THE PERCEPTIONS OF SELECTED UNIVERSITY ADMINISTRATORS ON ECONOMIC AND ASSOCIATED DECISION-MAKING FACTORS RELATED TO INSTITUTIONAL INVOLVEMENT IN DISTANCE EDUCATION

by

Miriam Elizabeth Guthrie

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John K. Burton, Chairman
David R. Ford
Susan G. Magliaro
D. Mike Moore
Thomas W. Wilkinson

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Committee Chairman: J. K. Burton

(ABSTRACT)

This study investigated the perceptions of Chief Financial Officers and primary Distance Education Administrators on economic and institutional decision-making factors influencing institutional involvement in distance education, and the economic readiness criteria and business plan components necessary for institutions to be strategically successful in distance education. Data were collected via an online questionnaire from a sample of 151 Carnegie Foundation Classified Doctoral/Research Institutions—Extensive. Responses from 80 institutions (31 Chief Financial Officers and 72 Distance Learning Administrators) indicated that 78.6% of all institutions planned to increase their institutional involvement in distance education and 19.4% planned to maintain their current involvement in distance education.

This study indicated that administrators should consider the role that economic and other institution-related decision-making factors play in distance education, particularly in assessing reasons for institutional involvement and plans to not start, maintain or increase distance education activities. Statistically significant relationships were found to exist between an institution's plans for not starting, maintaining or increasing distance education activities and institutional demographics, institutional engagement, specific core values, and distance education business plans. Economic factors were also found to impact institutional involvement in distance education. Specifically, addressed were institutional readiness criteria for successful involvement in distance education, components of a business plan, and institutional assumptions about distance and higher education.

The predominant markets for Research I institutions are graduate (43.1%) and undergraduate students (27.3%), and markets are selected primarily in accordance with institution mission, support of the strategic plan, and to address a specific market niche. Findings indicated that traditional core values are either not influenced by distance education or positively influenced. With respect to business plans, 25.2% indicated that no business plans were present for distance education, 19.4% were not certain, with the remaining reporting that business plans existed for university-wide and/or individual initiative levels.

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DEDICATION

For His glory

In Honor of my Family

Gregg John, my father
Kay Marlowe, my mother
Marcus John, my brother
Anna Joy, my sister
Edith Mae, my sister

In Memory of my Grandfather
A believer in education

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CHAPTER ONE
INTRODUCTION

Background

There are significant economic, demographic and technological forces acting upon institutions of higher education (Altbach, 2000; Boettcher & Sherron, 1997; Brinkman, 2000; Denning, 1996; Ehrmann, 2001; Ehrmann & Milam, 1999; Gallick, 1998; Gladieux & Hauptman, 1995; Hanna, 1998; Jones, 2000; Karelis, 1999; Milam, 2000; Rowley, Lugan, & Dolence, 1998). Practices and policy issues affected by these forces are not one or two, but many, as institutions struggle to carve out courses or methods of action in light of changing economic, demographic and technological conditions—courses and methods that guide and determine decisions made about distance education. Unfortunately, many institutions have turned to distance education as a means of leveraging current resources to meet new learner and market demands, uncertain of whether or not distance education is institutionally and economically beneficial (Brinkman, 2000; Carr, 2001; Ehrmann & Milam, 1999; Geith & Cometa, 1999; Goldstein, 2000; Morgan, 2000; Standing Stones Consulting, 2000; Wirt, Choy, Gruner, Salbe, Tobin, Bae, & Al, 2000).

The uncertainty of distance education's role in higher education is reiterated by news of both related casualties—such as the closings of NYUonline, Fathom.com, and Open University—as well as success stories—such as the growing enrollments of the University of Phoenix and the tremendous revenues of Apollo and Cardean. Economically, history shows that federal and state policy changes will continue to drift so that students or their families bear more and more of education's costs. Bearing the burden of significant educational expenses, consumer and government eyes are turned toward supplier pricing policies and the cost-effectiveness and accountability measures of postsecondary institutions (Brinkman, 2000). Institutions must meanwhile acquire new markets, increase enrollments, effectively market and develop programs, and keep learners for life (Hanna, 1998; Heterick, 1995, 1996; Jewett, 2001; Standing Stones Consulting, 2000).

Uncertainty paired with the changing culture and economy of higher education has left many institutions desperately seeking leadership, strategies and policies that will allow them to meet successfully the needs of all university constituents. Fortunately, for institutions and constituents alike, modeling tools, frameworks for cost efficiencies, and strategies for increasing revenue are growing in availability and accuracy. Unfortunately, few institutions have assessed the reasons for their involvement in distance education and relatively little research is available to assist.

This deficit of tools and research for assessing and benchmarking institutional involvement in distance education can inhibit effective institutional distance education planning and implementation, and can significantly hinder the effective utilization of the current and forthcoming decision-making and modeling tools. This study addresses strategic and appropriate decision-making for successful involvement in distance education by investigating what decision-making factors influence institutional reasons to implement, grow, narrow, maintain, not start, or eliminate distance education programming when the positive impact of distance education on higher education is not conclusive.

Purpose of the Study

The purpose of this study was to investigate the perceptions of selected institutional administrators from Carnegie Foundation classified Doctoral/Research—Extensive institutions, focusing on institutional demographics and opinions on economic and institutional decision-making factors that influence the level of postsecondary participation (including non-participation) in distance education, and the economic readiness criteria and business plan components necessary for institutions to be strategically successful in distance education.

Carnegie Foundation classified Doctoral/Research—Extensive (Research I) institutions were selected because of unique challenges identified through the review of literature. The literature review revealed that larger, traditional, public research institutions are much more likely to embrace distance education than their smaller or private counterparts (Mulugetta, 1999). However, these same institutions are also more frequently hindered in their implementation of distance education by funding and legislative regulations, antiquated procedures and policies, market needs, and cultural resistance (Gellman-Danley & Fetzner, 1998; Moore & Greg, 1996; Oblinger, Barone, & Hawkins, 2001; Van Dusen, 2000). Similarly, while private institutions can more easily implement distance education, they are more reticent to do so due to concerns over mission congruence.

Under the umbrella of Research I institutions, it was necessary to identify members of each institution's community who not only provided unique and relevant perspectives on economic and other institutional factors influencing involvement in distance education, but also influence or hold decision-making responsibility at an administrative, institutional level for the assessment, distribution and allocation of distance education resources. The two members identified from each institution to participate in this study were the institution's Chief Financial Officer and its primary Distance Education Administrator where available.

Research Questions

Specifically, this study investigated the economic and institutional decision-making factors related to postsecondary involvement in distance education, and the economic readiness criteria and business plan components necessary for institutions to be strategically successful in distance education. Three research questions guided this investigation.

1. What economic factors influence institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming?
2. What other decision-making factors influence institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming?
3. What components of a business plan are considered important factors to institutions deciding to implement, grow, narrow, maintain, not start, or eliminate distance education programming?

Definitions

The following definitions were used in this study to provide clarity of meaning and accuracy of subject response:

Distance Education: education or training courses delivered remotely (including home, office and site-based locations) via audio (live or prerecorded), or computer technologies, including both synchronous and asynchronous instruction. For the purposes of this study, courses

conducted exclusively on-campus are not included in this definition of distance education (although some on-campus instruction or testing may be involved); courses conducted exclusively via written correspondence are also not included (although some instruction may be conducted via written correspondence). Distance education also does not include courses in which the instructor travels to a remote site to deliver instruction in person. Distance education courses may include a small amount of on-campus course or lab work, on-campus exams, or occasional on-campus meetings. *(Adapted for the purposes of this study from the National Center for Education Statistics.)*

Business Plan: a document or documents designed explicitly for distance education initiatives and containing all related operational, marketing and financial considerations.

Full-Time Equivalent: enrollment of full-time students, plus the full-time equivalent of part-time students as reported by institutions. In the absence of an equivalent reported by an institution, the FTE enrollment is estimated by adding one-third of part-time enrollment to full-time enrollment. *(Adapted for the purposes of this study from the National Center for Education Statistics.)*

Limitations of Study

The study investigated perceptions of economic and institutional decision-making factors that influence the level of postsecondary participation (including non-participation) in distance education, and the economic readiness criteria and business plan components necessary for institutions to be strategically successful in distance education. The study was restricted to selected institutional administrators from Carnegie Foundation classified Doctoral/Research—Extensive institutions, specifically Chief Financial officers and Distance Education Administrators as selected by institution presidents/chancellors. It is not known the extent to which this study replicates the opinions of all Chief Financial Officers or Distance Education Administrators from Research I institutions, or the opinions of other those administrators in other Carnegie Foundation classified postsecondary institutions.

Significance of the Study

Investigation of influential economic and institutional decision-making factors will contribute to the field of distance education and higher education in three ways. First, it will contribute through the development of descriptive baseline data on institutional identity and economic models within the context of decision-making factors identified through this review of literature. Second, it will contribute through the development of descriptive baseline data with respect to business plan development within the context of economic specific decision-making factors identified through this review of literature. Finally, the analysis of these descriptive data based on institutional type, mission, and distance education characteristics, will begin to allow for institutional benchmarking.

Understanding the factors that influence a Research I institution's involvement in distance education will provide these institutions with an economic and institutional blueprint that will enable the benchmarking of their current identity/involvement in distance education within the context of institutions demographics, institutional and economic reasons for involvement, institutional readiness, and business plan development. Laying foundational research in an area where little research has been conducted, this study will also enable further large-scale practice and policy related educational research and assist in the immediate creation, review, refinement

and/or implementation of not one, but many, institutional distance education policies and practices. An improved understanding of these factors within the context of traditional Research I institutions will provide assistance to those universities and colleges impacted significantly, both institutionally and economically, by the changing culture and economy of higher education.

CHAPTER TWO
REVIEW OF THE LITERATURE

To support this study, a review of the relevant literature was conducted, laying the foundation toward a better understanding of economic and other decision-making factors influencing institutional involvement in distance education. Specifically, five areas were found germane to this study and are discussed in this chapter. These areas consist of current forces acting upon institutions of higher education and four areas of institutional factors. These four factor areas consist of institutional cores values, institutional assumptions about distance and higher education, institutional readiness for distance education, and barriers to distance education.

Forces Acting Upon Institutions of Higher Education

The culture and economy of post-secondary education is changing and distance education as a global, growing industry is requiring institutional response. Pushed to increase revenue, enrollments and reach new markets, institutions are being forced to define new arrangements between businesses, government, and emerging educational sectors. These new arrangements in collaboration and partnering are a clear trend impacting institutional involvement in distance education and the adoption of new business models. Other trends impacting institutions of higher education include a changing consumer demographic, technological development, and emerging educational organizations and competitors. Below, these trends are explored in more detail.

Understanding the Consumer

Consumer demographics are rapidly changing with respect to higher education. Change is evidenced through increased enrollments and internationalized learner needs and workplace demands. With respect to enrollment, the United States is presently experiencing historical levels of growth (Altbach, 2000; Boettcher & Sherron, 1997; Brinkman, 2000; Gallick, 1998; Gladieux & Hauptman, 1995; Jones, 2000; Karelis, 1999; Rowley et al., 1998; Wirt et al., 2000). The National Center for Education Statistics has projected enrollment growth through 2011 (Wirt et al., 2000). These projections (see Table 1) show dramatic increases in traditional 18-24 attendance of both public and private institutions. Similarly, between 1999 and 2011, full-time and part-time enrollments are expected to increase 22 percent and 16 percent to 10.7 million and 7.4 million, respectively. In addition to an increasing number of learners, these learners bring with them a more diverse set of needs and expectations.

While higher education must address the complex web of consumer expectations, perhaps none is more dynamic and challenging than those of the information age's new knowledge worker (Rowley et al., 1998). The information age is putting pressure on these knowledge workers in new ways—ways that pressure institutions of higher education to create linkages to the workplace and to internationalize education. Critical thinking and problem solving is necessary and expected from employees by corporations and industry. The information age learner is also finding that analytical skills are critical for sorting, parsing, recombining, and creating information. As a result, learners' expectations are increasing with respect to receiving quality, relevant, customizable products and services delivered in a timely manner and in a convenient way.

Table 1

NCES projects of enrollment in higher education

Consumer Characteristic	NCES statistical statement
	- Enrollment (overall) in degree granting institutions is projected to rise to 17.7 million by the year 2011, an increase of 20 percent from 1999.
Age	- Traditional college age population (18 to 24-year-olds) is projected to increase 17 percent from 1999 to 2011, a total of 10.8 million and comprising of 61 percent of total enrollments; this increase in traditional ages is in contrast to recent distribution patterns of college students. - 25 to 29-year-olds projected to increase 10 percent from 1999 and 2011 - 30 to 34-year-olds will decrease by 8 percent between 1999 and 2007 and increase 8 percent from 2007 to 2011 - 35 to 44-year olds will decrease by 13 percent between 1999 and 2011
Sex	- Enrollment of women increase to 10.3 million by 2011, 24 percent increase from 1999 and comprise a total of 58 percent for proportion of all college enrollments - Enrollment of men is expected to increase to 7.4 million by 2011, a 14 percent increase from 1999
Attendance	- Full-time is expected to increase another 22 percent to 10.7 million by 2011 - Part-time is expected to increase 16 percent to 6.9 million by 2011
Control	- Public institutions (4 and 2 year) should anticipate an increase of 20 percent from 1999 to 2011, to a total of 13.6 million - Private institutions (2 and 4 year, includes for and not-for-profit) should anticipate an increase of 18 percent from 1999 to 2011, to a total of 4.1 million - Public 4 year, 21 percent increase with rise of 7.3 million - Private 4 year, 18 percent increase of 3.8 million
Enrollment	- Undergraduate increase to 15.3 million by year 2011, a 21 percent increase from 1999 - Graduate enrollment is projected to increase to 2.0 million by 2011, a 13 percent increase from 1999 - First-professional enrollment is projected to increase to 342,000 by 2011, a 21 percent increase from 1999
FTE	- Increases of 21 percent anticipated for a total enrollment of 13.2 million by 2011
Degree	- Bachelor's degrees: expected to in increase to 1,392,000 by 2010-11, an increase of 18 percent from 1997-98 - Master's degrees: expected to increase to 477,000 in 2010, from 430,164 in 1997-98 - Doctoral degrees: increase to 49,100 in 2010-11, an increase from 46,010 in 1997-98

Consumers of higher education are diverse in expectations as well as need, goals, and preparation (Brinkman, 2000; Rowley et al., 1998). So diverse, in fact, that the capacity of our present categories for learners (i.e., full-time, part-time, degree-seeking, certificate-seeking, distance learners, traditional, non-traditional) to appropriately characterize the new educational consumer, has recently been called into question (Rowley et al., 1998). New consumers, both college-bound and workplace-oriented, want to not only mix and match educational goals and products, but also to partake in convenient, flexible scheduling. The advent of new technology, competition and lifelong learning demands, require learner access to resources, affordable pricing and appropriate financial aid (Rowley et al., 1998). New learning needs are interdisciplinary or trans-disciplinary and there would ideally be a shorter time to certification, licensure and degree.

Technology as a Catalyst for Change

Another major force of change in the current environment is technological development. This development is so significant that a lack of recognition by institutions of technology's strategic value will threaten the ability of an institution to survive the transition into the Information Age (Rowley et al., 1998). Serving as a force of change, technology has radically altered many processes and values within higher education. Armstrong (2000) notes that the accelerating advances of technologies, for both communication and learning, are fueling organizational changes and cultural shifts. In addition, that distance learning might be viewed by some academicians as a disruptive technology. Methods of instruction, communication, interaction, support, and learning are changing rapidly due to advances in technology (Jones, 2000). Hanna (1998) writes that the "combination of demands, costs, application of content and new technologies is opening the door to emerging competitors and new organizations" (n.p.). It is within this rapidly changing environment of technology and new learner expectations and needs that institutions of higher education are struggling to maintain traditional values and missions while transitioning as an organization into an uncertain future.

Emerging Organizations and Competitors

New and powerful organizations are becoming strong competitors for learners of traditional higher education institutions (Hanna, 1998). As funding decreases and competition increases, postsecondary institutions are reassessing their market share, image, and levels of quality, accessibility, and affordability. As a result, numerous institutions have begun to explore new organizational models such as the seemingly beneficial and cost-effective model of institutional or corporate partnerships (Hanna, 1998; Rowley et al., 1998; Standing Stone Consulting, 2000). Unfortunately, not all postsecondary institutions can respond as quickly or efficiently as they desire.

Unlike public institutions, private universities and colleges have been able to respond more quickly to challenges of this new educational environment. This is due in part to the fact that public institutions are more frequently hindered by restrictions of state funding and local, state and federal regulations (Gellman-Danley & Fetzner, 1998; Moore & Greg, 1996; Oblinger, Barone, & Hawkins, 2001; Van Dusen, 2000). Other impediments for public postsecondary institutions include antiquated procedures and policies, market uncertainty, and resistance to change.

In partial or direct contrast to traditional institutions are the organizational and economic entities

gaining prominence in the educational arena due to the new technologies and new learning market. Hanna (1998) developed a model for categorizing new competitors and organizations in distance education by addressing organizational function. The organizational types identified by Hanna consist of the following:

- Extended traditional universities (e.g., Virtual Michigan State University),
- For-Profit adult-centered universities (e.g., University of Phoenix, Strayer),
- Distance education/Technology-based universities (e.g., Virtual Online University, Greenleaf University, Cyber State University),
- Corporate universities (e.g., Apple, Motorola, McDonalds, Sylvan Prometric),
- University/Industry strategic alliances (e.g., with Addison, Wesley & Longman, AT&T, GTE, PrimeStar, Disney),
- Degree/Certification Completion Competency-Based Organizations (e.g., Sylvan), and
- Global multinational universities (e.g., Athena, Presidio World, Global One).

A slightly different categorization, and one that lends itself to business strategies, was developed by Standing Stone Consulting (2000). This categorization defines competitors and organizations within the framework of business models. The six types of economic entities defined by Standing Stone Consulting follow directly:

- Direct Sales/Virtual Universities (the institution is providing e-learning courses directly to learners with no broker involvement, e.g., Open University, University of Phoenix, Digital Think),
- Partnership/Joint Venture (the institution is collaborating with one or more partners to provide e-learning courses with no broker involvement e.g., Partnering of Cenquest, University of Texas, Monterrey Tech, and University of Adelaide),
- Brand Broker (an independent broker is partnered with the institution as a strong brand-name educational institution to compete based upon a recognized credible promise e.g., Cardean.com, Fathom.com),
- Mall/Aggregator Broker (an individual institution registers their offerings with an online "yellow pages" of e-learning courses e.g., Petersons.com, HungryMinds.com),
- Regional Consortia/Associations (the institution is part of a group of institutions, regionally based, that collaborate to provide learners with better learning and to share costs and services e.g., Illinois Virtual Campus, Western Governors University, Global University Alliance, Next Ed), and
- Channel Supplier (the institution utilizes an existing Web marketing channel to offer courses to a well defined market segment e.g., MuniMall.net).

When taken individually, any of the environmental trends—a changing learner demographic, emerging technologies or new educational organizations and competitors—has a substantial impact on higher education. Taken together, these forces of change require new and unique levels of planning and strategic leadership.

Planning and Leadership

One of the most important and most challenging needs of the present-day postsecondary institution is to build distance education leadership capacity through strategy development. Leadership—when integrated across all facets of the institution—promotes the change and decision-making structures necessary for the success of distance education (Hanna, 1998; Heterick, 1995, 1996). Administrative and organizational change must be considered together if distance-learning planning is to be implemented well (Berge & Cho, 2002). This implementation includes business plan development, without which costs will often spiral out of control (Van

Dusen, 2000). Similarly, without leadership and planning, successful implementation of distance education efforts will quickly become mired down in ill-defined markets, inappropriate goals, and obtuse measures of success.

Synthesis of related literature supports ten foundational recommendations for institutional planning (Armstrong, 2000; Chute, Thompson, & Hancock, 1999; Hall, 1990; Honeyman, Wattenbarger, & Westbrook, 1996; Kotter, 1996; Moore & Greg, 1996; Oblinger et al., 2001; Rowley et al., 1998). These recommendations, placed below, frame institutional planning for distance education, where planning should:

1. Be tied to financial systems;
2. Include people with power, leadership, expertise and credibility from all facets of the organization in order to foster cultural change;
3. Be translated into operational terms with specific timelines, priorities and measures;
4. Drive resources;
5. Have accountability built in;
6. Be based on facts;
7. Build on institutional distinction;
8. Include reorganization and governance changes;
9. Reflect the institutional mission; and
10. Identify markets through thorough market analysis.

Quick and easy solutions are highly unlikely within the complex maze of decision-making and the fluctuating education environment (Carr, 2001; Hopkins, 1996). However, as stated by Rowley (1998), "acting constructively to fit the needs and demands of the information age, colleges and universities can be strategic about choices they make and the futures they design" (p. 262).

Factors Influencing Decision-Making

The following sections of this chapter address the isolation and identification of economic and other decision-making factors influencing institutional involvement in distance education. Four areas of factors emerged through the review process and were used to frame the following discussion. These four factor areas consist of an institution's core values, institutional assumptions made about distance and higher education, institutional readiness for distance education, and barriers to distance education.

Core Values

Whether guiding an institution's strategic planning or a faculty member's interaction with a student in the classroom, longstanding core values play a foundational role in the day-to-day activities of higher education. These values carry historical and present-day import in shaping and facilitating the role of the academy in relation to meeting the needs of consumers, providing quality education as suppliers, and selectively engaging with organizations and markets outside the institution. It is in the wake of current developments in distance education that these core academic values are being challenged (Eaton, 2000; Oblinger et al., 2001; Van Dusen, 2000).

Writing about accreditation issues relating to distance education, Judith Eaton (2000) defines six core academic values of higher education. These values are institutional autonomy, collegiality and shared governance, intellectual and academic authority of faculty, the degree (whether associates, baccalaureate, professional, master's, or doctorate), general education, and site-based

education and community of learning. These values have traditionally been central to institutional processes such as planning, evaluation and instruction. However, as an increasing number of institutions adopt distance education, distance education by its very nature can affect change in these institutional processes and, perhaps, the institution's core values or the manner in which these values are addressed (Van Dusen, 2000).

Oblinger, Barone and Hawkins (2001) write: "What is clear is that distributed education, and specifically technology-enhanced learning environments, are challenging our historical assumptions about how postsecondary institutions will educate students and deliver services – even what our roles as institutions will be" (p. 2). In conjunction with the technological, demographic and economic forces acting upon higher education, distance education can have a significant impact on institutional processes, procedures and policies. These may, in turn, challenge the college or university's concept of *business as usual.*

One example of how processes might be affected by these forces and distance education is provided by Honeyman, Wattenbarger and Westbrook (1996) and provided in Table 2. The authors deconstruct the traditional characteristics of institutions into six systems. The six institutional systems are educational delivery, instruction, support servicing, planning, staff, and assessment. Though arguably simple in nature, Table 2 summarizes the components within each system and details the traditional versus future characteristics of these systems.

Distance education will influence core values through consortial agreements, dispersion of faculty and students, commercial courseware, standardized courses, an increase in part-time faculty, disaggregation of faculty responsibilities, competition from credentials, pervasiveness of training, and diminishing importance of site-based education (Eaton, 2000). As such, the role of core values as factors influencing post-secondary involvement in distance education should be considered. Implicit are important questions for key decision-makers to address: How will distance education impact an institution's core values? How can an institution balance distance education with its core values, mission and plans? How can a university appropriately transition instructional technology and administrative systems?

Assumptions

Very closely related to the core values of higher education institutions are, perhaps surprisingly, administrative and academy assumptions. Amidst the hype and hyperbole of distance education, institutions are struggling with an initial assumption that "everyone should be doing something" in regard to distance education (Carr, 2001; Ehrmann & Milam, 1999; Hall, 1995; Hanna, 1998; Karelis, 1999; Oblinger et al., 2001; Noblitt, 1997; Standing Stones Consulting, 2000; Weigel, 2000). This assumption is being replaced by the recognition that it is more critical for institutions to be doing the right thing – or perhaps, nothing at all. Knowing what the right thing is with respect to distance education, however, is difficult and often confused by long-standing assumptions about higher education and more recent assumptions about distance education (Carr, 2001; Ehrmann & Milam, 1999; Karelis, 1999).

In part, the difficulty of determining what institutional *business as usual* is or will be stems from the fact that assumptions are often woven into institutional objectives, policies, history, culture and values (Eaton, 2000; Education, 1998). This difficulty is exacerbated by the fact that institutions must navigate through internal and external environments that are in continuous

states of technological, demographic and economic flux. Oblinger (2001) writes: "few institutions have the luxury of waiting until the future becomes obvious. Each institution needs to determine the mix of objectives and actions that best fits its unique mission, history, culture and values" (p.3). The value of teasing out assumptions through this literature review is twofold: it identifies possible *reasons for* institutional involvement in distance education and alerts decision-makers to institutional or administrative presuppositional frameworks that may influence their level of engagement in distance education.

Table 2

Six institutional systems and components within each system

Educational systems	Traditional characteristics	Future characteristics
Educational delivery		
Strategy	Fixed entry/fixed exit	Open entry/open exit
Time	Semester based	Modular
Awards	Credits	Certification
Evaluation	Grades	Skills/competencies
Method	Single mode	Multimodal
Instruction		
Instructors	Content deliverers	Content managers
Focus	Teaching	Learning
Method	Single Mode	Multimodal
Curriculum/development	Specialized faculty	Cross-functional design team
Support Services		
Delivery	Centralized	Decentralized
Customer	Students/staff	Students
Time	Periodic/episodic	Continuous
Staff		
Faculty contract	9 months	Year round
Workload	Fixed	Flexible
Compensation	Formula	Incentive based
Hiring	Integrated	Integrated/virtual
Planning		
Process	Prescriptive	Exploratory
Goal	Incremental improvement	Create new futures
Unit of analysis	Existing market/competitors	Market foresight
Model of analysis	Benchmarking	Challenging orthodoxies
Assessment		
Timing	Periodic/episodic	Continuous
Customer	Faculty/staff	Students/community
Unit of analysis	Programs/services	Institution

There is no question that distance education can be advantageous for an institution and its constituents (Basom et al., 1997; Maruyama & Oblinger, 1996; Moore & Kearsley, 1996; Oblinger et al., 2001; Standing Stone Consulting, 2000). Basom and Sherritt (1997) and Oblinger (2001) list the following advantages for institutions and faculty: faster dissemination, revision, and distribution of materials; the ability to track student progress; increased access to potential sources of new revenue; a catalyst for institutional change; fostering of new collaborations with other educational institutions, government agencies and businesses; access to worldwide resources; and the capacity to reach expanded, diverse audiences. Faculty members and students can benefit additionally by technology and distance education.

For faculty, these benefits include new opportunities for teaching versatility, e-commerce solutions for administrative tasks, new resources for data collection and exchange of research ideas, access to online publications and job listings, and lastly, opportunities to participate in professional development through communication and collaboration tools (Maruyama & Oblinger, 1996). Students can benefit from distance education through increased flexibility and convenience in education, the opportunity to interact with classmates or instructors any place and any time, access to a broader range of resources and educational choices, and an education that is customizable (Basom & Sherritt, 1997; Standing Stones Consulting, 2000). In addition, students can take advantage of versatile, comprehensive learning experiences; higher levels of engagement and interaction; a fostered sense of community; easy and immediate access to content; and new changes for empowerment through available tools (Oblinger et al., 2001).

Balanced against these benefits is an equal number of assumptions or rationales regarding higher education and distance education. One interesting result of the literature review is the fact that many of the benefits of distance education, such as those listed above, are also implied or listed directly in the literature as assumptions, or perhaps perceived promises unfulfilled. For example, Twigg (2000) speaks to the assumptions made by institutions regarding information technology and cost. She asserts that most institutions have not reaped the return on investment somewhere promised by the integration of information technology. Twigg links the assumption of cost savings with the assumption of quality in instruction:

> Making use of the technologies to reduce the cost of instruction requires a fundamental shift in thinking. It requires challenging the primary assumption of the current instructional model: that the only way to achieve effective student learning is for faculty members to meet with groups of students at regularly scheduled times (p. 42).

The assumptions culled from the literature review are listed in Table 3 designated by author.

Despite institutional assumptions about, and very real benefits of, distance education, quick and easy solutions are highly unlikely if seeking to address the increasing economic, technological, demographic and instructional strains by becoming involved in distance education (Carr, 2001). As such, decision-makers should be aware of institutional and administrative assumptions regarding distance and higher education, as well as the institution's mission, academic goals and plans. Similarly, the possible existence, type and role of assumptions should be considered with respect to institutional involvement in distance education. Similarly, a better understanding should be acquired of whether or not assumptions differ between institutions and by level of institutional engagement or maturity in distance education.

This section closes with seven conclusions drawn about distance education and higher education as deduced by Van Dusen's research into higher education's digital dilemma (2000, p. v).

1. Successful efforts to transform American colleges and universities are very likely to occur quite differently from institution to institution, based on institutional mandate, mission, and vision. Given the increasing number of adult and nontraditional students, it is likely that the majority of institutions will undergo some form of significant transformation.
2. Although in many respects colleges and universities are businesses, in crucial respects, they are not (i.e., tenure, philosophy of service, mission, and vision).
3. The historic commitment to core values in traditional undergraduate education has wavered, and the same vacillation threatens to undermine general education requirements in electronically delivered certificate and degree programs.
4. Lack of internet access results in information poverty for several classes of individuals and creates a new class of postsecondary institution.
5. Distance education is unlikely to affect institutional cost savings over the short or middle term.
6. Existing evidence on the effectiveness of media-enhanced and distance education is generally inadequate because of experimental design flaws.
7. Containing the costs of academic and administrative computing today requires a campus wide rather than department-level perspective.

Table 3

Assumptions about distance and higher education

Assumptions by Author

Assumptions (Turoff, 1997):

- Delivery of courses by computers is a viable alternative for millions of students because of the WWW and Internet
- Institutions of higher education will have a geographic monopoly they can count on
- Distance education is a magical source of money
- Distance education is a source for students who are both talented and well-to-do

Assumptions (Oblinger et al., 2001):

- Institutions know the student, their learning needs and preferences
- Credit hours and Full-Time Equivalents are still applicable units of measure for distributed learning environments
- The traditional institution and its associated teaching and learning models will be successful in the new world of e-learning
- Institutions must be a one-stop-shop for all components of the educational process
- Educational services such as tutoring or courses provided by an external entity are lesser quality or inherently bad
- Non-profits provide higher quality education
- Low quality products will be driven out by high quality products
- All postsecondary institutions (over 3,700) will continue to be supported by the market
- All postsecondary institutions can consider distance education as a viable option
- The focal point of the learning process is the faculty member
- All higher education institutions must develop their own distributed learning programs
- Distance education will increase productivity
- Distance education will reduce cost
- Distance education will allow us to increase enrollments
- Distance education will reach new audiences, where audiences include corporate learners, professional enhancement learners, degree-completion adult learners, college experience learners (traditional student), Pre-college (K-12) learners, remediation and test preparation learners, recreational learners
- Distance education will reach new local, intra-state, inter-state and inter-country learners
- Distance education will act as a mechanism for institutional change
- Distance education will generate new revenue
- Distance education will expand access for those needing quality education or life-long education
- Distance education will alleviate fiscal and physical constraints
- That a course will successfully reach thousands of people around the world once offered via distance education

Assumptions by Author

Assumptions (Van Dusen, 2000):
- There are quick easy solutions to making higher education more accessible, affordable and effective

Assumptions (Basom & Sherritt, 1997):
- Information and knowledge are synonymous
- Providing information is the same as providing education
- More information will result in more learning

Assumptions (EDUCAUSE, 2002):
- Distance education will expand access
- Alleviating capacity constraints
- Capitalizing on emerging market opportunities
- Distance education allows for institutional transformation

Institutional Readiness

The third area of factors focuses on the preparedness or readiness of an institution in regard to distance education. With the looming prospects of increased enrollment, increased competition, and decreased funding, institutions cannot afford to invest in an instructional infrastructure that does not capitalize on financial and pedagogical investments. Advocates of readiness criteria development assert the direct proportionality of an institution's level of success in distance education to their level of understanding and preparedness (Berge, 2001; Chute et al., 1999; Schreiber, 1998; Twigg, 2000a, 2000b); indeed, there is a list of "preconditions – or readiness criteria – that must be in place before an institution can successfully implement such an [instructional] effort and thus see a return on its investment" (Twigg, 2000b, p. 44). Through appropriate preparation, institutions can improve benefit, reduce resistance to change, and damper the general institutional malaise that stems from a lack of definitions (e.g., of goals and levels of appropriateness for distance education), a lack of distance education alignment with other institutional plans (e.g., financial, academic, information technology), and an unprepared organizational and cultural climate (Black et al., 1998; Chute et al., 1999; EDUCAUSE, 2002; Hanna, 1998; Karelis, 1999; Twigg, 2000a, 2000b).

