AN INVESTIGATION OF THE MISSION, VISION, FUNDING STRATEGIES AND STUDENT SERVICES FOR DISTANCE LEARNING IN LAND GRANT AND STATE UNIVERSITIES

by

SUSAN PETERSON THOMAS

B.S., Kansas State University, 1976
M.P.A., University of Kansas, 1982

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Curriculum and Instruction
College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2005

ABSTRACT

This study was an investigation of mission, vision, funding strategies, and student services for distance learning as expressed by university administrators in land grant universities and state universities, and those institutions that are designated as both land grant and state universities by the state legislature. Three research questions guided the study

The study employed a survey distributed through e-mail. The questionnaire was sent to 261 senior administrators; the chief academic officers, chief business officers, and chief information officers in 37 land grant and state universities and 13 institutions that are both land grant and state universities. The return rate was 30%.

The institutional mission and administrator's vision for offering distance learning survey responses were analyzed using descriptive statistics. The study also used correlation, confirmed by factor analysis, to determine if there was a relationship among the administrators' responses regarding mission, vision, and funding. The data were analyzed with ANOVA and fishers least means difference test. These tests determined if there were differences in the administrators' responses between the type or sizes of higher education institutions on mission, vision of administrators. The data analysis indicated that the type of institution did not yield significant differences. The difference of means test indicated there were differences in the student population size of the institutions.

The responses indicated the mission or purpose for offering distance learning was to save money for the institution, and support degree completion for former students. The responses related to administrative vision show initiating a distance learning program and a being leader among higher education institutions were the reasons for a distance learning program.

The content analysis method was employed to determine the roles of the administrators in the survey. The administrators' responses related to distance learning were consistent with their roles in the institution.

The study also produced results related to student services institutions provide for distance learning students, how the student services were provided, on or off campus or both locations and the funding sources for the student services.

AN INVESTIGATION OF THE MISSION, VISION, FUNDING STRATEGIES AND STUDENT SERVICES FOR DISTANCE LEARNING IN LAND GRANT AND STATE UNIVERSITIES

by

SUSAN PETERSON THOMAS

B.S., Kansas State University, 1976
M.P.A., University of Kansas, 1982

A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Curriculum and Instruction
College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2005

Approved by:

Major Professor

Janice Wissman

ABSTRACT

This study was an investigation of mission, vision, funding strategies, and student services for distance learning as expressed by university administrators in land grant universities and state universities, and those institutions that are designated as both land grant and state universities by the state legislature. Three research questions guided the study

The study employed a survey distributed through e-mail. The questionnaire was sent to 261 senior administrators; the chief academic officers, chief business officers, and chief information officers in 37 land grant and state universities and 13 institutions that are both land grant and state universities. The return rate was 30%.

The institutional mission and administrator's vision for offering distance learning survey responses were analyzed using descriptive statistics. The study also used correlation, confirmed by factor analysis, to determine if there was a relationship among the administrators' responses regarding mission, vision, and funding. The data were analyzed with ANOVA and fishers least means difference test. These tests determined if there were differences in the administrators' responses between the type or sizes of higher education institutions on mission, vision of administrators. The data analysis indicated that the type of institution did not yield significant differences. The difference of means test indicated there were differences in the student population size of the institutions.

The responses indicated the mission or purpose for offering distance learning was to save money for the institution, and support degree completion for former students. The responses related to administrative vision show initiating a distance learning program and a being leader among higher education institutions were the reasons for a distance learning program.

The content analysis method was employed to determine the roles of the administrators in the survey. The administrators' responses related to distance learning were consistent with their roles in the institution.

The study also produced results related to student services institutions provide for distance learning students, how the student services were provided, on or off campus or both locations and the funding sources for the student services.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

Chapter One of this dissertation includes an *overview of the issues*, *statement of the problem*, *purpose of the study*, *significance of the study*, *limitations of the study*, and *definition of terms*. This study is an investigation of mission, vision, funding strategies, and student services for distance learning as expressed by university administrators in land grant universities and state universities, and those institutions that are designated as both land grant and state universities by their state legislatures. Although the mission of most universities has not substantially altered over the years, the public expectations for program delivery have changed significantly. With society's transition from the Industrial Age to the Information Age, new and emerging program delivery expectations are reshaping the university. As administrators encounter increased student expectations, they are challenged to re-evaluate the mission and vision for higher education in the 21st century.

Overview of the Issues

> The extraordinary pace of information-technology evolution is likely not only to continue for the next several decades but could well accelerate. It will erode, and in some cases obliterate, higher education's usual constraints of space and time. Institutional barriers will be re-shaped and possibly transformed. (National Research Council, 2002, p. 2)

This quote illustrates the challenges faced by traditional higher education institutions in this country to adapt to rapid technological advancements in the Information Age.

Administrators in public higher education institutions are searching for a relevant mission, vision, and related funding strategies to deliver technologically enhanced learning.

Studies have compared traditional learning with distance learning (Irlbeck, 2001; National Center for Education Statistics, 2000). There is, however, limited research concerning the mission of institutions of higher education to offer distance learning, and scarce research on the vision and ability of central administrators to offer distance learning in their institutions. Research related to funding strategies based on institutional mission and administrators' vision for the delivery of distance learning in higher education is currently not available in the literature. And while services provided to distance learning students are reported in the research, these studies do not speak specifically to the costs and the bearer of the costs of these services.

Dressel (1981) writes, "a concern in the university is that of its mission or purpose" (p.161). It is the duty of universities, through their expressed mission, to make themselves relevant to external demands and societal needs. The responsibility of the institution's senior leadership is to provide the vision. These leaders must take the long view to respond to societal pressures and to weigh the interests of the institution as a whole. Specifically, it is important for these leaders to direct the development of the vision by establishing goals for the institution (Bates, 2000; Hawkins & Marcum, 2002; Tierney, 2002).

The need for realistic funding strategies for education delivery in higher education has never been greater. A major challenge for universities today is to acquire the resources necessary to carryout the institutional mission and the senior administrators' vision.

Statement of the Problem

The U.S. higher education system has always changed and adapted to the nation's needs; however, today the system is facing a daunting challenge and must adapt again to a new

landscape, one that is both virtual and global. Universities across the country appear to be turning to distance learning to affect this change. A technology-driven workforce will be required in order to fill information jobs, which means higher education is no longer an option but a necessity for the majority of workers. The Information Age has expanded the need for a university-level education and drives the need for life-long learning to support a globally competitive workforce (Green, 1997; Green, 1999; 1997; National Association of State Universities and Land Grant Colleges, 2003; National Research Council, 2002).

Bates (2000) writes that the pressure to change in higher education will occur because of three factors: "the need to do more with less, the changing needs of society, and the impact of new technologies on teaching, learning, and research" (p. 8). These factors will impact the mission of the institution and the vision held by the institution's administrative leadership (Bates, 2000; Duderstadt, 1999; McClure, 2003).

To date, most studies and literature have focused on specific areas of distance learning in higher education such as quality of programs, types of course offerings, and the faculty role in distance learning (Berg, 1998; Carnevale, 2000; Farrington, 1997; Graves, 1999). In contrast to the available research and to add to the investigator's interest, this study focuses on the mission of universities and the administrators' vision in offering distance learning opportunities to their students. This study also examines the funding strategies used in higher education today in order to offer distance learning programs (Bates, 2000; Graves, 1999; Green, 2003; Hawkins, Rudy, & Madsen, 2003; Phipps & Wellman, 2001; Smallen & Leach, 2002; Smallen & McCredie, 2003; Texas Higher Education Commission, 1996). Finally, this study addresses the types of services institutions of higher education (IHEs) offer to distance learning students, and examines who bears the costs of these services.

Purpose of the Study

This study is an investigation of mission, vision, funding strategies, and student services for distance learning as expressed by university administrators in three types of IHE: land grant universities, state universities, and institutions that are designated as both land grant and state universities. Each institution studied is a member of the National Association of State Universities and Land Grant Colleges.

Research Questions

The following research questions guided this study:

1. What is the institutional mission and administrators' vision associated with offering distance learning in three types of IHEs: land grant universities, state universities, and those institutions that are designated as both land grant and state universities?
2. How are administrators' responses to institutional mission, administrative vision, and funding strategies for offering distance learning in their institutions related? Do these interrelationships differ across the types of institutions, the student population size of the institution, or the budget of the institution?
3. Compared to on campus students, what services are provided to distance learning students in the three types of IHEs? How are these services financed?

Significance of the Study

The purpose of this study was to provide information about mission, vision, funding strategies, and student services for distance learning to administrative policymakers in the researcher's IHE, a Midwestern land grant university with an enrollment of over 20,000 students. The policymakers that comprise the leadership team of the researcher's institution include the chief academic officer, the chief business officer, and the chief information officer, with the

chief information officer having the institutional responsibility for distance learning. Recently the researcher's university has undertaken significant technology initiatives to enhance the traditional on-campus teaching, research, and service mission of the institution. Like other land grant and state universities across the country, the investigator's university has been "caught up in the herd effect of offering distance learning" (Oblinger & Kidwell, 2000, p. 34). In other words, many IHEs realize that in order to continue to be a vital and growing institution, they must continually compete for students by extending beyond the physical borders of the campus. The likely result for IHEs will be the provision of "anytime, anywhere" learning in order to remain competitive in a global marketplace (Daniel, 1999; Duderstadt, 1999; Dunning, Vankekrix & Zaborowski, 1993; Hanna, 2000; Katz, 1999; Liberman, 2002; National Research Council, 2002).

In addition to providing information related to mission, vision, funding strategies, and student services for the investigator's institution, the researcher also believes the study will assist policymakers in similar public institutions of higher education as they plan, coordinate, and offer distance learning programs. Finally, the researcher undertook the study in order to add to the body of literature in these areas.

Limitations of the Study

Following are some of the limitations of this study:

- The study was conducted with a relatively small population consisting of three senior administrators (chief academic officer, chief business officer, chief information officer) in 87 land grant, state universities, and those universities that are designated as both land grant and state universities by their respective states.

- The study was conducted with three senior administrators in the three types of IHEs. These three senior administrators may not reflect the importance of mission and administrative vision in the institution that might be reflected by others in the institution.
- The results of this study are not generalizable to all IHEs in the United States because it surveyed only 87 specific public institutions identified as land grant and state universities and the institutions that are both.
- The return rate for this study was 30%. While the average for an e-mail survey ranges from 10 percent to 60 per cent, this response represents only 76 respondents of the 261 surveys distributed. The small return rate indicates the need for caution when interpreting the results of the study.
- The population represented 87 land grant and state universities and those that are both. The survey response rate was not evenly spread across the five different sizes of student population if the institution. The bulk of the respondents, were in the middle of the size ranges offered in the survey. Of the 76 respondents, 24 administrators indicated the size range of 10,001-20,000 and 23 administrators indicated the size range of 20,001-30,000.
- Identifying the person who serves as the chief information officer was difficult. This is not a common title among IHEs and the investigator chose the appropriate administrator or individual based on the institution's organizational chart.
- Because an Internet survey method was used, access to a computer and familiarity with a computer was required to complete the survey. Also, the survey designer and the survey participant may have used incompatible computer programs, making it difficult for the participants to complete the survey.
- Some participants in the survey elected not to complete and return the e-mail survey.

Definition of Terms

Chief academic officer: the senior administrator responsible for the direction of the academic programs in an IHE. His or her responsibilities may include teaching and research programs, extension, admissions and registrar, and library activities. This administrator reports to the chief executive officer (College and University Professional Association of Human Resources [CUPA], 2003).

Chief business officer: the senior administrator responsible for the combined functions of administrative and financial affairs. His or her responsibilities may include purchasing, physical plant management, property management, auxiliary enterprises, personnel services, investments, and accounting. This administrator reports to the chief executive officer (CUPA, 2003).

Chief information officer: the administrator responsible for the institution's major academic and administrative computing activities. His or her responsibilities may include on- and off-campus degree and institutional academic programs, the purchase of hardware and software systems for the institution, and the security, reliability, and availability of the institution's information systems. This administrator reports to the chief executive officer or a senior administrative officer (CUPA, 2003).

Distance learning: a general term used to cover all aspects of teaching and learning events in which the student and instructor are separated.

Funding strategies: used to determine the direct and indirect resources necessary to deliver academic programs in higher education institutions (Robbins, 1973).

Institutions of higher education (IHEs): for the purposes of this study, one of three types of college or university. A *land grant university* is designated by its state legislature to receive the benefits of the 1862 Morrill Act. The land grant university offers programs that lead to the

bachelor's, master's, or doctor of philosophy degree, or their equivalent. These institutions may have professional schools. A *state university* is designated by its legislature to be classified as the state university; it offers programs leading to the bachelor's, master's, or doctor of philosophy degree, or their equivalent and has three or more professional schools. A *land grant and state university* is designated by its state legislature to serve as both types of institution. Institutions that are both types offer programs leading to the bachelor's, master's, or doctor of philosophy degree, or their equivalent. These universities may have professional schools (National Association of State Universities and Land Grant Colleges, 2005; Walquist & Thornton, 1964).

Mission: a statement that articulates a guiding set of relevant core values, "the higher purposes of the university" (Katz, 1999, p. 120). The mission must be understood by the institution's stakeholders, board, staff, and community (Tierney, 2002).

Services: The non-academic functions a IHE provides students that support the academic programs of the institution (Phipps & Wellman, 2001). Examples of student services include information for prospective students, admissions, financial aid, registration, enrollment, academic advising, technical support, library access, instructional support, tutoring, bookstore, career and placement counseling, and disabled student services. Services also include parking, athletics, campus events, and identification cards.

State funds: a traditional source of revenue for IHEs. State funds are those monies recommended by governors and appropriated by state legislatures.

Student fees: a traditional source of revenue for IHEs. Fees are the actual cost of goods and services used by the student in a course providing academic credit.

Tuition: a traditional source of revenue for IHEs. Tuition is the amount of money charged to students for instruction. Tuition may be charged per term, per course, or per credit hour.

Vision: The ability to see beyond the probable by envisioning the possible. Vision is what the IHE intends to be doing in the future (Bates, 2000).

CHAPTER TWO
LITERATURE REVIEW

Introduction

Chapter Two of this dissertation is the literature review relating to an investigation of mission, vision, funding strategies, and student services for distance learning as expressed by university administrators in land grant universities, state universities, and those universities that are designated as both land grant and state universities by their state legislatures.

The first section of Chapter Two focuses on higher education. Included are the history and characteristics of land grant and state universities. This section also includes a review of the traditional mission of institutions of higher education (IHEs); the pertinent literature connected to the vision of administrators in IHEs; a description of the chief academic officer, chief business officer, and chief information officer as well as their respective roles in IHEs; and the literature associated with the financing of IHEs from conventional sources.

The second section of Chapter Two focuses on distance learning. This section reviews the history of distance learning and the use of technology to deliver education. The purpose of delivering higher education by distance learning specifically to fulfill the mission of the IHE is described in this section of the chapter. The literature review in this section examines the vision of IHE administrators in offering distance learning. Also reviewed in this section of Chapter Two are the funding strategies used by IHEs to pay for distance learning. Also addressed is the literature concerning the costs of distance learning in the areas of technology, credit course development, and course delivery. Finally, the availability of student services for distance learning in the institutions is included.

History

Land Grant and State Universities

The land grant university in the United States was established by the Morrill Act, passed by the United States Congress in 1862. The purpose of the Morrill Act was to make education available to a new class of individuals who needed the education and skills to maintain and expand the nation's social and economic systems. The Morrill Act states that the colleges, "without excluding other scientific and classical studies and including military tactics, shall teach such branches of learning as are related to agriculture and the mechanical arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life" (Parker).

The provisions of the Morrill Act granted 30,000 acres of land to each state to sell; the proceeds of the sale were to be used to establish at least one college. The land grant university was created to assist growth in a fledgling re-united nation and provide new ways innovation and invention could add to the lives of the population.

State universities also benefited from the granting of public lands by Congress to the states for the basic purpose of founding educational institutions. While many of the new western states were interested in educational opportunities, the granting of federal lands to newly created, struggling states provided the funding incentives for these states to establish universities (Brubaker & Rudy, 1997).

In the 1959-1960 edition of the *United States Department of Health Education and Welfare Education Directory*, the state university was defined as an "institutional unit which offers programs leading to the doctor of philosophy or equivalent degree and has three or more professional schools as well as liberal arts and general programs" (Wahlquist & Thornton, 1964,

p. 3).

Mission. The mission of higher education is said to be "teaching (and learning) research (and scholarship) and public service" (Green, a, 1997, p. J4). "For the first 20 years of American higher education, from the middle of the seventeenth century to the middle of the nineteenth century, the principal focus was on the instructional mission" (Bogue & Aper, 2000, p.19). From the founding of Harvard in 1789 to the passage of the Morrill Act in 1862, higher education focused only on teaching. Only late in the nineteenth century, primarily after the founding of Johns Hopkins University in 1876, did higher education have any institutions that merited the name "university." Fundamentally, a shift occurred in higher education in America. The shift was not away from the primary function of teaching, though the recognition of the need to add sciences and modern languages to the curriculum. Adding these courses followed the 19th-century German university model. With these additions to the curriculum and faculty who had trained in Germany, a new element was added to higher education in America, the research mission (Brubaker & Rudy, 1997).

