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Distance Education Strategy: Mental Models and Strategic Choices

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Abstract

What issues do distance education (DE) leaders believe will influence the future of DE? What are their colleges' DE strategies? This qualitative study compares DE strategic thinking and strategic choices at three community colleges. Two propositions are investigated: (1) each college's DE leaders use common strategic mental models (ways of thinking about key environmental issues and relationships), and (2) DE leaders from the three colleges employ common industry-level strategic mental models. The major findings are: (1) strategic beliefs are more varied than expected; (2) strategic choices address common DE issues but are tailored to local contexts; and (3) leaders' beliefs and college strategic choices are aligned.

Introduction

The continuing rapid growth of post-secondary distance education (DE) poses major strategic challenges for all types of higher education institutions (Eaton, 2002). These challenges include: political and public pressure for new accreditation and quality standards (Eaton, 2001), faculty concerns about teaching loads and compensation, institutional concerns about costs and sustainability (Carr, 2001), and a variety of related institutional and public policy issues (American Council on Education, 2000).

Strategy research is often conducted from two perspectives: strategy content and strategy process (Chakravarthy & White, 2002). Strategy content research investigates the objectives that organizations establish and the means they adopt to reach those objectives. Strategy process research examines the formulation, implementation, and alteration of strategy. One approach to strategy process focuses on the strategic mental models that decision makers employ to represent and manage complex external and internal environments (Porac & Thomas, 2002; Schwenk, 1988).

This qualitative study investigated two propositions regarding DE strategic thinking at three Midwestern community colleges (identified as Elm, Maple, and Oak): (1) each college's DE leaders used common strategic mental models (ways of thinking about key environmental issues and relationships), and (2) DE leaders from the three colleges employed common industry-level strategic mental models. This research also compared the colleges' DE strategies.

The research questions were:

1. Who were the DE leaders at each college?
2. What did each college's DE leaders see as key strategic issues?
3. How similar were the strategic mental models of each college's DE leaders?
4. What were each college's DE strategic choices?
5. Did DE leaders at all three colleges use similar industry-level mental models?
6. What were the similarities and differences in DE strategies?

The following definitions were used:

- DE was teaching and learning in which faculty and students were separated by space and/or time.
- DE leaders were those individuals who developed and directed a college's DE activities.
- DE strategy was broadly defined to include the colleges' objectives (ends) and their specific actions (means) (Chakravarthy & White, 2002).

Distance Education Strategy

DE strategy research has largely focused on three broad topics: goals, barriers, and responses; faculty and administrator attitudes; and planning processes and issues. Smith (1998) asked: Why provide DE? He proposed five objectives: improving access, expanding an institution's geographic reach, improving educational quality, increasing efficiency for institutions and for students, and achieving customer satisfaction. Shepherd, Martz, Ferguson, and Klein (2002) found that expanding geographic reach was by far the most common reason for getting into DE and that institutions primarily measured success in terms of enrollment increases, revenue increases, and improved learning.

Berge and Muilenburg (2001) compared "barriers to DE" with "stages of organizational maturity." They reported that the three most significant sets of barriers to DE, regardless of organizational stage were: faculty compensation and time, organizational change, and lack of technical expertise and support. Fornaciari, Forte, and Mathews (1999) proposed four DE strategies based on an institution's "size, reputation, and cost" (p. 709). They suggested that large regional universities with low reputations adopt cost leadership strategies to attract out-of-state students by charging them in-state tuition rates and that small national institutions with high reputations pursue differentiation strategies by focusing on highly selective distance degree programs.

Schifter (2000) identified factors that motivated and inhibited faculty participation in asynchronous learning networks (ALNs). The top three motivating factors for faculty who participated in ALNs were: (1) personal motivation to use technology, (2) opportunities to develop new ideas, and (3) opportunities to improve teaching. Armstrong (2000) reported on two classes of factors that motivated faculty to become involved with DE. Administrative support, organizational culture, and institutional commitment to access were important institutional factors. Primary personal factors included: curiosity, the opportunity to work with students who were practicing professionals, and personal convenience.

