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AUTHOR Mecca, Thomas V.; Morrison, James L.
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INSTITUTION North Carolina Univ., Chapel Hill. School of Education.; Piedmont Technical Coll., Greenwood, S.C.
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ABSTRACT

ED QUEST (Quick Environmental Scanning Techniques) is a strategic planning process designed to identify emerging trends, issues, and events which portend threats or opportunities for colleges and universities, analyze their probable impact on the institution, and facilitate the development of appropriate institutional strategies. A workshop was held in 1986 to demonstrate the ED QUEST model. Participants were asked to simulate the activities of an ED QUEST planning team of a hypothetical community college and to formulate the strategies that the college could follow over the next five years. The session began with an overview of ED QUEST, focusing on the primary activities of the process: (1) preparing for the process (2) developing a notebook of critical trends and events (3) defining the nature of the organization in terms of mission, key performance indicators, and strengths and weaknesses; (4) identifying and assessing the impact of critical trends and probable future events; (5) developing and assessing scenarios by analyzing trends and events; (6) selecting strategic options; and (7) incorporating those options into the strategic management process. Participants were provided with a notebook showing future prospects, handouts identifying the unique aspects of the college's mission and programs, a list of key indicators of institutional performance, and a list of institutional strengths and weaknesses. A brainstorming session was conducted to identify the trends and events the participants believed would influence the future of the college, and to vote on the top 5 critical trends and top 10 influential events. After further refining the list to identify critical trends and high impact/high probability events, the interrelationships between these trends/events were determined and the effects of the trends/events on the college's mission and performance were identified. The last activity was to develop strategic options based on a set of pre-prepared scenarios, and to identify the optimal strategies for inclusion in the college's strategic plan. A 15-item bibliography on strategic planning is included. (EJV)

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**PATHWAYS TO THE FUTURE:
LINKING ENVIRONMENTAL SCANNING
TO
STRATEGIC MANAGEMENT**

by

**Thomas V. Mecca
Vice President for Planning and Development
Piedmont Technical College
Greenwood, South Carolina
(803) 223-9351**

and

**James L. Morrison
Professor of Education
University of North Carolina
Chapel Hill, North Carolina
(919) 966-1354**

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Abstract

ED QUEST (Quick Environmental Scanning Techniques) is a strategic planning process designed to identify emerging trends, issues, and events which portend threats or opportunities to colleges and universities, analyze their probable impact on the institution and facilitate the development of appropriate institutional strategies. This article describes the activities of a group of two-year college administrators simulating the process as used by a planning team from a hypothetical two-year institution.

PATHWAYS TO THE FUTURE:
LINKING ENVIRONMENTAL SCANNING TO STRATEGIC MANAGEMENT

In the last two decades, the environment of two-year colleges, like that of other types of educational organizations, may be best described as chaotic and turbulent. The growing emphasis by federal and state governments on fiscal and educational accountability, the shifts in public opinion regarding the appropriate mission and role of postsecondary education, and the pervasive influence of the new emerging technologies throughout society are but a few of the environmental changes the two-year college must face as it moves into the future.

The ability to analyze environmental change and formulate appropriate institutional strategies for successfully adapting to such change is critical for successful two-year college administrators. The effects of the general societal environment on the tasks of organizations is well documented in the literature of organizational analysis (Osborne & Hunt, 1974; Hall, 1977; Kast & Rosenzweig, 1979; Scott, 1981). Current contingency approaches to organizational theory have increasingly focused the attention of organizational analysts upon the role of environmental uncertainty and its perception by decision-makers in their formulation of organizational strategy (Anderson & Paine, 1975; Duncan, 1972; Lindsay & Rue, 1980; Boulton, Lindsay, Franklin & Rue, 1982). Bourgeois (1980) emphasized that an organization's primary strategy of domain selection involves a scanning of the general environment both for broad trends that affect the organization's mission and for the identification of new organizational tasks.

Traditional educational planning processes are weak in facilitating the identification of critical trends and future events and assessing their impact on education. At best, most planning models assume there will be a "surprise-free" future in which present trends continue unabated and the interrelationship between and among social, economic, political, and technical forces remains essentially the same (Ziegler, 1972). We know,

however, that this is not true; environments are marked by rapid and unanticipated changes. What is needed is a model process that enables us to detect signals of change (i.e., emerging trends, issues or events) that make the future of our institutions different from their past, and a plan for conveying this information to the organization's strategic management.