Many areas of readiness are important for institutions engaging in distance education. However, the literature reviewed predominantly clustered around four areas of readiness: organizational, cultural, financial and philosophical. A forerunner in the development of readiness criteria is Carole Twigg. Two primary foci of readiness addressed by Twigg are that of the institution's adoption of distance education in general and large-scale course transformation (Twigg, 2000a, 2000b). For Twigg, there are eight primary questions that an institution must ask itself if engaging in distance education. These questions focus on cost, productivity, demonstrated commitment by leaders, campus culture, maturity of information technology support, technology skill levels and pedagogical development of faculty and learners, a demonstrable learner-centered approach to instruction, use of information technology for partnership development, and

opportunities for large-scale course redesign. Drilling down from an institutional level, Twigg also addresses specific course re-design criteria.

Large-scale course redesign readiness focuses on appropriate selection and support of courses that will have the highest level of returns for institutions (Jewett, 2001; Moore & Greg, 1996; Twigg, 2000a). Jewett (*in press*) states "One of the most important sources of economies of scale is spreading of fixed costs over larger and larger numbers of students" (p. 13). As a result, courses that are appropriate for online transformation must be selected based on significant impact on a curriculum. Courses should allow for a high rate of investment return and may be characterized by one or more of the following: large, introductory, high enrollment course; substantial failure rate or low material retention rate; naturally generic in nature (e.g., survey courses), or courses that face serious resource issues from increased enrollment or reduction of available faculty (Twigg, 2000a).

One of the most substantial undertakings with respect to readiness and decision-making was the development of the READiness InventorY (READY) tool through EDUCAUSE. Its contributive significance to this area of institutional need could be substantial. Serving as a decision engine, the tool guides individual users or groups through a series of self-assessment questions that target organizational, cultural, financial and philosophical readiness (refer to Table 4). These questions assist in developing a comprehensive, conceptual framework for the users of their readiness to expand the use of technology both in administrative and instructional activities.

The tool can serve key decision-makers in three ways: a) as an interactive, online venue that addresses the complexity of distance education integration into higher education, b) as a vehicle that supports and encourages dialog on the key areas of decision-making, and c) a resource compendium that allows for further analysis based on the resulting descriptive conclusions generated by institutional responses to the self-assessment questions. Key question areas included in the inventory by EDUCAUSE are listed below. The tool is available online at http://www.educause.edu/ready/.

If, as the literature reveals, institutions can receive institutional benefit by proactively addressing the financial, cultural, organizational and philosophical components of the university and college that may be impacted by distance education, how can institutions best prepare economically for involvement in distance education? Equally, what aspects of economic preparedness are deemed most critical to institutions and does a relationship exist between identified aspects and an institutions level of involvement?

Table 4

List of READiness InventorY focus areas

General

- Definition of Distance Learning
- Institution's Rationale/Need (president, provost, deans, faculty, students, Board, and governors/legislator)

Focus Area: Delivering Online

- Market Analysis (Learner Segments, Market Size and Demand, Competition)
- Strategic Planning (Environmental, Components of a Strategy, Product definition, Product, Risk Management)
- Governance and Organization (Centralized vs. decentralized, Within institution vs. Outside, Not for Profit vs. For Profit, Key Decision Makers, Division of responsibilities, Current and Ideal Responsibilities)
- Institutional Integration (Planning, Experience, Funding, Support/Services, Implementation)
- Market Size (Projections, Traditional Students, Non Traditional Students, Adult US Learners, International Learners, Constraints such as language and pricing)

Focus Area: Partner in the Learning Market Space

- Toolbox (Access to resources and advising, Matching Providers and Learners, Credit Transfer, E-portfolio, E-mentor, E-learning community)
- Context (Place vs. Space, Value-Chain vs. Value-Web, Sustaining vs. Disruptive Technologies)
- Options (Corporate vs. Public, Targeted vs. General)
- Priorities (Cultural Shifts, Participation in Global Economy, Rules Governing New Economy, Standardization and Scalability, Operating in an E-environment, Human Relationships)
- Blueprint (Description, Beliefs, Assumptions, Operations, Collaboration, Risk, Control, Adaptation)
- Return (Distance Learning as Bolt-on, Embedded, Spin-Off)
- Assessing Readiness (Technological infrastructure, Time, Resource Gaps and Plans, Public Funding, Private Funding, Partnerships, Commitment of Leadership, Faculty Buy-in, State e-Commerce Strategy, Identification of Industries, Climate, Overall Commitment, K-12 Integration, Alignment of Decision-Makers)
- State Digital Readiness (Authenticity, Competence, Polarity)

Focus Area: Aligning Plans and Operation

- Institutional Operating Plans (Planning Documents, Availability and Accessibility, Aliveness)
- Institutional Strategic Plan (Definition and Sources, Does a Plan Exist, Finding the Plan, Institutional Mission and Vision, Campus Acceptance)
- Planning Process (General Processes, Constituents, Sustainability, Leaders and Stakeholders, Academic plan)
- Evaluating the Plan and Outcomes
- Exploring Alignment between Plan and Budget (Strategic Alignment, Budget Process, Activities)
- Delivering Student Services (Culture, Policy Environment, Governance, Process Mapping/Risk Management, Assessment)

Barriers to Distance Education

Within the context of defining factors that influence an institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming, it is critical to spend time reviewing the literature on institutional barriers to distance education. The review of literature indicates that barriers play an important role in determining the level of institutional involvement and satisfaction in distance education and, hence, has received a significant amount of study.

Barrier research spans a diverse range of participants and topics, complementing and supplementing research on institutional preparedness. Where cores values and assumptions are foundational to decision-making, and readiness is proactively preparatory, the significance of barriers is the knowledge acquired by institutions predominantly through *hindsight*. Perhaps, this statement, more than anything, also indicates that the vast majority of current identification of factors by researchers has been—to a certain extent—reactive in nature. The reactionary approach supports the concern that few institutions have truly assessed the *reasons for* their involvement in distance education. For the purpose of this review, barrier literature was divided into works that contribute to barrier identification through contextual frameworks and those that identify barriers through studies.

Results of Framework Development on Barriers to Distance Education

Through the review of literature on barrier frameworks, 94 barriers for distance education were identified. These barriers were then organized into five overarching contexts: organizational barriers, operational barriers (including policies), infrastructure barriers, and barriers affecting faculty and students.

Organizational Barriers

The review of related literature led to seventeen organizational barriers being identified. Barriers range from accountability measures and planning to distribution of resources and imposed regulations. The most heavily referenced barriers are those of planning, administrative support for programs and faculty, imposed regulatory environments and the availability and distribution of funds. This literature review supported research by Bonk (2000), which found that institutional members tend to "focus on cultural and organizational inhibitors such as administrative vision and leadership rather than on technological concerns" (p. 14). For decision-makers it is important to note that while many barriers "stem from faculty concerns; others are artifacts of an organizational and financial structure that was designed in a former era" (Oblinger et al., p. 25). Of importance to decision-makers will be carefully deliberating what truly *are* artifacts of an era gone.

Also supported throughout the five overarching barrier contexts is the need for comprehensive support of distance education efforts. While support ranges from faculty incentives to student training, organizationally it hinges on the development of viable plans (e.g., business, strategic, information technology) and on a managing unit that is clearly defined, appropriately located—the higher the better and preferably within academics—and appropriately funded (Boettcher & Sherron, 1997). A list of the organizational barriers identified through the literature review is provided in Table 5.

Table 5

Organizational barriers

Barrier	Authors
Accountability metrics	(Bunn, 2001; Moore & Greg, 1996; Oblinger et al., 2001)
Accreditation	(Basom & Sherritt, 1997; Moore & Greg, 1996; Truman, 1995)
Administrative support for faculty and program	(Boettcher & Sherron, 1997; Bonk, 2002; Duin & Baer, 2000; Galusha, 2002; Lembke & Rudy, 2001; Sherry, 1995; Truman, 1995)
Alliances, partnerships, contracts	(Duin & Baer, 2000; Gellman-Danley & Fetzner, 1998)
Appropriate support personnel	(Galusha, 2002; Lembke & Rudy, 2001)
Availability and distribution of funds	(Bonk, 2002; Bunn, 2001; Duin & Baer, 2000; Galusha, 2002; Lembke & Rudy, 2001; Sherry, 1995; Truman, 1995)
Awareness and Education of Board and Administrators	(Bonk, 2002; Oblinger et al., 2001)
Communication of plans and priorities	(Duin & Baer, 2000; Ullrich, 1998)
Competition/Territoriality	(Hopkins, 1996)
Core Values	(Basom & Sherritt, 1997; Bonk, 2002; Van Dusen, 2000)
Designation of and Funding for distance education managing units	(Boettcher & Sherron, 1997; Bunn, 2001; Duin & Baer, 2000; Galusha, 2002; Lembke & Rudy, 2001; Truman, 1995)
Governance	(Basom & Sherritt, 1997; Duin & Baer, 2000; Gellman-Danley & Fetzner, 1998; Truman, 1995)
Imposed Legislative or government regulations	(Gellman-Danley & Fetzner, 1998; Moore & Greg, 1996; Oblinger et al., 2001; Van Dusen, 2000)
Institutional commitment	(Duin & Baer, 2000; Galusha, 2002)
Mission congruence and institutional differentiation	(Bonk, 2002; Van Dusen, 2000)

Barrier	Authors
Readiness	(Duin & Baer, 2000; Ullrich, 1998)
Viable strategies (organizational, distance education, governance, business, IT)	(Boettcher & Sherron, 1997; Bonk, 2002; Bunn, 2001; Lembke & Rudy, 2001; Moore & Greg, 1996; Oblinger et al., 2001)

Operational Barriers

Thirty-five operational barriers were identified in this review. The vast majority of these barriers are grounded directly in institutional policies, where policy needs fall along an institutional continuum departmental to national in scope. The breadth of these needs is equally expansive, ranging from audits and ownership to residency requirements and accreditation. Noted by Oblinger (2000), of import to decision-makers is the assertion that "even if an institution decides to forego entry into distance education or distributed learning, few parts of an institution will be untouched by technology-related policy questions" (p. 23). An understanding of economic and other institutional decision-making factors influencing institutional involvement in distance education can facilitate the immediate creation, review, refinement and/or implementation of institution-specific policies and practices. The question then remains, what are these factors? The list of operational barriers culled from the literature is provided in Table 6. Identified policy needs contributing to operational barriers are grouped according to similarity and presented in the table under a distinct sub-heading.

Infrastructure Barriers

The third barrier context is that of infrastructure. Ten barriers were identified as infrastructure barriers. Broadly, technology-supported or distance education, campus infrastructures need to be technologically friendly, cost effective and associated with viable economic plans, frequently updated, accessible, supported, stable, standardized, and developed around the needs and goals of the institution (Ehrmann, 2001; Kaludis & Stine, 2000; Schreiber, 1998; Standing Stones Consulting, 2000). According to Hopkins (1996) and Carr (2001), infrastructure implementation is not going to be something quickly or easily done. Hopkins reports:

> Fully integrating IT into higher education will be a long-term process. To succeed, it must be supported by coherent training implemented through clearly-defined policies at Department, Faculty, University and national levels. Higher Education (in common with the larger society around it) has not yet thought through what it wishes to do, or can afford to do with IT. It must do so. (n.p.)

It should be noted that infrastructure needs will differ between individual institutions and in respect to their goals for, and the role of, distance education (Jewett, 2001; Jones, 2000). However, it is also important to note that changing learner needs due to the information age will put great demands on an institutions infrastructure for global connectivity regardless of institutional involvement in distance education. Boettcher defines three tiers of infrastructure implementation that will be required:

Table 6

Operational barriers

Barrier	Authors
Accountability Metrics	(Sherry, 1995)
Cost and Cost-efficiencies	(Basom & Sherritt, 1997; Bonk, 2002; Bunn, 2001; Hopkins, 1996; Oblinger et al., 2001; Sherry, 1995; Van Dusen, 2000)
Distribution of Revenue	(Bunn, 2001; Hopkins, 1996; Lembke & Rudy, 2001; Oblinger et al., 2001; Sherry, 1995)
Facilities/Equipment	(Bunn, 2001; Hopkins, 1996; Lembke & Rudy, 2001; Sherry, 1995; Truman, 1995; University, 2001)
Labor Management	(Lembke & Rudy, 2001; Ullrich, 1998)
Lack of appropriate or clear policies	(Boettcher & Sherron, 1997; Bunn, 2001; Oblinger et al., 2001; Sherry, 1995; Truman, 1995)
Scheduling	(Gellman-Danley & Fetzner, 1998; Sherry, 1995; University, 2001)
Identified Policy Needs Contributing to Operational Barriers	
Accessibility	(Oblinger et al., 2001)
Accreditation	(Basom & Sherritt, 1997; Gellman-Danley & Fetzner, 1998; Oblinger et al., 2001)
Advising/Counseling	(Gellman-Danley & Fetzner, 1998; University, 2001)
Appropriate use	(Gellman-Danley & Fetzner, 1998; Oblinger et al., 2001; University, 2001)
Articulation of credit acceptance – among and between states	(Gellman-Danley & Fetzner, 1998; Oblinger et al., 2001; Truman, 1995; University, 2001)
Audits	(University, 2001)
Computer requirements	(Oblinger et al., 2001; University, 2001)
Conflict of interest	(Oblinger et al., 2001)
Copyright	(Basom & Sherritt, 1997; Gellman-Danley & Fetzner, 1998)
Curriculum standardization and approval	(Bunn, 2001; Gellman-Danley & Fetzner, 1998; University, 2001)

Barrier	Authors
Departmental/College Rewards and Incentives	(Moore & Greg, 1996)
Disability	(Oblinger et al., 2001)
Examinations	(Bunn, 2001; Moore & Greg, 1996; University, 2001)
Faculty Rewards and Incentives	(Basom & Sherritt, 1997; Gellman-Danley & Fetzner, 1998; Moore & Greg, 1996; Oblinger et al., 2001; University, 2001)
Faculty Workload	(Gellman-Danley & Fetzner, 1998; Oblinger et al., 2001; University, 2001)
Financial aid	(Oblinger et al., 2001; University, 2001)
Hiring	(University, 2001)
Intellectual property	(Gellman-Danley & Fetzner, 1998; Moore & Greg, 1996; Oblinger et al., 2001; University, 2001)
Ownership	(Oblinger et al., 2001; University, 2001)
Privacy, security, authentication	(Oblinger et al., 2001; University, 2001)
Registration, admissions, enrollment	(Gellman-Danley & Fetzner, 1998; Moore & Greg, 1996; University, 2001)
Repeating of courses	(Bunn, 2001; University, 2001)
Residency Requirements	(Truman, 1995)
Student awareness and training	(Gellman-Danley & Fetzner, 1998; Oblinger et al., 2001)
Student fees and leasing agreements	(Gellman-Danley & Fetzner, 1998; Oblinger et al., 2001; Van Dusen, 2000)
Student load	(University, 2001)
Tuition – of institution and among and between states	(Gellman-Danley & Fetzner, 1998; Moore & Greg, 1996; Oblinger et al., 2001; University, 2001)
Withdrawal	(University, 2001)

> The first tier is the intracampus network that supports voice, data, and video communications. The second tier is the national network which will not only provide access to shared resources, but facilitate cooperative ventures between and among universities, polytechnic institutes, and the private and public-sector institutions interested in links to tertiary education. Finally, the third tier will provide access to global external resources – databases, commercial services, and other specialized offerings—which are necessary to empower students, staff, and faculty in their roles as learners, information workers, teachers, and scholars (28).

The barriers identified with an institution's infrastructure are synthesized in Table 7.

Faculty Barriers

Truly, a critical aspect of institutional adoption of distance education is the willingness and satisfaction of the faculty member. Twenty barriers were identified as barriers relating to faculty needs and concerns. The most heavily referenced barriers relate to the erosion of tenure, faculty rewards and incentives, the changing role of faculty, faculty training in technology and/or pedagogy, the lack of respect for the quality of distance education, faculty workload and time. Additional concerns include support for innovation and experimentation, interaction with students and depersonalization of instruction, and commercialization and ownership. Barriers associated with faculty involvement in distance education are provided in Table 8.

Student Barriers

The fifth and final context of barriers identified pertains to students. The review resulted in the identification of 12 student barriers. Of the 12 barriers, the most frequently referenced barriers are those of alienation and isolation, student support and training, and faculty feedback. It is evident in the barriers listed that the need for consumer information will be increasingly important to students to have and for institutions to provide (Oblinger et al., 2001). Addressing these barriers when making decisions about institutional involvement in distance education will assist in reducing the "considerable variance in student attitudes and satisfaction levels…[which can, in part] be attributed to variations in the amount and quality of support available during the distance education experience" (Boettcher & Sherron, 1997) (p. 26). The complete list of identified factors is provided in Table 9.

Table 7

Infrastructure barriers

Barrier	Authors
Availability of funds	(Galusha, 2002; Hopkins, 1996; Lembke & Rudy, 2001)
Inadequate infrastructure	(Galusha, 2002; Hopkins, 1996; Lembke & Rudy, 2001; Oblinger et al., 2001)
Insufficient human support	(Boettcher & Sherron, 1997; Bonk, 2002; Bunn, 2001; Lehman, 1998)
Insufficient storage and content management	(Maruyama & Oblinger, 1996)
Lack of adequate personal computers or classroom systems	(Bonk, 2002; Hopkins, 1996; Lembke & Rudy, 2001)
Life-cycle and cost of obsolescence	(Sherry, 1995)
Limitations of bandwidth or communication, tracking tools	(Basom & Sherritt, 1997; Bonk, 2002; Hopkins, 1996; Maruyama & Oblinger, 1996)
Purchasing and maintaining equipment	(Basom & Sherritt, 1997; Hopkins, 1996; Sherry, 1995)
Security	(Maruyama & Oblinger, 1996)
Standardization of communications access	(Boettcher & Sherron, 1997; Hopkins, 1996; Maruyama & Oblinger, 1996)

Table 8

Faculty barriers

Barrier	Authors
Adapting to changing roles	(Boettcher & Sherron, 1997; Galusha, 2002; Moore & Greg, 1996; Sherry, 1995; Ullrich, 1998)
Class size	(Oblinger et al., 2001)
Commercialization of content	(Turoff, 1997)
Content re-usability	(Bonk, 2002)
Course ownership	(Bonk, 2002)
Depersonalization of instruction	(Bonk, 2002; Oblinger et al., 2001)
Equity between online and on-campus assignments	(Galusha, 2002)
Erosion of Tenure	(Basom & Sherritt, 1997; Boettcher & Sherron, 1997; Denning, 1996; Galusha, 2002; Lehman, 1998; Oblinger et al., 2001; Sherry, 1995; Turoff, 1997)
Faculty rewards and incentives, including release time	(Basom & Sherritt, 1997; Boettcher & Sherron, 1997; Bunn, 2001; Gellman-Danley & Fetzner, 1998; Moore & Greg, 1996; Oblinger et al., 2001)
Faculty training in technology and/or pedagogy	(Boettcher & Sherron, 1997; Bonk, 2002; Bunn, 2001; Galusha, 2002; Gellman-Danley & Fetzner, 1998; Hopkins, 1996; Lehman, 1998; Lembke & Rudy, 2001; Oblinger et al., 2001; Sherry, 1995; Truman, 1995; Turoff, 1997)
Faculty-Student interaction	(Basom & Sherritt, 1997; Boettcher & Sherron, 1997; Turoff, 1997)
Inadequate selection of instructing faculty	(Galusha, 2002; Lehman, 1998)
Increase of Part-time/Adjuncts (particularly due to cost)	(Boettcher & Sherron, 1997; Turoff, 1997)

Barrier	Authors
Increased time demands for planning, development, updating a course	(Boettcher & Sherron, 1997; Bonk, 2002; Galusha, 2002; Sherry, 1995)
Increased workload	(Boettcher & Sherron, 1997; Gellman-Danley & Fetzner, 1998; Lehman, 1998; Oblinger et al., 2001)
Lack of administrative support	(Bonk, 2002; Galusha, 2002)
Lack of control in teaching process	(Lehman, 1998)
Lack of respect for instructional or content quality	(Basom & Sherritt, 1997; Galusha, 2002; Lehman, 1998; Oblinger et al., 2001)
Support for innovation and experimentation	(Moore & Greg, 1996; Sherry, 1995)
Threatened by technology	(Oblinger et al., 2001)

Table 9

Student barriers

Barrier	Authors
Access to courses	(Boettcher & Sherron, 1997; Truman, 1995)
Affordability of computers	(Basom & Sherritt, 1997; Boettcher & Sherron, 1997)
Alienation and isolation	(Basom & Sherritt, 1997; Galusha, 2002; Lehman, 1998; Sherry, 1995; Truman, 1995)
Awareness and education	(Boettcher & Sherron, 1997; Lehman, 1998; Oblinger et al., 2001)
Cost and motivators	(Basom & Sherritt, 1997; Galusha, 2002; Oblinger et al., 2001)
Feedback and teacher contact	(Boettcher & Sherron, 1997; Galusha, 2002; Lehman, 1998)
Financial aid	(Moore & Greg, 1996; Oblinger et al., 2001)
Lack of experience or training	(Galusha, 2002; Hopkins, 1996; Oblinger et al., 2001; Truman, 1995)
Lack of self-direction or time-management skills	(Basom & Sherritt, 1997; Truman, 1995)
Lack of visual cues	(Basom & Sherritt, 1997)
Residency requirements	(Truman, 1995)
Student support services	(Boettcher & Sherron, 1997; Galusha, 2002; Gellman-Danley & Fetzner, 1998; Lehman, 1998; Lembke & Rudy, 2001; Moore & Greg, 1996; Oblinger et al., 2001)

Results of Studies on Barriers to Distance Education

In addition to a review of literature that addressed barrier frameworks, barrier studies were reviewed that have been conducted by leaders in the field of distanced education barrier research. Summarized below are the most pertinent of the studies in relation to identifying factors influencing institutional involvement in higher education.

Some of the most extensive research done on distance education barriers in the past five years has been conducted by Zane Berge. Berge's work, in association with researchers such as Muilenburg and Cho, has significantly advanced the understanding of barriers to distance education for institutions and organizations. A study foundational to barriers research was conducted by Berge (Berge, 1998). The purpose of this study was threefold (a) to explore what barriers are experienced when teaching and learning online; (b) to answer the question of how should institutions begin to overcome these barriers; (c) to test whether or not the policy framework of Barbara Gellman-Danley and Marie Fetzer (1998) was valid.

A survey detailing 69 possible barriers was administered by Berge to 812 higher education instructors who taught or might have taught online courses. One hundred, seventy-four (174) replies were received (21%) of which 111 did not meet the criteria and only 42 instructed in secondary education. (A criteria for respondents was that classroom activities were limited to primary online delivery with 50% of graded interaction being online.) A total of nine policy development clusters for distance education resulted from the study. The nine areas are provided in Table 10, along with their corresponding response counts in the right hand column. The barrier counts indicate the frequency that survey respondents referred to a policy barrier. Of the 69 barriers, 41 barriers (59.4%) fall under the categories of technical (19 barriers) and cultural (22 barriers) policy development areas.

A subsequent study by Berge and Muilenburg (2000) built upon the barrier list developed by Berge through a review of literature and the aforementioned research. The study stipulated two hypotheses (a) "barriers preventing persons from becoming involved in distance education are significantly different at different stages of individual expertise, from novice through expert," and (b) "different content areas are more or less suitable for distance education delivery" (n.p.).

A total of 2,504 responses were received. Of the total responses, 346 were support staff, 1150 teaching faculty/trainers, 648 were managers, 167 were higher administrators, 102 were researchers, 8 undergraduates and 83 graduates. Berge and Muilenburg's study focused on two of the six demographic characteristics. They were (a) work place, (b) job function, (c) type of delivery system, (d) expertise of individual regarding distance education, (e) stage of institution with regard to distance education, and (f) area which respondent primarily works. For the purposes of this study, the results from Berge and Muilenburg's are focused on the conclusions drawn about administrators and managers.

Ranking of factors across all respondent categories resulted in similar perceptions of barriers. Half of the top ten barriers as perceived by managers and administrators addressed strategic planning and organizational culture. These barriers include organizational resistance to change, lack of shared vision for distance education in the organization, lack of strategic planning for

distance education, slow pace of implementation, and difficulty keeping up with technological changes.

Table 10

Nine key policy areas and descriptors

Key issue areas in policy development	Barrier count
Academic: academic calendar, course integrity, transferability, transcripts, evaluation process, admission standards, curriculum approval process, accreditation	7
Fiscal: tuition rate, technology fee, FTE's, consortia contracts, state fiscal regulations	5
Geographic service area: regional limitations, local versus out-of-state tuition, consortia agreements	1
Governance: single versus multiple board oversight, staffing, existing structure versus shadow colleges or enclaves	0
Labor-management: compensation and workload, development incentives, intellectual property, faculty training, congruence with existing union contracts	8
Legal: fair use, copyright, faculty, student and institutional liability	0
Student support: advisement, counseling, library access, materials services delivery, student training, test proctoring	7
Technical: lack of systems reliability, lack of connectivity/access; inadequate hardware/software; setup problems; inadequate infrastructure; inadequate technical support	19
Cultural: faculty or student resistance to innovation; resistance to online teaching methods; difficulty recruiting faculty or students; lack understanding of distance education and what works at a distance	22

The eleven most critical barriers for administrators/managers consist of the following: (1) increased time commitment, (2) lack of money to implement distance education programs, (3) organizational resistance to change, (4) lack of shared vision for distance education in organization, (5) lack of support staff to help course development, (6) lack of strategic planning for distance education, (7) lack of technical support, (8) slow pace of implementation, (9) faculty needs (i.e., compensation, incentives), (10) difficulty keeping up with technological changes, and (11) lack of technology-enhanced classrooms, labs or infrastructure. Those barriers identified as least critical by administrators and managers included the following: (1) competition with on-campus courses, (2) lack of personal technological expertise, (3) lack of acceptable Use Policy, (4) lack of transferability of credits, (5) problems with vast distances and time zones, (6) technology fees, (7) tuition rates, (8) local, state or federal regulations, (9) ethical issues, and (10) lack of parental involvement.

Shifting exploration slightly, Berge and Muilenburg (2001) conducted a study to assess perceptions of members in higher education with respect to distance learning barriers. The underlying premise for this study was the hypothesis that businesses and organizations vary with respect to levels of maturity for integrating and conducting distance education. Building upon the idea of institutions having levels of capability regarding distance education, Berge and Muilenburg frame their prior research on barriers through three hypotheses:

1) "educators perceive different barriers depending upon the maturity of their organizations' capabilities in distance education";
2) "as the organization's distance education competency as a whole matures, the overall number or intensity of perceived barriers to distance education is reduced";
3) educators view organizational change, faculty roles, and administrative structures are more problematic than technological and pedagogical barriers. (n.p.)

A total of 2,504 responses were received. Analysis was restricted to self-reports of respondents working in higher education (n = 1,276). Respondents were asked to identify the organizational stage of maturity with respect to distance education, where stages ranged from 1 (have not attempted to use distance education) to 5 (distance education is institutionalized). In addition, respondents were also asked to rate 64 barriers derived from literature review and previous work of the author (Berge, 1998) on a rating scale of 1 (no barrier) to 5 (very strong barrier). Performing a subsequent factor analysis resulted in the ten factor clusters that were then cross-referenced with respondents' perceptions of institutional capability.

Across all stages of organizational maturity, barriers of faculty compensation and time ranked highest. Organizational change ranked second highest for all stages 1-4, being replaced in priority in stage five by barriers surrounding lack of technical expertise and support. In stage 5, organizational change barriers drop in importance from second to seventh of the 10 barriers. This is suggestive, as stated by the authors, that when distance education has by definition been "institutionalized" into the organization, it is likely that barriers to organizational changes have been substantially overcome and that "distance education becomes increasingly linked to the strategic planning of the institution" (n.p.). Similarly, in all of the first four stages of institutional capability, technical expertise and support barriers are third in their impact; evaluation is the third critical barrier for institutions in the fifth stage as they turn to the effectiveness and quality of their programming more fully.

Three conclusions were drawn by the authors (a) evidence suggests that a relationship exists between an organization's level of distance learning capability and some but not all distance learning barriers; (b) organizational change was ranked as more critical than technical expertise and social interaction – administrative structure was not more critical; and (c) the intensity and number of perceived barriers decreases as organizations become more capable of delivering distance education.

A fourth study by Muilenburg and Berge (2001) acknowledged the need to reduce the number of variables found in related literature and to create a "meaningful and useful framework for discussing the barriers, set forth the goal of addressing the "underlying constructs that comprise barriers to distance education" through factorial analysis (p.2). A large-scale factor analysis (n = 2,504) with respect to barriers was performed by the authors. The study sought respondents with diverse representation in six demographic variables of distance education: (a) workplace, (b) job

function, (c) type of delivery system used, (d) expertise regarding distance education, (e) the stage of respondent's organization with regard to capabilities in delivering distance education, and (f) the area in which the respondent primarily works. Survey respondents rated the severity of barriers to distance learning on a Likert scale that ranged from 1 (no barrier) to 5 (very strong barrier).

Factor loadings were used to organize barriers into constructs. Ten barrier constructs were proposed: (1) administrative structure, (2) organizational change, (3) technical expertise, support and infrastructure, (4) social interaction and program quality, (5) faculty compensation and time, (6) threat of technology, (7) legal issues, (8) evaluation/effectiveness, (9) access, and (10) student-support services. Of the original barriers culled from a prior review of literature and survey research, fifty barriers were ranked above the 0.30 cutoff for statistical significance; 14 barriers did not meet the cutoff. Table 11 lists the remaining fifty factors and their associated ranking.

The significance of the study to this literature review lies in the thread of economic factors that runs, unaddressed, through the 64 barriers and 10 constructs identified. Despite the changing economy and resulting forces on the academy, as well as the role distance education is being called upon to play within this changing world of education, there is little research or literature that specifically addresses economic factors in distance learning. As noted by Muilenburg and Berge (2001), "The ten constructs revealed through this factor analysis provide a solid starting point for developing a quantitatively based framework of barriers to distance education. However, given that the framework derived here is relatively general," and recognizes the need for additional development of the barriers and constructs (p.18). One area where continued development should be done is in relation to the economic needs of higher education in relation to distance education.

Detailed in Table 12 are 20 barriers found among those studied by Berge and Muilenburg (2001) and identified by the author of this literature review as being related to economic factors. No economic barriers were identified within Berge and Muilenburg' barriers as listed within the constructs of *Threat of technology, Legal issues, Evaluation/Effectiveness, Access* and *Social interaction and program quality*.

