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Strategic Planning for an Academic Department of Construction Science: Fostering Change

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For the past several decades, the corporate world has used the strategic planning process to set goals and objectives and frame the activities of the company. However, the use of strategic planning is a relatively new concept for academic institutions. Because of the complex array of stakeholders, the few post-secondary institutions using strategic planning have had limited success in using strategic planning. Strategic planning used by an academic department within a university is not common practice. This paper reviews the strategic planning process initiated by a new Department Head of an academic department of Construction Science. The emphasis is on the process used to involve faculty and to produce a strategic plan.

Keywords: Strategic Planning, Higher Education, Outcome Assessment, Faculty Involvement, Mission Statement

Introduction

Current literature is replete with references to terms like "strategic planning", "mission statements", "vision", "values", "statements of purpose", " long term goals", and "areas of emphasis". “Strategic Plans” are touted as the essential underpinning of many types of organizations. Private corporations have become so absorbed with strategic planning that at many firms “strategic planners” are permanent employees, and corporate strategic planning exercises are underway on a continuous basis. An entire industry of strategic planning experts and consultants has been spawned over the last decade. Most of the large accounting firms have created business areas that sell management consulting and organizational and strategic planning services. There seems to be a consensus among senior executives that the strategic planning process and a comprehensive Corporate Strategic Plan are essential to provide focus on where a company is going and how they are going to get there (Minzberg, 1994).

Unlike the corporate world, strategic planning in higher education has not been the norm (Cutright, 1999). In the early 1980’s, Keller (1983) estimated that no more than a dozen of 3400 colleges and universities nationwide were engaged in strategic planning. By the mid-1990’s, approximately 25% of those original universities/colleges were using strategic planning (Keller, 1993). To evaluate the effectiveness of strategic plans in higher education, a study published by the American Council on Education (Schuster, et. al., 1994), based on Keller’s original work, found that, although the number of universities/colleges who used strategic planning had grown, there were mixed results on the successes of the plans generated. Perhaps unlike their private corporate counterparts, whose motivations are driven by “shareholder value” and the "bottom line" of the next income statement, and the profit motive, university administrators serve many stakeholders that require accountability, i.e., state agencies and taxpayers (public institutions),

governors and boards of trustees, alumni, corporations who hire the graduates, faculty, and research funding agencies (Lucas, 2000). The diversity of the stakeholders in the higher education arena could be a contributing factor to the lack of success of the strategic planning process.

In recent literature, the positive outcomes of strategic planning in the university environment appear well worth the effort. Universities, colleges, and academic departments need to engage in "the process of making decisions in the present concerning which strategies and actions are to be taken in the future in order that certain goals or outcomes may be realized by a specified date" (Tucker, 1992, p. 311). Several researchers (Cutright, 1999; Wolverton & Gmelch, 1998; Taylor & Karr, 1999; Konsky, 1999; Lucas, 1994; and Lenington, 1996) in the area of strategic planning in higher education have suggested processes to promote success in conducting strategic planning and implementation. Some of these suggested processes are:

- Evaluate the external and internal environment(s) that may affect the planning process, outcomes, and implementation.
- Develop a vision, goals, and strategies that are aligned with the board of trustees, university, and college.
- Involve faculty in all phases.
- Develop aggressive, realistic measurable goals
- Develop timelines for goal attainment.
- Assign subcommittees or an "owner" for specific plan items to maximize goal achievement.
- Schedule periodic updates with the faculty to monitor progress and communicate milestones and achievements to all stakeholders.
- View the strategic plan as a living document and change the plan when necessary (as events warrant).

This paper provides a strategic planning process model of an academic department within a large, land grant university. The champion of the process was the new Department Head who had recently come from the corporate world.

Background

In late 1996, the University launched a university-wide strategic planning exercise for the period 1998-2000. In a kickoff memo, the Provost wrote:

> *"Although strategic planning poses a challenge for any organization, it can be particularly vexing for universities with the tradition of shared governance. Where should the process start? If the president and vice presidents, or even the deans, attempt to draw up a plan, the faculty, staff, and students will almost certainly object. How can we tell them what direction "their university" will be taking without first consulting with them? On the other hand, a bottoms-up approach can result in attempts to ride off in all directions often ignoring critical issues and resulting in a multiplicity of plans, which resists integration into one plan for the whole university.*

Moreover, based on what one observes as the result of planning at most universities around the country, one is tempted to forget the whole thing. Either the plan adopted represents all things to all people, and choices are harder to make, not easier, or there is a plan calling for action, which leads to sharp arguments and resignations. Still we need a common vision for the University and one sufficiently grounded to inform the decision-making process at all levels."