Although some colleges and universities engage in elaborate, formal DE strategic planning processes (Hache, 1998; Berge & Schrum, 1998), others develop DE through faculty initiatives and through experimentation (Adams, 2001). The colleges in this study followed this latter approach to developing their DE strategies. Several authors have addressed DE planning issues (Bates & Pole, 2003; Compora, 2003; Levy, 2003). Their ideas are incorporated into the strategic

choices framework that follows.

Strategic Mental Models

Three ideas from strategic cognition theory are relevant to this research. These ideas concern the nature of strategic mental models, the use of common strategic mental models by organizational leaders, and the tendency for leaders in industry groups to develop similar mental models. Leaders and managers use simplified mental representations of complex environmental factors and relationships to focus their strategic thinking (Porac & Thomas, 2002; Schwenk, 1988). Managers develop strategic mental models from their assumptions and experiences, and they use these models to select and interpret information and to guide decision making (Schwenk, 1988).

Strategic mental models incorporate beliefs about the organization, about its competitors, and about what it takes to succeed in the marketplace (Porac, Thomas, & Baden-Fuller, 1989). Organizational leaders develop common mental models as they work together to define critical issues and to establish and implement strategy (Porac & Thomas, 2002). Organizational interpretation systems (Daft & Weick, 1984) reinforce the development of common mental models by filtering and categorizing information, but the degree of commonality in leaders' strategic mental models varies among organizations (Ensley & Pearce, 2001). Strategic mental models contain both core beliefs that involve purpose, mission, and competition and peripheral beliefs that focus on specific goals and means (Lyles and Schwenk, 1992).

Leaders in cohesive industry groups also develop similar strategic mental models as they compete with one another and learn from one another (Huff, 1982). Leaders work to shape their external environments, but those environments also influence the strategic models that leaders construct (Porac et al., 1989). In particular, managers borrow and counter their competitors' strategies. They exchange opinions and ideas through professional and social interchanges, and they carry ideas and strategies between organizations by changing jobs.

Methods

The sample for this qualitative multi-case study included 16 administrators, professional staff, and faculty who were recognized as DE leaders at their colleges. Data were collected through semi-structured, tape-recorded interviews conducted between January 6, 2003, and March 6, 2003, and from documents, observations, and archival records.

The data were analyzed by diagramming the issues that participants said would influence the future of DE at their colleges and through coding the interview transcripts, documents, and field notes to fracture the data and to create categories. Verification was achieved through member checks, by using different theoretical lenses, and through discussions with other researchers. Validity was assured through the use of a sound case data base and through "analytical generalization" (Yin, 1994) that compared the findings with DE strategy and strategic cognition theory. Ethical concerns were addressed through informed consent and confidentiality.

The Colleges and the Leaders

Elm, Maple, and Oak were public community colleges with contiguous service areas. They operated in a Midwestern state with a diversified economy that included important agricultural and agribusiness sectors. Each college had an independent board of governors, but all three were members of the state community college association and operated under the jurisdiction of the state higher education commission. While their revenue and expenditure patterns varied, all three colleges relied on a mix of state appropriations, local property taxes, tuition, and fees from

ancillary activities that included residence halls. As was common at the time of this study, the governor and state legislature were wrestling with a major budget shortfall, and the community colleges anticipated reductions of five to ten percent in their base-level state appropriations. There were five or six participants from each college for a total of 16 (Table 1). The participants included vice presidents of instruction, deans and directors of distance and extended education, academic deans, instructional designers/trainers/technologists, and DE instructors. Six women and ten men participated in this study. All participants were identified as DE leaders on their campuses by the three site sponsors and by other participants. All but one of these DE leaders had worked at their colleges for over five years.