Fourteen variables fell below the 0.30 factor-loading cutoff of statistical significance established by the researchers and, as a result, were not included in a factor construct. Generalities of non-significant factors include cultural, time zone and language barriers, accreditation and ethics issues, acceptable use policy, instructor isolation and information overload. Those variables that relate to economic forces include existing union contracts, competition (e.g., on-campus courses or existing students), and problems with vast distances or time zones.

An additional barrier cluster that is important to note with respect to this review of literature are those barriers related to strategic planning and leadership. Planning and leadership barriers within this study along and their associated factor loads are provided in Table 13.

Table 11

Final 50 barriers with factor loadings

Listing of Factors	Loading
Perceptions that computers may replace teachers	(-.785)
Copyright and Fair Use issues	(-.769)
Lack of policy concerning intellectual-property rights	(-.743)
Organizational resistance to change	(-.724)
Lack of shared vision for DL in organization	(-.722)
Faculty feel job security is threatened	(-.720)
Lack adequate student access or equal access concerns	(-.703)
Lack of advisement for DL students	(-.693)
Faculty compensation, incentives, workload, tenure, etc.	(-.683)
Lack of library access or materials delivery	(-.650)
Lack of champion for DL in organization	(-.640)
Lack of person-to-person contact	(.637)
Lack of adequate instructor access of DL	(-.597)
Increased time commitment (course development, training, etc.)	(-.588)
Lack of strategic planning for DL	(-.555)
Disrupts traditional social organization of classroom	(.535)
Lack of student services (e.g., financial aid, admissions)	(-.527)
Difficulty keeping up with technological change	(.527)
Lack of support staff to help with course development	(.517)
Lack of partnerships/consortia agreements	(.516)
Full-time equivalent issues	(.510)
Lack of technical support	(.504)
Difficult to convince stakeholders of DL benefits	(-.498)
Lack of knowledge/support for administrators	(-.498)
Technology fee	(.494)
Tuition rate	(.491)

Fear of technology	(-.486)
Lack of knowledge/support for administrators	(-.465)
Lack of transferability of credits	(.464)
Threat to instructors' sense of competence, authority	(-.464)
Legal issues (computer crime, hackers, piracy, viruses)	(-.464)
Lack of research supporting effectiveness	(.464)
Lack of technology-enhanced classrooms/labs/infrastructure	(.461)
Quality of course/program, students, or learning	(.457)
Lack of personal technological expertise	(.452)
Lack of ongoing credibility of program	(.445)
Local, state, or federal regulations	(.440)
Slow pace of implementation	(-.433)
Revenue sharing with departments or business units	(.426)
Lack of grants for DL	(-.420)
Concerns with evaluation, testing, assessment, outcomes	(.406)
Difficulty competing with new distance learning business models	(.396)
Lack effective evaluation for courses/programs	(.394)
Inability to monitor identity of DL students	(-.394)
Lack of the "right" people to implement DL	(-.381)
Lack of DL training provided by organization	(.357)
Lack of identified need	(-.348)
Lack of money to implement DL programs	(.340)
Lack of colleague/knowledge support of DL	(-.336)
Difficulty recruiting faculty and students.	(-.316)
Traditional academic calendar/schedule hinders DL	(.304)

Table 12

Barriers related to economic factors

Barriers	
Administrative structure (8 barriers)	
- Lack of partnerships/consortia agreements	(.516)
- Full-time equivalent issues	(.510)
- Technology fee	(.494)
- Tuition rate	(.491)
- Local, state, or federal regulations	(.440)
- Revenue sharing with departments or business units	(.426)
- Difficulty competing with new distance learning business models	(.396)
- Lack of money to implement DL programs	(.340)
Organizational change (1 barrier)	
- Difficult to convince stakeholders of DL benefits	(-.498)
Technical expertise, support and infrastructure (6 barriers)	
- Difficulty keeping up with technological change	(.527)
- Lack of support staff to help with course development	(.517)
- Lack of technical support	(.504)
- Lack of technology-enhanced classrooms/labs/infrastructure	(.461)
- Lack of personal technological expertise	(.452)
- Lack of distance learning training provided by organization	(.357)
Faculty compensation and time (3 barriers)	
- Faculty compensation, incentives, workload, tenure, etc.	(-.683)
- Increased time commitment (course development, training, etc.)	(-.588)
- Lack of grants for DL	(-.420)
Student-support services (2 barriers)	
- lack of student services (e.g., financial aid, admissions)	(-.527)
- difficulty recruiting faculty and students.	(-.316)

Table 13

Barriers related to strategic planning and leadership and associated factor loadings

Barriers	Factor Loading
Organizational resistance to change	(-.724)
Lack of shared vision for DL in organization	(-.722)
Lack of champion for DL in organization	(-.640)
Lack of strategic planning for DL	(-.555)
Difficult to convince stakeholders of DL benefits	(-.498)
Lack of knowledge/support for administrators	(-.465)
Lack of the "right" people to implement DL	(-.381)
Lack of identified need	(-.348)
Lack of colleague/knowledge support of DL	(-.336)

Berge and Cho (2002) expand upon prior barrier research by using the ten (10) barrier constructs identified in Berge and Muilenburg (2001) to conduct content analysis of thirty-two, in-depth case studies. Case studies were selected for their institutional commonalities regarding distance training and education. Example commonalities include technological capability, distance education implementation processes, and barriers and solutions to distance education. Findings conclude that administrative structures and organizational change should be considered simultaneously if an institution is planning to implement distance programming. Likewise, technical support and infrastructure are interconnected with access, student support, the quality of the learning experience and interaction.

Prior to the work conducted by Berge et al., a study conducted in 1995 by Dr. Yuko Mulugetta (1999) investigated the primary factors hindering the development of distance learning in higher education. Of interest was the ability to assist distance-learning administrators in their strategic planning by identifying distance-learning concerns held by members in the institutional community. Institutions were asked to provide demographic information (i.e., size of institution and institutional control) and identify items that were prohibitive from becoming a practitioner or expanding current distance education programming.

In the study, a stratified random sampling of 1,274 institutions was selected from approximately 3,460 identified 4-year institutions. Ninety-four percent (94%) of institutions responded. Descriptive analysis showed that public institutions are much more likely to embrace distance programming than private institutions. Of ally private 4-Year institutions responding, 32% were currently providing distance learning programming while over two-thirds (68%) of all public 4-year respondents defined themselves as practitioners. More private institutions were not planning

to provide distance learning programming than public institutions, totaling 91% and 9% respectively.

In addition, two major factor dimensions were revealed as inhibitors of institutional involvement, whether expanding or starting, in distance education. These two dimensions totaled 35% of all variance. The first dimension is defined by the study as the *Faculty/Resource Support Dimension,* which includes those of program development cost, equipment cost, inter-institutional resource issues, faculty workload, faculty incentive, faculty interest and instructional support. The second construct identified as inhibitive was the *Mission Congruence Dimension*, which included the institution's size, lack of fit with institution's mission, lack of perceived need. In summary, public institutions were generally inhibited from participating in distance learning programming by factors falling within the Faculty/Resource Support Dimension. Factors falling within the Mission Congruence Dimension generally inhibited private institutions.

To take closer look at faculty and resource support needs and participation in distance education, it is useful to refer to a study by Betts (1998). Betts conducted a study to identify three types of factors: those that would motivate current or future faculty participation in distance education (practitioners and non-starters in distance education), factors that would inhibit current or future participation (practitioners and non-starters) and factors that would encourage continuation and/or growth. This study also focused on factor relationships within the context of faculty participation, demographics, and intrinsic and extrinsic motivation. The target population was comprised of 993 faculty and eight deans. A 53.8 % response rate resulted in a final number of 532 faculty and seven dean respondents.

Results from this study show no significant differences between dean and faculty identification of factors that would motivate faculty to participate in distance education. Evidence of significant differences, however, were presented with respect to dean and faculty identification of what factors would inhibit faculty to participate in distance education. Additional findings show that distance participators were more intrinsically motivated to participate in distance education than non-participators.

One last item worthy of note from this study is the faculty and administrative responses to whether or not a stated policy for distance education existed for the institution. When asked whether the institution had a stated or unstated but operative policy regarding distance learning, respondents showed clear uncertainty:

- 58% percent of practitioners were unsure of whether a formal policy existed;
- 67% of practitioners were unsure if an unstated by operative policy existed;
- 87% percent of non-practitioners were unsure if formal policy existed;
- 87% of non-practitioners were unsure if an unstated by operative policy existed;
- three deans believed there was a stated policy, two were not sure and two responded that there was no stated policy;
- two deans responded that there was an unstated but operative distance education policy, three responded to the negative and two were not certain.

These results imply a problematic lack of knowledge on both administrative and faculty with respect to other barriers identified in above studies that deal with leadership, strategic planning, and communication of institutional goals and objectives.

Rockwell, Shauer, Fritz, and Marx (1999) conducted a survey to identify incentives and obstacles that influence higher education faculty and administers to instruct online. Focusing on faculty as a key element in distance education's teaching and learning processes, the researchers recognized that educators resist change. Reasons for resistance were identified in the study's background include increase in faculty workload, additional time requirements for advanced planning, increased class enrollments, lack of institutional support, lack of training, loss of autonomy, inadequate compensation and incentives, loss of curriculum control, and lack of release time. Additionally noted by researchers is the need for these faculty concerns to be addressed in institutional strategic plans should the college or university be involved in distance learning.

The data collection instrument listed 19 items to be rank-ordered on a modified Likert scale as either incentives or obstacles. The sample targeted 207 faculty and 30 administrators and responses were received from 67% and 77% respectively. The 127 faculty respondents, 26% had taught online, 40% were planning to teach and 34% were not planning to teach online. Of the 22 administrator responses, those that had taught, were expecting to teach, and not expecting to teach were 36%, 46% and 18%, respectively.

The study identified nine incentives, five obstacles and two variables considered neither an incentive nor an obstacle. Of the incentives identified, six related to personal or intrinsic awards and two related to providing educational opportunities. The incentives identified were providing innovative instruction (83%), applying new teaching techniques (83%), self-gratification (77%), fulfilling personal desire to teach (75%), recognition of work (71%), access to place-bound students (67%), reduction of student travel time (58%), release time (57%), and peer recognition (46%). Administrative and faculty obstacles identified were strongly embedded in the concept of distance learning being a time-demanding activity. The five obstacles were time requirements (69%), assistance or support (65%), time taken from research (61%), training requirements (56%), and developing effective skills (55%). Student costs and monetary awards were considered neither obstacles nor incentives.

Chi-square tests revealed that faculty were more concerned about developing appropriate technology skills than administrators perceived. When compared to tenured faculty, non-tenured faculty ranked time taken from research, training requirements, assistance or support needs, and skill development as lesser obstacles. In conclusion, the authors of study carry forward the need for strategic plans that include distance learning to develop and capitalize on incentive structures that will encourage their faculty to teach via a distance.

Penultimately, included in this review of barrier research is a study conducted by Dickinson, Agnew, and Gorman (1999). The purpose of this study was to identify faculty perceived strengths and weaknesses of distance education, sufficiency of training, and the effects of distance education on workload and compensation. Forty-four subjects responded to a survey that was designed to gauge levels of teacher training and compensation in light of growing

institutional demands for distance learning. The initial sample targeted 60 faculty who instructed at least one distance course. The survey received a response rate of 73%.

Of the 44 responses, the single most prevailing concern expressed by faculty was the inability to hold class discussions. This concern was followed closely by faculty responses that indicated a substantial lack of faculty preparation time (over 90%), a lack of compensation or reduced workload for the development and/or instruction of a distance course (88%), and the need for additional training (75%). Faculty responses also indicated that very few instructors actually adjusted their teaching or testing methods for online courses. The authors conclude with a statement for continued research that investigates how increased enrollments and fiscal constraints will not only affect the research and service roles of faculty, but also the conceptualization of faculty incentives and retention by administrators who are searching for low-cost efficiencies through distance learning programming.

The last study addressed in this portion of the literature review addresses the role of policies and issues that affect the adoption of distance education by higher education institutions. In 1995, Penn State received three consecutive grants to study cultural change in higher education that was resulting from or affecting distance education. Participants included directors from both continuing and distance education, as well as academic administrators. Nineteen institutions participated; eight were historically Black institutions. The first Delphi round focused on gathering data on issues and policies. The second and third rounds addressed the role of faculty in distance education and the learner's perspective of distance education, respectively. After the first Delphi round, participant responses were collected and a content-analysis on these responses was performed. Issues were divided into four categories and used to prioritize the next two rounds of study. In these rounds, participants rank-ordered issues according to their critical influence on the adoption of distance education.

Symposium participants identified five institutional needs that would relate to successful integration of distance education into higher education's infrastructure. The five needs addressed policy practices for distance education student fee assessments, fees charged to out-of-state versus in-state distance learners, access by all students to educational resources, cost allocation and revenue sharing procedures related to distance courses, and the effects of channeling financial resources away from distance education with respect to faculty and student access to technology. Eight areas were identified as critical to policy development. These areas were educational goals, advantages to participating in distance education, access to technology and other resources, administration of distance education, centralization, cost, intra/interinstitutional sharing, and curriculum development and intellectual property rights. With respect to administrative policies, participants recommended development of policies for resource allocation, rules and regulations, and institutional accountability. Symposia participants also recommended a process for the review, development and integration of policies. The steps in the process are: 1) associate distance education with the institutional mission, 2) define a vision for distance education's role, 3) establish guiding principles for measuring performance of policy-makers and policies, 4) identify policy barriers, 5) examine the assumptions behind existing policies, 6) identify and involve the policy stewards.

Summary

This portion of the literature review was done to identify what factors influence institutional decision(s) to implement, grow, narrow, not start, or eliminate distance education programming. Results of this literature review show the complexity of decision-making processes regarding institutional involvement, as well as the desperate need for it. Results also show that quick and easy solutions are highly unlikely within the complex maze of decision-making and the fluctuating education environment (Carr, 2001; Hopkins, 1996). As a result, one of the most critical, and equally challenging, needs is an institution's capacity to build leadership for distance education through strategic planning and development. When appropriately integrated across all facets of the institution, leadership promotes the change and decision-making structures necessary for successful engagement in distance education (Hanna, 1998; Heterick, 1995, 1996). Yet current research and tools do not provide a perspective on reasons for institutional involvement in distance education, and as a result, institutional decision-making can be difficult at best, significantly hindered or incorrect at worst.

Through this literature review the author identified four overarching areas of factors that influence institutional participation, including non-participation, in distance education. These four areas consist of (1) institutional core values, (2) institutional assumptions about higher education and distance education, (3) institutional readiness, and (4) barriers to distance education. It was found that core values play a foundational role in the day-to-day activities of higher education, carrying historical and present-day import in shaping and facilitating the role of the academy. An institution's engagement in distance education, particularly when paired with the changing economic and cultural environment of higher education, can have a significant impact on institutional processes, procedures and policies. This may, in turn, challenges the college or university's concept of *business as usual.*

The second emergent area of factors influencing institutional involvement in distance education developed around assumptions. Very closely related to the core values of higher education institutions are, perhaps surprisingly, administrative and academy assumptions. When seeking to meet the needs of consumers, to provide quality education as suppliers, and to selectively engage with organizations and markets outside the institution, the review of literature showed that it is more critical for institutions to be doing the right thing – which, depending on mission and vision, is perhaps nothing at all – with respect to distance education. Unfortunately, many institutions have acted upon the initial assumption that "everyone should be doing something" in regard to distance education. Still, knowing what the right thing is with respect to distance education is difficult and often confused by long-standing assumptions about higher education and more recent assumptions about distance education that are often woven into institutional objectives, policies, history, culture and values.

The third area of factors that emerged during the review of literature surrounded an institution's preparedness to participate in distance education. As stated prior, an institution's engagement in distance education, particularly when considered in conjunction with the changing demographic, technological and organizational forces in higher education, can have a significant impact on institutional processes, procedures and policies. The synthesis of literature reveal that advocates of institutional preparedness equate an institution's level of distance education success with an institution's level of understanding and preparedness. Appropriate preparation can positively and

significantly impact the organizational, cultural, financial and philosophical components of the university or college, thus, alleviating the development of barriers detrimental to successful involvement in distance education.

Lastly, this review of literature addressed barriers that influence institutional involvement in distance education. For the purposes of review, literature was categorized as either barrier frameworks or barrier studies. With respect to barrier frameworks and barrier studies, the review of frameworks identified 94 barriers. These barriers were identified and organized into five overarching sub-categories. These sub-categories are comprised of 17 organizational barriers, 35 operational barriers (predominantly policy related), 10 infrastructure barriers, 20 barriers affecting faculty, and 12 barriers affecting students (refer to Tables 5, 6, 7, 8, 9). Barrier studies were also reviewed.

Numerous articles and studies have investigated and explored the barriers to successful implementation of distance learning programming. Until recently, these studies have been predominantly qualitative in nature and encompassing a small sample, such as a single case study, a single instructor, a single environment or organization (Berge & Muilenburg, 2001). The larger studies summarized in this literature review support the potential relationship between institutional involvement in distance education and core values, assumptions and institutional readiness.

Studies provide evidence in support of institutional control, mission congruence, faculty and resource support, and maturity in distance education all playing a role in institutional involvement in distance education (Muilenburg & Berge, 2001; Berge & Muilenburg, 2001; Mulugetta, 1999) Regarding institutional control, public institutions are much more likely to embrace distance programming than private institutions. However, public institutions are more frequently hindered in their implementation of distance education by funding and legislative regulations, antiquated procedures and policies, market needs, and cultural resistance. Similarly, while private institutions can more easily implement distance education, they are more significantly more reticent to do so due to concerns over mission congruence.

Equally important to identifying factors influencing institutional involvement in distance education is the organization's level of maturity with respect to distance education. Some but not all distance learning barriers share a relationship with the level of maturity in distance education experienced by universities and colleges. Also, the intensity, type and number of perceived barriers decreases as organizations become more capable of delivering distance education.

With respect to barriers influencing administrators and managers, those associated with strategic planning and organizational culture were ranked as significant factors influencing an institution's level of involvement (Berge & Muilenburg, 2000). The review of barrier frameworks identified 35 operational barriers, of which, the majority were policy related. Barrier studies also support policy development as a critical need. Specifically, the most predominant policy areas included those related to academic, fiscal, geography, governance, labor-management, legal, student support, technical, and cultural aspects of an institution.

Studies suggest that policies relating to academic and cultural needs are most critical and supported the literature reviews done on core values, assumptions and the critical, unaddressed role of economic factors. For example, some of the cultural and academic barrier and policy issues were shown to be accreditation, faculty and student resistance, autonomy with instructional methods, course integrity, resource allocation, labor-management, centralization, cost, consortia, tuition rates, state fiscal regulations, faculty compensation, faculty workload, faculty incentives, infrastructure, and sufficient hardware and software (Berge & Muilenburg, 2001; Education, 1998).

Clearly, conclusions drawn recognize the need for cultural change and leadership in strategic planning and decision-making as critical components to distance education involvement. Equally, that administrative structures and organizational change should be considered simultaneously if an institution is planning to implement distance programming (Berge & Cho, 2002). The challenge for administrators, and indeed all university and college constituents, is to successfully weave these transitions and processes into their organization appropriately. Unfortunately, the review of barrier studies also reveals a disconnect among the perceptions of institution constituents with respect barriers influencing institutional involvement in distance education.

Leadership and planning must include the communication of institutional plans, goals, practices and policies to administrative, faculty, and other constituents of the university or college. This is particularly important when considering the role of faculty in distance education and the affects of increased enrollments, technological advances, fiscal constraints, and perceived or real threats to institutional core values. For example, it is possible for administrators and faculty to share an understanding of what factors encourage faculty participation in distance education, but for administrators to not correctly understand what barriers would inhibit faculty participation; and for both constituents to be uncertain of what policies and goals actually exist with respect to distance education at their institution (Betts, 1998).

The review of core values, assumptions, institutional readiness and barriers has thus far stressed the importance of investigating what decision-making factors influence institutional reasons to implement, grow, narrow, maintain, not start, or eliminate distance education programming when the positive impact of distance education on higher education is not conclusive. Drawing from this foundation is the development of the second major thrust of this literature review and one critical to this study—that of identifying economic factors influencing institutional involvement in higher education.

Economic Factors Influencing Involvement

The review of literature thus far stressed the importance of investigating what decision-making factors influence institutional reasons to implement, grow, narrow, maintain, not start, or eliminate distance education programming when the positive impact of distance education on higher education is not conclusive. While much of the literature addressed economic related aspects of distance education, no in-depth, focused studies have been done on the particular thread of factors with respect to distance education or distance education barriers. Exploring the theme of economic-related factors that run throughout all areas of literature reviewed, a foundation of factors emerged and allowed for a second thrust of literature review that focused more in-depth on economic factors that influence institutional decisions regarding distance

education. The major categories of economic factors identified consist of cost, policies and regulations, organizational engagement, resources, and planning. These five areas, along with representative examples, are listed in Table 14.

Costs and Pricing

While distance education may provide better economies of scale in the long run or within specific contexts, for most colleges and universities, distance education has come with a heavier price than initially assumed. Not only have a significant number of distance education ventures proven to not be revenue-generators, but many institutions have barely broken even fiscally—some losing a substantial amount of money (Carr, 2001; Ehrmann & Milam, 1999; Geith & Cometa, 1999; Jewett, 2001; Morgan, 2000; Standing Stones Consulting, 2000). Stated by Carr (2001), questions surrounding supplier cost and cost-efficiencies are becoming "increasingly important as institutions decide whether it is financially feasible to expand their fledgling distance-learning efforts" (n.p.). The direct result is an increased need to focus a more substantial institutional effort behind creating and following a business plan (Carr, 2001; Ehrmann & Milam, 1999; Morgan, 2000; Van Dusen, 2000). Two example business plan frameworks are provided in Appendix A.

Table 14

Economic factors from literature review

Factor	Components
Cost	Includes cost-effectiveness and return on investment and focuses on four specific areas: - Cost for students (e.g., tuition, fees, financial aid) - Cost of labor (e.g., faculty salary, faculty compensation, increase in part-time faculty, training and support) - Infrastructure (e.g., purchasing, maintenance, life-cycle, obsolescence, facilities/equipment) - Program and course development and support
Policies and regulations	Includes state, local, and federal policies and regulations
Organizational engagement	Includes competition, business strategies, business models, alliances, contracts, partnerships, outsourcing
Resources	Includes the availability and distribution of funding including state and federal, revenue sharing, revenue strategies, adequate funding for support units
Planning	Viable economic planning and strategies

Institutions and Cost

A number of factors influence institution decisions regarding cost. The cost dilemma encompasses the high cost of entry and is paired with the uncertainty and competition of the new market, and the perception that *Return on Opportunity* might be as good as a *Return on Investment* (Hall, 1995; Hanna, 1998; Milam, 2000; Rowley et al., 1998; Standing Stones Consulting, 2000; Van Dusen, 2000; Weigel, 2000). Key costs affecting colleges and institutions surround curriculum development, instructional costs, teaching infrastructure costs, marketing and promotional costs, and faculty development and faculty support costs (Geith & Cometa, 1999; Jewett, 2001; Morgan, 2000; Standing Stones Consulting, 2000).

One example of a challenging area of cost and cost-efficiencies focuses on program and curriculum development. The cost of development can be substantial. Florida State University estimate their production cost for a 3-credit, stand-alone, web-based course to range between $500,000 and $1,000,000. The university also calculates approximately $37,000 to $43,000 additional monies in faculty salary plus infrastructure (Boettcher & Sherron, 1997). The total cost for this specific course is a significant investment by a university and suggests the importance of appropriate selection and design of courses for maximizing economic scale and

return on investment. While relatively problematic in the past, recent tools and initiatives for costing distance education development and delivery are assisting institutions.

Despite a substantive need for financial costing of distance education activities, this area is extremely challenging for institutions of higher education. In additional to being often over-whelming and time-consuming, costing has long been problematic due the simple lack of available models or models that were either overly simplified or unreasonably complex. Other inflictions of higher education regarding costing include the differences between institutions and hence institution models, non-disclosures of cost, rapidly changing technology and a lack of true tracking for inputs, outputs, activities and labor (Auerbach & Kotlikoff, 1998; Ehrmann & Milam, 1999; Jewett, 2001; Standing Stones Consulting, 2000).

As posed by Standing Stones Consulting, the problem of costing does affect providers, particularly when associated with the changing environment and business models: "web-based learning is a quickly evolving market with little useable historic data on which to base decisions about. Providers are continually adjusting and refining their business models based upon experience and market" (p. 54). Fortunately, recent advances in cost modeling through TCM, Bridge, and Flashlight projects have assisted universities and colleges tremendously. Also, there are an increasing number of strategies for decreasing institutional costs.

One of the most critical aspects of successful distance education is to have strategies for cost reduction that coincide with an institution's mission, goals and values. A few of these strategies as noted by Standing Stones Consulting firm (2000) include: brokering or adapting curriculum; partnering to share costs; using systematic development process and experienced teams for curriculum, program and infrastructure development; lowering costs through part-time instructors, partnering to share services; and outsourcing services. Another strategy is that of readiness and large course transformation as detailed by Jewett (2001) and Twigg (2000a, 2000b).

Pricing

There are a number of factors that affect the pricing of distance education for institutions (Alaluusua, 1992; Standing Stones Consulting, 2000). Factors listed by the Standing Stone Consulting firm include (a) the mission and tuition policies/legislation, (b) market demand, (c) number of learners, (d) accreditation, (e) residency status, (f) level of course interaction, (g) complexity of course content, and (h) equity of pricing between face-to-face and distance courses (Standing Stones Consulting, 2000). While satisfactory pricing models are still emerging, three different models are sometimes used. These models are cost-based pricing, value-based pricing (value to market), and competition-based pricing. Product pricing may include fee-per-use, a subscription, license-per-use, or reverse auction (Standing Stones Consulting, 2000).

Students and Cost

Higher education consumers range from society to the community to students. These consumers are as varied in demographic as they are in interest, purpose and level of preparation (Brinkman, 2000). Equally as diverse is the group of participants that supports educational costs. Gladieux and Hauptman (1995) report that "American taxpayers provide about two-fifths of the total national investment in higher education, students and their families pay close to one-half, and the rest comes from assorted private gifts and donors" (p.22). As a result, students, parents,

taxpayers, and private donors are sensitive to the cost of higher education (Brinkman, 2000). Of particular import to both consumers and financial contributors to higher education are the factors of prices and price discounts, price elasticities, financial aid and access.

Price, Price Discounts and Elasticities

Consumers take price, price discounts, and price elasticities into consideration when deciding on, and responding to, the level of participation in higher education. Generally, four characteristics provide an overview of a learner's consumer response (Brinkman, 2000; Heller, 2000). These characteristics are (a) as prices for higher education increase, demand for the product by consumers decreases resulting in a downward sloping demand curve; (b) changes in tuition prices create enrollment responses in consumers regardless of whether they are counterbalanced by equivalent financial aid support (c) price responsiveness is often distinguishable by class and ethnicity where poorer students and minority students are generally more responsive to prices; and (d) students respond differently to different forms of financial aid awards such as grants, work-study and loans. Implicit within this latter characteristic of learner consumer response is the long-standing academic value of providing access to higher education for an increasing number of people.

Tuition, Access Programs and Higher Education

A review of the past five decades shows that federal and state access programs have substantially contributed to overcoming access barriers. Access programs such as the GI Bill and the Higher Education Act have been the result of an enormous effort to provide affordable education to an increasing number of learners (Brinkman, 2000). Enacted by Congress in 1944, the Congressional Servicemen's Readjustment Act (GI Bill) is a major contributor to affordable and extended educational access. This act was followed in 1958 by the National Defense Education Act, which provided college students with low-interest loans, graduate fellowships in specific defense-related disciplines, and optionally debt-cancellation for those graduates becoming teachers. Perhaps one of the most substantial pieces of legislation with respect to access has been the 1960's Higher Education Act (HEA) which, according to Gladieux and Hauptman (1995), "embodied the first explicit federal commitment to equalizing college opportunities for needy students" (p. 15). In more recent years, the administration and impact of these programs has come under question.

Gladieux and Hauptman (1995) list five primary manners in which aid has changed from what original policies were intended. This is particularly problematic for the information age learner who is increasingly being affected by decades of policy drift:

> In the absence of meaningful access reform, the rapidly growing non-traditional sources of knowledge will continue to expand and establish their legitimacy. This is a source of competition the academy has never faced before, particularly on the scale that the information age will create. (Brinkman, p.17)

The first of these five predominant changes is a growing reliance on loans as students are required to finance more and more of their higher education. Even for the lowest-income students, loans are now primarily the largest portion of financial aid. Second, there is a progressive erosion of needs-based standards and resulting eligibility for financial aid at nearly all rungs of the economic ladder. Loans comprise over four times the amount of Pell grant funding. Third, access programs have been traditionally insensitive to non-traditional learners.

As consumers become increasingly diverse in age, educational goals, and lifestyle situations, there is a concern that the aid programs will not be supportive of this changing environment. Fourth, and directly related to the growth of non-traditional student populations, is the use of aid for short-term vocational training rather than an undergraduate or graduate degree. Lastly, there is the shift in use of aid for remediation of ill-prepared or non-high school graduates. Gladiuex and Hauptman (1995) assert that "existing federal student aid legislation allows students taking remedial courses to receive federal aid for up to one year of coursework" (p.12) but many receive aid for longer durations and awards are predominantly unregulated in nature.

Although federal contributions to the overall cost of higher education are at present relatively minimal, historically they played a significant role as evidence by the dramatic increase in federal assistance during the 1970's (Brinkman, 2000; Gladieux & Hauptman, 1995). Pressure to expand accessible, affordable learning opportunities to Americans, and in particular the middle class, continued to grow in the 1980s and simultaneously became more reliant on the state for incubation versus the federal government the following decade.

Over the course of the 1990s, state and federal government saw continued drift in policies and aid. For example, Pell grant entitlement failed and no cold war peace dividend materialized to allow for budgetary expansion. Similarly, new unsubsidized loan options were no longer restricted by financial need and a new federal methodology for determining aid eligibility dramatically reduced the expected contributions to education by the family or student. This same methodology substantially increased the reach of aid to a larger portion of the middle class.

Within the economy of higher education as it relates to consumer access, enrollment increases over the last five decades are staggering. Gladieux and Hauptman (1995) write:

> In 1940, American college and university enrollments totaled 1.5 million. A decade later, with the postwar influx of GI Bill beneficiaries, enrollments had increased by 60 percent to 2.4 million. When the Higher Education Act passed in 1965, enrollments had doubled to nearly 6 million. In the mid-1990s, American colleges and universities enroll[ed] over 15 million students." (p. 6)

Paralleling the trend of growing enrollments is the price of obtaining an education from a postsecondary institution. Unfortunately, prices charged by institutions of higher education, both public and private, have consistently risen through the 1980s, 1990s, and continue to do so currently. This increase in price over the past two decades has not only been ahead of inflation, but also the consumer price index, family income and available student assistance. As Gladieux and Hauptman state with respect to student assistance, increases have been met through heavy supplementation as "more than 90 percent of U.S. Department of Education funds for postsecondary education are in the form of financial aid" (Gladieux & Hauptman, p. 23). For the academic year 1999-2000, the total annual price for undergraduate room, board and tuition for public and private institutions was $7,032 and $20,277 respectively. These prices reflect a 22 percent increase for public institutions and a 27 percent increase for private institutions over the past ten years (Wirt et al., 2000).