Six months before the University initiated its strategic planning exercise, a new professor and Department Head of Construction Science (COSC) joined the faculty at the University. The new Department Head had 35 years experience in both the public and private sectors in the construction business. He had extensive involvement with strategic planning with two large construction companies from 1985-1996. The first major task upon the new Department Head's arrival was to put together a Strategic Plan for the Department. This paper chronicles that effort; and hopefully, other programs can benefit from the process and the product and avoid the pitfalls of the planning process that plague many strategic planning efforts. The process, which is detailed in this paper, is not necessarily the "right" process or the "best" process--it is "a process" that was used to produce a Strategic Plan that has strongly influenced the day-to-day activities and direction of the Department.

The Process

The Starting Point

The Department of Construction Science is one of three departments (Architecture and Landscape Architecture and Urban Planning) in the College of Architecture. There were 15 full-time faculty with several courses being taught by Ph.D. and Master's students. Faculty numbers were down from 24 in 1988 and only one new faculty hire had been made since 1991. The Department had 640 undergraduate students, and 30 Master's students, and graduated about 150 students per year. The undergraduate degree in Construction Science required 137 hours of coursework and a 12-week summer internship with industry.

The Department Head approached the departmental strategic planning process with certain paradigms resulting from industry experience:

- *The process is as important as the product.* The process needs to be a "bottom up" process with participation by as many players as possible. Without broad-based "buy in" of the Strategic Plan produced, the Plan has little chance to succeed. One of the best ways to create "buy-in" is to let everyone possible participate in the process, and conduct a process where all participants are heard and their opinions considered. While the final Strategic Plan will necessarily represent a compromise to many individual opinions and suggestions, active participants are more likely to embrace the compromises.

- *The product must contain discrete, measurable goals.* Far too many strategic plans suffer the "answer to all ills" syndrome, consisting of glowing generalities which management

can hide behind and claim to adhere to, while in fact providing little in the way of guidance or direction. Setting discrete, measurable goals is anathema to management--you might fail to meet these goals; in fact, you should fail to meet some goals if you set challenging goals which are necessary to stress an organization.

- *Many strategic plans fail from poor implementation and undisciplined follow up.* The need for disciplined implementation should permeate the planning process.

The Department had a Strategic Plan, written by the previous Department Head with limited faculty participation that had been in place for three years. This existing Plan was not used in the planning process described below.

Creating an artificial time schedule because of an urgent need to hire new faculty, the new Department Head wanted a coherent plan in place by the end of 1996 so the recruiting process could begin as soon as possible in 1997. He was concerned that it would be late for recruiting faculty to come on board during the summer of 1997 if the timeline was extended any longer. The Department Head wanted at least the essence of a Strategic Plan in place before the desired credentials for the new faculty were decided.

The Initial Phase

Using a strategic planning model similar to Minzberg's (1994), the Department Head used the following six-step model was used:

- ASSESS. Define the status quo. Do a critical examination of existing strengths and weaknesses. Document what is known.
- DEVELOP ALTERNATIVES. Take off all the boundary conditions possible and lay out alternatives. Provide sufficient detail to analyze each alternative.
- EVALUATE ALTERNATIVES. In the private sector this is the most demanding step because alternatives are usually costed, requiring some rather elaborate costing models.
- DECIDE. Pick an alternative.
- PLAN. Determine action items and short-term objectives to implement the decision.
- IMPLEMENT. Require a disciplined, structured implementation process.

The Department Head introduced the above model at his initial faculty meeting on August 30, 1996, which served to kick off the strategic planning process. At that meeting, the Department Head divided the faculty into five teams and assigned a topic to each team. The team topics were:

- Undergraduate programs (including curriculum)
- Graduate programs (including curriculum)
- Facilities and Equipment
- Research
- Development (Fundraising)

Every faculty member was assigned to one of the teams and each team was assigned a graduate student to help document committee work. The following schedule was given to the teams:

August 30	Kickoff
September 9	Team Charters Due
October 4	Draft Team Findings Due
October 7	Shuffle Teams
October 11	Revised Charters Due
November 1	Revised Findings Due
November 16-17	Faculty Retreat

The Department Head required each team to do a "charter" for their team's effort. This charter was to define the efforts of the team. The Team Charter included:

- SCOPE (Define what the team will look at)
- PURPOSE (The "why" of the team's effort)
- BOUNDARIES (As few as possible)
- ASSUMPTIONS (As required to meet the schedule)

The purpose of the charter was to insure that the teams got off to a quick start and that they had appropriately framed their issues. The first "deliverable" from each team (post charter) was a set of findings that would carry them through the first four steps of the strategic planning model. The Department Head did not participate with any of the teams, but kibitzed with each team constantly to insure that activity was underway. The teams responded quite well and seemed to take the process seriously. All five teams submitted their findings by the due date, and for the most part, they presented some excellent concepts with specific decisions and solid goals.