Table 1. Participants by roles and years at college

	Years at colleges (number of participants at each college)		
Roles	**Elm (6)**	**Maple (5)**	**Oak (5)**
Vice President of Instruction	35 years	13 years	30 years
Academic Dean	18 years		20 years
Associate Dean			11 years*
Program Chair		8 years*	
Dean of Extended and Distance Education or Director of DE (with dean-level status)	14 years	12 years*	20 years
Director of Video DE	19 years	22 years	
Learning Technologies Director			3 years*
Distance Learning Coordinator or Technologist	3 years	11 years*	
Instructor	10 years*		

**Current or former DE instructor.*

Findings

Strategic Mental Models

Leaders at each college identified a number of issues that would influence the future of DE at their colleges, and the researcher grouped these issues into categories. Convergence and divergence of strategic mental models was examined at category and issues-within-categories levels. Strategic thinking at each college is summarized below followed by an overview of industry-level strategic mental models.

Elm. The six Elm DE leaders identified 20 individual issues that clustered into nine categories. Only two categories included the majority of the leaders, and leaders emphasized different issues within the categories. Thus, the strategic mental models of Elm DE leaders were more divergent than convergent. Six categories included issues named by two or more participants. In order of importance, from highest to lowest based on the number of issues included in each category, these six were:

- Money and funding – competing priorities and state budget reductions
- Markets and demand – changing demographics and nontraditional students
- Technology changes and costs – rapid changes and limited resources
- Faculty availability and workload – recruitment, retention, and compensation
- Administrative commitment – support of the president and board of governors
- Usability and acceptance of DE – student and faculty satisfaction with DE

Other issues included training to prepare faculty and students for DE, marketing to inform the public about DE and to attract more students, and student support services.

Maple. The five Maple DE leaders named 18 issues that would influence the future of DE at the college. These issues were grouped into six multi-issue and two single-issue categories. Only two categories included issues identified by at least three of the five leaders. In addition to lack of consensus about categories, issues in several categories were only loosely related. Thus, the Maple DE leaders' mental models were fairly divergent.

The six multi-issue categories, in decreasing order of importance, were:

- Leadership and institutional support – executive commitment, DE support, and effective communications among faculty and with administrators
- Technology – need to replace homegrown course management system
- Money – state budget reductions and pricing of DE for out-of-state students
- Faculty and instruction – extra compensation for DE and changing expectation
- Change and planning – need to manage change and to strengthen planning
- Competition and marketing – little local competition and minimal marketing

The remaining issues were collaboration with high schools and other colleges and plans to create national online health technology programs.

Oak. The five Oak leaders identified a total of 19 influences on the future of DE at the college. Fourteen of these issues clustered into four categories, but five issues were sufficiently distinct to warrant separate categories. Only three categories included issues that were identified by most of the Oak leaders. Considering both the categories and the ranges of issues within the first four categories, the strategic mental models of the Oak leaders were divergent.

The four multi-issue categories (in decreasing order of importance) were:

- Technology – need to consolidate and upgrade four aging video technologies
- Money – state budget reductions and potential loss of enrollment-based state aid

- Quality, image, and competition – public recognition of DE quality
- Faculty issues – recruitment, retention, and burnout from teaching DE on overload

Five issues were identified by only one Oak leader. These included: visualizing multiple uses of technologies, collaborating with other community colleges in the state, appreciating learning styles and learner comfort with technologies, moving from online courses to full degree programs, and attracting out-of-state students to broaden the cultural perspectives of local students and faculty.

Industry-Level Strategic Mental Models. The DE leaders at the three colleges identified a total of 57 issues that would influence the future of DE. By combining the college-level categories, 14 industry-level categories were constructed. Based on the percentage of leaders who listed issues in each category, five categories demonstrated convergence (Table 2). There was moderate-to-high convergence regarding money and technology and low-to-moderate convergence regarding: leadership and college commitment; faculty issues; and competition, marketing, image, and quality.