Labor Costs

In addition to pricing, cost and access, research into the higher education economy focuses on labor-management. A critical component of assessing productivity of institutions hinges on the

production cost of academic labor. Higher education is heavily dependent on a labor force with responsibilities that are complex and comprised of non-repetitive tasks (Brinkman, 2000) – a workforce that concerned government and primary stakeholders are more closely scrutinizing with respect *to salary, productivity, bureaucratic accretion, and teaching load*. NCES statistics support these concerns (Wirt et al., 2000). For example, salaries have risen only two percent between 1971/72 and 1998/99. However, public and private salaries are much more disproportionate. Also, the student to faculty ratio is decreasing while the institutional labor force has increased its administrative and non-teaching staff from 15 percent in 1976 to 23 percent in 1997. Additional statistics are provided in Table 15.

Table 15

National Center for Educational Statistics on labor costs

Statistical landscape
- Between 1976 and 1997, the ratio between students and staff decreased from 5.4 percent to 4.9 percent. Similarly, during this same period, the ratio between students and faculty decreased from 16.6 to 15.0.
- In the total institutional labor force, administrative and non-teaching staff rose from 15 percent in 1976 to 23 percent in 1997.
- Of the 2.8 million people employed by colleges or universities in 1997, "44 percent of the staff were faculty or teaching assistance, 5 percent were managerial, 17 percent were other non-teaching professionals, and 33 percent were non-professional staff" (p. 194).
- 73 percent of faculty at public 4-year colleges were employed full-time; Private 4-year (59 percent), public 2-year (34 percent).
- "The proportion of time that full-time faculty spent teaching averaged 55 percent in 1992. For the remaining faculty time, research and scholarship accounted for 18 percent for the time; professional growth, 5 percent; administration, 13 percent; outside consulting, 3 percent; service and non-teaching activities, 7 percent" (p. 194).
- Salaries: have risen two percent between 1971/72-1998/99; average salaries for men ($58,048), women ($47,421) with 64 percent tenured in 1998/99 – (71 percent men, 52 percent of women).

Resources and Expenditures

Institution activities of supply and production have interested economists for a long time. Assessments of these activities frequently take the form of traditional econometric studies, which emphasize productivity and cost functions where productivity functions assess "outputs as function of inputs" and cost functions assess "costs as a function of outputs" (Brinkman, p. 7). Four primary factors that are predominantly focused on in econometric studies of supplier cost include resources and expenditures, cost behavior and scale economies, the relationship between marginal and average costs, and production possibilities given existing technologies.

In addition to econometric studies, economists and stakeholders are increasingly interested in four additional economic areas (a) *supplier pricing policies* as they relate to subsidies and financial aid; (b) *revenue flow and management*, particularly as it relates to resource expenditures and cost of labor; (c) *resource allocation strategies*; and (d) the *relationship* between institutional goals, revenue strategies, and costs where these relationships exist within an environment influenced by organizational, institutional, production and human conditions (Brinkman, 2000).

Research reveals two traditionally defining characteristics of postsecondary institutions' economic behavior with respect to resources and expenditures. The first is that an institution will maximize resources but not necessarily minimize costs. The second characteristic is the institution's substantial dependency on resources that stems from revenue pursuits (Brinkman, 2000). Paralleling the increase in tuition as noted in Consumer Section, institutional per-student expenditures have also increased over the last two decades with expenditures for scholarships and fellowships rising the most rapidly (Wirt et al., 2000). Table 16 provides statistics on expenditures and revenues.

Table 16

National Center for Education Statistics on expenditures and revenue

Statistical landscape
- After an adjustment for inflation at colleges and universities, current-fund expenditures per student rose about 5 percent between 1985-86 and 1990-91, and another 7 percent between 1990-91 and 1995-96.
- At public universities, between 1986-87 and 1996-97, inflation adjusted scholarship and fellowship expenditures per full-time-equivalent student rose 85 percent compared with 8 percent for instruction expenditures per student.
- Research expenditures per student per decade rose rapidly: public institutions up 26 percent; 36 percent at other public 4-year colleges.

Summary

Of the key findings relevant to this second, more compressed literature review are those economic factors influencing institutional involvement in distance education as it relates to strategic and financial planning. History suggests that policy changes will continue to drift and students or their families will continue to bear more and more of education's costs. In the meantime, bearing the burden of significant educational expenses, consumer and government eyes have turned toward supplier pricing policies and the cost-effectiveness and accountability measures of postsecondary institutions (Brinkman, 2000).

Fortunately for institutions and students alike, modeling tools, frameworks for cost efficiencies and strategies for increasing revenue are growing in availability and accuracy. With respect to institutional strategies in this new economy, institutions will need to ensure a market exists prior to developing for it, improve in their effective marketing, increase in enrollments, raise prices and keep learners for life (Jewett, 2001; Standing Stones Consulting, 2000). Similarly,

institutions will need to reassess what decision-making and economic factors are truly influencing their involvement in distance education.

Conclusion

This review of literature stressed the importance of investigating what decision-making factors influence institutional reasons to implement, grow, narrow, maintain, not start, or eliminate distance education programming when the positive impact of distance education on higher education is not conclusive. Results of this literature review show the complexity of decision-making processes regarding institutional involvement, as well as the desperate need for it. Through this literature review the author identified four overarching institutional categories: (1) institutional core values, (2) institutional assumptions about higher education and distance education, (3) institutional readiness, and (4) barriers to distance education. In this last category, 94 barriers were identified and organized into five overarching sub-categories. These sub-categories are comprised of 17 organizational barriers, 35 operational barriers (predominantly policy related), 10 infrastructure barriers, 20 barriers affecting faculty, and 12 barriers affecting students. Additionally, following the thread throughout all areas reviewed, five clusters of economic factors were identified. Review of barriers studies supported the role of core values, assumptions and institutional readiness in this study, as well as the critical need for appropriate decision-making amidst a challenging, complex, and changing higher education environment.

While much of the literature addressed economic related aspects of distance education, no in-depth, focused studies have been done on the particular thread of factors with respect to distance education or distance education barriers. Exploring the theme of economic-related factors that run throughout all areas of literature reviewed, a foundation of factors emerged and allowed for a second thrust of literature review that focused more in-depth on economic factors that influence institutional decisions regarding distance education. The major categories of economic factors identified consist of cost (i.e., student costs, labor, infrastructure, programmatic costs), policies and regulations (state, local, and federal), organizational engagement (i.e., competition, business models, partnerships, business strategies), resources (i.e., distribution, allocation, revenue sharing, state and federal), and planning (i.e., viable economic planning and strategies).

The conclusion of this review of literature is the need for further exploration of economic and institutional decision-making factors that influence institutional involvement in distance education, and the economic readiness criteria and business plan components necessary for institutions to be strategically successful in distance education. Specifically, what economic and other decision-making factors influence institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming? In addition, what aspects of institutional readiness and business plan development are considered important factors to institutions deciding to implement, grow, narrow, maintain not start, or eliminate distance education programming?

CHAPTER THREE
METHODOLOGY

The culture and economy of post-secondary education is changing and distance education as a global, growing industry is requiring institutional response. Pushed to increase revenue, enrollments and reach new markets, institutions are being forced to define new arrangements between businesses, government, and emerging educational sectors. These new arrangements in collaboration and partnering are a clear trend impacting institutional involvement in distance education and the adoption of new business models.

Unfortunately, while an institution's strategic planning for distance education is key to successful marketing, economic viability and institutional benefit, there is little information to assist institutions in making these strategic decisions. Additionally, a growing body of research suggests the positive impact of distance education on access, enrollment and program costs, is not conclusive. This study examines both decision-making and economic factors influencing post-secondary involvement in distance education and institutional business plans. Emphasis of this study is placed on Carnegie Foundation classified Doctoral/Research Universities—Extensive.

Three objectives have been identified for this study and its contribution to the field of distance education and higher education. The first objective is to contribute through the development of descriptive baseline data on decision-making factors influencing institutional involvement in distance education. The second objective is to contribute through the development of descriptive baseline data that isolates economic factors influencing institutional involvement in distance education. The third objective is to explore what institutions consider important components of a business plan development for distance education.

Research Questions

Specifically, this study investigated the perceptions of Chief Financial Officers and Distance Education Administers about economic and institutional decision-making factors influencing post-secondary involvement in distance education, and the economic readiness criteria and business plan components necessary for institutions to be strategically successful in distance education. Three research questions guided this investigation.

1. What economic factors influence institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming?
2. What factors, other than economic, influence institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming?
3. What components of a business plan are considered important factors to institutions deciding to implement, grow, narrow, maintain not start, or eliminate distance education programming?

Subjects

In congruence with the study's purpose and objectives, two audiences were identified as critical to assessing institutional and economic decision-making as it relates to distance education: an institution's Chief Financial Officer and, when available, its primary administrator responsible for distance education. This study specifically targeted the Chief Financial Officers and Distance

Education Administrators of Carnegie Foundation classified Research/Doctoral Institutions-Extensive (hereafter referred to as Research I institutions).

Based on degrees awarded between 1995-96 and 1997-98, the Carnegie Foundation for the Advancement of Teaching adopted the following definition for Research/Doctoral Universities – Extensive (Research I Institutions) in 2000:

> Doctoral/Research Universities-Extensive: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the doctorate. During the period studied, they awarded 50 or more doctoral degrees per year across at least 15 disciplines. (n.p.)

The resulting Carnegie Foundation classification is comprised of 151 institutions. All institutions were invited to participate in the study. Thirty institutions were randomly selected from Carnegie Foundation classified Doctoral/Research-Intensive institutions (Research II). A complete list of Research I institutions is provided in Appendix B. A complete list of Research II institutions is provided in Appendix C.

Data Gathering Instrument

Kerlinger (1986) categorizes survey research into two major areas–exploratory and explanatory. Whereas the objective of exploratory research is to gain familiarity of a topic that needs to be better understood or measured, the purpose of explanatory research is to identify causal relationships among variables where the topic is already significantly guided by theory-based expectations. Since minimal research exists regarding reasons for institutional involvement in distance education, this study will be exploratory in nature. Specifically, this study will focus on a form of exploratory survey research referred to as descriptive research. Grover (2002) defines the goal of descriptive research as "aimed at describing the distribution of a phenomenon in a population, thereby ascertaining facts" about that population (n.p.). Dubin (1978) considers this type of study indispensable when a phenomenon is in the early stages of being described or measured, such as that of economic and other decision-making factors influencing institutional involvement in distance education.

According to Gall, Borg, and Gall (1996), the purpose of a questionnaire is "to collect data from participants in a sample about their characteristics, experiences, and opinions in order to generalize the finding to a population that the sample is intended to represent" (p. 289). The purpose of this study was to collect descriptive, intangible data (Ary, Jacobs, & Razavieh, 1990) that focused on institutional demographics and opinions on decision-making and economic factors influencing institutional involvement in distance education from Chief Financial Officers and Distance Education Administrators of Research I institutions. To meet the objectives of the study, and in light of the geographically dispersed population and disadvantages of cost and time associated with survey methodology, data was collected through the administration of an online questionnaire (Gall et al., 1996; Bourque & Fielder, 1995). The questionnaire is provided in Appendix D.

Instrument Development

The online questionnaire consisted of six individual web pages programmed with Hypertext Markup Language (HTML), Active Server Pages (ASP) and JavaScript (see Appendix D). The pages were designed to require submission of all responses requested on a single web page prior to advancing to the next web page. These technologies allowed for the intentional design of

flexibility, ease of use, and cross-platform functionality, while capitalizing on (a) decreased download time, (b) improved ease of readability, (c) reduced possibility of data loss due to client or system failures during completion or submission, and (d) the ability to conveniently, transparently and directly skip questions not applicable to a specific respondent. The technologies also allowed for the addition of data entry rules to be programmed client-side, minimizing item non-response by subjects.

Each of the instrument's six individual web pages contained a series of related questionnaire items forming sections. The sections consisted of (1) questions requesting user information (i.e., position, institution name), (2) *Section One: Your Institution and Distance Education* (nine questions), (3) *Section Two: General Factors Influencing Involvement in Distance Education* (11 questions), (4) *Section Three: Institutional Involvement in Distance Education* (nine questions), (5) *Section Four: Economic Factors Influencing Involvement in Distance Education* (16 questions), and (6) questions requesting optional contact information, the length of time taken to complete survey, and a text field to provide any additional comments. Questionnaires administered to the Chief Financial Officers and Distance Education Administrators were identical with one exception—Chief Financial Officers were not asked to complete *Section One*: *Your Institution and Distance Education*, which requested data on institutional and distance education specific demographics. By programming the pages with Active Server Pages language, advancement of a Chief Financial Officer over *Section One* was transparent.

Item Development and Organization

The review of relevant literature provided the framework for development and organization of instrument items that would meet the four objectives of this study. Items stemmed directly from the review of literature which detailed current forces acting upon institutions of higher education and identified institutional and economic factors influencing institutional participation in distance education. Identified by the author were four overarching categories of factors: (1) institutional core values, (2) institutional assumptions about higher education and distance education, (3) institutional readiness, and (4) barriers to distance education. In this last category, 94 barriers were identified and organized into five overarching sub-categories. These sub-categories are comprised of 17 organizational barriers, 35 operational barriers (predominantly policy related), 10 infrastructure barriers, 20 barriers affecting faculty, and 12 barriers affecting students.

While much of the literature and studies reviewed touch upon economic related aspects of distance education, no in-depth, focused studies have been done on economic factors with respect to institutional involvement in distance education or distance education barriers. Upon exploration and synthesis by the researcher on the theme of economic-related factors and associated forces, trends and policies, five distinct clusters emerged. These clusters include cost (i.e., student costs, labor, infrastructure, programmatic costs), policies and regulations (state, local, and federal), organizational engagement (i.e., competition, business models, partnerships, business strategies), resources (i.e., distribution, allocation, revenue sharing, state and federal), and planning (i.e., viable economic planning and strategies).

The resulting set of instrument items are as follows. The first six (6) items collect data on institutional characteristics that will be required for benchmarking and analysis of results. These characteristics include institutional enrollment (FTE) for both university or college as a whole as

well as for distance education, number of years involved in distance education, primary technologies used for distance education, institutional control, and the institution's primary, secondary and growth populations targeted for distance education. Three subsequent questionnaire items collected information on both institutional and economic reasons for targeting the distance education primary, secondary and growth populations identified by the respondent prior.

Eleven questions obtained attitudinal responses on institutional factors influencing institutional involvement in distance education. Five questions addressed, respectively, the level of institutional involvement in distance education in light of mission congruence, strategic planning, institutional plans for distance education in the upcoming academic year, the pace of the institution's involvement in distance education, and the institution's present level of engagement. Three questions investigated economic readiness, business plans and business plan components. One question collected responses on core values influenced by institutional involvement in distance education. Finally, 16 questions obtained attitudinal responses on economic factors influencing institutional involvement in distance education.

Additional data collected included a respondent's position (i.e., Chief Financial Officer or Distance Education Administrator), duration of time taken to complete the questionnaire, and contact information required to provide participants with the results of the study. The item requesting the respondents position served as a filter question for the first nine demographic and target population questions.

Instrument Review and Pilot

All correspondence and questionnaire items were reviewed by a panel of five experts in the field of distance education, assessment, institutional economics and planning. Panel members were requested to review the correspondence and the instrument for (a) construct validity, (b) appropriateness for meeting goals of research objectives, (c) clarity and accurate word use, and (d) appropriate sequence. Expert panel data results and qualitative responses to correspondence were analyzed and evaluated and recommendations and modifications were implemented.

Thirty (30) Research II institutions were randomly selected to participate in the pilot study and their respective president/chancellor was sent a letter of invitation to participate. Participants in the pilot test were requested to perform functions similar to those of the expert panel. Quantitative and qualitative responses from these institutions were gathered and results analyzed. Reliability analysis was conducted with Cronbach's alpha ($\acute{\alpha}$) on the 27 resulting scale items, resulting in .88. Upon completing modifications to the instrument and correspondence as recommended by the expert panel and resulted from the pilot test, the researcher immediately developed a specifications document that detailed all changes made with respect to the instrument, correspondence, administration of the instrument and follow-ups, cleaning of the data, and processing of the data collected.

Data Gathering Procedures

Supporting the online questionnaire was an introductory web page and the correspondence mailed to presidents and/or chancellors of every Research I institution (N=151) inviting them to participate in the study. The introductory web page provided the study's statement of anonymity and privacy, instructions for completing the survey, logos of those organizations endorsing and

supporting the survey, contact and copyright information for the researcher, a link to the definition of distance education, and a link to the online questionnaire. An example of the online questionnaire and introductory web page are provided in Appendix D.

Printed and electronic forms of correspondence were used in this study. Commencing the study, the president and/or chancellor of each Research I institution was pre-contacted through a cover letter (Letter of Invitation to Participate) sent through the United States Postal Service. This type of pre-contact has been shown to increase response rates (Gall et al., 1996). The Letter of Invitation to Participate identified the researcher and stated the significance of the study. In addition to requesting participation, the letter provided instructions on how to participate, how confidentiality would be maintained, the types of results available, and the researchers contact information. Presidents and/or chancellors were requested to identify the appropriate institution respondents for participation in the study. Endorsement letters from two organizations were appended to the printed Letter of Invitation to Participate. An example of the Letter of Invitation to Participate and appended letters of endorsement are provided in Appendix E.

Four days after the printed letters were mailed through the Postal Service, an identical electronic version of the letter was emailed to presidents and/or chancellors. This electronic notification allowed for immediate forwarding to the Chief Financial Officer, the Distance Education Administrator as well as an institutional reviewer if needed. While printed and electronic letters were used for pre-contacts, follow-up notifications were conducted via email and telephone and in accordance with recommendations by established Bourque and Fielder (1995).

Prior to the first follow-up notification, responses were received from 28 institutions (18.5%), where 21 institutions participated in the study and 7 declined. The first follow-up was conducted two weeks after the electronic Letter of Invitation was sent. This follow-up was performed via email and sent to all presidents and/or chancellors from non-responding institutions. The notification reminded recipients to participate in the survey and provided summary information on the researcher, endorsements, instructions on how to participate and the deadline for submission. Appended to the email was the original electronic Letter of Invitation to Participate and, for review, a file detailing all items on the questionnaire. Two weeks following the first email notification, a second follow-up notification was performed via telephone. Prior to the second follow-up, responses had been submitted by 83 institutions (55.0%), resulting in the participation of 64 institutions and notification of non-participation by 19. One week following the second notification, at the close of the study, responses had been submitted by 107 institutions (70.9%), where 80 institutions (53.0%) submitted responses and 27 institutions (17.9%) demurred.

The addition of client-side validation rules to the online questionnaire web pages helped to ensure that all questions were submitted completely and accurately. In addition, the study utilized six individual flat files, one for each of the six web pages that comprised the questionnaire. The online responses were collected and saved page by page into flat files using Active Server Pages, minimizing potential loss of data due to technological complications or failures. As a result of the validation and capturing of responses, all of the online questionnaires submitted for this survey were deemed usable by the researcher for the study.

Data Analysis Treatment

Raw data from respondent online submissions were imported into the Statistical Package for Social Sciences (SPSS) for review, processing and cleaning. Merging of the six individual flat files relied on a unique identification number generated by the programming languages, which also served as the master code used by the researcher to maintain institutional anonymity and confidentiality. Data received was manually reviewed for logical inconsistencies, potential data slides, patterns of missing data, and appropriate completion of filtered questions. In turn, frequencies were run on all variables in order to assess data for any extreme or wild values, as well as percentages of missing values.

The system-missing value used by the SPSS computation was used for all questions in the survey. In addition to the system-missing values, nine items were filtered by respondent and were reviewed to ensure they were answered only by Distance Education Administrators. These filtered questions utilized the system-missing value for non-submitted answers by Chief Financial Officers, as well as a second specially coded value of "Did not Answer" for the questions left unanswered by the Distance Education Administrators. This latter category of responses was not counted as valid in data analyses. Five questions included a "Not Sure" or "Don't Know" response option, which was numerically coded and counted distinct from system-missing values. This response option was counted as valid. System-missing values were ignored in variable analyses unless (a) the variable allowed for imputation and (b) had a missing-value percentage less than five percent (5%) of the total response rate. While no question items in this survey lent themselves to mathematical imputation, some question items did allow for logical imputation.

The purpose of this study was both exploratory and descriptive in nature. Statistical procedures applied included frequencies, percentages, measures of central tendency—specifically Mode and Mean—contingency tables, chi-square tests of significance (χ^2), independent sample t-tests, and Cramer's *V*. The results of the analyses are detailed in the Chapter 4, subject to a margin of error of $\pm$ 5 percent.

CHAPTER FOUR
RESULTS OF STUDY

The purpose of this study was to investigate the perceptions of select Research I postsecondary administrators on economic and institutional decision-making factors influencing institutional involvement in distance education, and the economic readiness criteria and business plan components necessary for institutions to be strategically successful in distance education. Three research questions guided this investigation.

1. What economic factors influence institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming?
2. What other decision-making factors influence institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming?
3. What components of a business plan are considered important factors to institutions deciding to implement, grow, narrow, maintain, not start, or eliminate distance education programming?

In congruence with the study's purpose and objectives, two audiences were identified as critical to assessing institutional and economic decision-making as it relates to distance education: an institution's Chief Financial Officer and, when available, its primary administrator responsible for distance education. Printed and electronic forms of correspondence were used in this study. Commencing the study, the president and/or chancellor of each Research I institution was pre-contacted through a cover letter (see Appendix E) that introduced the study and was sent through the United States Postal Service. Presidents and/or chancellors were requested to identify the appropriate respondents for participation in the study. Selected respondents participated by completing an online questionnaire. Endorsement letters from two organizations were appended to the printed Letter of Invitation to Participate. Four days after the printed letters were mailed through the Postal Service, an identical electronic version of the letter was emailed to presidents and/or chancellors. Non-respondent institutions received two follow-up notifications – one by email, the other by telephone.

The online questionnaire consisted of six individual web pages. Each of the instrument's six individual web pages contained a series of related questionnaire items forming sections. The sections consisted of (1) questions requesting user information (i.e., position, institution name), (2) *Section One: Your Institution and Distance Education* (nine questions), (3) *Section Two: General Factors Influencing Involvement in Distance Education* (11 questions), (4) *Section Three: Institutional Involvement in Distance Education* (nine questions), (5) *Section Four: Economic Factors Influencing Involvement in Distance Education* (16 questions), and (6) questions requesting optional contact information, the length of time taken to complete survey, and a text field to provide any additional comments. Questionnaires administered to the Chief Financial Officers and Distance Education Administrators were identical with one exception—Chief Financial Officers were not asked to complete *Section One*: *Your Institution and Distance Education*, which requested data on institutional and distance education specific demographics.

Chief Financial Officers and, where available, Distance Education Administrators from 151 institutions were invited to participate in the study, resulting in a census target population for Research I institution investigation. A total of 107 institutions responded (70.9%). Of the 107

responses received, 27 indicated they would not participate in the study. Email and telephone follow-ups to institutions indicated that institutions demurring to participate fell into five primary categories. These categories consisted of those where (1) participation in surveys went against general institutional policy (N=5, 3.3%), (2) the institutions faced resource constraints (i.e., time or personnel) (N=3, 2.0%), (3) present institutional/instrument goodness of fit (i.e., recent re-organization, loss of appropriate administration, distance education was extremely decentralized or isolated and not reflective of institution as a whole) (N=6, 4.0%), (4) no distance education existed at the institution as defined in the study (N=7, 4.6%), and (5) no reason given (N=6, 4.0%).

Of the remaining 80 institutional replies, individual responses from Chief Financial Officers and Distance Education Administrators were reviewed for usability. The total number of replies from respondents was 103, where records for Chief Financial Officers totaled 31 (30.1%) and Distance Education Administrators totaled 72 (69.9%). Benefiting from the aforementioned use of technology and instrument validation rules, all respondent replies were found usable by the author for the study. The final accepted response rate for institution participation constituted 53% of all Research I institutions.

All data collected was categorized as either nominal or ordinal in scale. However, two interval scale statistics are used in this study—Mean and t-tests. These statistics are used for the purposes of addressing Likert-scale items only, of which there are 27, permitting the author to calculate an arithmetic mean. According to Rea and Parker (1997), utilizing the arithmetic mean for Likert scale items not only provides more information than the central tendency measure of Median, but also makes two assumptions about the nature of ordinal data: (a) that "respondents have a common understanding of the meaning of each response category," and (b) that there is "equal distance between each category of the variable" (p. 154). Noting these assumptions, the use of interval statistics in this study is premised on the common practice for survey research as articulated by Rea and Parker:

> …ordinality affords the researcher the ability only to rank the data, not the ability to manipulate the data arithmetically. However, such manipulation has become accepted, because the power of the information obtained is considered to far outweigh the costs….Hence it is recommended, that in the case of scaled responses, the proper measure of central tendency should be considered the mean, and in the case of a series of responses, an overall mean is an acceptable summary measure of the subject matter under study (p. 154).

To provide a comprehensive statistical review of the data collected, the analyses relied upon measures of central tendency (i.e., Mode and Mean), frequencies and percentages, cross-tabulated contingency tables, chi-square tests of significance, independent sample t-tests for significance, and Cramer's V measure of association.

Rea and Parker note that the Cramer's V statistic "rarely achieves a value of .80 or above" (p. 191). Using guidelines for interpretation established by Rea and Parker, the following scale of associations was used for reporting and categorizing results: .20 – .39 (moderate), .40 – . 59 (moderately strong), .60 – .79 (strong), and .80 – 100 (very strong). Finally, where appropriate, aggregate results of all data collected were provided and complemented by split-file variable

analysis based on the respondent positions of either Chief Financial Officer or Distance Education Administrator.

The remainder of this chapter is dedicated to the results of data analyses and information extraction. Results are presented in three frameworks. The first framework develops a profile of participating institutions based on institutional and distance education related demographics. The second presentation provides study results in detail and addresses two research questions in their focus on institutional and economic factors influencing institutional plans for distance education programming. The final framework addresses the third research question, which investigates the role of distance education business plans in Research I institutions.

Institutional Profiles

Four demographic questions were used to create an institutional profile for all participating institutions. Data were analyzed by applying the central tendency measurement of Mode. The "average" participating institution from the target population was public with a fulltime, Fall 2002 enrollment (FTE) in credit level courses, both undergraduate and graduate, between 20,001 and 30,000. Regarding the number of years the institution offered distance education courses or programs, a bi-modal response resulted of either six to ten years or more than 20 years. The institution enrolled under 1,000 fulltime students (FTE) in credit level distance education courses, both undergraduate and graduate, during Fall semester 2002.

Applying a split-file analysis by institutional control, participating public and private institutions had slightly different profiles. While the profile for participating public institutions matches the profile outlined above, the smaller population of participating private institutions differed. The profile of the "average" private institution consisted of a fulltime enrollment (FTE) count for Fall 2002 of fewer than 10,000. It offered distance education courses or programs for only one to five years and, like public institutions, enrolled under 1,000 fulltime students (FTE) in credit level distance education courses, both undergraduate and graduate, during Fall semester 2002.

Institutional Involvement in Distance Education

Two of the three research questions posed in this study explored institutional and economic-related decision-making factors that influence institutional decisions to not offer, eliminate, start, decrease, maintain or increase distance education activities during the upcoming academic year. It is critical to precede further discussion by addressing a finding that impacts both the forthcoming analyses in this chapter as well as the author's treatment of the research questions in this study. Specifically, no Chief Financial Officers or Distance Education Administrators indicated that their institutions had plans to start, eliminate or decrease distance education activities. Of the 103 respondents, two subjects (1.9%) indicated that their institutions did *not plan to offer* distance education courses or programs, 19.4% of all subjects indicated that their institution's intended to *maintain* their current level of activities, and 78.6% replied that their distance education activities would *increase* during the next academic year.

The results summarized below are compiled from the aggregate responses of 31 Chief Financial Officers and 72 Distance Education Administrators, providing a total 103 cases. Results of the analyses are organized to predominantly parallel the literature review. Similar to the review, the analysis is organized under five areas: (1) an overview of institutional and distance education demographics, (2) factors associated with institutional involvement in distance education, (3)

factors associated with core values, (4) factors associated with institutional readiness for economic success in distance education, and (5) factors associated with assumptions about, and barriers to, distance education.

Institutional and Distance Education Demographics

Self-reported data on institutional and distance education related demographics provided a snapshot of participating institutions with respect to institutional control, institutional size, the number of years institutions have offered distance education, the extent to which institutions are enrolling distance education students, the technologies used to reach these students, the general target populations for distance education enrollments, and the reasons for targeting the identified markets. Chief Financial Officers were not asked to complete demographic questions related to their institutions and distance education. Of the 80 institutions participating, eight Chief Financial Officers responded from institutions where a complementary response from a Distance Education Administrator was not submitted. Thus, the final number of institution records included in the analysis of demographic related questions was 72.

Of the 72 institutions on which demographic information was collected, 87.5% were public and 12.5% were private. Approximately 43% had fulltime (FTE) student enrollments in their credit level courses, both graduate and undergraduate, that fell between 20,001 and 30,000. Another 26.4% declared a Fall 2002 enrollment of 10,001 to 20,000 students. Most private institution enrolled less than 10,000 students. All institutions reported offering distance education courses and programs, with the majority offering their programming for a substantial amount of time. Twenty-five percent (25.0%) reported offering distance education between six to ten years, 25.0% offered distance education courses and programs for more than 20 years, and 20.8% of institutions offered distance education between one to five years.

Regarding distance education fulltime student enrollments (FTEs) in credit level undergraduate and graduate courses, 70.5% of institutions reported enrollments in the lowest two response categories available of five. Of the 70.5% of institutions reporting, 58.3% of respondents enrolled less than 1,000 FTEs and the remaining 22.2% enrolled between 1,001 and 3,000 FTEs. Complete details on institutional control, the number of fulltime FTE enrollments, the number of years distance education was offered by the institution, and the number of distance education FTE enrollments can be found in Tables 17, 18, 19, and 20, respectively.

Table 17
Types of institution by institutional control

Control	Number	Percent
Public	63	87.5
Private	9	12.5
TOTAL	72	100.0

Table 18

Number of students (fulltime FTE) enrolled in credit level courses Fall 2002

Fulltime enrollment (FTE)	Number	Percent
Under 10,000	6	8.3
10,001 – 20,000	19	26.4
20,001 – 30,000	31	43.1
30,001 – 40,000	9	12.5
40,001 – 50,000	2	2.8
Over 50,000	5	6.9
TOTAL	72	100.0

Table 19

Number of years institutions offered distance education courses or programs

Years offered	Number	Percent
No distance education courses or programs exist		
1 – 5 years	15	20.8
6 – 10 years	18	25.0
11 – 15 years	11	15.3
16 – 20 years	9	12.5
Over 20 years	18	25.0
Not sure	1	1.4
TOTAL	72	100.0

Table 20

Number of students (fulltime FTE) enrolled in distance education credit level courses Fall 2002

Fulltime enrollment (FTE)	Number	Percent
Under 1000	42	58.3
1,001 – 3,000	16	22.2
3,001 – 5,000	5	6.9
5,001 – 7,000	3	4.2
7,001 – 9,000	1	1.4
Over 9,000	1	1.4
Not sure	4	5.6
TOTAL	72	100.0

In addition to reporting on the demographic information described above, institutions were requested to provide data on (1) the types of technology used most often for delivering distance education courses and programs, (2) the specific audiences that were targeted for this programming, and (3) the reasons for targeting these audiences. Nine types of potential delivery technologies were provided for respondent selection, in addition to a response category of "Other." The technologies listed ranged from one-way live video transmissions to CD-ROMs and the Internet.

Multiple-response analysis administered on the subject replies revealed that approximately 70% of all institutions used three types of technology for delivering distance education during the 2001-2002 academic year. These three predominant technologies consist of asynchronous internet courses (35.6%), two-way video with two-way audio (21.6%), and synchronous internet courses (13.6%). A complete list of all technologies and the associated frequencies and percentages are available in Table 21.