At this point, the Department Dead shuffled the topics, retaining the same teams, but giving each team a new topic but one of the same five original topics. An effort was made throughout the initial phase of the process to structure the teams and assign topics to take advantage of the institutional memory and background of each faculty member. For the second iteration, teams received the work product--findings--produced by the initial team. For this second iteration the teams ran the first four steps of the model and produced their own "findings". The Department Head, also, introduced a set of questions, which were given to each team with the requirement that the team seek to answer the questions and include their responses in their "findings". The questions were designed to begin to have the faculty teams come to grips with significant issues for the final Strategic Plan. The questions were:

1. What are the most important issues that will be facing the construction industry in the year 2000? (List no more than 5)
2. Which of those issues could provide an area of emphasis for the COSC Department, given current capabilities, or capabilities that could be developed by the year 2000?
3. What factors are the most important in determining the size of the COSC Department? ("Size" refers to student population and faculty numbers.)

4. What student population would you recommend as optimum for the COSC Department? (Break your response down to undergraduate and graduate categories and provide the logic for your response.)
5. How many faculty members would you recommend are required to support the student population recommended in question 4? (Provide the logic for your response.)
6. Assuming that the Department will be hiring additional faculty in the near future, list the credentials that you would recommend for the top three priority recruits. (Example: Priority one recruit; Ph.D.; expertise in Arctic construction; 5 years industry experience, etc.)

On November 1, the Department Head had two sets of findings on each topic--every faculty member received a copy of all findings.

The Compromise Phase

With ten sets of findings on five different topics, it was time to move toward a single, integrated Strategic Plan. The Department Head structured a retreat agenda designed to promote consensus and produce the essential elements of a Strategic Plan. The Department Head considered bringing in an outside facilitator, but ultimately filled that role himself. The retreat was held on a Saturday and faculty participation was excellent. After a long day of "structured adversarialism", the faculty spoke well of the process.

The retreat was broken into multiple activities. In the morning, using standard "brainstorming" techniques to generate ideas and "chip voting" techniques to determine priorities, the faculty sought to answer the following questions:

1. What are your primary concerns related to the Construction Science Department? (This question served as an "ice-breaker" and demonstrated the use of brainstorming and chip voting procedures.)
2. What are the primary issues facing the construction industry today and in the next five years?
3. Given the resources and capabilities of the Construction Science Department, which construction industry issues could the Department take a leadership role in addressing?

In the afternoon, the faculty was broken into four teams and each team worked independently to address a series of tasks. The teams spent about an hour on each task and presented their findings to the reassembled faculty group. The tasks were:

1. What are the most important departmental issues in the area of teaching?
2. What are the most important departmental issues in the area of research?
3. Draft a department mission statement.
4. Over the next five years what should be the size of the Department--undergraduate students, graduate students, faculty, and teaching graduate students and what assumptions did you make in arriving at these numbers?

After each of the independent teamwork periods there was spirited give and take concerning the teams' findings. A graduate student captured the essence of the discussions on a laptop computer, and the work product of each teams' activities was documented on poster boards.

The Drafting Phase

Taking into account the work products from the previous two phases, the Department Head produced a first draft of the Departmental Strategic Plan. This first draft was provided to all faculty and feedback was solicited. Feedback was fairly extensive, and the Department Head spent time on every comment with the faculty member concerned to insure there was complete understanding. A second draft was produced. This second draft was again sent to all faculty for comment and it was also sent to the industry Executive Committee members of the Department's Professional Advisory and Development Board. Copies were also provided to the Dean and other Department Heads in the College. Feedback on the second draft was comparatively sparse; however, the Department Head responded to every comment. A final work product was then produced and is attached as Appendix A (excluding extensive budget details).

The Product

Appendix A contains six sections. It is intended to be readable yet quite definitive with measurable goals.

