract new industry. Consequently, the two-year colleges of the state have continued to experience difficulty in securing adequate financial support from state and county governments. The financial difficulty even more acutely now that the colleges are face ing the task of retraining significant numbers of the unemployed. Although Job Training Partnership Act funds are available to support programs for this group of students, many colleges find themselves in a position of fiscal dependency on these funds. Funds from JTPA now account for from 33% to over 40% of the annual revenue in the state's two-year colleges.

The continued economic problems of the state, both in terms of the need for massive retraining and the decline in state revenues, has resulted in an increased centralization of control over technical education at the state level. Area vocational centers, two-year colleges and four-year colleges find themselves forced to articulate more effectively. The management autonomy and flexibility once enjoyed by individual colleges has been greatly reduced by state governing boards. The state's Commission of Higher Education has issued a policy prohibiting ". . . the unnecessary duplication of programs."

Overall, the period from 1985 to 1995 has been one that is not remembered by the staff of two-year colleges with fondness. A UCCC staff member described it best as a time when ". . . they wanted us to keep the ocean out, but the state could only afford to give us a teacup and a spoon to bail with."

Appendix D: Biographical Sketches

James L. Morrison, Professor of Education, the University of North Carolina at Chapel Hill, received his Ph.D. at the Florida State University in 1969. He was lecturer in sociology at the University of Maryland, European Division (1964-65), instructor in sociology at the Florida State University (1968-69), and assistant professor of education and sociology at the Pennsylvania State University (1969-73). He served two terms as a member of the Board of Directors, Association for the Study of Higher Education, chaired the special interest group on futures research, the American Educational Research Association, chaired the editorial board, *The Review of Higher Education*, and served as consulting editor of *The Review of Educational Research* and *The American Educational Research Journal*. He currently serves as immediate past vice president (Division J--Postsecondary Education), the American Educational Research Association, and as convener of the Forum on Environmental Scanning, The American Association for Higher Education. Co-editor of *Applying Methods and Techniques of Futures Research* (Jossey-Bass, 1983) and coauthor of *Futures Research and the Strategic Planning Process* (Association for the Study of Higher Education, 1984), his research and writing activities focus on using futures research methods in educational planning and policy analysis. His consulting activities focus on assisting colleges and universities in developing environmental scanning systems to augment their long-range planning processes.

Thomas V. Mecca is Vice-President for Planning and Development at Piedmont Technical College in Greenwood, South Carolina. He completed his undergraduate and graduate studies in education and social science at the State University of New York and is currently a candidate for the Ed.D. in higher education administration at the University of South Carolina. He was Coordinator of Foreign Student Advisement at Sullivan County Community College (1967-68), a member of the administrative staff of Tompkins-Cortland Community College, where he served as Director of Executive Management Services (1968-81). He is President of the Institute for Future Systems Research, Inc., and an Adjunct Professor at the Graduate School of Management, Lesley College, where he teaches a course in forecasting emerging socio-political issues. He has co-authored articles on the future of occupational education and the use of environmental scanning in the field of education for the World Future Society. Co-editor of *Trend Digest*, his professional interests focus on the use of such future research techniques as socio-political forecasting and interactive computer simulation in strategic policy analysis. His consulting activities focus on assisting educational and other public service agencies in using future research techniques in institutional decision-making and long-range planning and in developing alternative sources of institutional funding.