All organizations acquire information from their environment in some form. However, Aquilar (1967) suggests that environmental assessment can be made more effective where a formal search replaces the informal search of the 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.

The possible linkages that can be made by a planning team between environmental factors and strategic elements through the use of futures research techniques is outlined by Klein and Newman (1980) in their description of the use of the SPIRE planning model in the oil industry. Cope (1978), although not discussing the integrating of environmental scanning into the process of strategic planning per se, outlined the use of such futures research techniques as probability/diffusion matrices, force-field analysis and value profiling for forecasting changes in a college's or university's environment. The application of environmental analysis in developing strategies to meet a state mandated reduction in force in a college is discussed by Dube and Brown (1983). A detailed discussion of the use of such futures research techniques as Delphi, cross-impact analysis, impact-networks and policy-impact analysis in developing a comprehensive environmental assessment that can be incorporated into a college's or university's strategic planning process is presented by Morrison, Renfro, and Boucher (1984).

In keeping with its theme, "Pathways to the Future," the authors conducted a

one-day workshop at the AACJC's 1986 annual meeting in Orlando, Florida, devoted to training participants in such a process. ED QUEST (Quick Environmental Scanning Technique) is an environmental scanning model designed to identify emerging critical trends and future events that portend threats and opportunities for educational organizations. ED QUEST analyzes the probable impact of these variables on the college, and plans ways to facilitate the development of appropriate organizational strategies. The model, adapted to education from a similar one first used with insurance executives (Nanus, 1982), is designed to use futures research techniques and divergent thinking methods within a group process mode to focus key institutional decision-makers' attention on the critical environmental changes that could affect their institutions' future. Although just being introduced into the field of two-year college administration, ED QUEST has been used by administrators and planning teams in other sectors of education interested in developing strategies for alternative futures (Mecca and Adams, 1982). It is currently being used at Piedmont Technical College (Greenwood, SC) and is being introduced into several other two-year colleges.

Unlike more elaborate strategic processes, ED QUEST can be easily and quickly implemented. It provides a framework within which an institution can incrementally design a more sophisticated process, since the model contains all the basic and essential elements of strategic planning. Moreover, its implementation does not require a major expenditure of funds for specialized technical services or personnel. With a minimal amount of training, a person from within the college can successfully facilitate the process.

The results of the ED QUEST process provide institutional decision-makers with the following information:

1. The driving forces at work in the college's environment

2. The critical and likely changes that these forces might bring about in the institution
3. The strategies that the college could implement to ameliorate the effect of these changes

A characteristic of ED QUEST, therefore, is that it tailors the product of the environmental scanning process to the user's college and does not rely on an environmental analysis based upon the perceptions of persons outside the college. The information generated from the process becomes the basis for on-going strategic management.

To demonstrate the model during the 1986 AACJC workshop, the participants were asked to simulate the activities of an ED QUEST planning team of a hypothetical public two-year institution, Utopia County Community College (UCCC). The task of the team was to formulate strategies that UCCC could follow over the next five years, using the ED QUEST process. The group included college presidents, deans and institutional research/planners in two-year institutions and state-level agencies from across the United States and Canada. Each participant was given a manual that contained both a description of each activity of the process and an example of that activity's product.

Overview of ED QUEST

The session began with an overview of ED QUEST, focusing on the primary activities of the process: 1) preparing for the process—establishing an ED QUEST team, appointing a facilitator, reviewing the process; 2) developing a notebook of critical trends and events—trend charts/graphs, speculative articles, speeches/articles by policy influentials, forecasts; 3) defining the nature of the organization—including mission, key performance indicators, strengths and weaknesses; 4) identifying and assessing the impact of critical

trends and probable future events--brainstorming and using the Delphi Survey; 5) developing and assessing scenarios by analyzing trends and events--selecting trends and events, assessing impact on the mission/key indicators, analyzing interrelationships (cross impacts); 6) selecting strategic options--identifying options, assessing options on strengths and weaknesses, selecting options; and 7) incorporating those options into the strategic management process--developing implementations plan, assigning information responsibility.

Identifying Critical Trends and Events and the Nature of the Organization

Because the workshop was a brief one-day simulation of the actual process, the authors made a representation of a notebook of future prospects with a slide presentation of driving social, economic, technological, and political trends in American society. Such information is crucial in the process, as it defines the environmental context within which the college functions and identifies potential changes in that environment for the future.