- PREAMBLE. The Preamble sets the tenor for the Plan and emphasizes the changing nature of the industry, driving the need for regular updates.
- STATEMENT OF PURPOSE. The Mission of the Department is detailed in descriptive narrative designed to set the stage for more detailed and objective goals.
- VALUES. Values seek to influence the culture of the Department, setting forth "what is important".
- AREAS OF EMPHASIS. The Department can't "be all things" to the industry so definition is provided for those specific areas that are both important to the industry and "a fit" for the Department's resources.
- VISION. These are the goals of the Department--both near term by the year 2000, and longer term by the year 2003. The goals are challenging, but achievable.
- RESOURCES. (Omitted from Appendix A). This is a somewhat lengthy discussion of resources available versus resources needed to implement the Plan. The discussion includes budget, faculty, staff and facility resources.

Conclusions

Several findings can be postulated with a significant degree of certainty:

1. The process produced a Strategic Plan, which has influenced the day-to-day decisions and activities of the department. For example, seven new tenure-track faculty were hired and the Strategic Plan influenced the credentials sought and the screening process.

2. The faculty appear to endorse the Strategic Plan. Certainly every faculty member is familiar with the Plan and often comment about whether or not a proposed action supports the Plan or is driven by the Plan.

3. The Strategic Plan is causing the Department to pursue actions, which will have a significant impact on the overall program. Three examples- (1) a substantial curriculum overhaul was completed in 1997 (2) plans have been drawn-up for a new facility to house the Department and a major fund-raising effort is planned, and (3) a major restructuring of the industry outreach program has been accomplished by the creation of a strong Construction Industry Advisory Council (CIAC).

4. In retrospect, there are some things that might have been done differently:

    A. The planning time frame of essentially three months was very compressed. This limited time was driven by the need to recruit new faculty and the necessity to have a Strategic Plan in place to define faculty needs.
    B. The process could have sought more active, continuing industry involvement. The review by industry of the second draft produced some limited comments, but the final Plan could have included more extensive industry input.
    C. The Department Head should not have moderated the faculty retreat. His role as moderator may have stifled full and open discussion.

In summary, this paper details a process used to produce a Strategic Plan for an academic Construction Science Department. Was it worth the effort? -ABSOLUTELY!

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Appendix A

The Strategic Plan for the Department of Construction Science
College of Architecture
1997-2003

PREAMBLE

Construction Science is an emerging field. Today, construction accounts for eight to nine percent of the nation's GDP and employs 4.5 million workers. Historically, construction managers were trained "on-the-job." Good engineers and architects became good project managers, good businessmen, and good leaders through trial and error. In the past, formal management training was available almost as an afterthought in engineering and architectural schools. Construction Science programs that he sprung up in other universities around the nation in the last five years are an acknowledgment that formal education is essential to product excellent construction managers and future leaders in the construction industry, one of the largest industries in the nation.

The Department of Construction Science at the University, which celebrated its 50th anniversary last year, has long been known as one of the best programs of its kind in the world. It is THE LARGEST in terms of student population and the number of graduates produced. It can become, without question, THE BEST Construction Science program in the world if this Strategic Plan is implemented successfully.

The Department's Strategic Plan is to provide purpose and direction for all actions of the Department. It sets priorities and provides a common vision, which every member of the Department should consider in day-to-day activities.

This Strategic Plan was created over a period of months with every faculty member participating. It represents a consensus, in some cases a compromise, that the Department collectively endorses. Without this consensus, the Strategic Plan is worthless.

The Plan is just a plan—not an inviolate set a rules and procedures. It will be re-examined from time to time. Current thinking is that a formal, all-inclusive re-evaluation will occur every two years.

Many Strategic Plans fail because of poor implementation. The Department has launched aggressive, disciplined implementation plans, realizing that future success cannot just happen.

STATEMENT OF PURPOSE

The Construction Science Department's primary mission is to prepare students for successful careers in construction and construction-related industries.

To accomplish this mission the Department must create an environment conducive to academic excellence that is responsive to the needs of industry. Not only must faculty be excellent teachers, they must also be in search of new knowledge that defines construction science and advances the state-of-the-art in the industry.

A complete environment requires a faculty-team eager to perform those service tasks essential to the smooth functioning of the Department and to promoting the image of the College, the University and the global construction industry.

The Department intends to become THE BEST Construction Science program in the world—the BEST in teaching, the BEST in research, and the BEST in service.