In addition to reporting on the delivery technologies used, respondents were asked to identify their institution's primary, secondary and growth populations for distance education. Response categories included Undergraduate, Graduate, International, Corporate, Military, and "Other." First, by administering a multiple-response test, the overall responses given by institutions were analyzed. The cases tested totaled 216, the results of which are displayed in Table 22. In the overall analysis, graduate students were revealed to be the prominent target audience at 43.1%. Undergraduates were the second most frequently targeted audience, receiving just over 27% of all records. The third most common audience identified were audiences other than corporate, military or international. The data collected on target audiences was complemented in the

questionnaire by information gathered on reasons why institutions selected their particular audiences.

Table 21

Most frequently utilized technologies for distance education by institutions in 2001-2002

Technologies	Number	Percent
Asynchronous internet courses	69	35.6
Two-way video with two-way audio	42	21.6
Synchronous internet courses	26	13.4
Multi-mode packages	24	12.4
One-way pre-recorded video	18	9.3
One-way video with two-way audio	9	4.6
CD-ROM	3	1.5
One-way live video	2	1.0
Two-way audio transmission	1	.5
TOTAL	194	100.0

Table 22

Populations targeted by institutions for distance education

Populations	Number	Percent
Graduate	93	43.1
Undergraduate	59	27.3
Other	26	12.0
Corporate	20	9.3
International	10	4.6
Military	8	3.7
TOTAL	216	100.0

Respondents were asked to complement their identification of target populations by also identifying the reasons for targeting these populations. Through the use of multiple-response analysis on the resulting 600 cases, the top five most prominent reasons for delivering distance education to the targeted audiences was culled from the data. These five reasons were: (1) to coincide with the mission of the institution (23.0%), (2) to address a specific niche market (19.0%), (3) to support the institution's strategic plan (14.5%), (4) to increase enrollment (13.0%), and (5) to increase institutional revenue (11.0%). Reasons specific to providing service, outreach, enhancing research and demands for physical space were not regarded as highly. A detail of all reasons and percentages is provided in Table 23. The order of prominence for both target audiences and the perceived reasons for selecting these audiences shifts when analyses is done individually on the specific primary, secondary and growth target audiences identified by institutions.

Distance Education Administrators reported that the primary population most frequently targeted by their institutions for distance education was graduate students (65.3%). The second most frequently targeted primary population was undergraduate students (25.0%). No institutions selected military or international audiences as a primary target. The top three reasons for selecting these primary audiences consisted of (1) coinciding with institutional mission (24.4%), (2) addressing a specific market niche (18.9%), and (3) supporting the institution's strategic plan (14.9%). The secondary population most frequently targeted was undergraduate students (43.3%), followed closely by graduate students (33.3%) and the corporate audience (13.9%). The top three reasons for selecting secondary audiences consisted of (1) coinciding with institutional mission (23.2%), (2) addressing a specific market niche (17.7%), and (3) increasing enrollment (15.2%).

Subject responses regarding the selected growth targets were more equally distributed amongst all audience types than those of primary and secondary populations. However, the growth population most frequently targeted by institutions was once again graduate students (30.6%), followed by the corporate audience (20.8%). Undergraduate and international audiences were equally targeted by institutions (13.9%). The top three reasons for selecting growth audiences were the same as those regarding the primary audiences. The reasons were (1) coinciding with institutional mission (21.4%), (2) addressing a specific market niche (20.4%), and (3) supporting the institution's strategic plan (17.9%). A more detailed presentation of institutional responses to the questionnaire items on primary, secondary and growth populations, along with reasons for selecting these populations, are provided in Tables 24 through 29.

Table 23

Institutional reasons for targeting populations for distance education

Reasons	Number	Percent
Mission of institution	138	23.0
Address specific niche market	114	19.0
Institution's strategic plan	87	14.5
Increase institutional enrollment	78	13.0
Increase institution revenue stream	71	11.8
Specialty programming	45	7.5
Service to residential students	22	3.7
Demands for physical space	15	2.5
Enhance research opportunities	13	2.2
International outreach	11	1.8
Other	6	1
TOTAL	600	100.0

Table 24

Primary populations targeted by institutions for distance education

Populations	Number	Percent
Graduate	47	65.3
Undergraduate	18	25.0
Other	6	8.3
Corporate	1	1.4
International		
Military		
TOTAL	72	100.0

Table 25

Institutional reasons for targeting primary populations for distance education

Reasons	Number	Percent
Mission of institution	49	24.4
Address specific niche market	38	18.9
Institution's strategic plan	30	14.9
Increase institutional enrollment	29	14.4
Increase institution revenue stream	21	10.4
Specialty programming	15	7.5
Service to residential students	9	4.5
Enhance research opportunities	5	2.5
International outreach	2	1.0
Other	2	1.0
Demands for physical space	1	0.5
TOTAL	201	100.0

Table 26

Secondary population targeted by institutions for distance education

Populations	Number	Percent
Undergraduate	31	43.1
Graduate	24	33.3
Corporate	510	13.9
Other	5	6.9
Military	2	2.8
International		
TOTAL	72	100.0

Table 27

Institutional reasons for targeting secondary populations for distance education

Reasons	Number	Percent
Mission of institution	46	23.2
Address specific niche market	35	17.7
Increase institutional enrollment	30	15.2
Institution's strategic plan	22	11.1
Increase institution revenue stream	21	10.6
Specialty programming	15	7.6
Demands for physical space	10	5.1
Service to residential students	10	5.1
Enhance research opportunities	5	2.5
International outreach	2	1.0
Other	2	1.0
TOTAL	198	100.0

Table 28

Growth populations targeted by institutions for distance education

Populations	Number	Percent
Graduate	22	30.6
Other	15	20.8
Undergraduate	10	13.9
International	10	13.9
Corporate	9	12.5
Military	6	8.3
TOTAL	72	100.0

Table 29

Institutional reasons for targeting growth populations for distance education

Reasons	Number	Percent
Mission of institution	43	21.4
Address specific niche market	41	20.4
Increase institution revenue stream	29	17.4
Institution's strategic plan	35	17.4
Increase institutional enrollment	19	9.5
Specialty programming	15	7.5
International outreach	7	3.5
Demands for physical space	4	2.0
Enhance research opportunities	3	1.5
Service to residential students	3	1.5
Other	2	1.0
TOTAL	201	100.0

Academic Plans and Demographics

To conclude this section on institutional and distance related demographics, analyses were conducted to determine whether or not statistically significant relationships existed between an institution's plans to not offer, maintain or increase distance education courses or programs in the upcoming academic year (AY 2003-2004) and data collected on (1) respondents' position, (2) institutional control, (3) the size of institutions (by FTE), (4) the number of years distance education was offered by institutions, and (5) the number of students enrolled in distance education courses as denoted by fulltime equivalency. Relationships between variables were determined by conducting chi-square tests of significance. Strengths of these relationships were measured using Cramer's *V*.

Of the five items tested against an institution's plans for distance education activities, two sets of variables were shown to be statistically significant. A moderate association (.398) was identified between the respondent's position, that of Chief Financial Officer or Distance Education Administrator, and respondent perceptions of their institution's plans to not offer, maintain or increase distance education courses and programs. Similarly, institutional control was also related to academic plans for distance education, with a moderate association of .267. The remaining sections in this chapter address in more detail the specific ways in which these two demographics—as well as the demographics of institutional size, institutional enrollment by FTE

and distance education enrollments by FTE—are related to an institution's plans for implementing distance education in the academic year 2003-2004.

Summary

One of the three forces acting upon higher education as noted in the literature review is a changing demography. The United States is presently experiencing historical levels of growth in its postsecondary enrollments. In addition to an increasing number of learners, these learners bring with them a diverse set of needs and expectations. This increase in diversity and needs, in turn, is posited to put pressures on institutions of higher education to create connections to the workplace, to internationalize education, to ensure a market exists prior to developing for it, to improve their effective marketing, raise prices and keep learners for life (Jewett, 2001; Rowley, 1998; Standing Stones Consulting, 2000).

Despite the possible pressure to create connections to the workplace and to internationalize education, the current as well as growth markets for Research I institutions reported in this study are almost entirely made up of graduate (versus corporate) and undergraduate students. Methods of instructional delivery used to reach distance education students, which are predominantly fewer than 1,000 fulltime equivalencies, is reported by institutions to be primarily two-way video with two-way audio and asynchronous and synchronous internet courses. While infrastructure needs will differ between individual institutions and in respect to their goals for, and the role of, distance education (Jewett, 2000), there is little doubt that methods of instruction communication, interaction, support, and learning are changing rapidly due to advances of technology. Markedly, respondents indicate that specific markets are selected in accordance with the university mission, in support of its strategic plan, and to address a specific niche market. Plans to not offer, maintain or grow the current level of participation are related to institutional control and institution size.

Institutional Engagement in Distance Education

This section summarizes results from five questionnaire items that assist in defining institutional involvement in distance education. These five items consist of (1) the extent to which distance education is congruent with the institution mission, (2) the extent to which distance education in integrated into an institution's strategic plans, (3) the pace at which the institution became involved in distance education, (4) the current level of engagement in distance education at the institution, and (5) institutional plans for implementing distance education in the upcoming academic year (AY 2003-2004). The results presented below provide aggregate frequencies and percentages for all 103 respondents and are complemented by those results calculated through split-file analyses of Chief Financial Officer (CFO, N=31) and Distance Education Administrator (DEA, N=72) responses.

Regarding the congruence of distance education with institutional missions, over 90% of respondents indicated that distance education was congruent with their institutions missions. Just fewer than 6% of respondents were not sure. With respect to institution strategic plans, reports were more evenly stratified. Over half of all respondents (55.3%) indicated that distance education was "Somewhat integrated" with their institution's strategic plan. Another 26.2% reported significant integration. No respondents perceived that their institutions became involved with distance education too quickly. Rather, 75.7% indicated their pace as appropriate, with the remaining noting their pace as too slow. Detailed presentations of data collected on mission

congruence, distance education integration with strategic plans, and the pace of institutional involvement are available in Tables 30, 31 and 32, respectively.

Table 30

Congruence of distance education with institution mission

Mission congruence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Yes, is congruent with mission	93	(90.3)	65	(90.3)	28	(90.3)
No, is not congruent with mission	4	(3.9)	2	(2.8)	2	(6.5)
Not sure	6	(5.8)	5	(6.9)	1	(3.2)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 31

Integration of distance education into institution's strategic plan

Plan integration	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Significantly integrated	27	(26.2)	21	(29.1)	6	(19.4)
Somewhat integrated	57	(55.3)	39	(54.2)	18	(58.1)
Not integrated	19	(18.4)	12	(16.7)	7	(22.6)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 32

Rate of institution's pace for becoming involved in distance education

Rate of pace	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Too fast						
Too slow	25	(24.3)	19	(26.4)	6	(19.4)
An appropriate pace	78	(75.7)	53	(73.6)	25	(80.6)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

The last two items on the questionnaire that helped define institutional involvement in distance education addressed (1) the present level of institutional engagement in distance education as defined by levels of integration or maturity, and (2) plans for offering distance education during the upcoming academic year. Regarding institutions' present level of engagement in distance education, 43.7% of subjects posited that distance education has matured in their institutions to a point where policies were established and processes related to programming were in place. Another 20.4% indicated the highest level of engagement applied to their institutions—that of distance education being a mature enterprise and integral part of the academic agenda. Only 12.6% indicated the lowest level of engagement, other than non-participation, where distance education activities were taking place but there was no concerted, centralized university or college effort or plan to support these activities.

Lastly, and as noted prior, respondents were asked to identify their institution's plans to not offer, eliminate, decrease, start, maintain or increase distance education courses or programs for the upcoming academic year (AY 2003-2004). With the exception of two respondents who indicated that their institutions were not planning to offer distance education, the remaining 101 posited that their institutions were either planning to increase activity (78.6%) or maintain their current level of activity (19.4%). No subjects indicated that their institutions were planning to eliminate/had eliminated, decrease or start distance education activities. Frequency and split-file analyses results for both institutional engagement in, and academic plans for, distance education are presented in Tables 33 and 34, respectively.

Academic Plans and Institutional Engagement

Chi-square tests of significance and Cramer's *V* were conducted to obtain information on the existence of statistically significant relationships—and types of associations—between an institution's plans to not offer, maintain or increase distance education courses or programs for the upcoming academic year (AY 2003-2004) and respondents' perceptions of distance education in relation to (1) mission congruence, (2) institutions' strategic plans, (3) levels of engagement in distance education, and (4) the institution's pace for becoming involved in distance education. Of the four items measured against an institution's academic plans for its distance education activities, three variable relationships were revealed to be statistically significant at a .99 percent level of confidence.

First, a moderate association (.379) was found between the reported extent to which distance education was congruent with an institution's mission and the institution's academic plans. A moderate association (.297) was also found between the reported extent to which distance education was integrated into an institution's strategic plan and its academic plans for implementing distance education. Finally, the reported perception of the level of maturity or engagement of an institution in distance education and the institution's academic plans was found to have a moderately strong association (.540).

Table 33

Institutions' present level of engagement in distance education

Levels of engagement	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
There are no distance education courses or programs	1	(1.0)			1	(3.2)
There is distance education activity, but there is no concerted, centralized university or college effort or plan that supports distance education	13	(12.6)	10	(13.9)	3	(9.7)
Distance education courses and programs are supported by institutional or college-level planning and team(s) of specialists	23	(22.3)	14	(19.4)	9	(29.0)
Distance education policies have been established and processes related to distance education courses and programs are in place	45	(43.7)	33	(45.8)	12	(38.7)
Distance education is a mature enterprise and an integral part of the academic agenda; it is viewed as a normal part of the institution's day-to-day activities similar to campus-based instruction	21	(20.4)	15	(20.8)	6	(19.4)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 34

Institutional plans for offering distance education in Academic Year 2003-2004

Academic Year Plans	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
We do not plan to offer distance education courses or programs	2	(1.9)			2	(19.4)
We plan to completely eliminate/have already eliminated distance education course or programs						
We plan to decrease distance education courses or programs						
We plan to start offering distance education courses or programs						
We plan to maintain current level of distance education courses or programs	20	(19.4)	8	(11.1)	12	(38.7)
We plan to increase distance education courses or programs	81	(78.6)	65	(88.9)	17	(54.8)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Further exploration of these related variables along the lines of institutional benchmarking was conducted by controlling for the demographics of (1) respondent position, (3) institutional control, (3) institutional size (FTE), (4) number of years offering distance education, and (5) the number of distance education enrollments (FTE). Analyzing the relationship between the congruence of an institution's mission and its plans for implementing distance education, while controlling for demographic variables, resulted in much stronger associations of relationships identified as statistically significant at either a .95 or .99 percent level of confidence.

Analysis revealed that respondent position and the size of the institution play a role with respect to factors influencing institutional involvement in distance education. A strong relationship (.616) was found between Chief Financial Officers perceptions of mission congruence and academic plans, as well as a moderately strong (.488) association for Distance Education Administrators. Strong associations regarding the relation of mission congruence and academic plans existed for Research I institutions that enrolled 10,001 to 20,000 students (.794), while slightly larger institutions, those enrolling 20,001 to 30,000 students, had a moderate association (.358). Similarly, a very strong association was found in reports from institutions offering distance education for one to five years (1.000), while a moderately strong association was found for institutions offering education for six to ten years (.671). Finally, analysis found that public institutions and institutions enrolling fewer than 1,000 distance education students had a moderately strong association between mission congruence and academic plans for distance education implementation. Relationships and their associations are presented in Table 35. Note:

in the tables that follow, the table heading of "χ^2" represents the level of statistical significance resulting from chi-square tests of significance. In addition, the table heading of "Controlled by" provides information on the specific institution or distance education demographic which, when controlled for, resulted in the relationship found.

Additional significant relationships were found between an institution's plans to not offer, maintain or increase distance education courses and programs and the extent to which distance education is integrated into the institution's strategic plan, the level of institutional engagement, and the pace in which the institution became involved in distance education. Regarding academic plans and the integration of distance education in an institution's strategic plan, a moderately strong relationship (.409) was found between Chief Financial Officers perceptions and a moderate association (.319) for those of Distance Education Administrators (see Table 36).

Table 35

Significance and associations of institutional mission as related to academic plans for offering distance education courses and programs

Related item	Controlled by	χ^2	Cramer's *V*	Association
Mission congruence		.000	.379	moderate
Chief Financial Officers	Position	.000	.616	strong
Distance Education Admin	Position	.000	.488	mod. strong
Public	Control	.001	.468	mod. strong
1-5 Years	Years DE	.000	1.000	very strong
6-10 Years	Years DE	.026	.671	strong
10,002 – 20,000	Size (FTE)	.003	.794	strong
20,001 – 30,000	Size (FTE)	.046	.358	moderate
Under 1000	DE FTE	.020	.433	mod. strong

Table 36

Integration of strategic plan as related to academic plans for offering distance education

Related item	Controlled by	χ^2	Cramer's *V*	Association
Strategic Plan		.001	.279	moderate
Chief Financial Officers	Position	.035	.409	mod. strong
Distance Education Admin	Position	.026	.319	moderate

Reports of Chief Financial Officers also resulted in a strong relationship between an institution's level of engagement or maturity in distance education and plans for not starting, increasing or maintaining distance education. Similarly, a very strong relationship (1.000) was found for institution's reporting to have offered distance education for six to ten years. Finally, reports from institutions that enrolled only 10,001 to 20,000 fulltime students resulted in a moderately strong relationship between the pace of an institution's becoming involved in distance education and its academic plans. Similarly, moderate relationship was found regarding pace for those institutions enrolling fewer than 1,000 distance education students (FTE). Tables 37 and 38 present these above relationships between academic plans and levels of engagement and academic plans and pace, respectively.

Table 37

Institutional engagement in distance education as related to academic plans for offering distance education

Related item	Controlled by	χ^2	Cramer's *V*	Association
Engagement level		.000	.540	mod. strong
Chief Financial Officers	Position	.002	.620	strong
6-10 Years	Years DE	.000	1.000	very strong

Table 38

Pace as related to academic plans for offering distance education

Related item	Controlled by	χ^2	Cramer's *V*	Association
Pace				
10,001 – 20,000	Size (FTE)	.035	.484	mod. strong
Under 1,000	DE FTE	.040	.317	moderate

Summary

As summarized in the literature, significant economic, demographic and technological forces are acting upon institutions of higher education. Many institutions have turned to distance education as a means of leveraging current resources to meet new learner and market demands. This increase in distance education activity is supported by the results of this study which show that Research I institutions who participated are actively offering distance education courses and

programs, with 98.1% seeking to maintain or grow their current level of institutional involvement.

As noted by the study on policy development for distance education a critical first step for successful distance education involvement is to associate distance education with the institutional mission (Education, 1998). The results of this study reveal that most all responding institutions (90.3%) indicate congruence between their institution's mission and distance education. Results also reveal that an institution's size, control, the number of distance education enrollments, and the number of years offering distance education all influence the relation of mission congruence to an institutions decision to not start, maintain or increase their current level of distance education activities. In contrast is the extent to which distance education is operationalized into an institution's strategic plan.

The review of literature proposes that the integration of distance education with an institution's strategic plan is evidence of an institution's ability to build the leadership, organizational structure and cultural support necessary for successful engagement in distance education (Hanna, 1998; Heterick, 1995, 1996). This is supported by Berge and Muilenburg (2001) who assert that "distance education becomes increasingly linked to the strategic planning of an institution" when distance education has been by definition "institutionalized" into the organization and organizational changes have been substantially overcome (n.p.). Results of the study support this institutional co-habitation, finding that 26.2% of respondents indicate that distance education is significantly integrated into their strategic plan and 20.4% of respondents consider distance education a mature enterprise and tied to the academic agenda at their institutions. Lending additional support, an institution's plans for not starting, maintaining, or increasing its distance education activities was found to share statistically significant relationships with distance education's congruence with mission, integration with the institution's strategic plan, and level of maturity.

Institutional Core Values

Ten items in the questionnaire were dedicated to investigating the relationship of core values with respect to distance education. These items included the core values of autonomy, collegiality and shared governance, intellectual and academic authority of faculty, the intellectual and academic freedom of faculty, the degree, general education, campus-based education, research quality, academic quality, and the development of learning communities. Participants were asked to report their perceptions of whether or not distance education positively, negatively or neutrally influenced institutional core values.

Administering frequency and multiple-response measures revealed that over one-half of all subjects did perceive that distance education influenced core values, however, very few indicated that this influence was negative. Rather, 51.7% of all subjects reported that core values are positively influenced by distance education and 44.7% posited that the values are not influenced by distance education at all. Table 39 provides a detailed overview of all participant perceptions. Tables 40 through 49 present individual results on each of the ten core values addresses in this study. Split-file analysis by respondent position is also provided.

Table 39

Overall influence of distance education on core values

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	37	(3.6)	27	(3.8)	10	(3.2)
Not influenced at all	460	(44.7)	284	(59.4)	176	(56.8)
Positively influenced	533	(51.7)	409	(56.8)	124	(40.0)
TOTAL	1030	(100.0)	720	(100.0)	310	(100.0)

Table 40

Influence of distance education on institutional autonomy

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	3	(2.9)	3	(4.2)		
Not influenced at all	70	(68.0)	46	(63.9)	24	(77.4)
Positively influenced	30	(29.1)	23	(31.9)	7	(22.6)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 41

Influence of distance education on collegiality and shared governance

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	3	(2.9)	3	(4.2)		
Not influenced at all	55	(53.4)	35	(48.6)	20	(64.5)
Positively influenced	45	(43.7)	34	(47.2)	11	(35.5)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 42

Influence of distance education on intellectual and academic responsibility of faculty

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	5	(4.9)	3	(4.2)	2	(6.5)
Not influenced at all	31	(30.1)	19	(26.4)	12	(38.7)
Positively influenced	67	(65.0)	50	(69.4)	17	(54.8)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 43

Influence of distance education on academic and intellectual freedom of faculty

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	3	(2.9)	3	(4.2)		
Not influenced at all	46	(44.7)	27	(37.5)	19	(61.3)
Positively influenced	54	(52.4)	42	(58.3)	12	(38.7)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 44

Influence of distance education on offering of a degree

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	1	(1.0)	1	(1.4)		
Not influenced at all	33	(32.0)	19	(26.4)	14	(45.2)
Positively influenced	69	(67.0)	52	(72.2)	17	(54.8)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 45

Influence of distance education on general education

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	3	(2.9)	2	(2.8)	1	(3.2)
Not influenced at all	49	(47.6)	36	(50.0)	13	(41.9)
Positively influenced	51	(49.5)	34	(47.2)	17	(54.8)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 46

Influence of distance education campus-based education

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	7	(6.8)	4	(5.6)	3	(9.7)
Not influenced at all	40	(38.8)	23	(31.9)	17	(54.8)
Positively influenced	56	(54.4)	45	(62.5)	11	(35.5)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 47

Influence of distance education on research quality

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	3	(2.9)	2	(2.8)	1	(3.2)
Not influenced at all	73	(70.9)	48	(66.7)	25	(80.6)
Positively influenced	27	(26.2)	22	(30.6)	5	(16.1)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 48

Influence of distance education on academic quality

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	4	(3.9)	3	(4.2)	1	(3.2)
Not influenced at all	38	(36.9)	17	(23.6)	21	(67.7)
Positively influenced	61	(59.2)	52	(72.2)	9	(29.0)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Table 49

Influence of distance education on development of a learning community

Influence	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Negatively influenced	5	(4.9)	3	(4.2)	2	(6.5)
Not influenced at all	25	(24.3)	14	(19.4)	11	(35.5)
Positively influenced	73	(70.9)	55	(76.4)	18	(58.1)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

Academic Plans and Core Values

Of the ten core values addressed in this study, four were revealed to have statistically significant relationships with an institution's plans to not offer, maintain or increase their offerings of distance education courses or programs. The significantly related items at a .95 confidence level were collegiality and shared governance (.049), having a moderate association of .215, and intellectual and academic responsibilities of the faculty for curriculum and learning (.041), having a moderate association of .220. The core values identified as campus-based education and academic quality shared statistically significant relationships with an institution's plans at a .99 percent confidence level, being .00 and .01 respectively. Cramer's *V* tests showed that academic plans were moderately associated with campus-based education at .276 and with academic quality at .254.

Extending the analysis of relationship and association, the ten core values were tested for significance and association a second time against an institution's plans to not start, maintain, or increase distance education activities. This second analysis controlled the cross-tabulation of the

contingency tables by the five demographics of respondent position, institutional control, institutional size, number of years offering distance education, and number of fulltime equivalent enrollments in distance education courses. The results are provided in Table 50.

Focusing specifically on institutional size, reports from institutions enrolling 10,001 to 20,000 students were found to relate core values and institutional plans for distance education. Specifically, moderately strong relationships were found for this size institution with respect to collegiality and governance (.567), faculty responsibility for curriculum and learning (.484), general education (.508), and academic quality (.484). A strong relationship was found for the core value of academic and intellectual freedom of faculty (.637) and a very strong relationship was found for the core value of developing learning communities (1.000). Reports from institutions offering distance education for 11 – 15 years resulted in a very strong relationship between faculty responsibility (1.000), academic quality (1.000) and development of a learning community (1.000). A strong relationship between offering of the degree and academic plans was found regarding instructions that had offered distance education for over 20 years (.600). Reports of Chief Financial Officers resulted in a moderately strong relationship between academic plans and campus-based education (.518). Finally, a moderate relationship between academic quality and academic plans was perceived by private institutions (.210).

Summary

The review of literature revealed that longstanding core values play a foundational role in the daily activities of higher education. These values shape the philosophies, policies, practices and processes embraced and implemented to meet the needs of consumers, provide quality education as suppliers, and selectively engage with organizations and markets outside the institution. The literature review also asserts that, in the wake of current developments in distance education, these core academic values are being influenced and challenged—if not threatened (Eaton, 2000; Oblinger et al., 2001; Van Dusen, 2000).

While it is clearly supported in this study through data collected on institutional and distance education demographics that institutions are changing how they educate students and deliver services (Oblinger et al, 2000), there is also evidence from this study that core values are being influenced, but not necessarily threatened. Rather, reported perceptions of CFO's and DEAs suggest that the influence of distance education on core values is either non-existent or positive in nature.

Using chi-square tests for significance, the reported academic plans for institutions' distance education activities were related to the influence of distance education on the core values of (1) collegiality and shared governance, (2) intellectual and academic responsibilities of the faculty for curriculum, (3) academic plans, and (4) campus-based education. Conducting additional tests while controlling for institutional demographics resulted in 84.2% of mid-sized institutions with FTE enrollments of 10,0001 to 20,0000, plan to increase their involvement in distance education. For this size institution, the influence of distance education on the core values of collegiality and governance, faculty responsibility, academic and intellectual freedom, general education, academic quality and the development of learning communities were related to their plans to maintain or increase their current level of distance education activities.

Table 50

Significance and associations of core values related to academic plans for offering distance education courses and programs

Related item	Controlled by	χ^2	Cramer's *V*	Association
Collegiality/Governance		.049	.215	moderate
10,001 – 20,000	Size (FTE)	.013	.567	mod. strong
Faculty responsibility		.041	.220	moderate
10,001 – 20,000	Size (FTE)	.035	.484	mod. strong
11-15 Years	Years DE	.011	1.000	very strong
Academic/Intellectual Freedom				
10,001 – 20,000	Size (FTE)	.005	.637	strong
Offering of degree				
Over 20 years	Years (DE)	.011	.600	strong
General education				
10,001 – 20,000	Size (FTE)	.027	.508	mod. strong
Campus-based education		.003	.276	moderate
Chief Financial Officer	Position	.002	.518	mod. strong
Academic Quality		.010	.254	moderate
Private	Control	.023	.210	moderate
10,001 – 20,000	Size (FTE)	.035	.484	mod. strong
11 – 15 Years	Years DE	.004	1.000	very strong
Learning Community				
10,001 – 20,000	Size (FTE)	.004	1.000	very strong
11 – 15 Years	Years DE	.004	1.000	very strong

For those institutions offering distance education 11-15 years, 90.9% of which indicate they will increase their distance education offerings, the core values of faculty responsibility, academic quality and development of a learning community were related to their distance education plans for the upcoming academic year. Lastly, private institutions relate their plans for distance education to distance education's influence on the core value of academic quality, Chief Financial Officers relate their plans to the influence on campus-based education, and institutions offering distance education for more than twenty years relate their plans to the influence of distance education on offering of a degree.

Economic Readiness Criteria and Institutional Preparation

As noted in the review of literature, institutional readiness is important for successful involvement in distance education. Culled from a synthesis of this review were 14 criteria of institutional preparation deemed critical to successful economic involvement in distance education. Respondents were asked to select the three criteria that they considered most important to preparing an institution for economic success.

Aggregate respondent results show the four highest ranked criteria were (1) a viable business plan for distance education created and communicated (18.4%), (2) viable infrastructure plans created and communicated (12.8%), (3) institutional funding to support a designated unit(s) for distance education management (11.1%), and (4) policies in place for labor management within distance education (9.8%). The four criteria selected least frequently by respondents consisted of (1) a special tuition rate in place (2.0%), (2) financial accountability metrics exist and are communicated (1.6%), (3) terms of revenue-related organizational changes defined in advance (1.3%), and (4) a student technology fee in place (0.7%).

The top four criteria reported by Distance Education Administrators did not differ from those of the group, with one exception. The fourth criteria addressing labor management policies received an equal number of responses as the need for administration to communicate its support for the distribution of distance education related funds. Chief Financial Officer selections were identical in positioning to that of the group aggregate. The lowest four criteria reported by Distance Education Administrators included all four of those listed by the aggregate group. Chief Financial Officers responded similar to the Distance Education Administrators, with one exception. While financial officers included tuition e-rates, technology fees and financial metrics as three of the four least important criteria, the fourth criteria reported within those considered *least* important for economic preparedness was the same criteria selected by Distance Education Administrators as one of their *most* important criteria: administration communicating its support for the distribution of distance education related funds. A complete list of all criteria is provided in Table 51, categorized by aggregate and respondent-based results.

Academic Plans and Institutional Readiness

Creating a cross-tabulated contingency table to analyze the criteria for institutional readiness and economic success by an institution's plans to not offer, maintain or increase distance education activities allowed for additional insight into the factors that influence institutional involvement in distance education. The five criteria considered most important to those not offering distance education (1.9%) were (1) a viable business plan created and communicated (100.0%), (2) administration communicating its support for distributing funds (50.0%), (3) viable technology

Table 51

Criteria most important to preparing an institution for successful economic involvement in distance education

Economic Criteria	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Specific mechanisms are in place for appropriating and distributing distance education funds	28	(9.2)	23	(10.7)	5	(5.6)
Administration must communicate its support for the distribution of funds for distance education	29	(9.5)	25	(11.6)	4	(4.4)
Terms of revenue-related organizational changes must be defined in advance (e.g., alliances, industrial affiliates, partnerships)	4	(1.3)	3	(1.4)	1	(1.1)
Institutional funding should support a designated unit(s) to manage distance education	34	(11.1)	26	(12.1)	8	(8.9)
A viable business plan for distance education has been created and communicated	56	(18.4)	32	(14.9)	24	(26.7)
Viable infrastructure plans for distance education have been created and communicated (e.g., purchase, development, maintenance and support)	39	(12.8)	28	(13.0)	11	(12.2)
Viable technology strategies for distance education have been created and communicated (e.g., technology life-cycle and cost of obsolescence)	27	(8.9)	20	(9.3)	7	(7.8)
Mechanisms are in place to deal with imposed legislative, government and/or accreditation regulations	8	(2.6)	3	(1.4)	5	(5.6)
Policies are in place for labor management within distance education (e.g., faculty workload, adjuncts, rewards, tenure and incentives).	30	(9.8)	25	(11.6)	5	(5.6)

Economic Criteria (cont.)	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Financial accountability metrics (e.g., audits) exist and are communicated for distance education	5	(1.6)	3	(1.4)	2	(2.2)
A distance education technology fee is in place	2	(0.7)	1	(0.5)	1	(1.1)
Policies regarding faculty scholarship and research have been developed (e.g., commercialization of content, Intellectual Property Rights, and Ownership)	24	(7.9)	15	(7.0)	9	(10.0)
A special distance education tuition rate is in place	6	(2.0)	3	(1.4)	3	(3.3)
E-commerce solutions are available (e.g., online registration and credit card payment)	13	(4.37)	8	(3.7)	5	(5.6)
TOTAL	305	(100.0)	215	(100.0)	90	(100.0)

strategies created and communicated (50.0%), (4) policies regarding faculty scholarship and research developed (50.0%), and (5) a special tuition e-rate (50.0%).