UCCC's simulated ED QUEST team next examined the college as it exists in the present. Each team member received a handout identifying the unique aspects of UCCC's mission, listing eight categories of students/clientele as follows: 1) students (i.e., high-school graduates, upgrades, etc.); 2) displaced workers; 3) reverse transfer students; 4) adult education students; 5) area employers; 6) public/non-profit organizations; 7) community groups; and 8) UCCC's staff. The list of student/client needs to be satisfied by UCCC included: 1) basic educational skills and/or credentials (e.g., reading, GED, etc.); 2) entry-level occupational/job skills; 3) upgraded occupational/job skills; 4) new occupational/job skills; 5) counseling assistant/information (e.g., ed. obj., career path, educational competencies); and 6) avocational interests. The nine programs and services the college provided to satisfy

these needs are: 1) on-campus non-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 Partnership Act (JTPA); 8) conference facilities; and 9) technical assistance/technology transfer.

In addition, a list of key indicators of institutional performance in areas critical to its success and well-being was also prepared. The indicators were measures of organizational attributes such as effectiveness, efficiency, competitive advantage or cost. Key indicators used in the workshop were: 1) technical education enrollment (credit hours generated); 2) continuing education enrollment (contact hours generated); 3) cost per credit hour; 4) graduate placement rate; 5) retention rate in school; 6) state government funds; 7) local government funds; 8) federal government funds; 9) private support; and 10) institutional expenditures.

Finally, in order to expedite the task of defining the college in its current state, a list of institutional strengths and weaknesses was given to participants as a handout. This list consisted of the following strengths: 1) dedicated and high quality faculty; 2) attractive campus; 3) frontrunner/status in instructional innovation, etc.; 4) flexibility of programs and services; 5) solid reputation of technical programs; 6) "caring" environment for students; 7) developmental educational program; 8) strong and capable institutional leadership; 9) courses tailored to industry; and 10) pivotal role in economic development of the area. Weaknesses listed were: 1) not viewed as higher education; 2) "fine for somebody else's child"; 3) insufficient and inconsistent funding; 4) lack of transfer opportunities for graduates; 5) too few transferable credits; 6) unqualified adjunct faculty; 7) too much use of adjunct faculty; 8) no prioritization of goals; 9) little time for faculty to develop new courses/programs; and 10) not enough up-to-date training equipment.

These three aspects of the college's current position (mission, indicators of performance, and strengths/weaknesses) were used later in the process to identify possible changes that could occur if the trends and future events identified by the team during their scan actually materialized.

A brainstorming session was next conducted to generate the trends and events the participants as members of UCCC's ED QUEST team believed would affect the future of UCCC. Specifically, the participants were asked to identify 1) the trends that, if they were to materialize, would have critical importance to the college, and 2) the future events they believed had a likelihood of occurring over the next 10 years and, if they did occur, would have a significant impact upon the institution. The following definitions were used to distinguish between trends and events:

- o A trend is a series of social, technological, economic or political characteristics that can usually be estimated and/or measured over time.
- o An event is a discreet, unambiguous, confirmable occurrence or discontinuity in a trend that makes the future different from the past.

The team initially identified approximately twenty (20) items that formed a master list of trends or events. After all the items suggested were listed, team members discussed the significance of each item or its possible relationship to other items that could describe UCCC's future external environment. In some instances, items were reworded to improve clarity or were combined into a new statement. Identified trends and events spanned all sectors of the external environment (social, technological, economic, and political). The preponderance of items dealt with demographic changes in American society, shifts in enrollment patterns, changes in the structure of the workforce, and the fiscal and educational policy of state and federal governments.

Once the team had developed a master list of trends and events, the group was asked to reexamine its respective initial list and, using a simple polling procedure

of its members, select the top 5 critical trends and the top 10 impacting events. The five critical trends selected were as follows: 1) (T-1) - The occupational structure of the American economy continues to shift from industrial manufacturing-based occupations to information-based occupations; 2) (T-4) - The number of part-time students in two-year colleges continues to increase; 3) (T-6) - The demand for accountability in higher education continues to increase; 4) (T-7) - The proportion of college graduates over-qualified for available jobs continues to increase; 5) (T-10) - U.S. population continues to shift from the frostbelt to the sunbelt.