The third mission of the university— public service—"is uniquely American in its origins, intent and content" (Bogue & Aper, 2000, p. 20). The public service element of the American higher education system has its roots in five different movements or programs. These movements are the American lyceum movement of 1826; the Chautauqua, founded by William Raney Harper of the University of Chicago in 1874; correspondence study, which began in 1873 and was incorporated into Chautauqua; university extension, which was a movement from 1905-1925; and finally, agricultural extension enacted by the United States Congress in 1914 (Bogue & Aper, 2000; Kerr, 1931; MacKenzie & Christensen, 1971; Morton, 1953; Shannon and Schoenfeld, 1965; Smith-Lever Act, 2003).

University extension has been a primary objective of many institutions. “The new American university performs three independent functions—teaching, research, and extension. In so doing, the university seeks to be both responsible for traditional ideals and responsive to current public needs” (Shannon & Schoenfeld, 1965, p. 1).The goals of university extension leaders as related by Shannon and Schoenfeld (1965) were to:

1. Identify public problems and public needs;
2. Present these public concerns to the university;
3. Focus university resources and skills on the public concerns; and
4. Translate university specialties and skills into educational activities throughout the state or region.

At one time, university extension was a function in most public universities. University extension has evolved into continuing education, described by Shannon and Schoenfeld (1965) as delivering the regular university curriculum to the student who cannot travel to the campus. Another form of university extension has evolved into adult education. Adult education is primarily non-credit courses of interest to the non-resident, off-campus adult population throughout a state. What can also be described as university extension is agricultural extension, which was established by the United States Congress in the 1914 Smith-Lever Act for land grant colleges. As land grant institutions progressed toward fulfilling their purpose, it became apparent that not everyone in need of enhanced knowledge and skills was able to attend classes at a university. The federal government in 1887 had already authorized funds to establish an agricultural experiment station in connection with the land grant colleges. The Smith-Lever Act created the system of distribution of information to practitioners about the research and knowledge developed at the institutions.

Administrator's vision. "Leadership in higher education in large part is the taking of effective action to shape the character and direction of a college and university" (Kouzes & Posner 1982, p. 277). Kerr & Gade (1986, p. 67), writes, "successful leadership requires both vision and the ability to persuade, or otherwise induce, others to support the vision." Vision in higher education is the ability of the human "to see with our minds, to imagine what the institution has been and what it might become with the leadership of a few or many" (Keller, 1995, p. 382). Institutional leadership deliberately tries to enhance and change the institution for the better. The history of higher education is replete with examples of visionary leaders in this country who brought their institutions forward. These leaders all had a similar intent: to be a significant force and accomplish a goal no one else has accomplished before. To do this, the leader must have a theme of core ideas and thoughts, a process to implement his or her vision. Institutional leadership deliberately tries to enhance and change the direction of IHEs for the better. The direction and leadership the leader provides must adhere to the themes he or she has developed. This allows the leader to make speeches using the theme, write about the theme, and constantly remind those in the institutions of the vision (Keller, 1995; Kouzes, 2003; Lucas, 2000).

Keller (1995) defines a vision as needing a finite outcome, a picture of what the future of the institution can look like, a goal that is slightly out of reach but with an outline of the steps that will make it attainable. Dolence and Norris (1995) describe a university leader's vision to transform their institution as "learning vision pull" (p. 87). This process is essentially the steps Keller describes: out-of-reach goals combined with a tangible outcome. Dolence and Norris state learning vision pull allows university leaders to "see beyond the curvature of the earth and then apply that vision" (1995, p. 87).

The literature indicates that the vision to establish themes for a higher education institution is primarily the purview of the provost or chief academic officer. However, the provost seeks out and relies upon the assistance of additional key administrators as part of a leadership team who should agree on the vision and work to achieve it. The provost relies on the chief business officer to join in the group's vision and work with them to allocate the institution's resources. The importance of the chief business officer and the provost in sharing the vision, agreeing with the priorities and goals established for the institution, collaborating on the strategies necessary to meet the goals, and agreeing to commit the necessary resources will ultimately make their institution thrive and grow (Dolence & Norris, 1995; Kouzes & Posner, 2003; Lambert, 2002).

"The vision for any institution should combine its tradition, culture and core values." (Keller 1995, p. 390). It is the shared sense of the administrative team that not only fulfils the mission, but also responds to the public's expectations for the institution (Keller, 1995; Kouzes & Posner, 2003).

Role of Administrators

Chief Academic Officer

The modern complex IHE requires an administrative officer between the level of dean and president. In these institutions, this is the highest academic officer or provost. In most IHEs, the chief academic officer reports directly to the president and is in the number-two position of authority and responsibility in the institution (Lambert 2002; Weingartner, 1996).

A study reported by Terrence Mech in the *Journal of Higher Education* (1997) found that the chief academic officer emerges "as an internally focused senior-level team manager in a collegial organization trying to develop and maintain a smooth running operation" (p. 291).

Mech reported that the roles of the chief academic officer are to be a" leader, resource allocator and disseminator, monitor, entrepreneur, disturbance handler, figurehead, liaison, and finally, spokesperson and negotiator" (p.288).

Chief Business Officer

The chief business officer is the one individual in an institution who is responsible for managing all its resources. This individual manages the business and financial affairs of the institution, determines global policies for all business and finance, creates the systems to hire and train appropriate personnel, and serves as financial advisor to the president (National Association of College and University Business Officers, 1974).

A study for the National Association of College and University Business Officers in 2000 surveyed chief business officers regarding their unique role in higher education. This study determined there were 17 skills associated with the roles and functions of the business officer. Among the variables listed, the chief business officer is a financial planner; has intimate knowledge and understanding of institutional, state and federal policies; possesses the ability to oversee facility construction, operations and maintenance; has hands-on knowledge of the budgeting process and board governance procedures; and, in short, is crucial to the institution's pursuit of academic excellence (Hurley, 2002; Katz & West, 1992).

Chief Information Officer

Twenty years ago, the top information technology manager on a campus knew little about managing information, but was likely the "sharpest technologist" (McClure, 2003, p. 8). McClure defines the current environment as a revolutionary period on campuses as information technology management and planning moves to a central administrative function inside the institution. As technology management becomes a central administrative function, it is the chief

executive officer (CEO) who defines the parameters of the management and planning for the centralized information technology function. To this end, chief information officers (CIOs) “are reporting directly to their organization’s CEO and serving on the CEO’s executive management team” (Zastrocky and Schiler, 2000, p. 53).

In a study published in January 2004 by the Educause Center for Applied Research (ECAR), “nearly 40 percent of the senior-most information technology leader respondents report to the CEO, and 50.6 percent are members of the president’s/chancellor’s cabinet” (Katz, Kvavik, Penrod, Pirani, Nelson & Salaway, 2004, p. 6). The study found that those individuals who are involved in the senior leadership team of the institution were more involved in the central information technology (IT) planning processes and governance, chaired top IT steering committees, and could be strong advocates for IT on their campuses (Katz et al, 2004).

McClure, as well as Zastrocky, and Schiler, articulated specific roles for the chief information officer on the campus. McClure (2003) delineates the roles of the chief information officer as the individual who focuses on the central IT infrastructure in a distributed environment, and provides basic system support, planning, and coordination. Zastrocky and Schiler describe more global roles for the CIO, a description which was also supported by the ECAR study. They define the CIO as having “two distinct roles within two different organizational units” (2000, p. 53). These roles are 1) as the leader of IT on the campus and 2) as a member of the CEO’s senior institutional management team (Katz et al, 2004; Kouzes & Posner, 2003; Lambert, 2002; McClure, 2003; Zastrocky & Schiler, 2000).

Funding Strategies

Land grant, state universities and those universities that are both are considered public institutions in their respective states. "States invest in colleges and universities to promote social

and economic development. Democracy rests on an informed and knowledgeable citizenry, and state support of education contributes to that goal" (Marks & Caruthers, 1999, p. 1). A number of funding sources support public higher education; however, the bulk of funding is from three sources: state appropriations, tuition, and mandatory fees. *The Southern Regional Education Board Fact Book on Higher Education 1998/1999* reports that nation-wide, state appropriations accounted for 44 percent of revenue, and tuition and fees made up 20 percent of revenue. All other sources of revenue totaled 36 percent. According to 1999-2000 data from the United States Department of Education, tuition as a source of revenue for public, degree-granting institutions is 18.5 percent of the total institutional revenue. The single largest source of revenue for these public universities continues to be state government at 35.8 percent, followed by sales and services at 21.6 percent (Marks & Caruthers, 1999; Rasmussen, 2003).

In addition to state appropriations, tuition, and fees, land grant and state universities also rely on other sources of revenue. These institutions have extensive portfolios of stock, land, and other securities donated by wealthy alumni and other benefactors. These IHEs maintain sophisticated fund raising operations through their development and foundation offices for the express purpose of raising money to support the institution. Unrestricted private gifts are encouraged as the institution can determine spending priorities for the gift (Robins, 1990).

Barr states that "undergraduate tuition is the engine that drives much of higher education" (2002, p. 13). Tuition is calculated on the basis of each credit hour enrolled in per student, or on a full-time enrollment basis per student.

In addition to tuition, many institutions charge additional fees to cover a myriad of goods and services offered by the institution. Examples of fees might include an athletic fee to assist with the costs of intercollegiate sports and intramural programs, technology fees to assist with

the costs of computers and technology infrastructure, or laboratory fees that science students pay for supplies and equipment (Heller, 2001). User fees are also assessed by some states to make up for limitations on tuition. States use fees for certain courses and programs to supplement the tuition paid for these programs (Rasmussen, 2003).

Starting in the mid-1950s, with the advent of federal programs for contract research, the federal government has "assumed 83% of the nation's total research budget in the natural sciences" (Brubacker& Rudy, 1997, p. 231). These grants provide direct support for salaries and operating costs for the research programs of the institution. Universities also gain funding through the indirect costs paid by contracting agencies for facilities as well as other costs of performing the research work. In addition to research contracts and grants, universities have contractual arrangements with (or receive grants from) business and industry for direct service in return for payment to the institutions. Examples of contracts include delivering training for a state agency, teaching a course for employees of a business, or conducting a research project for a company (Barr, 2002; Robbins, 1973).

Another potential source of revenue is internal reallocation. This is an effort to reshuffle existing institutional funds from units that may have excess funds or inefficiently used funds to higher priority units with insufficient or no funds. This approach allows the institution to provide new revenues that have been determined to be a higher priority from existing funds (Robins, 1973).

Distance Learning

The first university to offer correspondence instruction was Illinois Wesleyan University, in 1873. The university offered non-resident courses to students in preparation for university

examinations and potentially an A.B. or Ph.D. and eventually an A.M. or Ph.D. (MacKenzie & Christensen, 1971; Rumble & Harry, 1982).

The clear leader in correspondence instruction in higher education was the University of Chicago under the guidance of its first president, William Rainey Harper. Harper's first forays into correspondence instruction was through his role as a language teacher in a summer Chautauqua program. This movement was considered to be the historical basis of many innovations in higher education in the United States, some of which include university extension, summer sessions, university presses, and distance learning through correspondence instruction. The Chautauqua University began offering degree credit courses in 1883, and is considered an integral component of the history of distance learning in the United States because of its profound influence on higher education institutions and particularly on the University of Chicago.

As a young Hebrew teacher at Baptist Theological Seminary in Morgan Park, Illinois, Harper was concerned that students could not take his courses because of space limitations at the seminary. As a result, he teamed up with the Chautauqua University to teach his Hebrew courses and created Harper's Correspondence School of Hebrew. Harper resigned his post in 1892 to become president of a newly formed institution, the University of Chicago. Harper organized the University of Chicago into five divisions mirroring the five educational principles of the Chautauqua. One division was University Extension, including provisions for correspondence instruction. This division, later to be known as the Home-Study Department, offered college courses that met traditional academic requirements that were modified to fit the needs of correspondence students (Bode, 1956; MacKenzie, Christensen, & Rigby, 1968; Nanson, 1989).

Among other institutions engaging in correspondence study was the University of Wisconsin, whose catalog in 1889-1890 offered private correspondence study at the University in response to demands to expand the curriculum and adapt teaching methods to the needs of students, particularly for vocational training. By World War I, Pennsylvania State College, Baylor University, the University of California at Berkley, and the University of Nebraska were also offering correspondence courses for college credit (Curti & Carstensen, 1949; Eddy, 1956; Sherow & Wedemeyer, 1990).

Institutions of higher education are currently being challenged to adapt to a more competitive environment. The race to attract students and provide "anywhere, anytime" learning is forcing higher education institutions to "capitalize on emerging market opportunities and respond to the demand for services to a group much broader than the traditional eighteen to twenty-four year old students" (Oblinger & Kidwell, 2000, p. 33). This environment is changing the thinking of everyone in the higher education community. The competition is for the student as a customer (and education as a product), and institutions are fighting to keep their marketshare (Daniel, 1999; Dunning, Vankekerix, & Zaborowski,1993; Liberman, 2002).

The post-secondary education student of today is driving this competition and requiring that the learning process change. Today's college student attends classes that utilize multi-media tools and computer-mediated discussions, they submit papers and assignments and take tests electronically, they contact their professors through email, and they conduct academic research on the Internet. Students expect this type of learning because it is what the workplace will expect of them, as they must integrate technology into their jobs (Green, 1997; National Association of land Grant Universities and Land Grant Colleges, 2003).

As distance learning initiatives are announced almost daily, “universities are taking aim at a large, growing, and thus far untapped audience for distance learning: their own graduates” (Altschuler & Janis, 2000, p. 1). Several IHEs around the country are announcing educational opportunities for their alumni, because they realize that alumni provide an unparalleled opportunity for institutions to reconnect and re-establish loyalty, generate new revenue streams, and identify those who are willing to serve the institution and make major monetary contributions. The alumni of many institutions are seeking the educational opportunities they need to remain a viable force in their chosen careers. The life-long learner will currently need to train, re-train, and re-learn not just basic skills, but also new information. The shelf life of a technical degree is five years. Many fields such as science, engineering, and law are changing so rapidly that constant updates are necessary. Individuals with a degree are looking for access to new learning opportunities to improve their job skills and enhance their careers (Twigg & Oblinger, 1996).

The business world is being totally reshaped by demographics. More women and minorities will attend universities and subsequently enter the workplace. The worker of today and the future will remain in the work-world longer and will change careers more often. These workers will need education, training, and retraining, and instructional delivery systems must be flexible to accommodate them (Katz, 1999; Oblinger, 1998). A report released by Booz Allen Hamilton (2002) forecasts “the greatest potential for e-learning success within the professional and corporate segments is delivering highly targeted curricula designed to develop specific, job-related skills or gain professional credentials” (p. 6).

Institutions of higher education are not only responding to similar market forces and trends as these but also to the external groups that exert political, social, and financial pressure

on the institutions. Resmer, Mingle and Oblinger (1995), in a report for the State Higher Education Officers, writes that there are external influences beyond students and faculty that impact the decision-making process of IHEs. Resmer et al defines these groups as ranging "from senior-level policy makers to community organizations, employers, technology vendors and alumni" (p. 22).

With the market demands on higher education dictating that education is a product, some universities are striving to enhance revenues by offering the "product" through distance learning aided by technology (Berg, 1998). The literature points out that higher education institutions, in order to meet demand, see distance learning as a revenue generator for the institution. Distance learning programs require significant up-front investment. This poses a dilemma for university administrators who must determine whether it will provide a financial reward and be worth the investment costs. The opposite holds true as well, as institutions and policy-makers believe distance learning will produce savings for the institution. The basic idea is that the IHE can offer distance learning to a larger percentage of off-campus students, which decreases the pressure on on-campus programs and facilities and brings in additional revenue (Bates, 2000; Berg, 1998; Daniel, 1999; Garrison & Anderson, 1999; Hanna, 2000; Noble, 1998; Smith, 1998).

To dream, to plan, to outline, and to implement a vision in higher education, the institutional leadership must take center stage. This is particularly important if the institution is encouraging new ways of thinking in the organization, promoting new processes, or advocating the use of technology to fulfill the mission of teaching, research, and service. The leadership is the critical element (Bates, 2000).

University vice-presidents have a responsibility to take the long view to respond to societal pressures and to weigh the interests of the institution as a whole. To this end, it is the

vision of the institutional leadership that guides the strategy of the university for the future (Bates, 2000). The strategic plan for information technology must support the priorities of the institution and the institution's administrators. Campus leaders have a choice: Do they "want the campus to be a pioneer, close follower, middle of the pack, or trailing institution" (Smallen & McCredie, 2003 p. 46) with respect to technology?

A two-year study conducted by the Commission on National Investment in Higher Education concluded that if IHEs are going to be serious about increasing their productivity and accessing enhanced funding from their state legislatures, they must turn to technology. Technology is a prime tool with which institutions may reach off their campuses and cooperate with faculty from other IHEs to offer instruction to students wherever they are enrolled. Two good examples of inter-institutional cooperation are the Western Governors University and the Southern Regional Electronic Campus. The latter is composed of 150 participating institutions offering associate's, bachelor's and master's degree programs to students from the participating institutions (California Distance Learning Project, 2000; Katz, 2001; Van Dusen, 2000).