Table 2. Industry-level Categories and Leader Convergence

Category #	Category	Elm Leaders/issues (a)	Maple Leaders/issues (b)	Oak Leaders/issues (c)	Total Leaders/issues (d)	Percentage of All Leaders (e = d/16)
	Moderate to High Convergence					
1	- Money	5	2	4	11	69%
2	- Technology	2	3	5	10	63%
	Low to Moderate Convergence					
3	- Leadership and college commitment*	2	3(5)	1	6(8)	38%
4	- Faculty issues	2	2	2	6	38%
5	- Competition, marketing, image, and quality	1	2	3	6	38%
6-14	*Non-convergence*	8	4	4	16	n/a*
	Total issues named by leaders at each college	20	18	19	57	n/a*

**Two Maple leaders each named two issues in this category. N/A due to some leaders being counted more than once in the non-convergent category.*

The author found partial support for this study's second proposition that DE leaders from the three colleges employed common industry-level strategic mental models. While the category analysis appeared to support this proposition, the more detailed analysis of the issues produced mixed results, with little convergence in two of the five convergent categories listed in Table 2. These findings were contrary to what strategic cognition theory predicted. Because that theory was primarily based on studies of business leaders and corporate strategy, the findings may have been influenced by four issues: the mental model sampling methods, corporate leadership roles and the composition of DE leadership teams, the fact that DE strategy is a subset of college strategy, and the degree of competition among the colleges.

For example, corporate leadership teams include CEOs and functional leaders of production, marketing, finance, research and development, and other areas. The colleges' DE leadership teams were headed by vice presidents of instruction and included academic deans, distance education deans and directors, and technologists. Although there are clear differences, both types of leadership teams combine individuals with differing roles and experiences.
None of the four possible explanations adequately accounted the unexpected findings. Instead, core and peripheral knowledge structure theory (Lyles & Schwenk, 1992) provided a more satisfactory explanation. Leaders' mental models converged around core issues dealing with money, technology, and faculty issues, but they diverged regarding the specifics of these issues and around peripherals issues such as collaboration, training, and out-of-state students.

DE Strategies

Based on the literature, on the data, and on the author's experience, DE strategy was divided into eight categories:

- Leadership and organization
- Overall direction and objectives
- Courses, programs, delivery methods, and services
- Markets, customers, competitors, and marketing
- Instructional development, technical support, and faculty issues
- Finances
- Quality assurance and improvement
- Partnerships

There were important similarities in the colleges' DE strategies based on their parallel missions, but there were numerous strategic variations and operational differences.

Leadership and Organization. The colleges' DE leadership and organizational choices were equivalent in two respects. First, the vice presidents of instruction had overall responsibility for DE, and second, the academic deans at Elm and Maple, and the associate deans at Oak were responsible for content and faculty. Beyond that, DE leadership and organization were unique at each college.

Differences in DE leadership and organization were due to three issues: the size and underlying organizational structure of each college, the maturity and character of each college's DE initiative, and the particular skills and abilities of individual DE leaders. Elm was the smallest college and had a single campus with a fairly cohesive culture. By contrast, Maple and Oak operated as small community college systems, with the three campuses at each college retaining

significant degrees of independence. There were also DE differences at each college. Elm was only in its first year of online courses, whereas Maple and Oak had provided online classes for at least three years. Maple was the only college with online degree programs, and Oak had the only individualized, learning center-supported form of DE. Finally, leadership roles partially reflected the interests and experiences of the incumbents.

Overall DE Direction and Objectives. The colleges' two primary DE objectives were increasing enrollments and serving all the counties in their service areas. There were also more specific objectives. As a way of increasing enrollments, Elm DE leaders were eager to serve nontraditional local populations by expanding their fledgling online program, and they were considering creating specialized online degrees. Maple sought to increase its prestige and to strengthen the financial base of DE by going national with selected online degree programs. Oak leaders talked about staying current with technology. They were especially concerned about upgrading Oak's aging video network and about reducing the number of video technologies. Oak leaders also discussed: sustaining the college's political support by maintaining a presence in local communities; increasing diversity; improving classroom efficiency; and completing online degree programs. While developing online DE, the colleges also wanted to improve their successful interactive video DE courses.

Courses, Programs, and Services. There were several course, program, and service similarities. All three colleges provided DE general education courses to high school and college students. They all emphasized academic consistency, regardless of delivery format. These colleges were committed to providing comparable services to DE students, and they cooperated with other community colleges in developing shared DE courses for state-wide delivery.