Upon the completion of its tasks, the two groups were reconstituted into a committee of the whole to further refine the list of the top 10 impacting events. All participants now were asked to give their individual assessments of the probability that each of the ten selected events would occur during the planning time-frame of the exercise. From the list of ten, five events were selected as a majority of the members identified them as having a high (75 percent) to almost certain (95 percent or more) probability of occurring. The five events selected were as follows: 1) (E-1) - Gramm-Rudman budget reductions are implemented as specified; 2) (E-2) - The amount of money spent by special interest PAC's increase by 50 percent; 3) (E-3) - Twenty (20) states now require mandatory testing of graduates to determine the educational outcomes of two-year college programs; 4) (E-5) - Thirty percent (30%) of the U.S. workforce have changed their occupations; and 5) (E-9) - The percentage of whites now living in most major American cities is less than 50 percent.

In the final list, the critical trends and high impact/high probability events were in the social, economic, political, and educational sectors of the environment. Those trends and events in the social sector included the shift in population from the frostbelt to the sunbelt (T-10) and the change in the racial composition of America's urban

population (E-9). Economic developments identified by the teams were the occupational restructuring of the American economy (T-1) and its effect on the workforce (E-5). The reduction of the federal budget (E-1) and the increased activity of special interest PACs (E-2) were two future political events that the team selected as having significance for the future of UCCC.

As one might expect, by far the largest number of trends and events selected by the team came from the environmental sector of education. These included the continuing shift in two-year college enrollment patterns toward more part-time students (T-4), increased demand for accountability in higher education (T-6), increased proportion of college graduates over-qualified for available jobs (T-7) and mandatory exit testing of college graduates (E-3).

Analysis of Trends and Events

Once the critical trends and high impact/high probability events were selected, the planning participants assessed the interrelationship between these events by completing a cross-impact matrix. (In a typical QUEST process, the QUEST team would also assess the impact of events on trends. Because of the time limitation, this was not done during the workshop.) Using a grid designed for this purpose, each individual made an assessment based on a scale of +3 (greatly increased probability of the event's occurring) to -3 (greatly decreased probability of the event's occurring). When completed, cross-impact assessments were given to the facilitators who then tabulated the results. Two events, the Gramm-Rudman budget and the social composition of U.S. cities, had larger sums than the others. Those two events represented major "actors" in the external environment and would be reflected as such when writing scenarios. Increased PAC spending and mandatory testing were greatly affected by the other events, thereby indicating their sensitivity to these events.

The results of such analyses would also be used in the ED QUEST process to develop scenarios.

Once the team completed the selection of critical trends and events, the team identified the specific changes that the set of trends and events could have on the college's mission and how they would affect the college's performance. This required the team to review the elements of UCCC's current mission and to assess the implications of the trends and events as forecasted for this mission; that is, would the forecasted trends and events add to, subtract from, or otherwise alter the client groups currently being served, the needs being met and the services being provided.

The results of this assessment for UCCC's programs was as follows:

Present Programs/Services Element: (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) JTPA; (8) conference facilities; (9) technical assistance/technology transfer. Future Program/Service Elements: (1) services to teachers and trainers; (2) two-way video/instructional system for off-campus educational delivery (ITFS); (3) increased service of present program elements #2, #4, and #5; and (4) increased service in present element #9 (via teleconferencing). This analysis was later used when the ED QUEST team formulated the strategic options (see below).

Another important action for the planning team in this session was to assess the impact of events and trends on the institution's key performance indicators. Again, because of limitations of time, only the events were used in the assessment process conducted during the workshop. Using a series of "+" and "-" symbols, the participants worked in two person teams that assessed the impact of one event on each of ten indicators. The symbols used were:

- ++ Greatly increases the level of the indicator
- + Increases the level of the indicator
- 0 No change in the level of the indicator
- Decreases the level of the indicator
- Greatly decreases the level of the indicator

To tabulate the results of the assessment, each of the symbols was assigned the following values: ++ = 10, + = 4, 0 = 0, - = -4, and -- = -10. The results were then summed without regard to sign. The results of the assessment showed that E-5 would have a strong position impact on many of the key performance indicators of UCCC. In addition, five of the indicators (i.e., technical education enrollment, continuing education enrollment, retention rate, local funds, and expenditures) were positively influenced by the set of five events. This becomes important in assessing and understanding the potential impact of these events on the organization's future performance.