Another opportunity for inter-institutional collaboration is university research. The key purpose of a university—research—is also undergoing profound change due to technology. From the ability to solve previously unsolvable problems, to providing the results of a sophisticated study, to simulating natural phenomena in the lab, the rapid advance of technology is the common contributing factor (Ayres and Grisham, 2004; Duderstadt, 1999; National Research Council, 2002). Technology's impact on the research community has produced a benefit never fully exploited in higher education: collaboration. Researchers and scientists world-wide can now collaborate and share information with each other as easily as they can with a researcher

down the hall (Duderstadt, 1999; Farrington, 1997; National Research Council, 2002; Olsen, 2003).

The foresight of William Raney Harper of the University of Chicago to bring the university to a student's home and attract others to accept his vision for education is what IHE administrators today are facing. It will take, as Bates (2000) wrote, the senior leaders to endorse, articulate, or facilitate the themes, plan, and goals of their institution.

Use of Technology

The development of technology for higher education paralleled the development of distance learning. The first person to produce film for classroom use was Thomas Edison in 1911. Universities such as Yale University and the University of Minnesota used these films to become players in the early nineteenth century of educational films. (Saettler, 1990).

A number of universities, notably the Iowa State University, Pennsylvania State College, Ohio State University, and the University of Wisconsin began general radio broadcasting between 1911 and 1922. Iowa State University, in February 1925, offered its first five radio courses for credit. There were 80 students enrolled in those first course offerings, of which 64 completed their coursework for a degree at the university (Moore & Kearsley, 1996).

Educational television was in its early stages of development in 1934. In that year, Iowa State University began broadcasting programs about oral hygiene and identification of constellations. Five years later, more than 400 educational programs had been broadcast by Iowa State. The real expansion of educational television broadcasts occurred following World War II. At that time, 242 of 2053 television channels were allocated to noncommercial use. The networks also broadcast programming provided by universities; an example was NBC's credit courses for Johns Hopkins University (Angevine, 1997).

The first system that used audio conferencing was the Educational Telephone Network (ETN) at the University of Wisconsin. This system, established in 1965, was conceived to provide continuing education from the university. Over the years, the system expanded to many professions to provide continuing education or non-credit courses (Moore& Kearsley, 1996).

"Technology is the essential component for distance learning" (Garrison, 1990). The changes in our society due to the rapid advances of technology are moving this country from the Industrial Age to the Information Age at lightning speed. Businesses and governments are reorganizing to improve productivity and quality, and to contain costs. Certain areas of universities have primarily benefited from the digital era and while teaching has lagged behind in exploring technology's potential, instructional practices are now beginning to emerge that take advantage of what technology has to offer (Hanna, 2000; National Research Council, 2002; Newman & Scurry, 2000).

The simple, two-way communication loop offered by print and mail is no longer acceptable in distance education. This method has been replaced by telecommunications technology that plays a major role in the delivery of distance learning. For instance, the leading telecommunications technology, according to Garrison, is "not broadcast television, the quintessential technology is teleconferencing." (1990, p.43).

A July 2003 United States Department of Education study reported for the 2000-2001 academic year that 50 percent of all post-secondary institutions offered distance learning courses to a total of 2.8 million students. Of the institutions offering distance learning leading to a degree, public four-year institutions were most likely (48 percent) to offer degree programs to be completed entirely through distance learning (National Center for Education Statistics, 2003).

The survey documented the Internet as the most utilized delivery system for distance learning courses. Most distance learning courses are delivered via the Internet using slides and lecture notes coupled with printed textbooks and on-line course packets. Among those institutions offering distance learning courses, the majority (90 percent) responded that they offered Internet courses using asynchronous, computer-based instruction. Other methods reported in the survey were two-way video with two-way audio (51 percent) and one-way pre-recorded video as the primary methods of delivery (41 percent). In addition, 29 percent of the institutions offering distance learning courses used CD-ROM as the primary delivery method (National Center for Education Statistics, 2003).

A new element of distance learning is the virtual university. The virtual university is essentially a university without walls. It is an organization designed to deliver courses and accreditation to students through electronic delivery methods (Bates, 2000). These universities exist in many forms and do not have to conform to academic constraints that bind traditional universities. There are different iterations of these virtual universities, one of which is to serve as a broker for courses supplied by traditional universities. An example is the Western Governor's University founded by the governors of 11 western states to deliver education to students nation-wide (Duderstadt, 1999; National Research Council, 2002; Neal 1999; Oblinger & Rush, 1997).

The most successful for-profit, non-university-initiated virtual university is the University of Phoenix. The University of Phoenix offers traditional, classroom-based instruction for both undergraduate and graduate students. The university is based in Phoenix and operates in many states around the country. These students attend classes in learning centers that offer library support and administrative services to students (Hanna, 2000; (National Research Council, 2002).

Funding Sources

The literature on technology does not include much information about sources of revenue. There are studies that discuss a few current resources and there is some information on "new" sources of revenue that in most cases have not yet been utilized or explored by universities.

A 2000 Market Data Retrieval (MDR) survey estimated that IHEs spent $2.7 billion on computer hardware and software; the bulk was spent on academic computer hardware. Total spending for administrative hardware was projected to be $727.8 million, with spending on software projected at $762.8 million. According to the survey report, these figures significantly understate the total spending for technology because they do not include people (Phipps & Wellman, 2001).

The current sources available to fund technology cited in the literature reflect spending at all the Carnegie classification of institutions. The Carnegie Foundation (2004) classifies IHEs according to a number of criteria including size, degrees granted, and programs offered in the institution. One study examined the funding for information technology only at Carnegie Classification Doctoral Extensive and Intensive higher education (Carnegie Foundation, 2004). The *Core Data Service 2002 Summary Report* concluded that "Carnegie classification is still a reliable predictor of the amount of money allocated to the IT Organization" (Hawkins, Rudy, & Masden, 2003, p. 12). Doctoral campuses rely more heavily on funding sources other than on annual operating expenses. These institutions rely primarily on capital appropriations and fees for central services as a means of securing revenue for information technology (Hawkins, Rudy, & Madsen, 2003).

A discussion of "new" revenue sources for universities is found in Hezel Associates 1996 *State by State Report*. In Hezel's analysis, a number of revenue sources were cited which include foundations, technology companies, federal grants, student user-fees, and general revenue funds. Hezel found state governments contributed about half of the external funds, with the federal government and foundations contributing the balance. While the federal government's share is only roughly 15 percent, it is a very important component. These funds provided a critical source of start-up funds, assisting universities to acquire equipment and institutional support (Hezel, 1996).

State funding programs for information technology have resulted from a variety of sources. Missouri, for example, relies on a videotape rental tax to fund the Video Instructional Development and Educational Opportunity Fund (VIDEO). Texas poured $95 million in state funds into infrastructure development and training. Georgia and Michigan reaped windfalls from the excess earnings of telecommunications companies. States such as Montana and Wyoming have appropriated one-time state funds for specific projects. Many states, however, have allocated no new money to information technology, and in some cases, such as in Alabama and North Carolina, have reduced funding (Hezel, 1996; Phipps & Wellman, 2001).

A paper delivered at the 2003 EDUCAUSE Midwestern Regional Conference listed a number of "potential new funding sources universities could pursue for information technology funding." The list included some of the sources in Hezel's 1996 list and other potential sources. Listed in the EDUCAUSE report (Antolovic, 2003, p. 9) were:

- Sponsored research dollars;
- A development office for IT as part of the university's fund raising efforts;
- Commercializing intellectual property;

- New fees such as student technology fees and a targeted tuition component;
- New business lines, a computer store; and
- Vendor incentives.

Land grant and state universities receive appropriations of tax dollars annually or bi-annually from their governor and state legislatures. In terms of revenue policies for universities, a study performed in 2001 by the Institute for Higher Education Policy raised the stakes for state governments. The study recommended state policy makers and institutional leaders identify technology infrastructure revenue policies. The states should assess the means with which institutions are funding technology and determine where new revenue might be available.

Finally, revenue opportunities and cost efficiencies that could possibly be achieved through purchasing and leasing, vendor relationships, and alliances with for-profit entities should be encouraged (Phipps & Wellman, 2001).

For too long, IHEs have struggled to find the resources for information technology because IT does not fit the general model of higher education funding categories (Phipps & Wellman, 2001). IHEs have also struggled because the costs are high and the programs aren't making the institutions rich; in some cases, they actually cost more than they earn. Information technology, particularly for distance learning, costs institutions money and time in dealing with issues stakeholders weren't aware of or had not thoroughly discussed (Carr, 2001). Still, other institutions use temporary budget surpluses (termed "budget dust") accumulated at the end of some fiscal years. Hence the feeling that information technology was nice to have if there was budget dust available (Smallen & McCredie, 2003).

The Costs of Distance Learning

University students, faculty and, to an extent, the public expect and demand access to electronic information technology. What is the role of university administrators in determining the appropriate funding strategies for information technology, credit course development and delivery, and student services (Bates, 2000; Graves, 1999; Green, 2003; Hawkins, Rudy, & Madsen, 2003; Phipps, 2002; Smallen & McCredie, 2003; Texas Higher Education Commisssion, 1996)?

The Texas Higher Education Commission offers a comprehensive list of costs for IHEs. Distance learning costs include:

- network design, configuration, and installation
- hardware and software acquisition
- facilities—acquisition, modification, maintenance
- faculty, staff, and technical support personnel
- program development, administration, management
- academic support services—counseling, library resources, and so forth
- initial and on-going training of faculty, staff, students, administration
- instrumental design and program development
- technical integration/conversion of diverse delivery modes
- marketing, recruiting, admissions
- program research, assessment, evaluation, quality control
- maintenance and upgrade of systems—both software and hardware
- transmission charges (satellite time, phone lines)
- additional student support costs
- faculty and staff travel to remote sites

- course acquisition and licensing fees

Technology, Credit Course Development Credit, and Delivery

While the landscape of higher education is being dramatically altered by technology, relatively little attention has been given to the costs of technology. It is particularly difficult to pinpoint the costs and perceived financial benefits of distance learning. Since the equipment used for distance learning also often supports on-campus operations, it is problematic to assign direct costs to distance learning. Assigning direct costs is not a precise effort; identifying hoped-for financial savings is also clouded by the issue. In a computerized, cost-simulation model, the findings indicate that the cost structure for distributed technology is different from the cost structure for classroom technology. Instruction using distributed technology has a large start-up or a fixed cost that is not dependent on enrollment (Phipps & Wellman, 2001).

In a computerized cost-simulation model, the findings indicate the cost structure for distributed technology is different from the cost structure for classroom technology primarily because of course development costs. The development of a course is the total responsibility of the faculty member teaching the course, not the IHE. Course design is a "handicraft" industry in which the faculty member develops his or her own individual courses. Developing the courses to be used for distance learning require faculty members to spend more time preparing the course materials and the actual delivery of the course work. Faculty time is money. The result is that the development of courses for distance learning is a major cost driver for the IHE (Altbach, 1999; Jones & Matthews, 2002; Oblinger& Rush, 1997; Twigg, 2003).

The dilemma for higher education administrators lies in determining the actual costs of delivering distance learning. The costs of offering courses to distance learning students are not calculable by using the cost structure of students enrolled in a course. The costs vary depending

upon the mode of delivery that is used, the necessary resources, and the technical involvement. The research indicates, however, the potential for long-term financial rewards for IHEs are great (Bates, 2000; Jewett, 2000; Larson & Strehle, 2000; Maltz & DeBlois, 2005; McCollum, 1999).

Student Services

A 2002 study of the Southern Regional Education Board found that "student services play a critical role in student learning and success" (p. 5). Recently, student support has gained attention and interest among distance educators. These student services are important for a number of reasons. Services "can enhance enrollment, decrease attrition, and provide for a well-rounded program. In addition, they ease students' adjustment to college, assist in their intellectual and personal growth and contribute to their academic success" (LaPadula, 2003, p. 119).

A study conducted among distance learning students at Eastern Oregon University concluded that a key component of a distance learning student's success was the availability of support services that recognize the unique needs of these students. The survey and companion interviews described the needs of distance learning students as access to support services such as the library, bookstore, computers, and learning support services, i.e., tutoring, testing, counseling, and other campus services (Barone, 2003; Chastain, 2003; Kretovics, 2003; Hill, 1999; LaPadula, 2003; Oblinger, 2004; Regional Accrediting Commissions, 2003; Raphael, 2005; Sachs & Hale, 2003; Workman & Stenard, 1996; Distance Learning Policy Laboratory, 2002; Young, 2000).

The Western Cooperative for Educational Telecommunications produced a *Guide to Developing On-line Student Services*. This is not a best-practices guide for distance learning students, although it is a listing of good practices for students who cannot make a trip to campus.

The student support services in the guide include most services available to on-campus students and additional specific support services for distance learning students.

The services listed in the *Guide* include:

> Information for Prospective Students
>
> Admissions
>
> Financial Aid
>
> Registration
>
> Orientation Services
>
> Academic Advising
>
> Technical Support
>
> Career Services
>
> Library Services
>
> Services for Students with Disabilities
>
> Personal Counseling
>
> Instructional Support and Tutoring
>
> Bookstore
>
> Services to Promote a Sense of Community
>
> (Western Cooperative for Educational Telecommunications, 2003, p. 5).

The student, whether he or she is on the campus or lives hundreds of miles away, expects a complete, full-service approach in exchange for the fees he or she pays. These expectations should push the institution to provide the infrastructure that will meet the needs and demands of students (Oblinger & Oblinger, 2005). “Although the research about the use and benefit of online

student services is in its infancy, the value of providing these services to help enhance on-campus services is to help foster a sense of belonging to the institution" (Crawley, 2004, p.2).

Summary

The chapter reviewed two primary areas of literature; one area of focus was higher education, and the second area focused on distance education. The discussion on higher education looked specifically at land grant and state universities. The literature that related to the mission and history of these two types of institutions and the vision that administrators use to drive the functions of the institutions was examined. Additionally, since this study centers on funding issues, the literature encompassing all portions of higher education funding was reviewed. A glimpse of the changing landscape of higher education indicated that delivery systems are changing significantly as we move from the Industrial Age to the Information Age. A driver of this change is the evolution of technology, which is presented in this chapter. Technology provides revolutionary opportunities in all facets of our lives, but what is its purpose in higher education? The literature discussing the purpose of technology and the use of technology for distance education is in this chapter. After determining the uses of technology for higher education, the literature of how the funding for distance learning is secured. Additionally, the chapter looked at the costs of technology, credit course development, and delivery for offering distance learning.

The literature review revealed a lack of research about the gap between the desire to offer an Information Age learning environment and the ability to pay for this type of learning environment. The research indicated land grant and state supported universities know this is what they have to do to remain open and viable, but they do not know how to put the funding package together. The literature in this chapter reinforced that this problem of funding strategies for

distance education in state and land grant universities—as the funding strategies apply to the mission of the institution and the vision of the institutional leadership—merits investigation. The following chapter outlines the procedures used to investigate the problem.

CHAPTER THREE

METHODOLOGY

This chapter describes the methodology used to conduct the research for this study. Included in this chapter are the questions for the study, the research design, the population, instrumentation, data collection, and data analysis.

Questions for the Study

This study was an investigation of mission, vision, funding strategies and student services related to distance learning as expressed by university administrators in three types of institutions of higher education (IHEs): land grant universities, state universities, and those institutions designated as both a land grant and state university by their state legislatures. The study looked at how administrators' responses to institutional mission, administrative vision, and funding strategies for offering distance learning in their institutions are related? Also the study looked at whether these interrelationships differed across the types of institutions, the student population size of the institution, or the budget of the institution?

In addition the study examined the types of revenue sources used by IHEs. Finally, student services that the institutions offer to distance learning students, as well as mechanisms to pay for these services, were explored in the study.

Research Design

The research design was a survey. Rea and Parker (1997, p. 1) state, "surveys have broad appeal…because they are perceived as reflective of the attitudes, preferences, and opinions of the very people from whom society's policymakers derive their mandate." An advantage of survey research is that it discovers "characteristics of institutions and communities" (p. 1) by studying

certain individuals who are representative of those institutions and communities. The information obtained through a survey method is self-reported from individuals about themselves, their attitudes and opinions, or their behavioral patterns (Alreck & Settle, 1995; Cosby, 2004; Converse & Presser, 1986; Dillman, 1978; Dillman, 2000; Dillman,Torta & Bowker, 2003; Grover, 2003; Schononlau, Fricken & Elliott, 2002). The survey research method was used to glean information from university administrators around the country in a short time frame, and in the most cost-efficient manner available to the researcher.

Population

The unit of analysis for this study was three senior administrators in institutions of higher education. Three senior administrators in three types of state institutions constituted the population. The senior administrators chosen were the chief academic officer, the chief business officer, and the chief information officer in land grant universities, state universities, and institutions that are designated by their state legislatures as both a land grant and state university. These institutions are members of the National Association of State Universities and Land Grant Colleges (NASULGC). These administrators were chosen because they are perceived to be the top administrators responsible for leadership and decision making for distance learning in their institutions.

The administrators were identified after the appropriate universities in each state were selected. To obtain the list of land grant universities, the researcher used the web site of the National Association of State Universities and Land Grant Colleges, for a listing of all NASULGC members that are land grant institutions (NASULGC, 2005). The land grant institutions are characterized by NASULGC as those institutions whose state legislatures accepted the provisions of the Morrill Act, enacted by the United States Congress and signed into

law on July 3, 1862 (United States Congress, 1862). Thirty-seven land grant universities were selected for the study.