Those criteria selected by institutions seeking to maintain their current level of distance education activities were (1) a viable business plan (75.0%), (2) viable infrastructure plans created and communicated (35.0%), (3) institutional funding should support a designated unit to manage distance education (30.0%), (4) viable technology strategies created and communicated (25.0%), and (5) policies regarding faculty scholarship and research developed (25.0%).

Finally, institutions who are planning to grow their current distance education activities in the upcoming year rated the business plan (48.1%), infrastructure plans (39.4%), and technology strategies (34.6%) as the most important three criteria. Distinction was found with the latter positions of importance given to having policies in place for labor management (32.1%) and both administration communication of, and mechanisms in place for, the appropriation and distribution of distance education funds (30.9%). |

Summary

Noted in the review of literature, institutional preparation for involvement in distance education can improve benefit, reduce resistance to change, and damper the general institutional malaise that stems from a lack of definitions (e.g., goals and levels of appropriateness for distance education), a lack of distance education alignment with other institutional plans (e.g., financial, academic, information technology), and an unprepared organizational and cultural climate (Black et al., 1998; Chute et al., 1999; EDUCAUSE, 2002; Hanna, 1998; Karelis, 1999; Twigg, 2000a,

2000b). Similar to the perspectives and research within the literature review, respondents in this study supported the critical need for both the creation and communication of viable business, infrastructure and technology plans (Boettcher & Sherron, 1997; Bonk, 2002; Bunn, 2001; Lembke & Rudy, 2001; Moore & Greg, 1996; Oblinger et al, 2001).

In addition, participants also perceived the need for institutions to develop and communicate distance education policies, particularly with respect to labor management and faculty research and scholarship. Respondent reports supported the review of literature, identifying a need for organizational and administrative change to be considered in parallel and the need for administrative leadership and support (Boettcher & Sherron, 1997; Bonk, 2002; Bunn, 2001; Duin & Baer, 2000; Galusha, 2002; Lembke & Rudy, 2001; Sherry, 1995; Truman, 1995). This administrative leadership and support was particularly emphasized with respect to a unit(s) being designated as responsible for managing distance education and for the allocation and distribution of funds to support distance education activities.

While many of the frameworks and studies addressed in the literature review showed that tuition e-rates and technology fees as important to involvement in distance education, Chief Financial Officers and Distance Education Administrators predominantly perceived that fees and e-rates were two of the least important institutional criteria required for economic success. Similarly, the literature review asserted the lack of financial and accountability metrics as being inhibitors to distance education (Bunn, 2001; Moore & Greg, 1996; Oblinger, et al., 2001; Sherry; 1995). However, subjects indicated that metrics and measures of accountability were relatively low in importance for economic readiness and successful involvement.

Lastly, with respect to institutional plans to not start, maintain or grow institutional involvement in distance education activities, all respondents considered the existence of a viable business plan, the development of viable technology strategies, and policy-development as critical to institutional preparation. Those institutions maintaining their current level of involvement additionally considered management and funding of distance education important to institutional readiness. For those institutions growing their level of involvement, additional considerations included labor management and mechanisms for distributing distance education funds.

Institutional Assumptions and Barriers

The final items addressed in this chapter were developed through the review of literature and target both institutional assumptions about higher education and distance education, as well as institutional barriers to distance education. Twenty-seven statements were included in the questionnaire. Respondents were asked to report the extent of their agreement with the statements on a Likert scale that ranged from (1) Strongly Disagree to (5) Strongly Agree. The first 11 statements focused on general assumptions and barriers. The remaining 16 addressed specific economic assumptions and barriers.

Aggregate results from the 11 statements on general assumptions and barriers showed agreement on the following distance education statements in terms of their own institutions:

- it is a viable alternative for a large number of new enrollments (76.7%);
- it will not adversely affect the geographic monopoly (76.7%);
- distance education students have unique needs (90.2%);
- should participate only if providing all services needed by distance learners (69.9%);
- the institution can provide higher quality educational services (70.9%);

- the institution can provide higher quality educational experiences (86.4%);
- it is important to be recognized by peers as involved in distance education (78.7%);
- it can serve as a positive mechanism for cultural change (85.5%);
- makes the institution more accessible for students seeking lifelong learning (95.1%);
- the quality is equivalent to campus-based learning (77.6%), and
- an institution does not already have to be involved to be successful (82.5%).

Detailed results, both aggregate and respondent-based, are provided in Table 52.

Subjects responded to 16 items that explored economic assumptions for involvement in distance education. Aggregate results are summarized from the stance of participant institutions and a positive agreement with the statements on distance education that follow:

- it does not allow institution to decrease tuition through e-rates (73.8%);
- anticipated increases from enrollments can be used to justify increases in university infrastructure and support (62.1%);
- it should never enroll more distance education students than campus-based (58.3%);
- the institution is not able to respond more quickly to the market than corporate universities or non-profit educational institutions (73.8%);
- a business plan is critical to becoming involved (85.4%);
- there is not too much competition for institution to have positive ROI (77.7%);
- it can not alleviate fiscal constraints at institution (60.2%);
- it can not allow for quick, easy solutions to affordability and accessibility (58.3%);
- it can not allow for quick, easy solutions to affordability and accessibility (58.3%);
- it is an economically viable option for the institution (77.7%);
- it can increase capacity to teach more students with same infrastructure (77.7%);
- it cannot reduce cost of instruction at institution (64.1%);
- it can be used to reach new audiences (94.2%);
- it offers greater return on opportunity than return on investment (67.0%);
- market will continue to support current number of postsecondary institutions (48.6%, note: 19.4% responded “no opinion”);
- it can increase faculty productivity at institution (52.4%); and
- it can be a stable source of revenue for institution (68.0%).

Detailed results of aggregate and respondent-based replies are provided in Table 53.

As described above, Chief Financial Officers and Distance Education Administrators responded to 27 statements regarding distance education and higher education. T-tests for significance conducted on data collected from both groups revealed statistically significant differences for 11 of the 27 variables. Review of the 11 variables noted as statistically significant, at either $p \geq .05$ or $p \geq .01$ levels, revealed that Distance Education Administrators consistently more strongly agreed or disagreed with statements about the role of distance education than did Chief Financial Officers. Table 54 details group means, standard deviations, and t-values for all 27 items. Items identified as being statistically significant at the $p \geq .05$ and $p \geq .01$ levels are noted accordingly.

Table 52

General factors influencing involvement in distance education

General factors	Total*		DEA**		CFO***	
	N	(%)	N	(%)	N	(%)
Delivery of distance education courses at my institution can be a viable alternative for acquiring a large number of new enrollments						
Strongly agree	28	(27.2)	23	(31.9)	5	(16.1)
Slightly agree	51	(49.5)	36	(50.0)	15	(48.4)
No Opinion	2	(1.9)	1	(1.4)	1	(3.2)
Slightly disagree	13	(12.6)	8	(11.1)	5	(16.1)
Strongly disagree	9	(8.7)	4	(5.6)	5	(16.1)
Distance education will adversely affect any geographic monopoly that my institution may have						
Strongly agree	6	(5.8)	5	(6.9)	1	(3.2)
Slightly agree	15	(14.6)	12	(16.7)	3	(9.7)
No opinion	3	(2.9)	1	(1.4)	2	(6.5)
Slightly disagree	18	(17.5)	9	(12.5)	9	(29.0)
Strongly disagree	61	(59.2)	45	(62.5)	16	(51.6)
My institution considers distance education students to have unique needs						
Strongly agree	50	(48.5)	43	(59.7)	7	(22.6)
Slightly agree	43	(41.7)	27	(37.5)	16	(51.6)
No opinion	7	(6.8)			7	(22.6)
Slightly disagree	2	(1.9)	1	(1.4)	1	(3.2)
Strongly disagree	1	(1.0)	1	(1.4)		
My institution should participate in distance education only if it can internally provide all services needed by distance learners (e.g., career services, library services, 24/7 help desk)						
Strongly agree	42	(40.8)	33	(45.8)	9	(29.0)
Slightly agree	30	(29.1)	22	(30.6)	8	(25.8)
No opinion	5	(4.9)			5	(16.1)
Slightly disagree	19	(18.4)	14	(19.4)	5	(16.1)
Strongly disagree	7	(6.8)	3	(4.2)	4	(12.9)

General factors (cont.)	Total*		DEA**		CFO***	
	N	(%)	N	(%)	N	(%)
My institution can provide higher quality educational services (e.g., tutoring, training) than corporate universities or for-profit educational institutions.						
Strongly agree	42	(40.8)	33	(45.8)	9	(29.0)
Slightly agree	31	(30.1)	21	(29.2)	10	(32.2)
No opinion	18	(17.5)	11	(15.3)	7	(22.6)
Slightly disagree	12	(11.7)	7	(9.7)	5	(16.1)
Strongly disagree						
My institution can provide higher quality educational experiences (e.g., credit courses, degrees and certificates) than corporate universities or for-profit educational institution						
Strongly agree	75	(72.8)	56	(77.8)	19	(61.3)
Slightly agree	14	(13.6)	10	(13.9)	4	(12.9)
No opinion	11	(10.7)	4	(5.6)	7	(22.6)
Slightly disagree	3	(2.9)	2	(2.8)	1	(3.2)
Strongly disagree						
It is important that my institution be recognized by peers as involved in distance education						
Strongly agree	45	(43.7)	35	(48.6)	10	(32.3)
Slightly agree	36	(35.0)	25	(34.7)	11	(35.5)
No opinion	7	(6.8)	4	(5.6)	3	(9.7)
Slightly disagree	10	(9.7)	4	(5.6)	6	(19.4)
Strongly disagree	5	(4.9)	4	(5.6)	1	(3.2)
Distance education can serve as a positive mechanism for cultural change at my institution						
Strongly agree	49	(47.6)	42	(58.3)	7	(22.6)
Slightly agree	39	(37.9)	23	(31.9)	16	(51.6)
No opinion	8	(7.8)	3	(4.2)	5	(16.1)
Slightly disagree	4	(3.9)	2	(2.8)	2	(6.5)
Strongly disagree	3	(2.9)	2	(2.8)	1	(3.2)

General factors (cont.)	Total*		DEA**		CFO***	
	N	(%)	N	(%)	N	(%)
Distance education can make my institution more accessible for students seeking quality education for lifelong learning						
Strongly agree	86	(83.5)	64	(88.9)	22	(71.0)
Slightly agree	13	(12.6)	6	(8.3)	7	(22.6)
No opinion	2	(1.9)	1	(1.4)	1	(3.2)
Slightly disagree						
Strongly disagree	2	(1.9)	1	(1.4)	1	(3.2)
The quality of distance education is equivalent to campus-based learning at my institution						
Strongly agree	61	(59.2)	53	(73.6)	8	(25.8)
Slightly agree	19	(18.4)	11	(15.3)	8	(25.8)
No opinion	12	(11.7)	3	(4.2)	9	(29.0)
Slightly disagree	7	(6.8)	4	(5.6)	3	(9.7)
Strongly disagree	4	(3.9)	1	(1.4)	3	(9.7)
An institution will be successful in distance education only if it has already started to participate						
Strongly agree	4	(3.9)	3	(4.2)	1	(3.2)
Slightly agree	7	(6.8)	6	(8.3)	1	(3.2)
No opinion	8	(7.8)	3	(4.2)	5	(16.1)
Slightly disagree	44	(42.7)	29	(40.3)	15	(48.4)
Strongly disagree	40	(38.8)	31	(43.1)	9	(29.0)

* N = 103, % = 100.0
** N = 72, % = 100.0
*** N = 31, % = 100.0

Table 53

Economic factors influencing involvement in distance education

Economic factors	Total*		DEA**		CFO***	
	N	(%)	N	(%)	N	(%)
Distance education can allow my institution to decrease tuition through special e-rates						
Strongly agree						
Slightly agree	15	(14.6)	11	(15.3)	4	(12.9)
No opinion	12	(11.7)	8	(11.1)	4	(12.9)
Slightly disagree	23	(22.3)	16	(22.2)	7	(122.6)
Strongly disagree	53	(51.5)	37	(51.4)	16	(51.6)
Anticipated increases in distance education enrollments can be used to justify increases in university infrastructure and support						
Strongly agree	7	(6.8)	5	(6.9)	2	(6.5)
Slightly agree	57	(55.3)	48	(66.7)	9	(29.0)
No opinion	8	(7.8)	4	(5.6)	4	(12.9)
Slightly disagree	18	(17.5)	9	(12.5)	9	(29.0)
Strongly disagree	13	(12.6)	6	(8.3)	7	(22.6)
My institution should never enroll more distance education students than campus-based students						
Strongly agree	11	(10.7)	7	(9.7)	4	(12.9)
Slightly agree	49	(47.6)	34	(47.2)	15	(48.4)
No opinion	16	(15.5)	11	(15.3)	5	(16.1)
Slightly disagree	16	(15.5)	11	(15.3)	5	(16.1)
Strongly disagree	11	(10.7)	9	(12.5)	2	(6.5)
My institution is able to respond more quickly to the distance education market than corporate universities or for-profit educational institutions						
Strongly agree	1	(1.0)	1	(1.4)		
Slightly agree	15	(14.6)	13	(18.1)	2	(6.5)
No opinion	11	(10.7)	2	(2.8)	9	(29.0)
Slightly disagree	39	(37.9)	29	(40.3)	10	(32.3)
Strongly disagree	37	(35.9)	27	(37.4)	10	(32.3)

Economic factors (cont.)	Total*		DEA**		CFO***	
	N	(%)	N	(%)	N	(%)
A business plan is critical to becoming involved in distance education initiatives						
Strongly agree	13	(12.6)	9	(12.5)	4	(12.9)
Slightly agree	75	(72.8)	53	(73.6)	22	(71.0)
No opinion	5	(4.9)	2	(2.8)	3	(9.7)
Slightly disagree	6	(5.8)	5	(6.9)	1	(3.2)
Strongly disagree	4	(3.9)	3	(4.2)	1	(3.2)
There is too much competition in distance education for my institution to have a positive financial Return on Investment						
Strongly agree						
Slightly agree	13	(12.6)	7	(9.7)	6	(19.4)
No opinion	10	(9.7)	5	(6.9)	5	(16.1)
Slightly disagree	39	(37.9)	22	(30.6)	17	(54.8)
Strongly disagree	41	(39.8)	38	(52.8)	3	(9.7)
Distance education can alleviate fiscal constraints at my institution						
Strongly agree	2	(1.9)	2	(2.8)		
Slightly agree	33	(32.0)	25	(34.7)	8	(25.8)
No opinion	6	(5.8)	3	(4.2)	3	(9.7)
Slightly disagree	25	(24.3)	18	(25.0)	7	(22.6)
Strongly disagree	37	(35.9)	24	(33.3)	13	(41.9)
Distance education can allow for quick, easy solutions to making higher education affordable and accessible at my institution						
Strongly agree	1	(1.0)	1	(1.4)		
Slightly agree	35	(34.0)	28	(38.9)	7	(22.6)
No opinion	7	(6.8)	2	(2.8)	5	(16.1)
Slightly disagree	28	(27.2)	18	(25.0)	10	(32.3)
Strongly disagree	32	(31.1)	23	(31.9)	9	(29.0)
Distance education is an economically viable option for my institution						
Strongly agree	11	(10.7)	8	(11.1)	3	(9.7)
Slightly agree	69	(67.0)	54	(75.0)	15	(48.4)
No opinion	8	(7.8)	2	(2.8)	6	(19.4)
Slightly disagree	13	(12.6)	6	(8.3)	7	(22.6)
Strongly disagree	2	(1.9)	2	(2.8)		

Economic factors (cont.)	Total*		DEA**		CFO***	
	N	(%)	N	(%)	N	(%)
Distance education can increase my institution's capacity to teach more students using the same infrastructure						
Strongly agree	12	(11.7)	11	(12.5)	3	(9.7)
Slightly agree	68	(66.0)	49	(68.1)	19	(61.3)
No opinion	5	(4.9)			5	(16.1)
Slightly disagree	14	(13.6)	10	(13.9)	4	(12.9)
Strongly disagree	4	(3.9)	4	(5.6)		
Distance education can reduce the cost of instruction at my institution						
Strongly agree	5	(4.9)	2	(2.2)	3	(9.7)
Slightly agree	24	(23.3)	20	(27.8)	4	(12.9)
No opinion	8	(7.8)	3	(4.2)	5	(16.1)
Slightly disagree	35	(34.0)	24	(33.3)	11	(35.5)
Strongly disagree	31	(30.1)	23	(31.9)	8	(25.8)
Distance education can allow my institution to reach new audiences (e.g., corporations, individuals seeking professional development, and transfer options)						
Strongly agree	22	(21.4)	18	(25.0)	4	(12.9)
Slightly agree	75	(72.8)	52	(72.2)	23	(74.2)
No opinion	4	(3.9)	1	(1.4)	3	(9.7)
Slightly disagree						
Strongly disagree	2	(1.9)	1	(1.4)	1	(3.2)
Distance education offers my institution greater Return on Opportunity (e.g., image, competition, resource access) than Return on Investment (ROI)						
Strongly agree	10	(9.7)	8	(11.1)	2	(6.5)
Slightly agree	59	(57.3)	45	(62.5)	14	(45.2)
No opinion	17	(16.5)	9	(12.5)	8	(25.8)
Slightly disagree	15	(14.6)	9	(12.5)	6	(19.4)
Strongly disagree	2	(1.9)	1	(1.4)	1	(3.2)

Economic factors (cont.)	Total*		DEA**		CFO***	
	N	(%)	N	(%)	N	(%)
The distance education market will continue to support the current number of postsecondary institutions						
Strongly agree	4	(3.9)	4	(5.6)		
Slightly agree	46	(44.7)	38	(52.8)	8	(25.8)
No opinion	20	(19.4)	12	(16.3)	8	(25.8)
Slightly disagree	27	(26.2)	13	(18.1)	14	(45.2)
Strongly disagree	6	(5.8)	5	(6.9)	1	(3.2)
Distance education can increase faculty productivity at my institution						
Strongly agree	2	(1.9)	2	(2.8)		
Slightly agree	52	(50.5)	42	(58.3)	10	(32.3)
No opinion	19	(18.4)	12	(16.7)	7	(22.6)
Slightly disagree	20	(19.4)	11	(15.3)	9	(29.0)
Strongly disagree	10	(9.7)	5	(6.9)	5	(16.1)
Distance education can be a stable source of revenue for my institution						
Strongly agree	8	(7.8)	6	(8.3)	2	(6.5)
Slightly agree	63	(61.2)	51	(70.8)	12	(38.7)
No opinion	8	(7.8)	4	(5.6)	4	(12.9)
Slightly disagree	17	(16.5)	7	(9.7)	10	(32.3)
Strongly disagree	7	(6.8)	4	(5.6)	3	(9.7)

* N = 103, % = 100.0
** N = 72, % = 100.0
*** N = 31, % = 100.0

Table 54

Differences of perception on institutional assumptions and barriers for distance education

Assumption/Barrier	CFO		DEA		T-value
	$\overline{X}$	SD	$\overline{X}$	SD	
Delivery of distance education courses at my institution can be a viable alternative for acquiring a large number of new enrollments	3.32	1.376	3.92	1.135	-2.282*
Distance education will adversely affect any geographic monopoly that my institution may have	1.84	1.128	1.93	1.397	-.323
My institution considers distance education students to have unique needs	3.94	.772	4.53	.712	-3.777**
My institution should participate in distance education only if it can internally provide all services needed by distance learners	3.42	1.409	3.94	1.277	-1.855
My institution can provide higher quality educational services than corporate universities or for-profit educational institutions.	3.74	1.064	4.11	1.001	-1.685
My institution can provide higher quality educational experiences than corporate universities or for-profit educational institution	4.32	.945	4.67	.712	-2.032*
It is important that my institution be recognized by peers as involved in distance education	3.74	1.210	4.15	1.122	-1.665
Distance education can serve as a positive mechanism for cultural change at my institution	3.84	.969	4.40	.914	-2.821**
Distance education can make my institution more accessible for students seeking quality education for lifelong learning	4.58	.848	4.83	.581	-1.752
The quality of distance education is equivalent to campus-based learning at my institution	3.48	1.262	4.54	.918	-4.770**
An institution will be successful in distance education only if it has already started to participate	2.03	.948	1.90	1.090	.574

Assumption/Barrier	CFO		DEA		T-value
	$\overline{X}$	SD	$\overline{X}$	SD	
Distance education can allow my institution to decrease tuition through special e-rates	1.87	1.088	1.90	1.123	-.127
Anticipated increases in distance education enrollments can be used to justify increases in university infrastructure and support	2.68	1.301	3.51	1.075	-3.396**
My institution should never enroll more distance education students than campus-based students	3.45	1.121	3.29	1.227	.622
My institution is able to respond more quickly to the distance education market than corporate universities or for-profit educational institutions	2.10	.944	2.06	1.124	.179
A business plan is critical to becoming involved in distance education initiatives	3.87	.806	3.83	.888	.203
There is too much competition in distance education for my institution to have a positive financial Return on Investment	2.45	.925	1.74	.964	3.496**
Distance education can alleviate fiscal constraints at my institution	2.19	1.250	2.49	1.343	-1.035
Distance education can allow for quick, easy solutions to making higher education affordable and accessible at my institution	2.32	1.137	2.53	1.332	-.748
Distance education is an economically viable option for my institution	3.45	.961	3.83	.839	-2.026*
Distance education can increase my institution's capacity to teach more students using the same infrastructure	3.68	.832	3.68	1.046	-.015
Distance education can reduce the cost of instruction at my institution	2.45	1.287	2.36	1.271	.330
Distance education can allow my institution to reach new audiences	3.94	.727	4.19	.597	-1.889

Assumption/Barrier	CFO		DEA		T-value
	$\overline{X}$	SD	$\overline{X}$	SD	
Distance education offers my institution greater Return on Opportunity (e.g., image, competition, resource access) than Return on Investment (ROI)	3.32	.979	3.69	.882	-1.898
The distance education market will continue to support the current number of postsecondary institutions	2.74	.893	3.35	1.077	-2.747**
Distance education can increase faculty productivity at my institution	2.71	1.101	3.35	1.009	-2.861**
Distance education can be a stable source of revenue for my institution	3.00	1.183	3.67	.964	-3.001**

* Statistically significant at $p \geq .05$
** Statistically significant at $p \geq .01$

Academic Plans and Institutional Assumptions and Barriers

T-tests and contingency tables were used to analyze subject responses with respect to perceived institutional plans to not start, maintain or increase their involvement in distance education activities during the upcoming academic year and agreement with the assumption statements investigated in this study. Only two respondents noted that their institutions were not planning to offer distance education courses or programs for the upcoming year, resulting in the 98.1% of respondents being grouped as subjects either maintaining the current level of involvement or increasing their current level. Focusing on these two response groups, t-tests were conducted for statistical significance regarding agreement. Tests revealed significant differences on nine of the 27 assumptions. Table 55 details group means, standard deviations, and t-values for all 27 items. Items identified as being statistically significant at the $p>.05$ and $p>.01$ levels are noted accordingly.

Table 55

Differences of perceptions between academic plans and assumptions/barriers for distance education

Assumption/Barrier	Maintain		Grow		T-value
	$\overline{X}$	SD	$\overline{X}$	SD	
Delivery of distance education courses at my institution can be a viable alternative for acquiring a large number of new enrollments	3.35	1.226	3.85	1.195	-1.647
Distance education will adversely affect any geographic monopoly that my institution may have	1.95	1.099	1.90	1.384	.146
My institution considers distance education students to have unique needs	4.05	.759	4.46	.742	-2.185*
My institution should participate in distance education only if it can internally provide all services needed by distance learners	3.40	1.231	3.90	1.357	-1.506
My institution can provide higher quality educational services than corporate universities or for-profit educational institutions.	3.80	1.152	4.05	.999	-.970
My institution can provide higher quality educational experiences than corporate universities or for-profit educational institution	4.00	.973	4.69	.701	-3.640**
It is important that my institution be recognized by peers as involved in distance education	3.60	1.392	4.19	1.026	-2.120*
Distance education can serve as a positive mechanism for cultural change at my institution	3.85	.988	4.38	.860	-2.408*
Distance education can make my institution more accessible for students seeking quality education for lifelong learning	4.75	.444	4.83	.565	-.568
The quality of distance education is equivalent to campus-based learning at my institution	3.65	1.268	4.42	.998	-2.921**
An institution will be successful in distance education only if it has already started to participate	2.20	1.152	1.88	1.017	1.240

Assumption/Barrier	Maintain		Grow		T-value
	$\overline{X}$	SD	$\overline{X}$	SD	
Distance education can allow my institution to decrease tuition through special e-rates	2.10	1.165	1.84	1.096	.946
Anticipated increases in distance education enrollments can be used to justify increases in university infrastructure and support	2.75	1.118	3.42	1.182	-2.293*
My institution should never enroll more distance education students than campus-based students	3.45	1.191	3.32	1.213	.428
My institution is able to respond more quickly to the distance education market than corporate universities or for-profit educational institutions	1.85	.933	2.10	1.102	-9.29
A business plan is critical to becoming involved in distance education initiatives	3.85	.745	3.85	.896	-.009
There is too much competition in distance education for my institution to have a positive financial Return on Investment	2.35	.988	1.83	.985	2.125*
Distance education can alleviate fiscal constraints at my institution	2.05	1.317	2.49	1.315	-1.352
Distance education can allow for quick, easy solutions to making higher education affordable and accessible at my institution	2.15	1.309	2.56	1.265	-1.275
Distance education is an economically viable option for my institution	3.15	1.137	3.88	.765	-3.428**
Distance education can increase my institution's capacity to teach more students using the same infrastructure	3.50	1.051	3.74	.972	-.976
Distance education can reduce the cost of instruction at my institution	2.40	1.188	2.40	1.301	.015
Distance education can allow my institution to reach new audiences	4.00	.562	4.20	.557	-1.417

Assumption/Barrier	Maintain		Grow		T-value
	$\overline{X}$	SD	$\overline{X}$	SD	
Distance education offers my institution greater Return on Opportunity (e.g., image, competition, resource access) than Return on Investment (ROI)	3.30	.801	3.67	.949	-1.592
The distance education market will continue to support the current number of postsecondary institutions	2.75	.786	3.27	1.107	-1.984*
Distance education can increase faculty productivity at my institution	2.80	1.056	3.27	1.049	-1.798
Distance education can be a stable source of revenue for my institution	3.15	1.137	3.56	1.061	-1.510

* Statistically significant at $p \geq .05$
** Statistically significant at $p \geq .01$

Summary

Knowing the right thing to do with respect to distance education is difficult and often confused by long-standing assumptions about higher education and more recent assumptions about distance education (Carr, 2001; Ehrmann & Milam, 1999; Karelis, 1999). These assumptions are often woven into institutional objectives, policies, history, culture and values (Eaton, 2000; Education, 1998). Although environmental scans and conducted research validate the uncertainty of distance education's economic or institutional benefit, many institutions have turned to distance education as a means of leveraging current resources to meet new learner and market demands. Of the Research I institutions represented in this study, nearly all are actively offering distance education courses and programs, with the majority seeking to increase their programs.

Results of this analyses show that perceptions do differ regarding assumptions about distance and higher education with respect to administrative position as well as academic plans. While generally optimistic about distance education's utility within higher education, t-test results suggest that Chief Financial Officers are less certain about distance education as a viable source for increasing enrollment or as a stable source of institutional income. This may be, in part, due to their stronger perception of competition and its limitations on Return on Investment, as well as their disagreement that the distance education market will continue to support the current number of post-secondary institutions. Similarly, CFOs are less likely to agree that anticipated distance education enrollments can justify increases in university infrastructure.

Regarding questions that were statistically significant and focused on academic quality, productivity and cultural change, Chief Financial Officers more frequently selected a neutral

response. CFOs were slightly less likely to perceive distance education students as having unique needs and less opinionated about the quality of distance education versus campus-based learning. As well, Distance Education Administrators are slightly more positive about distance education's ability to serve as a cultural change agent at their institutions. Neither consider it to be a strong mechanism for increasing faculty productivity.

Looking specifically at assumptions about distance and higher education in light of institutional plans to maintain or grow distance education activities, t-tests conducted to determine statistically significant differences of agreement revealed that those institutions intending to grow their distance education involvement consistently agreed or disagreed more strongly with institutions planning to maintain their current level of involvement. Specifically, institutions seeking to increase their involvement agreed more strongly that their institution's considered distance education students as having unique needs and that they could provide higher quality educational experiences than corporate universities or for-profit educational institutions. These institution respondents reported that the quality of distance education was equivalent to campus-based learning at their institutions and that peer-recognition was more important for institutions growing their activities. These institutions also more strongly considered distance education to be a positive mechanism for cultural change and an economically viable option for their institutions. Lastly, institutions increasing their distance education activities agreed more strongly that anticipated distance education enrollments can be used to justify increases in university infrastructure and disagreed more completely that there is too much competition in distance education for their institution to have a positive Return on Investment.

Economic Factors Influencing Institutional Involvement

The review of literature stressed the importance of investigating what decision-making factors influence institutional reasons to implement, grow, narrow, maintain, not start, or eliminate distance education programming when the positive impact of distance education on higher education is not conclusive. Much of the literature reviewed explored economic related aspects of distance education. However, no in-depth studies have been conducted on this particular thread of factors with respect to distance. Investigating more deeply the theme of economic-related factors that run throughout all areas of literature reviewed, a foundation emerged of economic factors that influence institutional decisions regarding distance education. The five major categories of economic factors identified consist of cost, policies and regulations, organizational engagement, resources, and planning. This portion of Chapter 4 synthesizes the results of the prior analyses with respect to these five categories of economic factors.

Institution respondents participating in this study indicated that priority markets for distance education were graduate and undergraduate students. When asked to address institutional reasons for pursuing these markets, respondents had the option of selecting four economic reasons out of the nine provided. These four reasons included addressing demands for space, a special niche market, increase of enrollments, and increase of the institution's revenue stream. Subjects indicated that addressing a niche market was a very important reason, with increasing enrollments also of substantial importance. Increasing the revenue stream for their institutions held a mid-level importance. Demands for space was not considered an important economic reason for pursuing the identified distance education populations.

Addressing the economic criteria associated with institutional readiness and institutional plans for distance education, eight economic criteria were considered important to institutional preparation. All respondents indicated that a viable business plan and the creation and communication of technology strategies were critical to institutional preparation. Institutions planning to increase their involvement additionally considered the following criteria important to economic success: (1) administration support of the distribution of distance education funds, (2) viable infrastructure plans created and communicated, (3) policies for labor management in place, and (4) mechanisms for the distribution of distance education funds.