There were also differences. Maple did not operate learning centers, but it had online degree programs. Oak, did not have telecourses, but it offered individualized, print- and internet-based DE courses through numerous learning centers. Elm had telecourses and three education centers but no online degrees.
The colleges emphasized comparable services for DE students. These services included: application, registration, financial aid, library, orientation, advising, and career planning. However, not all of the DE leaders at each college were equally satisfied with their college's services.

All three colleges provided DE online and via interactive video, but Oak used satellite delivery far more than the other two colleges. Because of its individualized courses, Oak did not offer telecourses. On the other hand, Maple and Elm licensed nationally produced telecourses that their faculty taught to DE students through video-tapes and correspondence.

Markets, Customers, Competitors, and Marketing. With two major differences, Maple, Oak, and Elm served similar markets and customers. All three colleges focused on their local markets, but Maple served a large city and hoped to create a national (and global) market for its specialized online degree programs. Within their local service areas, the colleges' primary DE customers were place and/or time bound adult students, high school students, on-campus students, and students from surrounding colleges and universities.

Although the colleges did not track DE enrollment patterns, leaders agreed about the importance of two groups: (1) on-campus students who took DE courses for convenience and (2) students from four year colleges and universities. These latter students enrolled in Elm, Maple, and Oak online courses because courses were not available at the four year colleges, due to the community colleges' lower tuition rates, and for scheduling flexibility.

Competition was not a major concern for Elm, Maple, and Oak. They were exclusive providers of interactive video courses to their areas, and competition for telecourses was insignificant. Although competition for online students was possible, it was not an immediate concern. Consequently, DE marketing was rudimentary. It included: college publications and Web sites; course listings in newspapers, "shoppers," and high school newsletters; and word of mouth. In addition, Maple planned to rely on out-of-state community college partners to market its national online programs. While DE leaders generally saw their low tuition rates as a competitive advantage, they did not want to compete on the basis of price.

Production and Delivery. The principle production and delivery issues were: faculty training, course selection, content development, faculty and student support, video network scheduling, and technology management and upgrades. In terms of complexity, these issues were the least challenging for telecourses and the most challenging for online courses.

Elm and Maple had fairly stable sets of telecourses. The colleges purchased video tapes and course materials from national publishers, and faculty customized the courses to ensure consistency between the telecourses and the same courses delivered in other ways. Faculty communicated with students individually by surface mail, e-mail, and telephone. Although the number of telecourses was more limited, the opportunity for individualized learning was conceptually similar to Oak's individualized DE courses. However, Oak's courses were developed by its faculty, and Oak's learning center managers provided motivational support for students in these DE courses.

Oak, Maple, and Elm were all members of one or more distance learning consortiums that connected the colleges with their area high schools and educational resource agencies via fiber optic video networks. These consortiums operated and scheduled the networks.

Online education presented the most complex set of training, support, and technology issues. Elm's technologist had simplified the training that he provided for the first group of online instructors, and he assisted faculty in either using publisher's e-packs to provide the structure for their online courses or in developing courses from scratch. Oak's learning support services team provided group and individualized training for online faculty and consulted with faculty on instructional design and technology issues. Maple's trainer/designer helped faculty design their courses and prepared them to teach in an interactive online environment.

Elm and Oak used WebCT as their course management system, and Maple was considering converting from Lotus Notes to WebCT or Blackboard. Elm was the only college that did not host its own courses and the only college that restricted the use of its course management system to online courses to avoid the cost of expanding its license. By contrast, Oak encouraged the use of WebCT in face-to-face classes, and Maple was considering developing blended or hybrid courses as the next logical step in the application of online instructional technologies.

Finances. With the exception of Maple's planned nation-wide online degree programs, the three colleges faced similar DE financial issues and pursued similar financial strategies. The major issues included: enrollment-driven changes in each college's state appropriations, reductions in total state funding due to the state budget shortfall, technology and support-staff costs, and incentive pay for DE faculty. The basic strategies were to grow DE enrollments, to charge the same resident tuition rates for DE and face-to-face courses, to not expect DE to pay for itself or to produce margin, and to pay incentives to DE faculty. However, there were variations in how each college pursued these common strategies.