After identifying the land grant institutions, the investigator returned to the NASULGC web site for a listing of all other member institutions. From this list, the researcher selected the state universities believed to be the counterpart to the land grant institution in each state. Thirty-seven state universities were the selected for the study.

The final group of IHEs (those that are both land grant and state institutions) were identified using the same listing of NASULGC members. It was apparent which states had only a single institution that served as both the land grant and the state university. Thirteen institutions were identified as both land grant and state universities and were selected for the study. No institution of higher education systems were included in the study, only single institutions.

To select the appropriate university administrators, the researcher utilized the web site of each institution selected for the study. From the sites, the researcher obtained the names of the individuals currently serving as the chief academic officer, chief business officer, and chief information officer in each institution. The institutional online directories yielded the e-mail addresses for each of these individuals. The chief information officer may have a title that does not readily lend itself to easy identification at all IHEs in the country. The researcher used the same online directories for the chief information officer. If the individual name or position was not evident, the researcher chose the individual who was listed in the organizational chart under the chief academic officer who appeared to have information or distance learning responsibilities. The list is available in Appendix A.

The population of the survey was 261 individuals in 37 land grant institutions, 37 state universities, and 13 institutions designated as both a land grant and state university. Among the

261 were 79 chief academic officers, 79 chief business officers, and 79 chief information officers for all three types of IHE.

The researcher chose the three types of IHEs (land grant universities, state universities, and those universities that are designated both) because of the similarities of these types of institutions as compared to the researcher's home institution. Following are some specific reasons for the choices. First, land grant universities were chosen because the researcher was conducting a descriptive study to assist administrative policymakers in her home land grant institution. Second, all three types of institution, like the investigator's home institution, enjoy some level of state tax-support. Third, the institutions all collect tuition and fees from their students and this becomes part of the institution's revenue base. Fourth, the institutions were perceived as treating students as either residents or nonresidents for tuition and fee assessment. Fifth, the land grant institutions in particular (and possibly most of the state universities) have research missions that expand the institution into their communities and states. Sixth, the institutions have at least a 100-year history of education extension beyond the actual campus boundaries. And finally, all the institutions are accountable to state elected officials and their constituents.

The three categories of administrators selected for the study were chosen because they were viewed by the researcher and shown in research on higher education administration as the key policymakers in IHEs (Altbach, 1999; Barr, 2002; Birnbaum, 1988; Lambert, 2002; Lucas, 2000; Martin& Samuel, 1997). The research in higher education also contends that these individuals sit on the management, decision-making, and policymaking team of their respective IHEs along with the chief executive officer. In the researcher's home institution, these officers control the academic, financial, and technology systems of the institution and act as

policymakers as well. This study was conducted to supply information for these specific administrative policymakers. In support of this study, the chief academic officer, chief business officer, and chief information officer in the investigator's institution agreed to contact their counterparts at the selected IHEs and request their participation in the research study.

Kobulnicky (1999) contends the chief academic officer should either express the vision for information technology or help develop a university-wide vision. This administrator's role is to explore ways to finance the development of an information technology plan for the university and ensure the plan fits into the academic scheme of the institution. He chief academic officer serves between the level of dean and president and is the highest academic officer or provost. In most institutions the chief academic officer reports directly to the chief executive officer and is the number two position in the institution (Lambert, 2002; Weingartner, 1996).

The chief business officer oversees the entire budget of an IHE. This administrator also is a key player in technology planning for the institution. As part of the administrative team, it is necessary for the chief academic officer to partner with the chief business officer to create the institutional budget, to examine the chief business officer's priorities (and vice versa), and have the same level of understanding as do the other administrators with respect to important problems and issues concerning distance learning (Bates, 2000; Lambert, 2002).

Contemporary higher education literature indicates the chief information officer (CIO) in today's fast-moving information technology environment should be an integral part of the university's executive team. Zastrocky and Schiler (2000) state that the CIO has to know where the institution is heading in regards to teaching, learning, and research. In addition, they point out that the CIO must understand the institution's funding strategies, the institution's current revenue streams, and the prospect for new and different revenue streams. McClure (2003)

defines the role of the chief information officer as the individual who is responsible for the central information technology infrastructure in a distributed environment, and provides basic system support, planning, and coordination.

Instrumentation

The researcher designed a survey to collect the data. To design the survey the researcher conducted an interview with the chief information officer in the investigator's home institution; examined institutional websites from land grant, state universities and those that are both who currently offer distance learning programs; and reviewed the literature in the field of IHEs related to distance learning.

The chief information officer interview guided the research questions related to mission, administrator's vision and funding for distance learning in the three types of IHEs. The items on the survey related to these issues and the corresponding research questions are found in Table 1. A state by state analysis of funding for distance learning in IHEs, published by Hezel (1996), were incorporated into Survey Questions 6, 7,and 8 displayed in Table 1. Information for Survey Questions 9, 10, and 11 related to student services, displayed in Table 1 were aided by the review of the institutional websites and by the literature regarding distance learning and student services in IHEs. Survey Question 4 was included in the survey because from information received in the interview with the investigators chief information officer.

Table 1 - Research Question with Corresponding Item on the Survey

Research Question	Item on the Survey
1	4 Future of Distance Learning in Institution
2	2 Mission of Institution, 3 Vision of Administrator
3	6, 7, 8 Funding Strategies
4	9, 10, 11 Student Services

Fowler (2002) advises the survey designer to define an objective or purpose before writing the questions. The questions should reflect the objective and therefore the information the researcher is seeking in asking the questions. The research questions or purpose of the study guided the development of the questions. According to Dillman (1978, 2000), the survey items must be written to be respondent-friendly and to extract the desired information. He emphasizes that the survey must be simple, use simple wording, consist of short questions, and aim for short responses. Dillman, Torta & Bowker (2003) also suggest that questions should draw the respondent in and motivate him or her to respond to the survey. Open-ended question early in the survey draw the respondent in and encourage buy-in. Dillman and Torta (2003) state that questions should be specific and be written with the assumption that the respondents know less about the subject than they actually may know.

Alreck & Settle (1995) specify that like items be grouped together using the same scale or the same topics. Converse and Presser (1986), and Schononlau et al. (2002) recommend a number of rules to follow in constructing a survey in order to ensure a good response rate. The introduction or first question is emphasized to prompt the respondent to begin and complete the survey. Pre-testing the survey on a pilot sample and observing the responses closely is also recommended. Finally, Shafer and Dillman (1998) suggest sending the respondents a cover letter that explains the nature of the survey and how the research will be used in advance of the actual survey. If the survey is properly introduced, the response rate will be increased and the reliability and validity of the survey will be augmented.

The survey developed for this study consisted of 16 closed questions with one open-ended question for a total of 17 questions. The closed questions were designed to elicit specific answers. The one open-ended question allowed the respondents to answer a broad question about the future of distance learning specific to their institutions of higher education.

The Likert Scale is defined by Alreck and Settle (1995) as a set of responses that "states the issue or opinion and obtains the respondents' degree of agreement or disagreement with the question" (p. 117). The question about mission provided the respondent with a list of reasons that characterized his or her institutional mission in offering distance learning and provided a Likert scale for the responses ranging from *strongly agree*, *agree*, *neutral*, *disagree*, to *strongly disagree*. The question relating to administrator's vision for offering distance learning used this same Likert scale.

The question about tuition and fees charged to distance learning students asked the respondent to select one response. The three questions concerning funding sources and the three

questions referring to student services provided respondents with a list of responses and reqested they check all that apply.

The last closed questions were the demographic questions, which asked for information about the size of the institution, the type of the institution, the institution's budget (and the proportion of the budget from state sources), the percentage of the institution's courses offered through distance learning, and the percentage of the budget spent on distance learning courses.

Each of the senior administrators in the three types of institutions of higher education received the same survey. The researcher specifically chose the three senior administrators in the three types of IHEs because the likelihood of all three administrators from one institution responding to a survey was remote. The survey is found in Appendix B.

Reliability and Validity

Reliability is used to "measure the extent to which an item, scale, or instrument will yield the same score when administered at different times, locations or populations" (Garson, 2001 p. 1). A common test of reliability is Cronbach's alpha. To assist in establishing the internal consistency of the survey, the closed –end items on the survey were analyzed using Cronbach's alpha. The analysis of the survey items yielded a Cronbach's alpha of .845.

Face validity is what a research method appears to measure. It is important to the respondents who will be participating in the research that the method looks valid. Face validity is critical f there is a discrepancy between what a test appears to measure and what it actually measures (Anastasi, 1988; Creswell, 2003; Fowler, 1995; Krathwohl, 1998). Construct validity is defined by Krathwohl (1998, p. 426) "as a test or measure behaves as the definition of the construct predicts that it should". The survey was examined by a panel of experts in survey design. The panel compared the survey items with the research questions of the study. The

panel reported the instrument would measure the institutional mission, administrators' vision, funding strategies, and student services for distance learning students in three types of higher education institutions. In addition, the investigator pre-tested the invitation for participation and the questionnaire with an associate business officer and an associate dean of continuing education in the researcher's home institution. The associate dean of continuing education offered suggestions to broaden the response options related to the services higher education institutions provide to their students.

Data Collection

Survey data were collected through the Kansas State University 2.0 Online Survey System, which is a flexible Web-based survey creation tool. It is designed to poll, assess, report, and analyze the respondents' thoughts, feelings, and opinions. The system is available at no cost to students, faculty, and staff of Kansas State University.

The researcher chose to collect data electronically for reasons found in the literature on using e-mail to distribute a survey. Factors that influenced the decision to use email rather than regular mail included "speed, cost, sample control, convenience, response rate and quality of data" (Mehta, 1995, p. 430). The survey can be delivered to the respondent in a matter of seconds. Once the respondent has finished the survey, the response can be returned to the researcher in a matter of seconds. Compared to mailed surveys, research indicates respondents are more apt to respond, respond more openly, and provide longer answers to open-ended questions when using an Internet survey (Bachman, Elfrink & Vazzana, 1996; Dillman, 1998; Grover, 2003; Mehta, 1999; Shafer & Dillman 1998; Smith, 1997).

The researcher believed the respondents would complete the survey without monetary incentives. However, the researcher offered to share the results of the study as an incentive.

Administration of the Survey

According to Shafer and Dillman (1998), Internet surveys must be personalized to each individual whom the researcher plans to survey. Also, they recommend that no listserv be used or created to distribute the survey. There are multiple advantages to sending the email directly to each individual. Response rates tend to be higher if the survey is sent directly to the intended respondent. (This also prevents the researcher from sending the survey to unintended respondents.) The researcher determined the email address of each administrator in the three types of IHEs in order to send the administrators both an invitation of participation and a survey (Dillman 2000; Shafer & Dillman, 1998).

An individual invitation to participate in the study was e-mailed to the chief academic officer, chief business officer, and chief information officer at the three types of institutions from their respective counterpart at the investigator's home institution; a total of 261 invitations were sent. The invitation of participation is found in Appendix C. Two days later, the survey was sent to each individual's e-mail address. The survey included preface information, an explanation of why he or she was receiving the survey, instructions for completing the survey, and a request for the administrator's participation. A copy of the e-mail message is found in Appendix D.

The respondents who did not reply within 11 days of receipt of the survey were sent an email reminder and a replacement survey. The reminder repeated the explanation of the study and again asked for the respondent's participation. The reminder e-mail is found in Appendix E. The respondents who did not reply to the first two email messages and surveys received a fourth

and final contact 11 days after the second reminder along with another replacement survey. The data collection was conducted from March 14, 2005 to April 20, 2005.

Protection of Human Rights

The appropriate forms were submitted to the Committee for Research Involving Human Subjects (IRB) at Kansas State University in September, 2004. As a part of the application process, the researcher completed the training modules provided by the Office of Research Compliance at Kansas State University. The researcher was notified that all six modules were completed by September 9, 2004. As a result of the training modules, the researcher determined the subjects in the study would not be subjected to any physical, psychological, social, or human risks because the researcher and respondents would have no physical contact. Final approval for Protocol #3202 was granted on March 4, 2005. The approval is found in Appendix G.

The survey instructions stressed that participation was completely voluntary and respondents could choose not to complete of the survey altogether or exit the survey at any point should they desire to stop. As this was an electronically administered survey, no consent forms were distributed to the survey respondents. In lieu of a consent form, both the invitation of participation and the e-mail survey instructions assured the respondents of the confidentiality of their responses.

The survey system used by the researcher tracks respondents and non-respondents. The researcher had control over the number and timing of follow-up contacts.

Data Analysis

The survey data were exported from the Kansas State Online Survey System into. The data were analyzed using the Statistical Package for the Social Sciences (SPSS).

Closed Survey Questions

The data for mission, administrator's vision, funding sources, and student services was analyzed using descriptive statistics. Additional analysis included Principal Component Factor analysis, Pearson's r, Cronbach's alpha, and one-way analysis of variance (ANOVA). The researcher also analyzed the data using Fisher's least squares means difference test.

Open-ended Survey Question

The researcher used the content analysis method to analyze the open-ended question regarding where the administrator thought their institution would be in ten years. Krippendorff (1980) defines content analysis

> as a process that views data as representations not of physical events but of texts, images, and expressions that are created to be seen, read, interpreted, and acted on for their meanings, and must therefore be analyzed with such uses in mind. Analyzing texts in the contexts of their uses distinguishes content analysis from other methods of inquiry. (p. xiii)

The researcher chose this method of analysis because, while it does follow the rules of science, it also allows the researcher to determine the complexity of the open-ended question (Bereleson, 1952; Holsti, 1969). The open-ended survey question required the administrator to picture the future of distance learning in his or her IHE. The question allowed the respondent to answer by using up maximum of 250 characters.

CHAPTER FOUR

DATA ANALYSIS

This chapter will present the results of the study by research questions. This study was an investigation of mission, vision, funding strategies, and student services for distance learning as expressed by university administrators in three types of institutions of higher education (IHEs): land grant universities, state universities, and those institutions that are designated as both land grant and state universities by state legislatures.

Return Rate

A total of 261 surveys were distributed to three groups of administrators: chief academic officers, chief business officers, and chief information officers. Of the 261 distributed, 76 were reported by the survey system as returned. This accounted for a return rate of 30 percent. The returned surveys were distributed across the types of administrators, with 35 chief academic officers responding (out of 87) for a return rate of 39 percent. Twenty-two chief business officers returned surveys (out of 87) for a return rate of 25 percent. Nineteen chief information officers returned the survey (out of 87) for a return rate of 21 percent. The return rate based on type of administrator by type of institution was land grant; 10 chief academic officers, seven chief business officers, and nine chief information officers. The state university responses were; 10 chief academic officers, six chief business officer and four chief information officers. The respondents that indicate both type of institution were; 10 chief academic officers, six chief business officers and four chief information officers. Five chief academic officers, three chief business officers and two chief information officers did not respond to the question regarding type of institution. These results are displayed in Table 2.

Table 2 - Responses to Distance Learning Survey by Institution and Senior Administrator Type (N=76)

Institution	CAO	CBO	CIO
Land grant	10	7	9
State university	10	6	4
Both	10	6	4
N/A	5	3	2
Total	35	22	19

CAO – Chief Academic Officer
CBO – Chief Business Officer
CIO – Chief Information Officer

The survey results did not report the specific senior administrator from the specific institution beyond the type of the institution responded to the survey.

The data presented in Table 3 indicates the size (by student population) of the institutions as reported by the entire survey group.

Table 3 - Responses to Distance Learning Survey by Student Population of Institutions. (N=76)

Size	Number of Respondents	Percent
Less than 10,000	6	7.9%
10,001 – 20,000	24	31.6%
20,001 – 30,000	23	30.3%
30,001 – 40,000	3	4.4%
Over 40,000	12	15.8%
N/A	8	10.5%

Table 4 displays the respondents' answers to survey question 14. This question asked the respondents to indicate the total size of their institutions budget.

Table 4 - Responses to Distance Learning Survey by Institutional Budget (N=76)

Budget	Number of Respondents	Percent
>$150 million	8	10.5%
$150-$300 million	9	11.8%
$301-$450 million	10	13.2%
$450-$600 million	10	13.2%
Over $600 million	29	38.2%
N/A	10	13.2%

Results

The results will be reported in this chapter via one of the three research questions the study was designed to answer. The research question, and the corresponding item on the survey, will be followed by the statistical analysis employed and the results the analysis yielded.

Research Question 1

What is the institutional mission and administrators' vision associated with offering distance learning in three types of IHEs: land grant universities, state universities, and those institutions that are designated as both land grant and state universities?

Content Analysis

Survey Question 4 was an open–ended question, allowing the individual administrator to relate his or her vision for the institution in distance learning 10 years into the future. There were 58 responses to this question. The responses of each individual administrator were used for this analysis.

The investigator employed the content analysis method to analyze the responses to this survey question. The researcher using content analysis method determined the following seven themes from the administrators' responses. The themes are listed the order of rank (highest to lowest) in terms of the overall number of times the comment corresponding to the theme was mentioned by one of the three senior administrators.