In addition to a business plan(s) and technology strategies, those institutions planning to maintain their current level of involvement additionally considered the following criteria as critical to institutional readiness for distance education: (1) viable infrastructure plans created and communicated, and (2) administrative funding and support of a unit(s) for the management of distance education. A number of economic-related criteria were not considered as critical by subjects for the preparation of institutions for successful financial involvement in distance education. These criteria included tuition e-rates, technology fees, and accountability metrics.

Using chi-square tests of significance to determine statistically significant relationships between variables, business plans were found to share a relationship with an institution's plans for not starting, maintaining or increasing distance education involvement. Specifically, a distance education business plan was related to academic plans for institutions enrolling 20,001 to 30,000 students. The association of this variable dependency was moderately strong. Also, responses from Distance Education Administrators resulted in a moderately strong association and significant relationship.

The final area explored in this study that related to economics and institutional involvement specifically targeted institutional assumptions about distance and higher education. T-tests for statistical significance revealed that significant differences in agreement existed with respect to assumptions made by respondents indicating their institutions would increase their involvement and those indicating their institutions would maintain their current level of involvement. In all instances, those respondents indicating their institutions were planning to increase distance education activities more strongly agreed or disagreed with assumptions.

Assumptions that showed a statistically significant difference between agreement as reported by the two groups consisted of the following: (1) that distance education students have unique needs, (2) their institution can provide higher quality educational experiences than corporate universities or for-profit educational institutions, (3) the quality of distance education was equivalent to campus-based learning at their institutions, (4) peer-recognition is important for involvement in distance education, (5) distance education can be a positive mechanism for cultural change, (6) it can also be an economically viable option for their institution, (7) anticipated distance education enrollments can be used to justify increases in university infrastructure, and (8) there is not too much competition in distance education for their institution to have a positive Return on Investment.

The Role of Distance Education Business Plans

Four questionnaire items collected data on business plans created for distance education. This data focused on the significance of the plan, the types of plan—if any—at an institution, and the

components most critical for developing business plans. Regarding the significance of a business plan for distance education, results show that respondents perceive a business plan as both important to preparing for distance education as an institution and to becoming involved in distance education initiatives.

In fact, of the 18 criteria listed prior for economic success in distance education, the criteria identified by institutions as the most critical for preparing an institution for successful involvement in distance education was "a viable business plan for distance education" being both created and communicated. Similarly 85.4% of all respondents agreed with the statement that a business plan is critical to becoming involved in distance education, where responses of agreement by Distance Education Administrators were 86.1% and Chief Financial Officers were 83.9%. Those institutions that reported actually having distance education business plans, however, were barely more than 50% (see table 56).

Of the 103 respondents, approximately 28% reported that a business plan was present for each distance learning initiative. Similarly, an additional 20.4% stated that business plans were present for both university-wide, as well as individual, distance

Table 56

Existence of a unique business plan designed explicitly for distance education initiatives

Role of plan	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
No business plan is present for distance education university-wide or for individual initiatives	26	(25.2)	20	(27.8)	6	(19.4)
A business plan is present for each distance education initiative (i.e., online program)	29	(28.2)	23	(31.9)	6	(19.4)
A business plan is present only for distance education university-wide	7	(6.8)	6	(8.3)	1	(3.2)
Business plans are present for both the university-wide and individual distance education initiatives	21	(20.4)	13	(18.1)	8	(25.8)
Not sure	20	(19.4)	10	(13.9)	10	(32.2)
TOTAL	103	(100.0)	72	(100.0)	31	(100.0)

education initiatives and 6.8% indicated that a business plan is available only for distance education university-wide. In direct comparison, nearly an equal number of all respondents noted that either no business plan was present (25.2%) or they were not certain (19.4%).

As mentioned above, analyses of the data regarding institutional readiness revealed that the economic criterion most important for distance education is a viable business plan(s). Since the components included in business plans can vary tremendously, respondents who had self-identified as having distance education business plans were asked to select the three components they considered most important for inclusion in plan development. A list of 18 components derived from the review of corporate and educational business plans was provided in a multiple-response format, with a nineteenth response category provided for the addition of other components.

Aggregate results show the four highest ranked components were (1) purpose or rationale (8.7%), (2) designation of unit/division responsible (8.0%), (3) relation to institutional mission (7.8%), and (4) both marketing plan (6.8%) and program delivery description (6.8%). Outside of the response category "Other," the four components selected least frequently by respondents consisted of (1) product type(s) (4.6%), (2) a reporting schedule for financials (4.2%), (3) marketing research results (3.0%), and (4) industrial partner criteria (1.0%). Responses from Distance Education Administrators and Chief Financial Officers were identical with respect to the top four components most critical for business plan inclusion. While Distance Education Administrators also shared the same components least frequently selected as those reported in the aggregate results, Chief Financial Officers provided a slightly different reply. For Chief Financial Officers, marketing research results was followed by non-recurring costs, the pricing of education, and then industrial partner criteria. Aggregate and respondent-based results are provided in full in Table 57.

These results, cross-tabulated in a contingency table, allow for a better understanding of which components are considered critical for respondents based on existence and type of business plan. Analysis of components selected by at least two-thirds, or 66%, of all respondents shows that those institutions with no plans perceive the most critical components to be included in a business plan to be the designated unit responsible (83.3%) and at 66.7%, the rationale, marketing plan, policies, program delivery description, and measures of success. Institutions that have business plans for each individual distance education initiative differ slightly in their selection. These institutions rank the most important components as both rationale and designated unit responsible (76.2%), followed by the relation to mission (71.4%).

Institutions having only university-wide distance education plans selected rationale (100%), both designation of unit responsible and program delivery at 85.7%, and relation to mission, policies, and predictive models as third, at 71.4%. Those institutions having both individual level and university-wide distance education business plans ranked both rationale and marketing plan as highest (94%), followed by relation to mission (88.9%), designation of unit responsible (77.8%), policies (72.2%), and environmental analysis, infrastructure description, program delivery description, recurring variable costs, and predictive models for revenue streams (66.7%). Those respondents not sure of whether or not a plan existed reported the rationale, relation to mission and product type(s) to be of equal importance, at 66.7%.

A second contingency table cross-tabulating the components of a business plan with academic plans for distance education, allowed specific targeting of the question: What business plan components are important to institutions not offering, eliminating, starting, decreasing, maintaining, or increasing their distance education efforts. Cross-tabulation of responses revealed that most important business plan components were the same for institutions seeking to maintain or to increase their current level of distance education activities. The three most critical components were rationale, relation to mission and designation of unit responsible.

Lastly, when controlled by institutional demographics, chi-square tests of significance resulted in three statistically significant relationships between the existence of distance education business plans and institution's plans to not start, maintain or increase their distance education activities. A moderately strong relationship was found with respect to reports of Distance Education Administrators (.412). Moderately strong relationships were also found with respect to public institutions (.454) and institutions enrolling 20,001 to 30,000 fulltime students (.555). These relationships are detailed in Table 58.

Table 57

Components included in business plans designed for distance education initiatives

Business plan components	Total		DEA		CFO	
	N	(%)	N	(%)	N	(%)
Purpose or rationale	46	(8.7)	33	(8.2)	13	(10.4)
Designation of unit/division responsible	42	(8.0)	31	(7.7)	11	(8.8)
Relation to institution's mission	41	(7.8)	29	(7.2)	12	(9.6)
Environmental analysis (e.g., needs assessment)	26	(4.9)	20	(5.0)	6	(4.8)
Marketing plan	36	(6.8)	28	(7.0)	8	(6.4)
Marketing research results	13	(3.0)	13	(3.2)	3	(2.4)
Infrastructure description	28	(5.3)	21	(5.2)	7	(5.6)
Pricing of education	25	(4.8)	20	(5.0)	5	(4.0)
Justification of need	30	(5.7)	22	(5.5)	8	(6.4)
Product type(s)	24	(4.6)	18	(4.5)	6	(4.8)
Policies	30	(5.7)	24	(6.0)	6	(4.8)
Program delivery description	36	(6.8)	28	(7.0)	8	(6.4)
Industrial partner criteria	5	(1.0)	4	(1.0)	1	(0.8)
Non-recurring or fixed costs	25	(4.8)	20	(5.0)	5	(4.0)
Recurring or variable costs	28	(5.3)	22	(5.5)	6	(4.8)
Predictive models for revenue streams and economic viability	33	(6.3)	27	(6.7)	6	(4.8)
Reporting schedule for financials	22	(4.2)	15	(3.7)	7	(5.6)
Measures of success	27	(5.1)	21	(5.2)	6	(4.8)
Other	6	(1.1)	5	(1.2)	1	(0.8)
TOTAL	526	(100.0)	401	(100.0)	125	(100.0)

Table 58

Business plan(s) for distance education as related to academic plans for offering distance education courses and programs

Related item	Controlled by	χ^2	Cramer's *V*	Association
Business Plan				
Distance Education Administrators	Position	.016	.412	mod. strong
Public	Control	.011	.454	mod. strong
20,001 – 30,000	Size (FTE)	.049	.555	mod. strong

Summary

The significant role of the business plan with respect to distance education is clearly evident in the results of this study. It is equally evident in the review of literature. Not only have a significant number of distance education ventures proven to not be revenue-generators, but many institutions have barely broken even fiscally—some losing a substantial amount of money (Carr, 2001; Ehrmann & Milam, 1999; Geith & Cometa, 1999; Jewett, 2001; Morgan, 2000; Standing Stones Consulting, 2000).

However, despite the import reported by respondents, relatively few institutions by comparison have business plans and many respondents were not aware if a plan existed at either university-wide or individual initiative levels. As noted by Van Dusen (2000), the implementation of distance education includes business plan development, without which, costs will often spiral out of control. Similarly, supplier cost and cost-efficiencies become more important to determining whether or not growth in distance education endeavors can be economically viable (Carr, 2001). As many respondents indicate that institution plans are to increase their current level of distance activities, there is a direct need to focus a more substantial effort behind creating and following a business plan (Carr, 2001; Ehrmann & Milam, 1999; Morgan, 2000; Van Dusen, 2000; Weigel, 2000).

CHAPTER FIVE
CONCLUSIONS

Summarized from the review of literature, there are significant economic, demographic and technological forces acting upon institutions of higher education. Practices and policy issues affected by these forces are not one or two, but many, as institutions struggle to carve out courses or methods of action in light of changing conditions—courses and methods that guide and determine decisions made about distance education. Unfortunately, many institutions have turned to distance education as a means of leveraging current resources to meet new learner and market demands, uncertain of whether or not distance education is institutionally and economically beneficial.

Economically, history shows that federal and state policy changes will continue to drift so that students or their families bear more and more of education's costs. Bearing the burden of significant educational expenses, consumer and government eyes are turned toward supplier pricing policies and the cost-effectiveness and accountability measures of postsecondary institutions. Institutions must meanwhile acquire new markets, increase enrollments, effectively market and develop programs, and keep learners for life.

Uncertainty paired with the changing culture and economy of higher education has left many institutions desperately seeking leadership, strategies and policies that will allow them to meet successfully the needs of all university constituents. Rowley (1998) asserts, that by "acting constructively to fit the needs and demands of the information age, colleges and universities can be strategic about choices they make and the futures they design" (p.262). It is through this strategic decision-making that successful implementation of distance education efforts can avoid becoming mired down in ill-defined markets, inappropriate goals, and obtuse measures of success.

Fortunately, for institutions and constituents alike, modeling tools, frameworks for cost efficiencies, and strategies for increasing revenue are growing in availability and accuracy. Unfortunately, few institutions have assessed the reasons for their involvement in distance education and relatively little research is available to assist. This study addresses strategic and appropriate decision-making for successful involvement in distance education by investigating what decision-making factors influence institutional reasons to implement, grow, narrow, maintain, not start, or eliminate distance education programming when the positive impact of distance education on higher education is not conclusive.

Specifically, this study investigated the economic and institutional decision-making factors related to postsecondary involvement in distance education, and the economic readiness criteria and business plan components necessary for institutions to be strategically successful in distance education. Three research questions guided this investigation.

1. What economic factors influence institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming?
2. What other decision-making factors influence institutional decision(s) to implement, grow, narrow, maintain, not start, or eliminate distance education programming?

3. What components of a business plan are considered important factors to institutions deciding to implement, grow, narrow, maintain, not start, or eliminate distance education programming?

Conclusions and Recommendations

Based on the results of this study, conclusions are drawn with respect to the research questions guiding this study.

Factors Influencing Institutional Involvement

The findings drawn from this study reveal that indeed many statistically significant relationships exist between an institution's plans to not start, maintain or grow their distance education activities with respect to the upcoming academic year. In addition, that the demographic differences of respondent position, institutional control, institutional size (FTE), the years an institution has offered distance education, and the size of distance education enrollments (FTE) all play a role in institutional involvement.

Statistically significant relationships with moderate associations were found between institutional involvement with respect to academic plans and institutional control, respondent position, the extent to which distance education is congruent with an institution's mission, and the extent to which distance education is integrated into an institution's strategic plan. A moderately strong relationship was found with respect to institutional plans for distance education and the level of maturity or engagement of an institution. In addition, four core values shared significant relationships with an institution's plans. Moderate associations were found with respect to institutions plans to not offer, maintain or grow distance education activities and collegiality and shared governance, academic and intellectual responsibility of the faculty, campus-based education and academic quality. Additional relationships were found when controlling for institutional demographics.

When controlling for institutional demographics, new statistically significant relationships emerged. Controlling for respondent position, seven statistically significant relationships were found. Perceptions of Chief Financial Officers with respect to their institutional plans shared a moderately strong relationship with their institution's strategic plans and the core value of campus-based education. Two additional relationships were found for this position. Chief Financial Officers reported institutional plans also shared strong associations with mission and with the level of institutional engagement/maturity. Moderately strong relationships were also found between Distance Education Administrators perceptions of mission congruence and institutional involvement, as well as business plans and institutional involvement. Finally, Distance Educators reports of academic plans shared a moderate relationship with strategic plan integration.

Controlling for institutional control of public or private institutions, three total relationships were found to be significant. Institutional plans for public institutions had moderately strong relationships with business plans and mission congruence. Institutional plans for involvement for private institutions shared a moderate relationship with the core value of academic quality. Plans of those institutions reporting an enrollment of less than 1,000 fulltime distance education

students were found to share a moderate association with their pace of becoming involved in distance education and mission congruence.

Controlling for institutional size in light of institutional plans to grow, maintain or not start distance education, ten statistically significant relationships were found. Institutional plans for involvement for institutions enrolling between 10,001 and 20,000 fulltime students Fall 2002 shared moderately strong relationships with the core values of collegiality and governance, academic and intellectual responsibility of the faculty, general education, academic quality and the development of learning communities, as well as with the pace of becoming involved in distance education. This size institution also shared strong relationships with the core value of academic freedom and with mission congruence. Distance education plans of involvement for institutions enrolling 20,001 to 30,000 students shared a moderate relationship with mission congruence and a moderately strong relationship with distance education business plans.

Finally, controlling for the demographic of the number of years an institution has offered distance education, seven statistically significant relationships were shared with institutional plans. The institutional plans for distance education reported by respondents at institution's that had offered distance education for one to five years, shared a very strong relationship with mission congruence. Reported plans for institutions offering distance education for six to ten years shared a moderately strong relationship with mission congruence and a very strong relationship with the institution's level of engagement or maturity. Plans of institutions where respondents had reported offering distance education for 11 to 15 years shared very strong relationships with the core values of academic quality, academic and intellectual responsibility of faculty and the development of learning communities. Similarly, institutional plans reported by respondents who indicated offering distance education for over 20 years shared a strong relationship with the core value of offering a degree.

Based on the findings of this study, there are a number of demographic and institutional features of colleges and universities that play a role in determining institutional involvement in distance education. Findings confirm not only the complexity of decision-making with respect to distance education and institutional involvement, but also potential institutional reasons for involvement in distance education in light of traditional core values. Recommendations for further research include the integration of the institutional factors identified here into an expanded investigation of other Carnegie Foundation classified institutions.

Economic Factors Influencing institutional Involvement

The major finding drawn from the results of this study is that a number of economic factors also influence institutional involvement in distance education. With respect to economic factors and institutional selection of distance education markets, factors of addressing a marketing niche, increasing institutional enrollment and increasing institutional revenue were included as important reasons for targeting audiences by institutions planning to not start, increase or maintain distance education involvement.

Eight economic criteria were deemed most critical to institutional preparedness by institutions planning to not start, grow or maintain current levels of institutional involvement in distance education. These criteria consisted of (1) a viable business plan, (2) the creation and communication of technology strategies, (3) administrative support for the distribution of

distance education funds, (4) viable infrastructure plans created and communicated, (5) policies for labor management in place, (6) mechanisms for the distribution of distance education funds, (7) policies for faculty research and scholarship, and (8) administrative funding and support of a unit(s) for the management of distance education. Economic criteria of tuition e-rates, technology fees, measures of success, and accountability metrics were not considered critical to institutional readiness.

As noted prior, institutional plans for involvement in distance education shared a statistically significant relationship with reports on business plans. Specifically, a moderately strong relationship was found between reported institutional plans and distance education business plan with respect to institutions enrolling 20,001 to 30,000 students. Also, a moderately strong association was found with respect to responses from Distance Education Administrators.

Finally, eight assumptions were found to have a statistically significant difference in agreement between institutions that planned to maintain there current level of institutional involvement in distance education versus those that planned to increase it. Assumptions considered with statistical significance surrounded (1) the needs of distance education students (2) the ability to provide quality educational experiences, (3) the quality of distance education instruction, (4) peer-recognition, (5) cultural change, (6) economic viability, (7) enrollment and infrastructure, and (8) positive Return on Investment.

To conclude, based on the findings of this study, there are a number of demographic and economic factors that play a role in determining institutional involvement in distance education. Once again, findings confirm not only the complexity of decision-making with respect to distance education and institutional involvement, but also potential institutional reasons for involvement in distance education. Some of these reasons are based on assumptions, while others are based on revenue and cost-related economic behaviors traditional to postsecondary institutions, as well as growing pressures to provide affordable and accessible education to a changing demographic and in light of financial constraints. Recommendations for further research include the integration of the economic factors identified here into an expanded benchmarking against key institutional stratifying variables such as geographical location, institutional fund revenues and expenditures, total salary outlay, tuition and fee rates, number of fulltime faculty and staff, and degree completions.

Distance Education Business Plans

A third finding drawn from this study is that despite the significance reported of the role of business plans, few institutions by comparison have business plans and many are not aware if a plan exists at either a university-wide or individual initiative level. The significant role of the business plan with respect to distance education is clearly evident in the results of this study. It is equally evident in the review of literature.

As noted by Van Dusen, the implementation of distance education includes business plan development, without which, costs will often spiral out of control (Van Dusen, 2000). As many respondents indicate that institution plans are to increase their current level of distance activities, there is a direct need to focus a more substantial effort behind creating and following a business plan (Carr, 2001; Ehrmann & Milam, 1999; Morgan, 2000; Van Dusen, 2000; Weigel, 2000). Thus, for a substantial portion of Research I institutions, it can be concluded that the complete

lack of a business plan, or a lack of a business plan at either a university-wide or individual initiative level, has resulted in poor institutional preparation for successful involvement in distance education, and hence the lack of cost-effectiveness, cost-efficiencies and positive Return on Investment. Further research should be considered that investigates the extent to which business plans not only exist, but are followed, and an in-depth comparison of institutional business plans in terms of business plan components and purposes.

Institutional Plans to Increase Involvement

A fourth finding drawn from the results of this study specifically considers plans for institutional involvement with respect to mission congruence, strategic plans and the level of distance education maturity. When requested to provide reasons for selecting their distance education markets, the three most consistently prominent reasons reported by respondents were (1) to address a specific niche market (19.0%), (2) in support of their institution's mission (23.0%), and (3) in support of their institution's strategic plan (14.5%). With respect to an institution's mission and distance education, over 90% of all respondents reported that distance education is congruent with their missions. In contrast, is the extent to which distance education is operationalized into an institution's strategic plan.

The review of literature proposes that the integration with an institution's strategic plan is evidence of an institution's ability to build the leadership, organizational structure and cultural support necessary for *successful* engagement in distance education (Hanna, 1998; Heterick, 1995, 1996). This is supported by Berge and Muilenburg (2001) who assert that when "distance education becomes increasingly linked to the strategic planning of an institution" is when distance education has been by definition "institutionalized" into the organization and organizational changes have been substantially overcome (n.p.). Results of the study support this institutional co-habitation in finding that only 26.2% of respondents indicate that distance education is significantly integrated into their strategic plan and only 20.4% of respondents consider distance education a mature enterprise and tied to the academic agenda at their institutions. Similarly, nearly half of all respondents either do not know of a distance education business plan or report that a plan does not exist, without which, associated costs can spiral out of control.

While many institutions consider distance education congruent with their institutional missions, a substantial number of Research I institutions have not reached a point where distance education is operationalized into their strategic plans or where distance education has matured into an accepted academic enterprise. Based on the literature review, this implies that many barriers, particularly organizational and administrative, have not yet been overcome. Still, 78.6% of institutions are planning to increase their institutional involvement in distance education this upcoming academic year.

Core Values Influenced by Distance Education

A fifth finding drawn from the results of this study focuses on the impact of distance education on the traditional core values of Research I institutions. Researchers assert that, in the wake of current developments in distance education, traditional core academic values are being influenced and challenged—if not threatened (Eaton, 2000; Oblinger et al., 2001; Van Dusen, 2000). There is evidence from this study that core values are being influenced, but it can be concluded that with respect to the perceptions of selected Research I administrators, this

influence is not negative in nature. Rather, reported perceptions of Chief Financial Officers and Distance Education Administrators suggest that the influence of distance education on core values is either non-existent or positive in nature. However, a second conclusion can also be drawn.

The review of literature also indicates the following, that: (1) institutional core values are threatened by distance education, (2) core values are associated with institutional barriers that inhibit involvement in distance education, and (3) a lack of communication and differences of opinion can exist between administrators and faculty with respect to distance education (Bassom & Sherritt, 1997; Betts, 1998; Bonk, 2002; Lehman, 1998; Oblinger, et al, 2001; Rockwell et al, 1999; Van Dusen, 2000). A second conclusion, then, and one that necessitates further research, is that administrative and faculty perceptions may be very different with respect to the extent and direction of distance education's influence on core values.

Assumptions, Enrollments, Markets, Affordability and Accessibility

A sixth finding drawn from the results of this study specifically addresses distance education enrollments, markets, affordability and accessibility. With respect to institutional revenue, the price of education and consumer participation, Brinkman (2000) and Heller (2000) note the critical role that the economics of pricing plays in higher education. Educational consumers take price, price discounts, and price elasticities into consideration when deciding on, and responding to, their level of participation in higher education. Implicit within the learner's consumer response is a long-standing academic value of providing access to higher education for an increasing number of people. Pressure to expand accessible, affordable learning opportunities to Americans, and in particular the middle class, has continued to grow. Paralleling the trend of growing enrollments is the growing price of obtaining an education from a postsecondary institution.

The vast majority of institutions participating in this study are enrolling distance education students. Nearly 60% of all respondents reported that their institutions have a distance education enrollment (FTE) of fewer than 1,000 students. Another 22.2% enroll between 1,001 and 3,000. Respondents indicate that distance education may not necessarily reduce costs of instruction, alleviate fiscal constraints of the institution, or offer a quick or easy mechanism for access and affordability. However, servicing consumers through distance education can enable an institution to increase student enrollments (76.7%), be an economically viable option of instruction (77.7%), enable the institution to reach new audiences (94.2%), increase access to lifelong learning (95.1%) and allow the institution to instruct more students using the same infrastructure (77.7%).

Despite the documented relationship between price and participation, findings of this study show that Chief Financial Officers and Distance Education Administrators perceive access and affordability to be benefits of distance education and at the same time perceive the establishment of education tuition rates and technology fees to be two of the least important criteria for institutional readiness. Additionally, while affording new enrollments and viable revenue, involvement in distance education does not allow an institution to decrease tuition through e-rates (73.8%).

In conclusion, it is noted here that two traditionally defining characteristics of postsecondary institutions' economic behavior with respect to resources and expenditures are defined by Brinkman (2000) as (1) that an institution will maximize resources but not necessarily minimize costs, and (2) that an institution has a substantial dependency on resources that stem from revenue pursuits. As funding decreases and competition increases, postsecondary institutions should be reassessing their market share, image, and levels of quality, accessibility, and affordability. However, findings of this study with respect to distance education and related assumptions support the influence of these traditional characteristics of economic behavior in relation to distance education, and indicate further research along these lines should include the extent to which these characteristics play a role in both the pursuit and pricing of distance education.

Assumptions, Market Share and Organizational Engagement

A final finding drawn from this study addresses assumptions about distance education, market share and organizational engagement. The review of literature asserted that new and powerful organizations are becoming strong competitors for learners of traditional higher education institutions (Hanna, 1998). Also, and noted above, as funding decreases and competition increases, postsecondary institutions should be reassessing their market share, image, and levels of quality, accessibility, and affordability. With respect to markets, participants in this study were requested to provide information on their primary, secondary and growth populations targeted for distance education. Despite pressures noted in the literature review to internationalize education, the identified markets predominantly consisted of graduate students (43.1%) and undergraduate students (33.3%).

Related to this finding are the issues of competition and organizational engagement. The review of literature asserts that numerous institutions have begun to explore new organizational models such as the seemingly beneficial and cost-effective model of institutional or corporate partnerships (Hanna, 1998; Rowley et al., 1998; Standing Stone Consulting, 2000). Findings in this study, however, show that with respect to business plans and economic preparation, providing industrial partner criteria or defining the terms of revenue-related organizational changes in advance (e.g., alliances, industrial affiliates, and partnerships) were not considered important factors for business plan development or institutional readiness for successful economic involvement in distance education.

With respect to distance education's role in higher education, the uncertainty is reiterated by news of both related institutional casualties as well as for-profit success stories. In this study, respondents agree that an institution does not have to already be involved in distance education to be successful (82.5%); however, 69.9% of all respondents agree that institutions should only participate if they can provide all services needed by distance learners. Institutions increasing their distance education activities did not agree that there was too much competition for their institution to have a positive return on investment. This perception is shared with near complete agreement that their institution's can provide higher quality experiences than corporate universities or for-profit educational institutions.

Based on these findings, a conclusion warranting further supportive research can be made. Specifically, that the reason that Research I institutions participating in this study do not consider rules of organizational engagement or learner competition to be inhibiting to their institutional

involvement in distance education is because of their market selection—that of graduate and undergraduate students, in accordance with their missions. Should Research I institutions delve more heavily into international, corporate, and military markets, their assumptions about competition and market share might change as quickly as their interest in rules of engagement.

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APPENDIX A: SAMPLE BUSINESS PLANS

Sample Business Plan Framework #1 (*Distance education business plan*, 1997)

- Part 1. Rationale
- Part 2. Identification and responsibilities of academic and non-academic units
- Part 3. Marketing plan
- Part 4. Infrastructure description
- Part 5. Program(s) delivery description
- Part 6. Industrial partner criteria
- Part 7. Action Plan (3-year)
- Part 8. Financials (e.g., reporting, evaluation, revenue sharing, financial aid)

Sample Business Plan Framework #2 (Brigham & Gapenski, 1994)

- Part 1. Corporate purpose
- Part 2. Corporate scope
- Part 3. Corporate objectives
- Part 4. Projected business environment
- Part 5. Corporate strategies
- Part 6. Summary of projected business results
- Part 7. Product line plans and policies
    - a. Marketing
    - b. Manufacturing
    - c. Finance
        1. Working capital
            - (a) Overall working capital policy
            - (b) Cash and marketable securities management
            - (c) Inventory management
            - (d) Credit policy and receivables management
        2. Dividend Policy
        3. Financial forecast
            - (a) Capital budget
            - (b) Cash budget
            - (c) Pro forma financial statements
            - (d) External financing requirements
            - (e) Financial condition analysis
        4. Accounting plan
        5. Control plan
    - d. Administrative and personnel
    - e. Research and development
    - f. New products
- Part 8. Consolidated corporate plan

APPENDIX B: DOCTORAL/RESEARCH UNIVERSITIES—EXTENSIVE

American University
Arizona State University, main campus
Auburn University
Boston College
Boston University

Brandeis University
Brigham Young University
Brown University
California Institute of Technology
Carnegie Mellon University

Case Western Reserve University
Catholic University of America
City University of New York, Grad. Ctr.
Claremont Graduate University
Clemson University

Colorado State University
Columbia University
Cornell University
Duke University
Emory University

Florida International University
Florida State University
Fordham University
George Washington University
Georgetown University

Georgia Institute of Technology
Georgia State University
Harvard University
Howard University
Indiana University at Bloomington

Iowa State University
Johns Hopkins University
Kansas State University
Kent State University, main campus
Lehigh University

Louisiana State University
Loyola University of Chicago
Marquette University
Massachusetts Institute of Technology
Michigan State University

Mississippi State University
New Mexico State University, main campus
New York University
North Carolina State University
Northeastern University

Northern Illinois University
Northwestern University
Ohio State University, main campus
Ohio University, main campus
Oklahoma State University, main campus

Old Dominion University
Oregon State University
Pennsylvania State University at University Park
Princeton University
Purdue University, main campus

Rensselaer Polytechnic Institute
Rice University
Rutgers University, New Brunswick Campus
Saint Louis University
Southern Illinois University at Carbondale

Southern Methodist University
Stanford University
State University of New York at Albany
State University of New York at Binghamton
State University of New York at Buffalo

State University of New York at Stony Brook
Syracuse University
Teachers College, Columbia University
Temple University
Texas A&M University

Texas Tech University
Tufts University
Tulane University
University of Alabama at Birmingham
University of Alabama at Tuscaloosa

University of Arizona
University of Arkansas, main campus
University of California at Berkeley
University of California at Davis
University of California at Irvine

University of California at Los Angeles
University of California at Riverside
University of California at San Diego
University of California at Santa Barbara
University of California at Santa Cruz

University of Chicago
University of Cincinnati, main campus
University of Colorado at Boulder
University of Connecticut
University of Delaware

University of Denver
University of Florida
University of Georgia
University of Hawaii -- Manoa
University of Houston

University of Idaho
University of Illinois at Chicago
University of Illinois at Urbana-Champaign
University of Iowa
University of Kansas, main campus

University of Kentucky
University of Louisville
University of Maine
University of Maryland at Baltimore County
University of Maryland at College Park

University of Massachusetts at Amherst
University of Memphis
University of Miami
University of Michigan at Ann Arbor
University of Minnesota -- Twin Cities

University of Mississippi
University of Missouri at Columbia
University of Nebraska at Lincoln
University of Nevada at Reno
University of New Hampshire

University of New Mexico, main campus
University of North Carolina at Chapel Hill
University of North Texas
University of Notre Dame
University of Oklahoma at Norman

University of Oregon
University of Pennsylvania
University of Pittsburgh, Pittsburgh Campus
University of Rhode Island
University of Rochester

University of South Carolina at Columbia
University of South Florida
University of Southern California
University of Southern Mississippi
University of Tennessee at Knoxville

University of Texas at Arlington
University of Texas at Austin
University of Toledo
University of Utah
University of Vermont

University of Virginia
University of Washington
University of Wisconsin at Madison
University of Wisconsin at Milwaukee
University of Wyoming

Utah State University
Vanderbilt University
Virginia Commonwealth University
Virginia Tech
Washington State University
Washington University (Mo.)
Wayne State University
West Virginia University
Western Michigan University
Yale University
Yeshiva University

APPENDIX C: DOCTORAL/RESEARCH UNIVERSITIES—INTENSIVE

Adelphi University
Alabama A&M University
Andrews University
Antioch New England Graduate School
Ball State University

Baylor University
Biola University
Bowling Green State University
Central Michigan University
Clark Atlanta University

Clark University
Clarkson University
Cleveland State University
College of William and Mary
Dartmouth College

DePaul University
Drexel University
Duquesne University
East Carolina University
East Tennessee State University

Florida Atlantic University
Florida Institute of Technology
George Mason University
Hofstra University
Idaho State University

Illinois Institute of Technology
Illinois State University
Indiana State University
Indiana University of Pennsylvania
Indiana University -- Purdue University at Indianapolis

Jackson State University
Loma Linda University
Louisiana Tech University
Mayo Graduate School
MCP Hahnemann University

Miami University (Ohio)
Michigan Technological University
Middle Tennessee State University
Montana State University at Bozeman
National-Louis University

New Jersey Institute of Technology
New Mexico Institute of Mining and Technology
New School University
North Dakota State University, main campus
Northern Arizona University

Nova Southeastern University
Oakland University
Pace University, New York Campus
Pepperdine University
Polytechnic University

Portland State University
Rockefeller University
Rutgers University, Newark Campus
Saint John's University (N.Y.)
San Diego State University

Seton Hall University
South Carolina State University
South Dakota State University
State University of New York College of Environmental Science and Forestry
Stevens Institute of Technology

Tennessee State University
Texas A&M University at Commerce
Texas A&M University at Kingsville
Texas Christian University
Texas Southern University

Texas Woman's University
University of Akron, main campus
University of Alabama at Huntsville
University of Alaska at Fairbanks
University of Arkansas at Little Rock

University of Bridgeport
University of California at San Francisco
University of Central Florida
University of Colorado at Denver
University of Dayton

University of Hartford
University of LaVerne
University of Louisiana at Lafayette
University of Maryland at Baltimore
University of Massachusetts at Boston

University of Massachusetts at Lowell
University of Missouri at Kansas City
University of Missouri at Rolla
University of Missouri at St. Louis
University of Montana

University of Nevada at Las Vegas
University of New Orleans
University of North Carolina at Greensboro
University of Northern Colorado
University of North Dakota, main campus
University of Puerto Rico, Rio Piedras campus
University of Saint Thomas (Minn.)
University of San Diego
University of San Francisco
University of Sarasota

University of South Alabama
University of South Dakota
University of Texas at Dallas
University of Texas at El Paso
University of the Pacific

University of Tulsa
Union Institute
United States International University
Wake Forest University
Walden University

Wichita State University
Widener University
Wilmington College (Del.)
Worcester Polytechnic Institute
Wright State University, main campus

APPENDIX D: DATA COLLECTION INSTRUMENT

Economic Factors Influencing Institutional Involvement in Distance Education

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Statement of Anonymity/Privacy for this Study:

Any respondent contact information or institution identification information requested will be available to *only* the researcher in this study and used by the researcher for two purposes *only*: (a) to determine needs of follow-up correspondence based on received responses and (b) to provide respondents with the results of the study. To ensure anonymity of results but enable the generation of benchmarking reports, the researcher will replace identification information with a numeric code. This replacement will occur immediately following data collection and prior to data analysis. The master code sheet will be available *only* to the researcher of this study.