Developing Alternative Scenarios

Because of the lack of time, the participants did not have an opportunity to use the information to develop a series of scenarios. In a normal ED QUEST process, this would be an important activity. Scenarios allow the ED QUEST team to incorporate their assessments of the changes into alternate states of the future that the college would face. These scenarios then become the basis for assessing their implicated effect on the institution and for developing the alternative strategic options the college would consider for possible adoption.

Developing/Selecting Strategic Options

The last activity of the process was to develop the strategic options based on a set of scenarios. Using scenarios that had previously been prepared by the authors for UCCC, the participants were divided into two groups. Each group analyzed one of two scenarios, one entitled, "The Neoclassic Future," and the other one, "The

Technological Imperative." The task of analysis was to identify what implications that particular alternative future would hold for UCCC, should it occur. A series of implications that one group developed for their scenario were as follows:

1. New "centrality" of changing technology would be the driving external factor affecting the college and its mission.
2. The cost of new laboratory equipment to remain current with changing technology would become a major budget priority.
3. There would be a closer relationship between the college and business/industry.
4. Staff development would increase in importance if the possible "obsolescence" of faculty's knowledge of new technology was to be avoided.
5. Existing facilities would need to be redesigned and/or expended to accommodate instruction in new technology.
6. Institution's mission would shift away from traditional A.A. and A.S. programs necessitating the college to re-educate the community to the institution's new thrust.
7. Knowledge of computers and their use would become part of the "core" learning in all curriculum.
8. UCCC would have to maintain a policy of maximum flexibility in all aspects of curriculum, staffing, and services, etc., to accommodate every changing technology.

Using those implications as a basis, each group then developed a set of four strategic options. These options represented strategies that the college could possibly use to position itself in the alternate future depicted in the scenario, should it occur. Once the strategic options were developed, the groups used an impact matrix grid to assess the impact of each option on the previously identified strengths and weaknesses of the college. A scale of plus +5 (greatly enhanced) to a -5 (greatly reduced) was used in making this assessment. A strategic option matrix was developed for the assessment of the strategic options on the set of five strengths. A similar matrix was developed for assessing the impact of the strategies on the set of five weaknesses. Once each

matrix was completed, the values of its cells were algebraically summed for each row. This sum represented the overall impact of a particular strategic option on all strengths (or weaknesses). Thus, each strategic option had two scores, one representing the sum of its impact on all strengths and one representing the sum of its impact on all weaknesses.

Using the scores for each strategic option, the group then selected the optional strategies for inclusion into the college's strategic plan. Those options whose impact on the college's strengths were represented by positive scores and whose impact on the college's weaknesses were represented by negative scores were considered good candidates for eventual implementation. The following options were selected as meeting this selection criteria:

1. Develop a Business Innovation Center for technology transfer (+17/-3).
2. Establish a Computer Resource Center (+11/-4).
3. Expand and improve community outreach programming and services (+10/-6).
4. Improve program/service/advisory linkages between UCCC, the local government, and area business and industry(+11/-2).

Conclusion

The purpose of the workshop was to demonstrate how a process such as ED QUEST could link information developed from an environmental scanning and forecasting process to the formulation of institutional strategy by the senior administration and planning team of a two-year college.

It is imperative that two-year institutions, like other institutions in our society, have the capacity to anticipate societal development and emerging external forces that will affect the nature and quality of their programs. This implies that institutions should develop the ability of foresight, so that they can accomplish their mission. ED QUEST is a process that anticipates environmental changes applicable to a specific institution and that suggests constructive strategies for that institution's strategic management.

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Biographical Information

Thomas V. Mecca, Vice President for Planning and Development, Piedmont Technical College in Greenwood, SC, has extensive experience in applying the strategic management process at both that institution and other institutions of higher education. He is adjunct professor at the Graduate School of Management, Lesley College, Cambridge, MASS, where he teaches a course in forecasting emerging socio-political issues. He (with James B. Morrison) has presented ED QUEST at the 1986 annual meeting of AACJC and SCUP and at the 1987 annual meeting of AIR and SCUP.

James L. Morrison, Professor of Education, University of North Carolina at Chapel Hill, NC, is immediate past Vice President, American Educational Research Association (Division J — Postsecondary Education), and former chair, Special Interest Group in Futures Research, of that same association. He is co-editor of Applying Methods and Techniques of Futures Research and co-author of Futures Research and the Strategic Planning Process.

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