1. Blur the lines between on and off campus (15)
2. Offer graduate programs, career education, and degree completion programs (15)
3. Lead the field (14)
4. Fulfill mission and secure necessary resources provide access (10)
5. Extend education to citizens in the state and rural areas (8)

6. Provide access (7)

7. Enhance and utilize technology (3)

After determining the seven themes, the researcher compiled the number of times each particular senior administrator's response corresponded with one of the themes. The results in rank order are shown in Table 5.

Table 5 – Position of the Institution in 10 Years in Distance Learning as Envisioned by the Senior Administrators (N=58)

	Administrative Responses		
Theme	CAO	CBO	CIO
1. Blur the lines between on and off-campus	6	5	4
2. Graduate programs and career education and degree completion	9	4	2
3. Lead the field.	9	4	1
4. Fulfill mission and obtain the necessary resources	4	2	2
5. Extend to citizens in the state/rural areas	4	2	2
6. Provide access	5	1	1
7. Enhance and use technology	2	0	3

CAO – Chief Academic Officer
CBO – Chief Business Officer
CIO – Chief Information Officer

All survey responses to Survey Question 4 categorized in one of the seven themes are found in Appendix H.

The chief academic officers listed *leading the field* nine times, *offering graduate programs, career education and degree completion programs* nine times, *blurring the lines between on campus and off campus distance learning* nine times, *providing access* five times, *fulfilling the mission and obtaining the necessary resources* and *extending to citizens in the state and rural areas* four times each, and *enhancing technology* two times. The chief business officers listed *blurring the lines between on campus and off campus distance learning* five times, *graduate programs and career education and degree completion* and *leading the field* four times each, *fulfilling the mission and obtaining the necessary resources* and *extending to citizens in the state/rural* areas two times each , and *providing access* only once. The chief information officer listed *blurring the lines in between on and off campus* four times, *enhancing technology* three times, *graduate programs, career education and degree completion programs, fulfilling the mission and obtaining the necessary resources, and extending to citizens in the state and rural areas* two times each, and *leading the field* and *providing access* once each.

Beyond the seven themes, two similar comments were made by chief business officers. They *stated their institution would see no change in the next ten years* or *would not be a player in distance education.*

Research Question 2

How are administrators' responses to institutional mission, administrative vision, and funding strategies for offering distance learning in their institutions related? Do these interrelationships differ across the types of institutions, the student population size of the institution, or the budget of the institution?

The results presented in Table 6 are for Survey Question 2. The question asked the three senior administrators to indicate on a Likert scale their agreement with a list of reasons which characterize the institutions purpose or mission for offering distance learning.

Table 6 - Reasons Characterizing Mission or Purpose for Offering Distance Learning (N=76)

Reasons	Mean	SD	SA	A	N	D	SD
1. Enhance the competitiveness of institution	2.1	.90	31.5%	41.1%	20.5%	6.8%	-----
2. Support degree completion for the institution's former students	2.6	.93	14.3%	34.3%	35.7%	15.7%	-----
3. Support degree completion for former students	2.7	.86	7.2%	30.4%	42.0%	20.3%	-----
4. Strengthen visibility of the institution among relevant publics	2.2	.83	18.3%	53.5%	19.7%	8.5%	-----
5. Provide life-long learning to alumni of the institution	2.3	.96	23.6%	33.3%	31.9%	11.1%	-----
6. Generate funds for the institution	2.4	.97	21.4%	30.0%	35.7%	12.9%	-----
7. Save money for the institution	3.1	.83	6.2%	9.2%	47.7%	36.9%	-----
8. Serve business and industry	2.0	.66	23.6%	63.9%	9.7%	------	-----

The results displayed in Table 6 demonstrate the respondents strongly agreed a reason for offering distance learning was to save money for the institution. This response shows the highest mean on the table of 3.1. The administrators also agreed, supporting degree completion for former students and for the institutions former students was a reason for the institutional mission for offering distance learning with means of 2.7 and 2.6. The administrators expressed their purpose or mission for offering distance learning was to save money, and the results show they

also agreed generating money for the institution characterized reasons for the institutional mission in offering distance learning. The respondents also agreed, though less strongly on the reasons providing life-long learning to alumni. The mean for this response option was 2.3. The respondents did not show strong agreement for strengthening the visibility of the institution among relevant publics, enhancing the competitiveness of the institution and serving business and industry. These means were 2.2, 2.1 and 2.0 respectively.

The results presented in Table 7 are for Survey Question 3. The question asked the three senior administrators to indicate on a Likert scale their agreement with a list of reasons which characterize the administrative vision or intent for offering distance learning.

Table 7 - Reasons Characterizing Vision or Intent for Offering Distance Learning (N=76)

	Reasons	Mean	SD	SA	A	N	D	SD
1.	Support the core mission of the institution	1.6	.76	50.0%	38.9%	8.3%	2.8%	-----
2.	Support the institution's strategic plan	1.7	.79	44.4%	43.1%	8.3%	4.2%	-----
3.	Initiate a distance learning program for the institution	2.6	.96	14.7%	23.5%	42.6%	19.1%	-----
4.	Leader among other institutions in distance learning	2.6	.91	11.9%	35.8%	35.8%	16.4%	-----
5.	Encourage inter-institutional efforts through distance learning	2.4	.82	13.2%	41.2%	38.2%	7.4%	-----
6.	Extend the research findings of the institution through the technology used in distance	2.6	1.1	15.2%	37.9%	21.2%	25.8%	-----

learning

The respondents strongly agreed with three of the response options; being a leader among other institutions in distance learning, initiate a distance learning program for the institution, and extend the research of the institution through technology used in distance learning as the reasons characterizing their administrative intent for offering distance learning. Each of these reasons show a mean of 2.6 as displayed in Table 7. The responses pointed to the option regarding encouraging inter-institutional efforts through distance learning as a reason the administrators agreed with as part of their vision for offering distance learning. The mean of this response was 2.4. Two additional response options displayed in Table 7 show weak agreement from the administrators as reasons for their administrative vision for offering distance learning. These are the response options of supporting the strategic plan of the institution with a mean of 1.7 and supporting the core mission of the institution with a mean of 1.6.

The following tables present the results of the survey for the funding sources employed by IHEs to fund technology infrastructure, credit course development, and credit course delivery.

The results displayed in Table 8 are for Survey Question 6. This question asks what funding sources IHEs use for technology infrastructure to provide distance learning.

Table 8 - Institutional Sources for Funding of Technology Infrastructure for Distance Learning

(N=76)

Sources	Percent
State funds	73.2%
Tuition and student fees	64.8%
Institutional funds and tuition and student fees	57.7%
Institutional funds	42.3%
Private funds	23.9%
Federal funds	19.7%
Vender incentives	12.7%
New business lines	9.9%
Bonding	5.6%
For-profit entity created specifically to fund distance learning	4.2%
Commercialization of intellectual property	4.2%

The data in Table 8 indicates the institutions spend primarily state funds (73.2%), tuition and student fees (64.8%), institutional funds and tuition and student fees (57.7%), and institutional funds (42.3%) to fund their technology infrastructure for distance learning. Private funds and federal funds at 23.9 percent and 19.7 percent respectively are also used to fund

technology infrastructure. The institutions utilize vendor incentives (12.7%), new business lines (9.9%), and bonding (5.6%). A for-profit entity created specifically for distance learning and commercialization of intellectual property are only drawn on for 4.2 percent for both sources.

Table 9 presents the data for the funding sources IHEs take advantage of to fund credit course development for distance learning. This is Survey Question 7.

Table 9 - Institutional Sources for Funding for Credit Course Development for Distance

Learning (N=76)

Sources	Percent
State funds	60.6%
Tuition and student fees	57.7%
Institutional funds and tuition	53.5%
Institutional funds	40.8%
Private funds	19.7%
Federal funds	14.1%
Vender incentives	4.2%
For-profit entity created specifically to fund distance learning	2.8%
Commercialization of intellectual property	1.4%
New business lines	0.0%

This data shows that credit course development is primarily funded with state funds (60.6%), tuition and student fees (57.7%), institutional funds and tuition (53.5%), and institutional funds (40.8%). All other sources of funds IHEs could access to fund credit course development fall below 20 percent according to the survey results.

The data presented in Table 10 are for Survey Question 8 which are those sources of funds IHEs avail themselves of to fund credit course delivery.

Table 10 - Institutional Sources for Funding Credit Course Delivery for Distance Learning

(N=76)

Sources	Percent
Tuition and student fees	60.6%
State funds	56.0%
Institutional funds and tuition and student fees	49.3%
Institutional funds	28.2%
Private funds	18.3%
Federal funds	8.5%
For-profit entity created specifically for distance learning	5.6%
New business lines	4.2%
Vendor Incentives	1.4%
Commercialization of intellectual property	1.4%

Table 10 reflects that the bulk of sources to fund credit course delivery are from three sources; tuition and student fees at 60.6 percent, state funds at 56.0 percent, and institutional funds and tuition and student fees at 49.3 percent. Institutional funds at 28.2 percent and private funds at 18.3 percent are the only other sources of funding for credit course delivery in double figures.

In order to confirm the results of the study regarding institutional mission, administrators' vision, and funding sources for distance learning in IHEs the researcher analyzed the data with the principal component factor analysis method. The researcher was looking for patterns in the results for Survey Questions 2, 3, 6, 7, and 8. The description of the factor analysis method and the factor loadings for each of these survey questions are found in Appendix I.

The factor loadings were summed to yield scale scores. The scales were named:

1. Institutional
2. Student–oriented

3. Mission/strategic planning
4. Program development

5. Institutional revenues sources–external
6. Institutional revenue sources–internal

7. Institutional revenues sources–external
8. Institutional revenues sources–internal

9. Institutional revenues sources–non-student
10. Institutional revenues sources–student

Correlation and Validity

The investigator conducted a Pearson's r correlation and Cronbach's coefficient alpha analysis on the factors to determine the reliability of the data. The Pearson's r correlations and Cronbach's coefficient alphas are displayed in Table 11.

Table 11 - Means1, Standard Deviations, Intercorrelations, and Coefficient Alpha Reliabilities (shown in parentheses in the diagram) for Scales 1-10 for Mission, Vision, and Funding Sources of Distance Learning (N=62-71**)**

Table 11

Means[1], Standard Deviations, Intercorrelations, and Coefficient Alpha Reliabilities (shown in parentheses in the diagram) for Scales 1-10 for Mission, Vision, and Funding Sources of Distance Learning (N=62-71)

Scale	Mean	SD	# of Items	Intercorrelations									
				1	2	3	4	5	6	7	8	9	10
Institutional	8.5	2.8	5	(.71)									
Student–oriented	5.3	1.6	2	.33*	(.79)								
Mission/ strategic planning	6	2	3	.57**	.31**	(.74)							
Program development	7.6	2	3	.40**	0.15	.42**	(.59)						
Institutional revenue sources–external	12.1	1.6	7	0.08	0.15	0.17	.28*	(.70)					
Institutional revenue sources–internal	6.8	1.4	5	-0.17	0.01	0.07	0.02	.57**	(.62)				
Institutional revenue sources–external	5.8	0.5	3	-0.07	-0.08	0.04	0.21	.35**	0.08	(.53)			
Institutional revenue sources–internal	4.4	1.1	3	-0.15	0.01	-0.1	0	.50**	.66**	.25**	(.53)		
Institutional revenue sources–non-student	10	1.2	6	-0.1	-0.03	0.01	0.11	.52**	.48**	0.23	0.6	(.52)	
Institutional revenue sources–student	5.9	1	4	-0.24	-0.28	-.00	0.03	0.13	.53**	0.12	.24*	0.1	(.51)

*p<.05

**p<.01

The analysis indicates four findings.

First, there is a correlation between the institutional mission and the administrator's vision in offering distance learning.

Second, there is no correlation between a) mission and administrator's vision for institutions to offer distance learning and b) the funding strategies used to fund technology infrastructure, credit course development, and course delivery for distance learning. The scales representing mission and vision—Scales 1 and 2—show no correlation with Scales 5 through 10, which represent funding strategies for distance learning. As well, Scales 3 and 4 representing vision show no correlation with Scales 5 though 10 representing the funding strategies for distance learning. To illustrate this finding, there is a solid dark line dividing Table 11 into four distinct quadrants to distinguish the quadrants where the correlations are found. The lack of correlation between mission and vision and funding strategies is shown in the lower right quadrant of Table 11.

Third, the mission and the vision scales do show a correlation with each other. Specifically, Table 11 shows a significant correlation at both the $p<.05$ and $p<.01$ levels between Scales 1 and 2 (the mission–institutional and student–oriented scales) and Scales 3 and 4 (the mission/strategic planning and program development scales). The administrators' responses to the survey questions regarding mission and vision are generally related. These relationships are shown in the upper left quadrant of Table 11.

Finally, the fourth finding from the correlation analysis, which is displayed in the lower right quadrant of Table 11, depicts the correlation between Scales 5 through 10. These correlations illustrate the relationship between the funding sources used by institutions to fund

technology infrastructure, credit course development, and course delivery for distance learning as indicated by the administrators' responses to the survey.

One-Way Analysis of Variance (ANOVA)

The investigator conducted a 3X5 analysis of variance (ANOVA) to find the differences in administrators' responses on the items comprised by the 10 scales.

The data displayed in Table 12 represent an ANOVA of the survey group, which is the three university administrators surveyed (the chief academic officer, the chief business officer, and the chief information officer) by the type of institution. The type of IHE was land grant or state university, or an institution that is designated as both the land grant and state university.

There was no interaction reported between responses of the survey group and type of institution. The results of the ANOVA are displayed in Table 12.

Table 12 - 3X5 Analysis of Variance Results for Land Grant University, State University, and Both for Survey Group by Type of Institution (N=60)

	F–Tests					
Scale	Survey group	df	Type of institution	df	Interaction	df
Institutional	1.45	2	2.50	2	0.71	4
Student–oriented	0.291	2	0.21	2	0.46	4
Mission/strategic planning	0.73	2	0.05	2	0.63	4
Program development	0.75	2	1.60	2	0.47	4
Institutional revenue sources–external	0.26	2	0.29	2	0.11	4
Institutional revenue sources–internal	0.34	2	1.91	2	0.56	4
Institutional revenue sources–external	0.59	2	1.97	2	0.37	4
Institutional revenue sources–internal	0.12	2	1.78	2	1.21	4
Institutional revenue sources–non-student	0.44	2	0.88	2	0.23	4
Institutional revenue sources–student	0.96	2	0.74	2	0.82	4

*p<.05

**p<.01

As no differences were found in the responses by type of IHE, the researcher turned to the size of the institutions. A second 3X5 ANOVA was conducted and is displayed in Table 13 to determine whether the size of the institution would produce a difference in the responses of the administrators. A significant difference between the means of the survey group responses and the size of the institution was found.

Table 13 - 3X 5Analysis of Variance Results for Survey Group by Size of Institution (N=60)

			F–Tests			
Scale	Survey group	df	Size of institution	df	Interaction	df
Institutional	1.7	2	2.8*	4	2.4*	6
Student–oriented	0.56	2	0.49	4	0.29	6
Mission/strategic planning	1.2	2	0.51	4	3.34**	6
Program development	0.38	2	1.54	4	1.02	6
Institutional revenue sources–external	0.14	2	7.0**	4	0.59	6
Institutional revenue sources–internal	0.39	2	2.4	4	0.57	6
Institutional revenue sources–external	0.31	2	2.3	4	0.39	6
Institutional revenue sources–internal	0.20	2	2.3	4	1.3	6
Institutional revenue sources–non–student	0.71	2	6.0**	4	0.40	6
Institutional revenue sources–	1.5	2	0.57	4	1.4	6

student

---

*p<.05

**p<.01

The results displayed in Table 13 indicate that differences were found by size, but not by type, of IHE. Since size produced a difference, the researcher performed a 5X5 ANOVA by budget information provided by the survey participants. According to the analysis in Table 14, there is a significant difference in the size of the IHE and institutional budget on six of the ten scales. The differences were found in the scales related to institutional mission, external revenue sources and internal revenue sources for technology, external revenue sources and internal revenue sources for credit course development, and student revenue sources for credit course delivery.

Table 14 - 5X5 Analysis of Variance for Results for Size of Institution by Institution Total Budget, Percent of Budget from State Government, and Percent of Courses Offered as Distance Learning (N=66)

Scale	Size of institution	Total budget of institution	df	% of total budget by state to institution	df	% of distance learning courses in institution	df
				F–Test			
Institutional	2.67*	0.73	4	1.49	4	1.55	3
Student-oriented	0.48	1.62	4	0.95	4	2.68	3
Mission/ strategic planning	0.56	1.90	4	0.24	4	1.20	3
Program development	1.30	0.20	4	0.98	4	1.33	3
Revenue sources – external	7.57	2.51	4	0.75	4	0.90	3
Revenue sources – internal	3.04*	0.87	4	0.88	4	0.33	3
Revenue sources –	2.60*	0.95	4	1.43	4	0.38	3

external							
Revenue sources – internal	3.00*	1.11	4	0.65	4	0.45	3
Revenue sources – non-student	7.77*	1.30	4	1.01	4	0.46	3
Revenue sources – student	0.85	0.93	4	0.91	4	0.27	3

*p<0.05
*p<0.01

As the ANOVA results displayed in Table 14 illustrate, there was a difference among the size of the IHEs and this analysis did not indicate where the differences were among the sizes of the institutions. The scales where the differences were indicated were Scale 1 (institutional mission), Scale 5 (institutional revenue sources–external, for technology infrastructure), Scale 6 (institutional revenue sources–internal, for technology infrastructure), Scale 7 (institutional revenue sources–external for credit course development), Scale 8 (institutional revenue sources–internal for credit course development), and Scale 9 (institutional revenue sources–non student for course delivery).