INSTRUCTIONS:

1. Review the definition of Distance Education.
2. Begin the survey by clicking on the link provided below.
3. Questions have been separated into five short sections. After completing each section, click once on the **Submit** button. The questionnaire will be automatically advanced for you and your responses preserved.
4. To receive results of the study, complete the contact information fields located at the end of the questionnaire.

Click Here to Begin Survey

For additional information about this survey contact
Miriam E. Guthrie at mguthrie@vt.edu

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Economic Factors Influencing Institutional Involvement in Distance Education

Virginia Tech

General Information

Q1 What best describes your position?

- ○ Chief Financial Officer
- ○ Distance Education Administrator

Q2 What is the name of your institution?

Submit

Section 1 of 4: Your Institution and Distance Education (9 Questions)

Q1 Is your institution categorized as public or private?

- ○ Public
- ○ Private

Q2 Approximately how many students (fulltime FTE) are enrolled in credit level courses (undergraduate, graduate) at your institution for Fall semester 2002?

- ○ Under 10,000.
- ○ 10,001 - 20,000.
- ○ 20,001 - 30,000.
- ○ 30,001 - 40,000.
- ○ 40,001 - 50,000.
- ○ Over 50,000.

Q3 How many years have you had distance education courses or programs at your institution?

- ○ No distance education courses or programs exist.
- ○ 1 - 5 years.
- ○ 6 - 10 years.
- ○ 11 - 15 years.
- ○ 16 - 20 years.
- ○ Over 20 years.
- ○ Not Sure.

Q4 Approximately how many students (fulltime FTE) were enrolled in all credit level distance education courses (undergraduate, graduate) at your institution for Fall semester 2002?

- ○ Under 1000.
- ○ 1,001 - 3,000.
- ○ 3,001 - 5,000.
- ○ 5,001 - 7,000.
- ○ 7,001 - 9,000.
- ○ Over 9,000.
- ○ Not Sure.

Q5 Which technologies did your institution use most often for distance education courses and programs in 2001-2002 (choose top 3)?

- ☐ Two-way video with two-way audio.
- ☐ One-way video with two-way audio.

☐ One-way live video.

☐ One-way pre-recorded video (including pre-recorded videotapes provided to students, and television broadcast and cable transmission using prerecorded video).

☐ Two-way audio transmission (e.g., audio/phone conferencing).

☐ One-way audio transmission (including radio broadcast and prerecorded audiotapes provided to students).

☐ Internet courses using synchronous (i.e., simultaneous or "real time") computer-based instruction (e.g., interactive computer conferencing or Interactive Relay Chat).

☐ Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction (e.g., email, listservs, and most World Wide Web-based courses).

☐ CD-ROM.

☐ Multi-mode packages (i.e., a mix of technologies that cannot be assigned to a primary mode).

Q6 Using the drop-down menus below, please select the primary, secondary and growth populations targeted by your institution for distance education.

Primary Population: [ ]

Secondary Population: [ ]

Growth Population: [ ]

Q7 What are your institution's top three reasons for targeting its PRIMARY population?

☐ Mission of institution

☐ Institution's strategic plan

☐ Increase institutional enrollment

☐ Increase institution revenue stream

☐ Address specific market niche

☐ Specialty programming

☐ Enhance research opportunities

☐ International Outreach

☐ Service to residential students

☐ Demands for physical space

☐ Other

Q8 What are your institution's top three reasons for targeting its SECONDARY population?

☐ Mission of institution

☐ Increase institutional enrollment

☐ Enhance research opportunities

☐ International outreach

☐ Address specific niche market

☐ Demands for physical space

☐ Service to residential students

- ☐ Inrease institution revenue stream
- ☐ Institution's strategic plan
- ☐ Specialty programming
- ☐ Other

Q9 What are your institution's top three reasons for targeting its GROWTH population?

- ☐ Mission of institution
- ☐ Institution's strategic plan
- ☐ Inrease institution revenue stream
- ☐ Address specific niche market
- ☐ Enhance research opportunities
- ☐ Increase institutional enrollment
- ☐ Demands for physical space
- ☐ Service to residential students
- ☐ International outreach
- ☐ Specialty programming
- ☐ Other.

Submit

Economic Factors Influencing Institutional Involvement in Distance Education

Virginia Tech

Section 2 of 4: General Factors Influencing Involvement in Distance Education (11 Questions)

		Strongly disagree	Slightly disagree	Slightly agree	Strongly agree	No Opinion
Q1	Delivery of distance education courses at my institution can be a viable alternative for acquiring a large number of new enrollments.	○	○	○	○	○
Q2	Distance education will adversely affect any geographic monopoly that my institution may have.	○	○	○	○	○
Q3	My institution considers distance education students to have unique needs.	○	○	○	○	○
Q4	My institution should participate in distance education only if it can internally provide all services needed by distance learners (e.g., career services, library services, 24/7 help desk).	○	○	○	○	○
Q5	My institution can provide higher quality educational sevices (e.g., tutoring, training) than corporate universities or for-profit educational institutions.	○	○	○	○	○
Q6	My institution can provide higher quality educational experiences (e.g., credit courses, degrees and certificates) than corporate universities or for-profit educational institutions.	○	○	○	○	○
Q7	It is important that my institution be recognized by peers as involved in distance education.	○	○	○	○	○
Q8	Distance education can serve as a positive mechanism for cultural change at my institution.	○	○	○	○	○
Q9	Distance education can make my institution more accessible for students seeking quality education for lifelong learning	○	○	○	○	○
Q10	The quality of distance education is equivalent to campus-based learning at my institution.	○	○	○	○	○

Q11	An institution will be successful in distance education only if it has already started to participate.	○	○	○	○	○

Submit

Economic Factors Influencing Institutional Involvement in Distance Education

Virginia Tech

Section 3 of 4: Institutional Involvement in Distance Education (9 Questions)

Q1 Is distance education congruent with your institution's mission statement?

- C Yes
- C No
- C Not sure

Q2 To what extent is distance education integrated into your institution's strategic plan?

- C Significantly integrated
- C Somewhat integrated
- C Not integrated

Q3 Does your institution have a unique business plan (a document or documents containing all related operational, marketing and financial considerations) designed explicitly for distance education initiatives?

- C No business plan is present for distance education university-wide or for individual initiatives.
- C A business plan is present for each distance education initiative (i.e., an online degree program).
- C A business plan is present only for distance education university-wide.
- C Business plans are present for both the university-wide and individual distance education initiatives.
- C Not sure.

Q4 Regarding your institution's involvement in offering distance education courses and programs, what response below best describes your institution's plans for the Academic Year 2003-2004?

- C We do not plan to offer distance education courses or programs.
- C We plan to completely eliminate/have already eliminated distance education courses and programs.
- C We plan to decrease distance education courses or programs.
- C We plan to start offering distance education courses or programs.
- C We plan to maintain current level of distance education courses or programs.
- C We plan to increase distance education courses or programs.

Q5 How would you rate your institution's pace for becoming involved in distance education?

- C Too fast.
- C Too slow.
- C An appropriate pace.

Q6 Please select the response that best describes your institution's present level of engagement in distance education.

C There are no distance education courses or programs.

C There is distance education activity, but there is no concerted, centralized university or college effort or plan that supports distance education.

C Distance education courses and programs are supported by institutional or college-level planning and team(s) of specialists.

C Distance education policies have been established and processes related to distance education courses and programs are in place (e.g., online registration and payment, help desk support).

C Distance education is a mature enterprise and an integral part of the academic agenda; it is viewed as a normal part of the institution's day-to-day activities similar to campus-based instruction.

Q7 To what extent do you feel the values listed below will be or have been influenced by your institutions involvement in distance education?

		Negatively Influenced	Not Influenced at All	Positively Influenced
A	Institutional autonomy (versus consortia, partnerships).	C	C	C
B	Collegiality and shared governance.	C	C	C
C	Intellectual and academic responsibility of faculty for curriculum and learning.	C	C	C
D	Academic and intellectual freedom of faculty.	C	C	C
E	Offering of a degree (versus certificate or non-credit courses).	C	C	C
F	General education.	C	C	C
G	Campus-based education.	C	C	C
H	Research quality.	C	C	C
I	Academic quality.	C	C	C
J	Development of a learning community.	C	C	C

Q8 From the list below, select the THREE items you believe most important in preparing an institution for successful economic involvement in distance education.

F Specific mechanisms are in place for appropriating and distributing distance education funds.

F Administration must communicate its support for the distribution of funds for distance education.

F Terms of revenue-related organizational changes must be defined in advance (e.g., alliances, industrial affiliates, partnerships).

F Institutional funding should support a designated unit(s) to manage distance education.

F A viable business plan for distance education has been created and communicated.

☐ Viable infrastructure plans for distance education have been created and communicated (e.g., purchase, development, maintenance and support).

☐ Viable technology strategies for distance education have been created and communicated (e.g., technology life-cycle and cost of obselescence).

☐ Mechanisms are in place to deal with imposed legislative, government and/or accreditation regulations.

☐ Policies are in place for labor management within distance education (e.g., faculty workload, adjuncts, rewards, tenure and incentives).

☐ Financial accountability metrics (e.g., audits) exist and are communicated for distance education.

☐ A distance education technology fee is in place.

☐ Policies regarding faculty scholarship and research have been developed (e.g., commercialization of content, Intellectual Property Rights, and Ownership).

☐ A special distance education tuition rate is in place.

☐ E-commerce solutions are available (e.g., online registration and credit card payment).

Q9 If your institution does have a unique business plan that is explicity designed for distance education initiatives, which of the components listed below are included in the business plan(s)? Select all that apply.

☐ Purpose or rationale.

☐ Designation of unit/division responsibilities.

☐ Relation to institution's mission.

☐ Enrivonmental analysis (e.g., needs assessment, competition).

☐ Marketing plan.

☐ Marketing research results.

☐ Infrastructure description.

☐ Pricing of education.

☐ Justification of need.

☐ Product type(s).

☐ Policies.

☐ Program delivery description.

☐ Industrial partner criteria.

☐ Non-recurring or fixed costs (e.g., infrastructure, equipment, facilities).

☐ Recurring or variable costs (e.g., personnel, marketing, equipment maintenance).

☐ Predictive models for revenue streams and economic viability.

☐ Reporting schedule for financials.

☐ Measures of success.

☐ Other.

Submit

Section 4 of 4: Economic Factors Influencing Involvement in Distance Education (16 Questions)

		Strongly disagree	Slightly disagree	Slightly agree	Strongly agree	No Opinion
Q1	Distance education can allow my institution to decrease tuition through special e-rates.	○	○	○	○	○
Q2	Anticipated increases in distance education enrollments can be used to justify increases in university infrastructure and support.	○	○	○	○	○
Q3	My institution should never enroll more distance education students than campus-based students.	○	○	○	○	○
Q4	My institution is able to respond more quickly to the distance education market than corporate universities or for-profit educational institutions.	○	○	○	○	○
Q5	A business plan is critical to becoming involved in distance education initiatives.	○	○	○	○	○
Q6	There is too much competition in distance education for my institution to have a positivie financial Return on Investment.	○	○	○	○	○
Q7	Distance education can alleviate fiscal constraints at my institution.	○	○	○	○	○
Q8	Distance education can allow for quick, easy solutions to making higher education affordable and accessible at my institution.	○	○	○	○	○
Q9	Distance education is an economically viable option for my institution.	○	○	○	○	○
Q10	Distance education can increase my institution's capacity to teach more students using the same infrastructure.	○	○	○	○	○
Q11	Distance education can reduce the cost of instruction at my institution.	○	○	○	○	○
Q12	Distance education can allow my institution to reach new audiences (e.g., corporations, individuals seeking professional development, and transfer	○	○	○	○	○

options).

Q13	Distance education offers my institution greater Return on Opportunity (e.g., image, competition, resource access) than Return on Investment (ROI).	○	○	○	○	○
Q14	The distance education market will continue to support the current number of postsecondary institutions.	○	○	○	○	○
Q15	Distance education can increase faculty productivity at my institution.	○	○	○	○	○
Q16	Distance education can be a stable source of revenue for my institution.	○	○	○	○	○

Submit

Optional Information

If you would like to receive the results from this study, you must provide the following contact information. Results of this study are scheduled to ship Summer or Fall of 2003.

Name:

Email Address:

Phone:

How long did it take you to complete this survey?

- ○ Less than 10 minutes.
- ○ 11 - 15 minutes.
- ○ 16 - 20 minutes.
- ○ 21 - 25 minutes.
- ○ 26 - 30 minutes.
- ○ Over 30 minutes.

Please provide any additional comments below.

Submit

APPENDIX E: LETTER OF INVITATION TO PARTICIPATE

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Institute for Distance & Distributed Learning

3046 Torgersen Hall; Blacksburg, VA 24061
Office phone: (540) 231-3054 Fax: (540) 231-5922
http://www.iddl.vt.edu

January 13, 2003

President Charles Steger
Virginia Polytechnic Institute & State University
210 Burruss Hall
Blacksburg, VA 24061

Dear President Steger:

I would like to invite your institution to participate in a national study of over 180 Carnegie Foundation classified Research Extensive (RI) and Research Intensive (RII) institutions. Endorsed by the *National Association of College and University Business Officers* and the *United States Distance Learning Association*, this national study targets economic and related decision-making factors influencing the involvement of RI and RII institutions in distance education. It is being being conducted in partial fulfillment of my doctoral program at Virginia Polytechnic Institute and State University. The *significance* of this research and the *benefits* to your institution are outlined below.

Significance of Research & Benefits of Your Participation

Of the many pressing issues faced by traditional higher education institutions today, one issue of significant impact is the effect of distance education on an institution's infrastructure, organization, culture, outreach and fiscal capacity. Pushed by competition and budget constraints, institutions are being forced to increase revenue and define new arrangements between businesses, government, and emerging educational sectors. While an institution's strategic planning for distance education is a key to successful marketing, economic viability and institutional benefit, there is little information to assist institutions in making strategic decisions about how to grow enrollments and reach new markets. Additionally, research is inconclusive about whether or not distance education can positively impact access, enrollment and program costs.

The utility of this research is its focus on the economic factors influencing involvement in distance education, and the economic readiness criteria and business plan components necessary for research institutions to be successful in e-learning. Additional utility stems from the study's integration of research with environmental scan statistics to provide your institution with (1) an ***economic blueprint*** of e-learning factors, readiness criteria and business plan components, as well as (2) ***a means of benchmarking*** – through aggregated results and institution-specific results stratified by key variables (i.e., faculty salary, enrollment, geography) – your institution's level of involvement in distance education.

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Statement of Privacy

The privacy of your institution and its respondents will be maintained fully. All information requesting respondent and institution identification (e.g, name, title) will be available to *only* the researcher in this study and used by the researcher for two purposes *only*: (1) to determine needs of follow-up correspondence based on received responses and (2) to provide respondents with final aggregate and institution-specific benchmarking results. To ensure anonymity of results and also enable the generation of benchmarking reports, the researcher will replace identification information with a numeric code. This replacement will occur immediately following data collection and prior to data analysis. The master code sheet will be available *only* to the researcher of this study.

Participating in the Study and Receiving Results

For your convenience, questions are available via the World Wide Web. Institutional participation includes completion of the online questions by your Chief Financial Officer ***and*** the Distance Learning Administrator most knowledgeable about your institution's distance education programming. Questions will be available online starting *Monday, January 20, 2003*. All responses must be submitted on or before *Friday, February 21, 5PM, 2003* to receive your institution's benchmarking and aggregate results. Results will be sent via email.

Questions are available online at: http://66.0.113.20/default.htm

If I can encourage your willingness to participate by providing any additional information, please do not hesitate to contact me either via email (mguthrie@vt.edu). Thank you for your consideration.

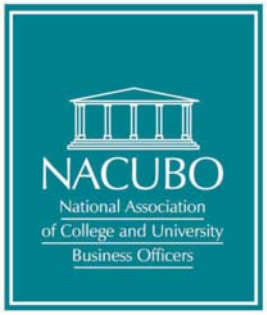
Sincerely,

Miriam E. Guthrie
Doctoral Candidate, College of Human Resources and Education

In full support of this study:

Dr. John Burton
Department Head & Doctoral Advisor
Department of Teaching and Learning
College of Human Sciences and Education

Dr. Thomas W. Wilkinson
Director
Institute for Distance & Distributed Learning



January 8, 2003

Dear President/Chancellor:

On behalf of NACUBO, the National Association of College and University Business Officers, I am writing to encourage your institution's participation in a study of the economic factors influencing postsecondary institutional involvement in distance education. This national study, a part of a doctoral dissertation research project, targets economic factors influencing Carnegie Foundation classified Doctoral/Research Extensive (RI) and Doctoral/Research Intensive (RII) institutions' involvement in distance education, and the economic readiness criteria and business plan components necessary for institutions to be successful in distance learning.

Currently, there is a significant lack of research that allows for benchmarking of institutional involvement in distance education and identifying institutional and economic factors associated with this involvement. The study, proposed by Ms. Guthrie, underscores the necessity of informed entrepreneurial thought, tight market focus, and the development/execution of appropriate strategic and business planning. Your participation in this study would greatly assist in developing an economic blueprint for improved decision-making with respect to involvement in distance education.

Thank you in advance for considering participating in this very important study.

With kind regards,

James E. Morley, Jr.
President

2501 M Street, NW, Suite 400 • Washington, DC 20037
Telephone: 202-861-2500 • FAX: 202-861-2583
Website: http://www.nacubo.org

January 6, 2003

Dear President/Chancellor:

On behalf of the United States Distance Learning Association, a national organization committed to serving the needs of the distance learning community through advocacy, information, networking and opportunity, I am writing to strongly encourage your institution's participation in a study entitled, **Economic Factors Influencing Postsecondary Involvement in Distance Education**. This study will target economic factors influencing Carnegie Foundation classified Doctoral/Research Extensive institutions' involvement in distance education, and the economic readiness criteria and business plan components necessary for Research One institutions to be successful in distance learning.

Currently, there is a significant lack of research allowing the benchmarking of institutional involvement in distance education and identifying institutional and economic factors associated with this involvement. The study proposed by Ms. Miriam Guthrie underscores the necessity of informed entrepreneurial thought, tight market focus, and development/execution of appropriate strategic business planning. Your involvement in this study would greatly assist in developing an economic blueprint for improved decision-making with respect to distance education.

Thank you in advance for your participation in this very important study!

Sincerely,

John G. Flores, Ph.D.
Executive Director

8 Winter Street, Suite 508 • Boston, MA 02108-4705
Telephone: 800.275.5162 Fax: 617.399.1771
Website: www.usdla.org

CURRICULUM VITAE

Miriam E. Guthrie
716 McBryde Drive
Blacksburg, VA 24060
Phone: 540.230.2018
Email: mguthrie@vt.edu

Academic Degrees

PHD	*Virginia Polytechnic Institute & State University*	*3/2003*	*Curriculum & Instruction*
MA	Virginia Polytechnic Institute & State University	1995	Curriculum & Instruction
BA	Lawrence University	1993	English

Relevant Professional Experience

2003-present Consultant/Educational Research Director
North Carolina State University, Raleigh NC

2000-2002 Coordinator, Special Initiatives, Outreach & Marketing
Project Manager, Online Masters of Information Technology Program
Virginia Polytechnic Institute and State University, Blacksburg VA

Responsible for the management of division (i.e., reporting, budget and personnel management); identifying and developing of credit and/or non-credit specialized and contractual distance education and training; targeting specialty programming and marketing; initiating and collaborating with university colleges and departments to reach audiences in both domestic and international business, industry and government organizations; providing expertise for consulting, market research, financial plan development, and grant development and support; developing of distance education policies, procedures, and program and business models; event coordination; overseeing marketing and promotion of university distance education efforts (including programs and courses); supervising and assisting in design and development of associated marketing materials; providing overall project and program management to university distance education special initiatives to include: program transformation, delivery and evaluation; course design, development, delivery and assessment; consistency and quality assurance; instructional design; technical support; production team management; and faculty training.

1998-2000 Coordinator, Instructional & Distance Technology/Director, mGrants Program
James Madison University, Harrisonburg, VA

Responsible for informing direction of distance learning and associated policies and procedures; supporting instructional development of new and existing distance and distributed learning initiatives; defining, promoting and implementing faculty and student services for centralized distance and distributed learning applications; supervising operations of university-wide distance and distributed learning applications; managing and coordinating production teams, resource allocation and acquisition; assessing and

informing development and implementation of instructional technologies, programs and projects; collaborating with campus technology and assessment units to advance awareness, design and development of instructional technologies, course offerings, and best practices; assisting faculty in the analysis, design and development of instructional purposes for internet-based, multimedia, face-to-face and other alternative delivery media; serving as Director of the university's *mGrants Program* (an in-university instructional technology grants program): overseeing and producing grant projects awarded; managing associated production teams and design, development, assessment, budgeting, evaluation and coordination processes.

1997 Course Developer
James Madison University, Harrisonburg, VA

Responsible for managing the development of web-based technical writing course–the first completely online course for the university; researching and integrating technologies to optimize student interaction and collaboration; developing qualitative and quantitative assessment instruments and tools; conducting course analyses; working with university members on awareness and integration of federal and university policies (i.e., Fair Use Guidelines, FERPA, and Digital Copyright).

1995-1996 Instructional Designer/Research Specialist
Virginia Polytechnic Institute and State University, Blacksburg, VA

Responsible for designing and developing multimedia, graphic and web-based materials for online courses; producing asynchronous/synchronous learning modules for faculty; supporting faculty and staff in the use of distance and distributed learning applications; designing and maintaining internet host sites for university departments; instructing workshops on instructional technologies; assessing and evaluating effectiveness of major grant production; developing assessment tools for and conducting formative and summative evaluation of instructional materials, teaching and learning processes and needs within asynchronous environments.

Associated Educational & Consulting Experience

2000	Consultant/Web Designer	State Historical & Cultural Society, LDF, WI
1999	Consultant/Instructor	Norfolk State University, Norfolk, VA
1999	Instructor, Adult Degree Program	James Madison University, Harrisonburg, VA
1998	Instructor, Forestry and Wildlife	Virginia Tech, Blacksburg, VA
1996-1998	Graduate Assistant	Virginia Tech, Blacksburg, VA
1995-1998	Instructor/Faculty Development	Virginia Tech, Blacksburg, VA
1997	Lecturer	James Madison University, Harrisonburg, VA
1997	Lecturer	Blue River Com.College, Harrisonburg, VA
1996	Consultant/Web Designer	G3 Systems, Blacksburg, VA
1996	Instructor	Town of Blacksburg, Blacksburg, VA

Professional Affiliations

American Association for Higher Education
American Educational Research Association
United States Distance Learning Association

Research Interests

(1) *Distance Education*: specifically, economic and institutional decision-making factors influencing postsecondary involvement in distance education, and the economic readiness criteria and business plan components necessary for institutions to be strategically successful in distance education (2) *Integration of instructional technologies in the arts/arts education*

Publications

Pitt, S. P., Updike, C., & Guthrie, M. E. (*in press*). *Digital images in Art and Art History Curriculum*. Journal of Library Administration. Binghamton, NY: Haworth Press.

Pitt, S. P., Updike, C., & Guthrie, M. E. (2002). *Integrating digital images into the Art and Art History Curriculum: An internet-based image database connects to an in-class teaching and learning tool for easy access to art*. EDUCAUSE Quarterly, April-June (v25, n2). pp. 38-44.

Pitt, S. P. & Guthrie, M. E. (1999). *Digitally invested: Teaching and learning with online images*. EDUCAUSE [Conference Proceedings]. Available on the World Wide Web: http://www.educause.edu/ir/library/htmledu9940/edu9940.html.

Pitt, S. P & Guthrie, M. E. (1999). *Creating an internet-based pathophysiology course: Entry to exit.* College and University Media Review, Fall (v6, n1).

Presentations & Papers (partial listing)

Guthrie, M. E. (2002). *Managing distance learning growth at an RI university: a scalable instructional delivery model*. Presentation given at Western Cooperative for Educational Telecommunications Conference, Coeur d'Alene, ID.

Guthrie, M. E. & Wilkinson T. (2002). *Utilizing New Models to Broaden Reach: Online MIT Program*. Presentation given at E-Learning 2002 Conference and Exposition, Washington, DC.

Robbins, R & Guthrie M. E. (2002). *Tracking the involvement of your organization through project management*. Presentation given at Distance Learning Administration Conference, Jekyll Island, GA.

Guthrie, M. E. & Raby, M. (2001). *Synchronous communication tools for enhancing online learning*. Poster given at EDUCAUSE Conference, Indianapolis, IN.

Guthrie, M. E. & Raby, M. (2001). *Developing online courses at a distance using H.323*. Poster given at EDUCAUSE Conference, Indianapolis, IN.

Guthrie, M. E. & Fornash, L. (2001). *An online Masters of Information Technology degree program.* Poster given at Digital Divide Conference, Roanoke, VA.

Guthrie, M. E. (2000). *Using H.323 to develop courses at a distance.* Presentation given at Megaconference Worldwide Teleconference.

Guthrie, M. E., Wilkinson, T., Raby, M., Robbins, R., & Turner, S. (2000). *FastTrack project: Distance learning student services*. A presentation given at EDUCAUSE Conference, Knoxville, TN.

Pitt, S. P., Foucar-Souki, D., Vitale, E., Harbeck, J., and Guthrie, M. (2000). *Partnering to train professional workforce educators*. Proceedings paper for EDUCAUSE Conference, Knoxville, TN.

Pitt S. P. & Guthrie, M. E. (1999). *Digitally invested: Teaching and learning with online images.* Presentation given at EDUCAUSE Conference, Long Island, CA.

Guthrie, M. E. & Pitt, S. P. (1999). *Instructional impact of the digital image database at JMU.* Presentation given at Challenge and Response Conference, Elon, NC.

Guthrie, M. E. & Pitt, S. P. (1997). *Using the internet to teach a technical writing course.* Presentation given at Consortium for College and University Media Centers Conference, Norfolk, VA.

Grant Awards & Participation

2002 United States Agency for International Development Grant.
Amhara Microenterprise Development, Agricultural Research, Extension & Watershed Management Project. Assisted in conception and coordination of distance education component. [Virginia Tech partnered with Cornell University, Virginia State, and ACDI-VOCA, a private sector, non-governmental organization. $10M Award.]

2002 United States Agency for International Development Grant.
Management Development Initiative (MDI) Phase 2 – Nile University. Assisted in the curricular and distance education conceptualization and coordination. [Virginia Tech partnered with Planning and Learning Technologies, Inc. (PaL-Tech) and PricewaterhouseCoopers (PwC). $1.4M Award.]

2002 United States Agency for International Development Grant
Africa IPM Link Project. Assisted in coordination and conception of distance education/technology component. [Virginia Tech partnered with the Consortium for International Crop Protection (CICP) in implementing an Internet-based IPM information exchange network in Sub-Saharan Africa. $100K Award.]

1995-1998 Alfred P. Sloan Foundation Grant
Asynchronous Communication Courses to Enable Student Success (ACCESS). Assisted in course and module design and development, faculty training and support, course assessment and grant evaluation and report development. [Virginia Tech's Information Systems partnered with the College of Arts and Sciences. $200K Award.]

Professional Awards & Participation

2002 E-Learning 2002 Award
(Position: Project Manager, Online Masters of Information Technology)
Virginia Tech was awarded the E-Learning 2002 Success Stories Award "Virtual Learning and Collaboration" for the nomination entitled, "Utilizing Virtual Classrooms and New e-Learning Models to Broaden Reach." Strategies and models highlighted required cross-university collaborations and technology integrations that radically changed the University's approach to tuition, e-learning delivery, and course transformation. These models were piloted in the University's online Masters of Information Technology (MIT) degree and certificate program, which was recently transformed into an asynchronous e-learning format.

1998 Paragon Award
(Position: Course Designer and Developer)
On January 19, 1999, James Madison University received a 1998 Paragon Award from Centra Software. The Second Annual Award Program lauded 25 innovators using live Internet collaboration. The Award was received for the University's online and audiographic-conferenced courses in mediation.

1997 Hesburgh Certificate of Excellence Award
(Position: Instructor, 1995 – 1998)
Judges of the Theodore M. Hesburgh Award for Faculty Development to Enhance Undergraduate Teaching selected Virginia Tech's *Faculty Development Institute* for its contributions to the enhancement of undergraduate teaching methods. Virginia Tech was one of three schools nationally to receive the Certificate of Excellence.

General Proficiency Areas

Assessment & Evaluation	Graphic Design	Marketing Media Development
Assistive Technologies	H.323	Technical Editing
ADA Compliance	Instructional Design	Web Design & Development
Distance Learning Tools	Multimedia Development	Videoconferencing & Satellite