Elm looked to DE as a way to maintain course and college enrollments by attracting nontraditional students. At the other extreme, Maple served a growing urban area, and enrollments were increasing on two of its three campuses. Thus, Elm was likely to receive a smaller proportion of state community college funding, and even if its enrollment grew, Oak would face a similar problem because Maple would grow faster.

The colleges charged the same tuition rates for DE and face-to-face courses, and their in-state rates were almost the same. On the other hand, the premiums charged to out-of-state students varied. Maple only charged a 16% differential, while the differences were 25% at Elm and 50% at Oak. These colleges considered themselves to be low cost, high quality providers, and they saw DE as a way to attract students who were concurrently enrolled at the state's universities or private colleges, where tuition and fees were higher.

All three colleges paid incentives to DE faculty. Elm provided extra compensation to faculty who developed and taught online courses. It also paid faculty for completing video training and the first time they taught a video course. This compensation plan was scheduled to "sunset" in 2007. Maple paid faculty to develop and to teach online courses, but it was considering dropping its incentives. Oak was using funds from a five-year grant to compensate faculty who developed online courses, and Oak also used non-financial incentives to motivate faculty to become involved with DE. Oak had not determined what its incentive policy would be after the grant terminated.

Q*uality Assurance and Improvement.* Oak, Elm, and Maple were all committed to high quality DE, to consistency between courses regardless of delivery format, and to ongoing improvement based on learning assessments and on student evaluations. Oak was participating in the North Central Association's (NCA) Academic Quality Improvement Project. Elm was seeking permission from the NCA to offer its entire set of degree program through DE, and Maple had just gained that approval.

The colleges used student evaluations and other feedback as a basis for making improvements. Students were asked to evaluate teaching, technology, and learning. In addition, Oak relied on high school counselor and administrator comments about its high school video courses, and Maple used performance on national licensure examinations to evaluate its online health technology programs.

Partnerships. The colleges' most important partners were high schools, distance learning consortiums, and other community colleges in the state. Elm, Maple, and Oak relied on the high schools as local delivery sites and on the consortiums for their fiber optic networks. The high schools and educational resource agencies owned the networks and paid the operating costs, except for college line charges. Elm, Maple, and Oak worked with the other state community colleges on DE planning and policy development and on creating joint DE degree programs.

The high school and consortium partnerships allowed the colleges to deliver courses to high school students during the day and to college students in the evenings. Most of these classes originated on a college campus, but in some cases faculty taught from high school distance learning classrooms. Scheduling was a major issue, and college DE leaders worked to maintain satisfactory relationships with high school principals, counselors, and superintendents.

Elm, Maple, and Oak cross-listed each other's DE degree programs in their catalogs. Students completed general education courses at their local college and specialized courses through DE from the remote college. The three colleges also cooperated with their area state colleges, and

Maple delivered its DE health technology programs through partnerships with clinical education sites.

Conclusions and Recommendations

The strategic mental models of each college's DE leaders were more divergent than convergent. All three colleges' leaders used convergent industry-level core ideas, but they surrounded their core thinking with a large number of divergent peripheral ideas. All three colleges pursued similar DE strategies but with significant local variations, especially in online DE. There was a high degree of consistency between what leaders said they believed about the future of the DE at their colleges and their colleges' strategic choices.

College and university leaders should fashion DE strategies that recognize their institution's culture, identity, market opportunities, and competitors. There are no universal approaches. Student expectations, technologies, and competition will continue to change, and DE strategies must evolve. However, DE has been part of higher education for over a century, and effective DE strategies should build on accumulated knowledge, while fashioning new solutions to emerging challenges and opportunities. Further research should focus on the relationship between formal strategic planning, ad hoc operational planning, and the degree to which colleges and universities achieve their DE goals and objectives.

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