Because significant differences were found, the investigator chose to extend the research. In order to determine the differences, the Fisher least squares difference of means test was computed for each scale for which differences were indicated. The scale is the dependent variable and the institution's size is the independent variable.

Fisher's Least Squares Mean Difference Test

Scale 1, displayed in Table 15, relates to the institutional mission and why the institution offers distance learning. The significant difference of the means was 1.89. This difference is found in the institutional mission between IHEs with a student size of 20,001–30,000 and institutions of fewer than 10,000 students and those with 10,001–20,000 students. The significant difference is that a higher sense of mission is more of a reason for smaller institutions to offer distance learning than was reported by the larger IHEs in the survey. A note of caution: the bulk of the sample for this question is among the medium–sized institutions (those with an enrollment of 10,001–20, 000 and 20,001-30,000) not in the lower–enrollment or larger–enrollment institutions.

A negative significant difference (–3.39) regarding institutional mission was found between IHEs with a student population of 10,001–20,000 students and institutions with fewer than 10,000 students. The difference is that these institutions of 10,001–20,000 students did not indicate that mission was a reason for offering distance learning. The second negative significance was found between institutions with a population of 30,001–40,000 students and institutions of fewer than 10,000 students. Once again, this negative difference indicates that institutions with fewer than 10,000 students have a sense of mission—which leads them to offer distance learning—than do institutions of 30,001–40,000 students. These mean differences are displayed in Table 15.

Table 15 - Means and Least Square Differences by Size of Institution for Mission to Provide Distance Learning (Scale 1)

	Institution size	Mean	Standard deviation	N	Mean differences 1.	2.	3.	4.	5.
1.	Fewer than 10,000	9.00	2.94	4	——	——	——	——	——
2.	10,001–20,000	12.39	2.89	23	-3.39*	——	——	——	——
3.	20,001–30,000	10.50	2.13	20	——	1.89*	——	——	——
4.	30,001–40,000	14.00	1.41	2	-5.00*	——	——	——	——
5.	Over 40,000	12.09	3.33	11	——	——	——	——	——

Note: Only significant differences are shown.

Scale 5 represents institutional revenue sources–external for technology infrastructure. For this scale—displayed in Table 16—a number of positive significant differences were found. IHEs with fewer than 10,000 students, those with between 10,001–20,000 students, and those with 20,001–30,000 students all used more diverse external resources to fund technology

infrastructure than did institutions of 30,001–40,000 students. The significant differences for IHEs with fewer than 10,000 students was 4.33, for 10,001–20,000 students was 3.96, and for 20,001–30,000 students was 3.61. All the institutions with fewer than 10,000 up to 40,000 students used significantly more diverse external resources to fund technology infrastructure for distance learning than did institutions with more than 40,000 students. The significant differences of the means were 1.75 for fewer than 10,000 students, 1.38 for 10,001–20,000 students, 1.02 for 20,001–30,000 students, and 2.58 for 30,001–40,000 students. These mean differences are displayed in Table 16.

Table 16 - Means and Least Square Differences by Size of Institution for External Revenue Sources for Technology Infrastructure to Provide Distance Learning (Scale 5)

					Mean differences				
	Institution size	Mean	Standard deviation	N	1.	2.	3.	4.	5.
1.	Less than 10,000	13.00	1.1	6	——	——	——	——	——
2.	10,001–20,000	12.63	1.41	24	——	——	——	——	——
3.	20,001–30,000	12.27	1.32	22	——	——	——	——	——
4.	30,001–40,000	8.67	1.53	3	4.33*	3.96*	3.61*	——	——
5.	Over 40,000	11.25	1.42	12	1.75*	1.38*	1.02*	2.58*	——

Note: only significant differences are shown.

Scale 6 represents institutional revenue sources–internal for technology infrastructure. For the scale, displayed in Table 17, there was a positive significant mean difference for IHEs with a student population of fewer than 10,000 students and institutions of 30,001–40,000 students. Again, this indicates that institutions with a population of fewer than 10,000 students use more diverse internal sources of revenue to fund technology infrastructure for distance learning than do the larger IHEs surveyed. These mean differences are displayed in Table 17.

Table 17 - Means and Least Square Differences by Size of Institution (Number of Students) for Internal Revenue Sources for Technology Infrastructure for Providing Distance Learning (Scale 6)

					Mean differences				
	Institution size	Mean	Standard deviation	N	1.	2.	3.	4.	5.
1.	< 10,000	7.67	.82	6	——	——	——	——	——
2.	10,001–20,000	7.00	1.41	24	——	——	——	——	——
3.	20,001–30,000	7.05	1.43	22	——	——	——	——	——
4.	30,001–40,000	5.67	.58	3	2.00*	——	——	——	——
5.	Over 40,000	5.92	.90	12	1.75*	1.08*	1.13*	——	——

Note: Only significant differences are shown.

Scale 7 represents institutional revenue sources–external for credit course development for distance learning. For this scale, displayed in Table 18, a number of positive significant differences were found. IHEs with a student population of fewer than 10,000 students, those with 10,001–20,000 students, and those with 20,001–30,000 students used more diverse external resources to fund credit course development than did institutions of 30,001–40,000. The significant difference of the means for IHEs with fewer than 10,000 students was 1.00, for 10,001–20,000 students, it was 0.75, and for 20,001–30,000 students, it was 0.78. Institutions of 30,001–40,000 students also used more diverse external revenue sources to fund credit course development for distance learning than did institutions with more than 40,000 students. The significant mean difference was 1.00. These mean differences are displayed in Table 18.

Table 18 - Mean and Least Square Differences by Size of Institution (Number of Students) for External Revenue Sources for Course Development to Provide Distance Learning (Scale 7)

					Mean differences				
	Institution size	Mean	Standard deviation	N	1.	2.	3.	4.	5.
1.	< 10,000	6.00	.00	6	——	——	——	——	——
2.	10,001–20,000	5.75	.44	24	——	——	——	——	——
3.	20,001–30,000	5.78	.52	23	——	——	——	——	——

4.	30,001–40,000	5.00	1.73	3	1.00*	.75*	.78*	——	——
5.	Over 40,000	6.00	.00	12	——	——	——	1.00*	——

Note: only significant differences are shown.

The results for Scale 8, displayed in Table 19, represent institutional revenue sources–internal for credit course development for distance learning. IHEs with a student population of 10,001–20,000 used more diverse internal sources of revenue to fund course development then did institutions of 20,001–30,000 students. The significant mean difference was 1.54. Institutions of fewer than 10,000 students and those with 20,001–30,000 students used more diverse internal resources to fund credit course development then did institutions of 30,001–40,000 students. The significant mean differences are 2.00 and 1.61. The final significant mean difference for internal revenue sources for credit course delivery is that institutions with fewer than 10,000 students used more diverse sources than did institutions with more than 40,000 students. The mean difference is 1.08. These mean differences are displayed in Table 19.

Table 19 - Mean and Least Square Differences by Size of Institution (Number of Students) for

Internal Revenue Sources for Course Development to Provide Distance Learning (Scale 8)

					Mean differences				
Institution size	Mean	Standard deviation	N	1.	2.	3.	4.	5.

1.	< 10,000	5.00	1.10	6	——	——	——	——	——
2.	10,001–20,000	4.54	1.02	24	——	——	——	——	——
3.	20,001–30,000	4.60	1.03	23	——	1.54*	——	——	——
4.	30,001–40,000	3.00	.00	3	2.00*	——	1.61*	——	——
5.	Over 40,000	3.92	1.00	12	1.08*	——	——	——	——

Note: only significant differences are shown.

The results for Scale 9, displayed in Table 20, represent institutional revenue sources–non-student used to fund course delivery for distance learning. IHEs with a student population of fewer than 10,000, those with 10–20,000 students, and those with 20,001–30,000 students all used more diverse sources of non-student revenues to fund course delivery than did institutions of 30,001–40,000 students. The significant mean differences are: for IHEs with fewer than 10,000 students, a mean difference of 3.33; for those with 10,001–20,000 students, a mean difference of 2.67; and for those with 20,001–30,000 students, a mean difference of 3.01. IHEs with fewer than 10,000 students and those with 20,001–30,000 students used more diverse sources of non-student revenues to fund course delivery for distance education than did institutions with more than 40,000 students. The significant mean differences are 1.17 mean differences for IHEs with fewer than 10,000 students, and 0.85 mean difference for IHEs with 20,001–30,000 students. Institutions of 30,001–40,000 students used fewer non-student revenues to fund course delivery for distance learning than did institutions with more than 40,000 students. This is a negative significant mean difference of –2.17. These mean differences are displayed in Table 20.

Table 20 - Mean and Least Square Differences by Size of Institution (Number of Students) for Non–Student Revenue Sources for Course Delivery to Provide Distance Learning (Scale 9)

					Mean differences				
	Institution size	Mean	Standard deviation	N	1	2	3	4	5
1.	< 10,000	10.67	.52	6	——	——	——	——	——
2.	10,001–20,000	10.00	1.06	24	——	——	——	——	——
3.	20,001–30,000	10.35	.71	23	——	——	——	——	——
4.	30,001–40,000	7.33	.58	3	3.33*	2.67*	3.01*	——	——

5.	Over 40,000	9.50	1.38	12	1.17*	——	.85*	–2.17*	——

Note: Only significant differences are shown.

Research Question 3

Compared to on- campus students, what services are provided to distance learning students in the three types of IHE's? How are these services financed?

Frequency Distribution

Table 21 displays the results for Survey Question 9, which asked administrators to identify from a list of alternative responses the services their institution provides to distance learning students. The table indicates the services that are provided to distance learning students.

Table 21 - Services Institutions Provide to Distance Learning Students (N=71)

Services	Percent
Library resources and services	93.0%
Admissions application and registration forms	88.7%
Academic advising	83.1%
Books and materials from campus bookstore	69.0%
Disabled and special student services	62.0%

Student identification card	57.7%
Scholarships and financial aid	50.7%
Academic learning and tutorial services	47.9%
Career and job placement services	47.9%
24/7 technology support	43.7%
Student discount to athletic events	32.4%
Student discount to lectures and cultural events	29.6%
Campus recreational services	22.5%

Table 22 displays the results from Survey Question 10, which asked administrators to identify for listing of student services the institution may provide to distance learning students, how the services are provided. The respondents could choose from these response options: *campus, on–line, both campus and on–line*, *don't know*, or *don't provide the service*. The responses to this question track very similarly to the responses for Survey Question 9, displayed in Table 21.

Table 22 - Methods by Which Institutions Provide Services to Distance Learning Students

(N=51–67)

Service	Campus	Online	Both	Don't	Don’t

					Know	provide service
1	Student Identification Card	35.3%	7.8%	29.4%	27.5%	----
2	Admissions application and registration forms	3.0%	32.8%	56.7%	7.5%	----
3	Academic advising	11.5%	13.1%	65.6%	9.8%	----
4	Library resources and services	9.0%	19.4%	67.2%	4.5%	----
5	Academic learning and tutorial services	7.3%	14.5%	56.4%	21.8%	----
6	Scholarships and financial aid	13.3%	6.7%	53.3%	26.7%	----
7	Career and job placement services	23.1%	5.8%	51.9%	19.2%	----
8	Books and materials from campus bookstore	22.2%	9.5%	52.0%	15.9%	----

Table 23 displays the third and final survey question pertaining to student service. Survey Question 11 asked administrators to identify—for those services provided to distance learning students—what the funding mechanism was to provide the service. The response options included *tuition and student fees, institutional funds and student fees, other funding sources, don't know*, and *don't provide the service*. Again, these responses are very similar to the responses provided for Survey Questions 9 and 10, displayed in Tables 21 and 22.

Table 23 - Funding Sources the Institution Uses to Fund Services for Distance Learning Students (N=68)

	Tuition/Fees	Institutional funds/fees	Other	Don't Know	Don't Provide Services
1. Student identification card	23.5%	30.9%		19.1%	26.5%

2.	Admissions application and registration forms	25.0%	55.9%	2.9%	16.2%	
3.	Academic advising	17.6%	55.9%	5.9%	14.7%	5.9%
4.	Library resources and services	19.1%	61.8%	5.9%	11.8%	1.5%
5.	Academic learning and Tutorial services	11.8%	44.1%	2.9%	19.1%	22.1%
6.	24/7 technical support	17.6%	42.6%	1.5%	13.2%	25.0%
7.	Disabled and special Student services	10.3%	47.1%	7.4%	20.6%	14.7%
8.	Scholarships and financial aid	8.8%	42.6%	14.7%	16.2%	17.6%
9.	Career and job placement services	10.3%	41.2%	7.4%	16.2%	25.0%
10.	Books and materials from campus bookstore	14.7%	30.9%	29.4%	14.7%	10.3%
11.	Student discount for lectures and cultural events	11.8%	22.1%	1.5%	19.1%	45.6%
12.	Student discount for Athletic events	16.2%	23.5%		17.6%	42.6%
13.	Recreational services	13.2%	19.1%		16.2%	51.5%

CHAPTER FIVE

CONCLUSIONS and RECOMMENDATIONS

Chapter Five of this study includes a summary of the research study and methodology. The conclusions will be discussed based on the results of the analysis of the data for each of the study's research questions. Recommendations for policy makers and further research will be presented.

Summary

This study was conducted at the behest of senior policymakers in the researcher's own land grant IHE in the Midwest. The study was an investigation of mission, vision, funding strategies, and student services related to distance learning as expressed by university administrators in land grant and state universities and those universities that are both. Distance learning was defined in this study as all teaching and learning events where the student and instructor are separated.

Data were collected through an e-mail questionnaire sent to three senior administrators in each of the selected institutions of higher education, including 37 land grant universities, 37 state universities, and 13 universities designated as both the land grant and state universities. The e-mail questionnaire was sent to 261 administrators. The researcher chose chief academic officers, chief business officers, and chief information officers to participate in the study because the literature indicates that these administrators—in concert with the chief executive officer—function in leadership roles in their respective institutions. Seventy-six administrators returned the questionnaire for a response rate of 30%.

The chief academic officer works in conjunction with the chief business officer to provide senior–level management and leadership to all aspects of the institution. The chief business officer is responsible for managing all financial resources of the institution and works with the chief academic and chief information officers and all senior managers in the institution to carry out their roles. The literature characterizes the chief information officer as fulfilling a combination of responsibilities in an IHE, including maintenance of the information infrastructure, providing basic support, coordinating planning for the distribution of information,

securing the necessary resources, and advising the senior leadership of the institution on these issues.

Included in the questionnaire were items regarding the mission of the institution in offering distance learning; the vision of university administrators in offering distance learning; and the funding strategies used by the institutions to fund technology infrastructure, credit course development, and course delivery. Also included were questions regarding services offered to distance learning students. The administrators were asked to consider where they believed their institutions would be positioned in ten years in regard to distance learning.

The researcher turned to institutional web sites to identify the appropriate individual administrators to whom to send the questionnaire for this study. Without access to this information, it would have been extremely difficult to locate the appropriate administrators and to find their respective e-mail addresses. The ability to send the questionnaire directly to individual administrators and to carry out individualized follow-up contacts facilitated the researcher's attempt to include exactly the appropriate administrators in every state in the country. Since this was a study about distance learning in IHEs, the researcher strongly believed that using the tool—the Internet—that many institutions employ for distance learning was important to the study.

The research questions for the study were:

1. What is the institutional mission and administrators' vision associated with offering distance learning in three types of IHEs: land grant universities, state universities, and those institutions that are designated as both land grant and state universities?
2. How are administrators' responses to institutional mission, administrative vision, and funding strategies for offering distance learning in their institutions related? Do these

interrelationships differ across the types of institutions, the student population size of the institution, or the budget of the institution?

3. Compared to on campus students, what services are provided to distance learning students in the three types of IHE's? How are these services financed?

Conclusions

Research Question 1 and 2

For this research question, the administrators were asked to respond with their view of the future for distance learning in their respective institutions. Interestingly, as predicted in the literature, the administrators were more forthcoming in their open–ended comments than in the closed–ended questions. At least 14 of the administrators who responded spoke of their desire to lead the field in distance learning, or their goal to be a national player in distance learning.

The study results suggest these administrators responded to the questions within the framework of their existing traditional roles. It is implicit in the responses that all three administrators in the group view distance learning as an on–campus delivery method instead of strictly an off–campus delivery method. These administrators see a separation only in physical location, not apart from the community housing the campus. A few of the administrators responded that distance learning programs are seen as being of equal importance to the other educational offerings of their institutions which are focused on traditional, on-campus students. This was evidenced by the response of one administrator who stated that any distance learning expansion would be focused on current, traditional, degree–seeking students and on making more courses available to them through distance learning. Once again, this seems to reflect the

roles the administrator is confident in pursuing. These might be extra opportunities for those students who are mostly face-to-face but are unable to take all their classes on campus.