VALUES

The Department places great value on:

- **Producing well-rounded students** whose broad-based educational experience will produce graduates who will **elevate the level of professionalism** of the construction industry commensurate to other recognized professions.
- **Generating new knowledge to advance the profession of construction management.**
- **Working** together in a team approach so staff and faculty experience a collegial atmosphere, where **open and frequent communication** is the norm.
- Maintaining the Department's reputation for fostering **a "student-friendly" environment** where students are encouraged to interface with staff and faculty, and where staff and faculty go out of their way to be responsive to students' needs and concerns.
- Improving **its relationship with industry** on a continuing basis.
- **Strengthening its student chapters** of professional organizations – AGC, ABC, AIC, and NAHB. These student chapters offer leadership opportunities, foster team activities, and provide an invaluable supplement to traditional academic programs.
- **Promoting the concept of certification** as proposed by the American Institute of Constructors. Certification can provide validation of construction management as a profession and improve the image of the industry.
- **Offering honors courses** which challenge both the students and faculty.
- **Supporting and encouraging interdisciplinary activities** by students and faculty, because the success of interdisciplinary teams is increasingly important to the construction industry.
- Recognizing the benefit to the program and to the graduates derived from curriculum emphasis on:
  1. **The ability of students to function in a team setting**. The construction industry relies on teams—sales teams, project teams, quality improvement teams—to function effectively.
  2. **The ability of students to communicate effectively**—both orally and in writing—in deliberate presentations or impromptu settings.
  3. **The ability of student to use computers and related systems** as tools in their academic work which will be a critical requirement in their construction careers.
  4. **The ability of students to function effectively in a global setting**.

AREAS OF EMPHASIS

While the Department will be required to maintain a broad knowledge of construction industry issues in order to keep its academic programs current, there is recognition that the Department cannot acquire and maintain academic leadership in all issue areas. Therefore, the Department has elected to become the leading academic authority in the following issue areas:

- **Image.** As viewed by the general public and particularly high school work force candidates, the image of the construction industry is not good. Research is required to identify root causes and to develop programs to address those causes.
- **Labor.** The industry predicts a severe shortage in construction labor for the foreseeable future. The shortage is caused by a combination of factor – increasing demand, marginally competitive salaries, frequent dislocation, and image. Working with the professional societies and the **industry, the Department will emphasize research and service to address this issue.**
- **Construction Delivery Strategies.** Strategies for delivering construction projects are changing from traditional "design-bid-build" scenarios to more complex design-build and design-build-finance-operate delivery strategies. These evolving strategies transfer risk to the contractor. The Department will track these evolving strategies and develop "expert knowledge" in the area.
- **Accommodating the global trends of the industry.** The construction industry is becoming a global industry. Many large international firms are acquiring U.S. construction firms or are otherwise creating a presence in the U.S. Conversely, some large U.S. construction firms are multinational and are seeking to expand their business outside the U.S. The Department needs to exploit this trend and to prepare its students for service in tomorrow's global industry.

VISION

By the year 2000 –

- The Department will be THE BEST academic program of Construction Science in the world.
- The Department will be recognized both nationally and internationally for its excellence in its chosen Areas of Emphasis.
- The Department will have identified funding sources for foundation endowment (for whom the Construction Science School may be named) and for a new facility to house the Construction Science Department (for whom the facility may be named).
- The Department will have established, or be an integral part of, Centers for Construction Education and for Construction Research. Continuing education programs will be an integral part of the Construction Science program with widespread faculty participation. Outside funding for research will total $250,000 annually, and the Department will have an active role in a refereed journal.
- The Department will have 60 graduate students, and will have admitted its first candidate for a Ph.D. degree in Construction Science.
- The Department will have 600 undergraduate students with honors courses available in at least half of the Construction Science courses.
- The Department will have international faculty, courses in the global construction issues, and international student and faculty exchange programs.

By the year 2003—

- The Department will have enhances its reputation as THE BEST academic program of Construction Science in the world.
- The Department will have enhanced its national and international reputation in its selected Areas of Emphasis.
- The Department will reside in its own facility, will enjoy a significant endowment, and may be known as the School of Construction Science, named for a significant donor.
- Centers for Construction Education and Research will be well established. Annual research funding will have reached $1 million.
- The Department will have 100 graduate students, including 10 Ph.D. candidates. The Department will have graduated its first Ph.D. student.
- The Department will have 600 undergraduate students with honors classes available in all Construction Science courses.
- The Department will have enhanced its reputation for excellence in global issues.