In their responses, the chief academic officers focused mostly on face–to–face instruction suggesting access to learning was important to them. The chief information officers wanted to extend the educational opportunities of the institution and they proposed achieving that by utilizing technology. The chief business officers also stayed true to their role by providing financial and management assistance to both of the other types of administrators. The chief business officers, as indicated in the literature, supported the priorities of the chief academic officer in providing access to education. On the other hand, the chief business officers also expressed the most interest or concern regarding the instructional costs of learning, particularly the costs of accessing and using technology to provide distance learning.

This juxtaposition or conflict of roles among administrators could lead to disparities in selecting the means to fulfill the mission of the IHE. These three types of senior administrators have a common goal, that is, to support the educational aspects of the institution, albeit through a different lens. Each of these administrators expressed support for distance learning as a way to extend the university. The chief academic officers and the chief business officers were more loyal to the mission of the institution as it pertained to the students who were taking courses physically on the campus. The purpose of extending the institution in the state and beyond to any student who needs an education and cannot be on the physical campus was the assigned role of the chief information officer.

Extending the reach of the institution did appear in several administrators' open-ended responses to the survey question about the future of distance learning. Among the reasons listed for extending the institution, providing educational opportunities to the institution's graduates

was not cited as an answer to the notion this was a component of the institutions mission.

The research results suggest the administrator's views were more varied than the investigator originally thought. Prior to the study, the investigator predicted the chief academic officer and the chief information officer would have the same vision in offering distance learning. The chief academic officer's vision was more attuned than the other two administrator respondents to providing access to distance learning, a vision that corresponds to the traditional role of that position in the institution. In contrast, the chief information officer was really the only administrator who expressed the theme of utilizing technology as a means of extending the university. The chief business officer's focus was on the costs of technology and the processes to deliver distance learning. Their comments reflect this vision as their institutional role.

The differences in roles of the administrators were also not due to the type of institution they represented. As the study results suggest, the differences in the administrators' roles correspond to the student–population size of the institution. The lack of flexibility of financial resources in the smaller population IHEs for distance learning as indicated by the results would ensure the chief business officers to acquiesce to the chief academic officers since they are natural partners in the institution. The chief information officer's role in the institution might be diminished as the budget could not accommodate his or her goals of extending the institution to potential student customers, even if the customers pay tuition and fees.

The research indicates, however, that institutions do not use the variety of funding sources that the literature implies is available to support distance learning (Phipps & Wellman, 2001). The administrators were asked if they used sources such as vendor incentives, bonding, a for-profit entity created specifically to fund distance learning, or commercialization of intellectual property. The results indicate that very few, if any; IHEs used these potential revenue

sources. The researcher had anticipated that at least some of the administrators would report their institutions had created a separate for–profit entity for some distance learning activities. It is clear from the results that a few institutions have taken this path for technology infrastructure and course delivery, though not for course development.

According to 1999-2000 data from the United States Department of Education, state funds and student tuition comprise 54.3 percent of the revenue for IHEs in this country. This study, conducted for policymakers in a land grant university, explored the other sources of funding that land grant, state, and those IHEs that are both rely on (beyond state funds and student tuition) to finance distance learning. The literature does not provide much detail on new or existing sources of funding for distance learning in IHEs. One purpose of this study was to attempt to identify new sources of revenue to assist the researcher's home land grant institution. Instead the researcher found little assistance in new or additional revenue sources.

This study found that the type of institution was not a determinant of the funding sources the institutions utilized. This study found that smaller institutions (as compared to larger institutions) used more diverse revenue sources to fund technology infrastructure, course development, and course delivery. The only anomaly is that institutions with a student population of 30,000–40,000 appear to use more diverse funding sources to fund course development than did the institutions with a student population of over 40,000. The researcher concludes that the smaller–student–population institutions want to be players in distance learning yet are hamstrung by few revenue choices. One can conclude from this study that the larger–population institutions have a great deal of flexibility when it comes to funding distance learning. This, however, is not necessarily good news for the investigator's land grant institution since the student population is in the 20,001–30,000 range where there is less flexibility in revenue

sources, as the results suggest. The researcher also believes the time period late 2001 and concluding with the study in the Spring of 2005 has been a difficult budget time for public institutions but the larger institutions continue to be able to support distance learning because their revenue sources in total are larger and diverse than are those of the smaller institutions.

Research Question 3

A 2002 study of the Southern Regional Education Board (Distance Learning Policy Laboratory, 2002) found student services were vital to student learning and success. Although the need for services for distance learning students is well documented, it is not clear from the literature that this is a priority for the institutions represented in this study. This study sought to acquire information for policy makers in the investigator's land grant institution about three areas concerning student services for distance learning students. The three areas were; 1.what services were offered to distance students, 2.where the services were offered on-campus, off-campus or both, and 3.how the services were financed.

The results from the study seem to confirm what is found currently in the literature. Services for distance learning students are not the main concern of university administrators. In contrast, both Crawley (2004) and Oblinger (2004) found that distance learning students expect services to be available to them, especially the services that ease their entree to the institution. The results indicate there are limited services provided to distance learning students. No doubt the results reflect the reality that student services occupy a very small niche among the priorities of institutional administrators. The descriptions in the literature of the responsibilities of the three senior administrators chosen for this study do not specify that these administrators are involved with student services on the campus. Thus the results again reflect the fact that the roles of the administrators queried for the study influence their areas of interest as well as their priorities for

distance learning.

Contributions of the Study

The researcher undertook this study to assist senior–level policymakers in her own institution. The contributions of this study provide the senior policymakers with information to make research-based decisions for their institution's distance learning endeavors.

The roles of the chosen administrators and their perceptions of their roles remained consistent as they relate to distance learning in this study. One administrator respondent wrote, the administrators "need to tear down the silos" in relationship to their own roles in the institution to be successful in distance learning in the future. Assisting each one of the administrators with the desire and comfort level to go beyond their traditional roles and function in a collaborative way across the university with all university stakeholders could help to advance the institution through distance learning.

The results of the study also suggest there is not a great deal of differentiation of the mission and vision of administrators in IHEs. In fact, even though three different types of institutions were included in the study and five different sizes of IHE were included, the discussion of administrators' roles and the literature reviewed for the study do not differentiate IHEs. Actually, the study indicates all IHEs want to be the same in how they see themselves and market themselves.

Recommendations for Policymakers and Further Study

The researcher would suggest a number of recommendations for policymakers in the researcher's institution. The researcher also makes recommendations for further study regarding

mission, vision, funding strategies and student services for distance learning in institutions of higher education.

Policymakers

The researcher concludes from this study that all senior administrators should fill their roles in the IHE. However, the three administrators need to collaborate and work as a team in making decisions for offering distance learning in the institution. The chief academic officer should be focused on the academic pursuits of the IHE. The chief information office, while the top proponent of technology in the institution, needs to be a player in the academic pursuits of the institution and not lead with technology. The chief business officer should be in agreement with the agendas of both the chief academic officer and the chief information officer. This agreement is critical for the other two administrators as the chief business officer controls a key element, the institution's financial resources.

The results lead the researcher to deduce all the IHES included in this study perceive it is the institution's responsibility to extend the offerings and information of the institution. No one type of institution has the sole responsibility for the extension of the institution in the state, country, or world. The investigators senior administrators should plan for and be prepared to compete for students entering into the higher education arena. Distance learning has become part of the mission of all of higher education.

In conducting this study, the researcher wanted to find new and innovative means to fund distance learning. The findings from the study indicate the respondents use what are the known revenue sources for technology infrastructure, credit course development and credit course delivery. The study also found institutions the same size as the investigators institution have limited flexibility for funding distance learning.

The study indicates the administrator respondents either did not know or were not concerned with student services for distance learning students. A recommendation to the researcher's institution policy makers is to work with the institution's Dean of Students to provide appropriate student services to distance learning students. This administrator is the expert in the IHE in providing student services and should be consulted.

The findings of this study will also assist the researcher's institutional policy makers in justifying technology expenditures the institutions make in order to deliver distance learning to external policy makers namely state legislatures. The study can assist the institutions senior administrators in advocating to state policy makers for the additional resources necessary to extend the institution beyond the campus.

Further Study

The researcher learned from this study that the chief information officer may have a title that does not readily lend itself to easy identification at all IHEs in the country. The chief information officers had the smallest return rate in this study, leading the researcher to conclude the correct administrator might not have been identified in all the institutions for this study. A future study could replicate this study by determining the correct administrator. The determination could be made through the institution's human resources office or through a phone call to the institutions chief executive office or chief academic office.

This study asked senior administrators what reasons characterized their mission or purpose, and vision or intent for offering distance learning in their institutions. Because of their leadership responsibilities these individuals may have substantially different reasons than administrators at levels closer to instructional delivery. A study of other university administrators could produce different results.

A qualitative study focusing on mission and vision of Deans or Department Head/ Chair might yield powerful data. These administrators are involved in instructional delivery decisions in response to student and institutional needs.

Although the three senior administrators in this study did not identify student services as a priority for distance learning students, the literature review leads the investigator to believe student services is an important facet of distance learning offering in IHEs. A survey of students enrolled in distance learning courses should be conducted to determine these student's expectations and desires regarding services the IHE should provide.

While this study did not strongly identify serving the institution's alumni as a priority, it would be interesting to learn what alumni and former student's academic expectations are after they leave the university. A survey of alumni should be undertaken to ascertain their viewpoint on what they want their alma mater to provide for them in the future. This information might be useful to institutional policy makers in order to continue a long term relationship with these alumni and former students.

The senior administrators in this study did not identify serving business and industry as a reason for mission or administrative intent. A survey of top businesses and employers in the state to determine the role their land grant or state university should play in responding to the educational needs of their employees could be conducted.

References

Alreck, P., & Settle, R. (1995). *The survey research handbook* (2nd ed.). Boston: Irwin/ McGraw Hill.

Altbach, P. (1999). Harsh realities: The professoriate faces a new century. In P. Altbach, R. Berdahl & P. Gumport (Eds.), *American higher education in the twenty-first century* (pp. 271-298). Baltimore: Johns Hopkins University Press.

Altschuler, G., & Janis, R. (2000, June 16). Promise and pitfalls in distance education for alumni. *The Chronicle of Higher Education,* p. A30.

Anastasi, A. (1988). *Psychological testing.* New York: Macmillian.

Angevine, J. (1997). Images of the future: Crystal ball gazing and technology policy making. In Westbrook, K. (Eds.), *Technology and the educational workplace* (pp 188-197) Thousand Oaks, California. Corwin Press

Antolovic, L. (2003). *IT funding strategies: It is 2003. Do you know where your IT dollar is?* Paper presented at the EDUCAUSE Midwestern Regional Conference, March 24-26, Chicago, IL.

Ary, D., Jacobs, L. C., & Razavieh, A. (1979). *Introduction to research in education* (2nd ed.). New York: Holt, Rinehart and Winston, Inc.

Ayres, E., & Grisham, C. (2004). Why IT has not paid off as we had hoped (yet). *virginia.edu, VIII* (1), April 27, 2004.

Bachman, D., Elfrink, J., & Vazzana, G. (1989). Tracking the progress of E-mail versus snail mail. *Marketing Research, 8*(2), 31-35.

Barone, C. (2003). *Technology and the changing teaching and learning landscape*. Washington, DC: American Association of Higher Education.

Barr, M. (2002). *Academic administrator's guide to management*. San Francisco: Jossey-Bass.

Bates, A. (2000). *Managing technological change*. San Francisco: Jossey-Bass.

Beaudoin, M. (2003). Distance education leadership for the new century. *Online Journal of Distance Learning Administration, 6*(2), July 7, 2004.

Berelson, B. (1952). *Content analysis in communication research*. New York: American Book.

Berg, G. (1998). Public policy on distance learning in higher education: California state and Western Governor's Association initiatives. *Education Policy Archives, 6*(11), May 24, 2003.

Birnbaum, R. (1988). *How colleges work: The cybernetics of academics and leadership*. San Francisco: Jossey-Bass.

Blumenstyk, G. (2001). *Temple U. shuts down for-profit distance education company.* Retrieved May 15, 2004 from http://chronicle.com/free/v47/i45/45a02901.htm.

Bode, C. (1956). *The American lyceum town meeting of the mind*. New York: Oxford University Press.

Bogue, E., & Aper, J. (2000). *Exploring the heritage of American higher education: The evolution of philosophy and policy*. Phoenix, AZ: Oryx Press.

Booz Allen Hamilton. (2002). *Re-learning e-learning.* Retrieved April 27, 2003 from http://extfile.bah.com/livelink/livelink/108290/?func=doc.Fetch&nodeid=108290.

Brubaker, J., & Rudy, W. (1997). *Higher education in transition: A history of American colleges and universities* (4th ed.). New Brunswick, NJ: Transaction Publishers.

Bunn, M. D. (2001). Timeless and timely issues in distance education planning. *The American Journal of Distance Education, 15*(1): 55-68.

California Learning Project(2000) National institute for literacy State Policy Update. Retrieved September 10, 2005 from http://www.nifl.gov/nifl/policy/distance.htm

Care, W., & Scanlon, J. (2001). Planning and managing the development of courses for distance delivery: Results from a qualitative study. *Online Journal of Distance Learning Administration, IV*(II), July 22, 2004.

Carnevale, D. (2003). *Group plans new services for distance education.* Retrieved July 10, 2004 from http://chronicle.com/free/2003/04/200304180lt.htm.

Carnevale, D. (2002). *In states hurt by the recession, technology is on the chopping block.* Retrieved January 5, 2003 from http://chronicle.com/weekly/v48/i45/45a02901.htm.

Carnevale, D. (2001, September 14). Should distance education students pay for campus based services? *The Chronicle of Higher Education,* pp. A26-A27.

Carnevale, D. (2000, February, 18). Assessing the quality of online courses remains a challenge, educators agree. *The Chronicle of Higher Education,* p. A29.

Carnegie Foundation for the Advancement of Teaching. Retrieved September 10, 2005 from http:// carnegiefoundation.org/classifications/

Carr, S. (2001). *Anyone making money on distance education?* Retrieved January 7, 2003 from http://chronicle.com/weekly?v47/i23/23a04101.htm.

Carr, S. (2000). *Princeton, Stanford and Yale plan alliance to offer online courses to alumni.* Retrieved July 17, 2004 from http://chronicle.com/cgi2-bin/printable.cgi?article=http://chronicle.com/prm/weekly/v46i2.

Chastain, M. (2003). *Rethinking advising at Kansas State University.* Retrieved August 3, 2003 from http://www.wcet.info/communique/2003/May.

Christovich, L. (2005). *Universities continue to expand their research space with the largest increase since 1988; data reported for networking capacity*. Retrieved July 28, 2005 from http://www.nsf.gov/statistics/inbrief/nsfo5314.

College and University Personnel Administration. CUPA (2003). *Human resources 2002-03 administrative compensation survey*. Knoxville, TN: Author.

Converse, J. & Presser, S. (1986). Survey questions handcrafting the standardized questionnaire Thousands Oaks, California: Sage Publications Inc.

Couper, M., Traugott, M., & Lamias, M. (2001). Web survey design and administration. *Public Opinion Quarterly, 65*(2), 230-252.

Cozby, P. (2004). *Methods in behavioral research* (Eighth Edition ed.). New York: The McGraw-Hill Companies

Crawley, A. (2004). Online student services benefit all students. *Student Affairs On-Line, 5*(1), 2005.

Cresswell, J. W. (2003). Research design: Qualitative, quantitative,and mixed methods approaches (2nd ed.). Thousand Oaks, CA: Sage Publications.

Curti, M., & Carstensen, V. (1949). *The University of Wisconsin: A history 1848-1925*. Madison: University of Wisconsin Press.

Daniel, J. S. (1999). *Mega-universities and knowledge media* (5th ed.). London: Kogan Page.

Dickeson, R. (1999*). Prioritizing academic programs and services: Reallocating resources to achieve strategic balance.* San Francisco: Jossey-Bass.

Dillman, D. (1978). *Mail and telephone surveys: The total design method*. New York: Wiley.

Dillman, D. (2000). *Mail and Internet surveys: The tailored design method*. New York: Wiley.

Dillman, D., Tortora, R., & Bowker, R. (2003). *Principles for constructing Web surveys.* Retrieved October 10, 2003 from www.ksu.edu/surveys.

Distance Learning Policy Laboratory. (2002). *Anytime, anyplace services for the 21st century student*. Atlanta, GA.: Southern Regional Education Board.

Dolence, M., & Norris, D. (1995). *Transforming higher education: A vision for learning in the 21st Century*. Ann Arbor, MI: Society for College and University Planning.

Dressel, P.L. (1987). Mission, organization, and leadership. Journal of Higher Education, 58(1), 101-110.

Driver, R., Morris, J., & Henwood, W. (1991). Maximizing unit and individual performance through more individualized faculty roles. In R. Sims, & S. Sims (Eds.), *Managing institutions of higher education into the 21st century* (pp. 122-139). Westport, CT: Greenwood Press.

Duderstadt, J. (1999). Can colleges and universities survive in the education age? In R. Katz (Ed.), *Dancing with the devil: Information technology and the new competition in higher education* (pp. 1-27). San Francisco: Jossey-Bass.

Dunning, B., Vankekerix, M., & Zaborowski, L. (1993). *Reaching learners through telecommunications*. San Francisco: Jossey-Bass.

Eaton, J. (2001). *Maintaining the delicate balance: Distance learning, higher education accreditation and the politics of self-regulation.* (Council for Higher Education Accreditation Monograph Series, No. 1). Washington, D.C.: American Council on Education.

Eckel, P., & Kezar, A. (2003). *Taking the reins: institutional transformation in higher education.* Westport, CT: Praeger.

Eddy, J. E. (1956). *Colleges for our land and time: The land-grant idea in American education*. New York: Harper Brothers.

Edgerton, R. (2000). The re-examination of faculty. In D. DeZure (Ed.), *Learning from change* (pp. 19-23). Sterling, VA: Stylus.

Epper, R. (1999). *State policies for distance education: A survey of states*. Denver, CO: State Higher Education Executive Officers.

Epper, R. (1997). Coordination and competition in postsecondary distance education. *Journal of Higher Education, 68*(5), 551-587.

Farrington, G. (1997). Higher education in the information age. In D. Oblinger, & S. Rush (Eds.), *The learning revolution* (pp. 54-71). Bolton, MA: Anker.

Fowler, F. (2002). *Survey research methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Fowler, F. (1995). *Improving survey questions: Design and evaluation*. Thousand Oaks, CA: Sage Publications.

Garrison, D. (1990). Communications technology. In D. Garrison, & D. Shale (Eds.), *Education at a distance: From issues to practice* (pp. 41-52). Malabar, FL: Robert E. Krieger.

Garrison, D. R., & Anderson, T. D. (1999). Avoiding the industralization of research universities: Big and little distance education. *The American Journal of Distance Education, 13*(2), 48-63.

Gasset, J. (1946). *Mission of the university*. London: Lund Humphries.

Gilbert, S. (1997). *Visions worth working toward: Narrowing the widening gap.* Retrieved August 3, 2003 from http://www.tltgroup.org/resources/vwwt.html

Glover, R., & Krotseng, M. (1993). *Developing executive information systems for higher education: New directions for institutional research.* San Francisco: Jossey-Bass.

Gould, S. (1968). A new objective. In C. Dobbins, & C. Lee (Eds.), *Whose goals for American higher education?* (pp. 220-229). Washington, DC: American Council on Education.

Grant, D. (1999). Intellectual life of alumni. *Journal of Higher Education, 70*(5), 533-541.

Graves, W. (1999). Developing and using technology as a strategic asset. In R. Katz (Ed.), *Dancing with the devil: Information technology and the new competition in higher education* (pp. 95-118). San Francisco: Jossey-Bass.

Gray, L. R., & Airsian, P. (2003). *Educational research competencies for analysis and applications* (7th ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Green, K. a. (1997). Drawn to the light, burned by the flame? Money, technology, and distance education. *ED, Education at a Distance,* (5), J1-J9.

Green, K. b (1997). *Supporting instruction and assisting users: The major technology challenge confronting US colleges and universities.* Retrieved September 13, 2003 from http://ts.mivu.org/default.asp?show=article&id=550.

Green, K. (2003). *Campus computing 2003: The 14th national survey of computing and information technology in American higher education*. Encino, CA: The Campus Computing Project.

Green, K. (1999). When wishes come true: Colleges and the convergence of access, lifelong learning and technology. *Change, 30*(2), 11-15.

Green, K. (1998). *Colleges struggle with IT planning.* Retrieved July 25, 2004 from http://www.campuscomputing.net/.

Greenburg, M. (2004). *How the G.I. bill changed higher education.* Retrieved June 26, 2004 from http://chronicle.com/prmweekly/v50/i41/41b00901.htm.

Gregorian, V. (2004). *Colleges must reconstruct the unity of knowledge.* Retrieved June 26, 2004 from http://chronicle.com/weekly/v50/i39.htm.

Gross, T. (2000). Inside room 307. In D. DeZure (Ed.), *Learning from change: Landmarks in teaching and learning in higher education from* Change *magazine, 1996-1999* (pp. 9-11). Sterling, VA: Stylus.

Grover, V. (2003). *A tutorial on survey research: From constructs to theory.* Retrieved October 5, 2003 from http://dmsweb.badm.sc.edu/grover/survey/MIS-SUVY.html.

Guernsey, L. (1998). *Colleges debate the wisdom of having on-campus students enroll in on-line classes.* http://chronicle.com/che-data/articles.dir/issue-29dir/29a02901.htm

Hanna, D. (2000). *Higher education in the era of digital competition*. Madison, WI: Atwood Publishing.

Hawkins, B. (2000). Technology, higher education, and a very foggy crystal ball. *EDUCAUSE Review*, 64-73.

Hawkins, B., Rudy, J., & Madsen, J. (2003). *Core data service 2002 summary report*. Boulder, CO: EDUCAUSE.

Hawkins,B., Marcum D.(2002). Leadership challenges for the campus and the profession. Retrieved July 7, 2003 from http://www.educause.org

Heller, D. (2001). Trends in the affordability of public colleges and universities: The contradiction of increasing prices and increasing enrollment. In D. Heller (Ed.), *The states and public higher education policy* (pp. 11-39). Baltimore, MD: Johns Hopkins University Press.

Hendley, V. (2000). *Thirty years of higher education*. Retrieved May, 25, 2004 from aahebullentin.com/public/archive/marchoofl.asp?pf=1.

Hezel, R. (1996). *Educational telecommunications: The state-by-state analysis, 1996-97*. Syracuse, NY: Hezel Associates.

Hezel, R. (1990). *State-wide planning for telecommunication in education*. Syracuse, N.Y.: Annenberg Corporation for Public Broadcasting Project.

Hill, S. (1999). Required to be wired? *Kansas Alumni, 97*(6) 22-29.

Holsti, O. (1969). *Content analysis for the social services and humanities*. Reading, MA: Addison-Wesley.

Howell, S., Williams, P., & Lindsay, N. (2003). Thirty-two trends affecting distance education: An informed foundation for strategic planning. *Online Journal of Distance Learning Administration, VI*(III), September 21, 2003.

Hurley, D. (2002). *A study of the leadership preparedness of U.S. public university chief business officers*. Unpublished doctoral dissertation, Kalamazoo, MI: Western Michigan University.

Hurley, D. (2003). *Developing in the evolving role of chief business officer.* Retrieved July 6, 2003 from http://www.nacubo.org.

Immerwahr, J. (2002). *Meeting the competition: College and university presidents, faculty, and state legislators view the new competitive academic arena*. Providence, RI: The Futures Project: Policy for Higher Education in a Changing World.

Irlbeck, S. (2001). *Leadership and distance education* (PhD ed.). Minneapolis: University of Minnesota.

Irlbeck, S. (2002). *Leadership and distance education in higher education: A perspective.* Retrieved June, 13, 2003 from www.irrodl.org/content/V3.2/irlbeck.html.

Jewitt, F. (2000). Bridge: a model for computing the Costs of using distance learning instruction and classroom instruction. *The American Journal of Distance Education* 14(2) 37-47

Johnstone, B. (1998). Patterns of finance: Revolution evolution or more of the same? *The Review of Higher Education, 21*(3), 245-255.

Johnstone, S. (2002). *Really serving students at a distance.* Retrieved July 30, 2004 from http://www.syllabus.com/print.asp?ID=6244.

Jones, D. (2001). *Technology costing methodology handbook—version 1.0*. Boulder, CO: Western Interstate Commission for Higher Education

Jones, D., & Matthews, D. (2002). *The transformation of instruction by information technology: Implications for state higher education policy*. Boulder, Colorado: Western Cooperative for Educational Telecommunications.

Jones, S. (2002). *The Internet goes to college*. Washington, DC: Pew American Internet and American Life Project.

Kaiser Family Foundation. (2003). *Zero-six: Electronic media in the lives of infants, toddlers and preschoolers*. Washington, DC: Author.

Kaiser, J., & Kaiser, P. (1994). Persuasive messages to support planned change. *College and University, LXIX* (3), 124-129.

Kansas State University. (2004). *K-State undergraduate catalog, 2004-2006*. Retrieved July 7, from http://courses.ksu.edu/catalog/undergraduate/tuition/schedule.html

Katz, R. (1999). Competitive strategies fro higher education in the information age. In R. Katz (Ed.), *Dancing with the devil: Information technology and the new competition in higher education* (pp. 27-49). San Francisco: Jossey-Bass.

Katz, R., Kvavik, R., Penrod, J., Pirani, J., Nelson, M., & Salaway, G. (2004). *Information technology leadership in higher education: The condition of the community*. Boulder, CO: EDUCAUSE Center for Applied Research.

Katz, R., & West, R. (1992). *Sustaining excellence in the 21st century: A vision and strategies for college and university administration*. (CAUSE Professional Paper Series Number 8.) Boulder, CO: The Association for the Management of Information Technology in Higher Education.

Katz, S. (2001). *In information technology, don't mistake a tool for a goal.* Retrieved August 3, 2003 from http://chronicle.com/weekly/v47/i40/40b00701.htm.

Keegan, D., & Rumble, G. (1982). Distance teaching at university level. In G. Rumble, & K. Harry (Eds.), *The distance teaching universities* (pp. 15-31). London: Croon Helm.

Keisler, S., & Sproull, L. S. (1986). Response effects in the electronic survey. *Public Opinion Quarterly, 50,* 402-413.

Keller, G. (1995). Creating a vision for the future. In S. Johnson, & S. Rush (Eds.), *Reinventing the university: Managing and financing institutions of higher education* (pp. 381-390). New York: John Wiley.

Kellogg Commission on the Future of State and Land Grant Universities. (2000). *Renewing the covenant: Learning, discovery and engagement in a new age and different world*. Washington, DC: National Association of State Universities and Land Grant Colleges.

Kerr, C. (1994). *Higher education cannot escape history*. Albany: State University of New York Press.

Kerr, C. (1984). *Presidents make a difference: Strengthening leadership in colleges and universities*. Washington, DC: Association of Governing Boards of Colleges and Universities.

Kerr, C., & Gade, M. (1986). *The many lives of academic presidents*. Washington, DC: Association of Governing Boards of Universities and Colleges.

Kerr, W. (1931, November 16-18). *The spirit of the land-grant institutions*. Addresses delivered at the 45th annual convention of the Association of Land-Grant Colleges and Universities at Chicago, IL.

Kiernan, V. (2003, July 21). A survey documents growth in distance education in late 1990's. *The Chronicle of Higher Education*, pp. A26-A27.

Kobulnicky, P. (1999). Critical factors in information technology planning for the academy. *Cause/Effect*, *22*(2).

Kouzes, J., & Posner, B. (2003). The Jossey-Bass academic administrator's guide to exemplary leadership. San Francisco: Jossey-Bass.

Kravik, R., & Hanberg, M. (2000). Transforming student services. *Educause Quarterly*, 2, 31-37.

Krathwohl, D. (1998). *Educational and social science research: an integrated approach* (2nd ed.). Reading, MA: Addison-Wesley Educational Publishers.

Kretovics, M. (2003). The role of student affairs in distance education: Cyber-services or virtual communities. *Online Journal of Distance Learning Administration, VII*(III), July 10, 2004.

Krippendorff, K. (1980). *Content analysis: an introduction to its methodology*. Beverly Hills, CA: Sage Publications.

Lambert, L. (2002). Chief academic officers. In R. Diamond (Ed.), *Field guide to academic leadership* (pp. 425-437). San Francisco: Jossey-Bass.

LaPadua, M. (2003). A comprehensive look at online student support services for distance learners. *The American Journal of Distance Education, 17*(2), 119-128.

Larson, R., & Strehle, G. (2000). *Edu-tech: What's a president to do?* Washington, DC: United States House of Representatives, Committee on Science.

Latimer, D. (1999). A National Study of Chief Information Officers in U.S.Higher Eduacation Retrieved May 20, 2004 from http://www.ciosinacademia.org/introduction.htm.

Layzell, D., & Lyddon, J. (1990). *Budgeting for higher education at the state level*. Washington, DC: The George Washington School of Education and Human Development.

Leiner, B., et al. (2000). *A brief history of the internet.* Retrieved August 6, 2004 from http://www.isoc.org/internet/history/brief.shtml.

Lenhart, A., Simon, M., & Granzino, M. (2001). *The internet and education: Findings of the Pew Internet and American Life Project*. Washington, DC: Pew Internet and American Life Project.

Lenth, C. (1993). *The tuition dilemma—State policies and practices in pricing public higher education*. Denver, CO: State Higher Education Executive Officers.

Leslie, L., & Anderson, R. (Eds.). (1990). *ASHE reader on finance in higher education*. Needham Heights, MA: Ginn Press.

Levine, A., & Sun, J. (2002). *Barriers to distance education*. Washington, DC: American Council on Education.

Lezberg, A. (1998). Quality control in distance education: The role of accreditation. *The American Journal of Distance Education, 12*(2), 26-37.

Liberman, E. (2002). The new competition for college. *State Legislatures*, *28*(5) 12-17.

Losco, J., & Fife, B. (2000). Higher education spending: assessing policy priorities. In J. Losco, & B. Fife (Eds.), *Higher education in transition: The challenges of the new millennium* (pp. 51-83). Westport, CT: Bergen and Garvey.

Lucas, A. (2000). *Leading academic change*. San Francisco: Jossey-Bass.

Mackenzie, O., & Christensen, E. (1971). *The changing world of correspondence study*. University Park: The Pennsylvania State University Press.

Maltz, L., & De Blois, P. (2005). *Top -ten issues 2005*. *EDUCAUSE Review, May/June,* 15-28

MacKenzie, O., Christensen, E., & Rigby, P. (1968). *Correspondence instruction in the United States*. New York: McGraw Hill.

Mark, M. (1990). The differentiation of institutional structures and effectiveness in distance education programs. In M. Moore (Ed.), *Contemporary issues in American distance education* (pp. 11-21). New York: Pergamon.

Marks, J., & Caruthers, J. (1999). *A primer on funding of public higher education.* Retrieved March 29, 2003 from http://www.sreb.org/main/Publications/Finance/PrimeronFundingHigherEd.pdf.

Martin, J., & Samuel, J. (1997). First among equals: The current roles of the chief academic officer. In J. Martin (Ed.), *First among equals: the role of the chief academic officer* (pp. 3-21). Baltimore, MD: Johns Hopkins University Press.

Massy, W. (2003). *Honoring the trust*. Bolton, MA: Anker.

Matthews, D. (1998). Transforming higher education: implications for state higher education policy. *Educom Review, 33*(5), 48-57.

McClure, P. A. (2003). *Organizing and managing information resources on your campus*. San Francisco: Jossey-Bass.

McCollom, K. (1999, February 19). Colleges struggle to manage technology's rising costs; administrators say planning, not yet widely used, is the key. *The Chronicle of Higher Education,* p A27.

McCredie, J. (2000). Planning for IT in higher education: It's not an oxymoron. EDUCAUSE QUARTERLY, (4), 14-21.

McDonald, W. (2002). *Creating campus community: In search of Ernest Boyer's legacy*. San Francisco: Jossey-Bass.

Mech, T. (1997). The managerial roles of chief academic officers. *The Journal of Higher Education, 68*(3), 282-298.

Mehta, R. (1995). Comparing response rates and response content in mail versus electronic mail surveys. *Journal of the Market Research Society, 37*, 429-439.

Meisinger, R., & Dubeck, L. (1984). *College and university budgeting*. Washington, DC: National Association of College and University Business Officers.

Middaugh, M., Graham, R., & Shadid, A. (2003). *A study of higher education instructional expenditures: The Delaware study of instructional cost and productivity*. Washington, DC: U.S. Department of Education.

Middaugh, M. (2005). Understanding higher education costs. *Planning for Higher Education, 33*(3), 5-18.

Mingle, J. (1995). Vision and reality for technology-based delivery systems in postsecondary education. Boulder, CO: State Higher Education Excecutive Officers.

Mintzberg, H. (1994). *The rise and fall of strategic planning: Reconceiving roles for planning, plans, planners*. New York: The Free Press.

Mintzberg, H. (1983). *Structures in fives: Designing effective organizations*. Englewood Cliffs, NJ: Prentice Hall.

Moak, M. (2000). *A view from the states: A survey of the collection and use of cost data by state*. Washington, DC: The Institute for Higher Education Policy and TIAA-CREF Institute.

Moore, M., & Kearsley, G. (1996). *Distance education: A systems view*. Belmont, CA: Wadsworth.

Morton, J. (1953). *University extension in the United States*. Birmingham: University of Alabama Press.

Mumper, M. (2001). The paradox of college prices: Five stories. In D. Heller (Ed.), *The states and public higher education policy* (pp. 39-64). Baltimore, MD: Johns Hopkins University Press.

Nanson, S.K. (1989). Influences of the Chautauqua Movement on American higher education. ED 312940.

National Association of College and University Business Officers. (1974). *College and university business administration* (3rd ed.). Washington, DC: Author.

National Association of State Universities and Land Grant Colleges NASULGC. (1998). *Development of the land grant system: 1862-1994*. Retrieved September 11, 1998 from http://www.nasulgc.org//publications/Land_Grant/Development.htm.

National Association of State Universities and Land Grant Colleges. (2003). *The land grant tradition: Text of federal legislation relating to land-grant colleges and universities.* Retrieved July 7, 2003 from http://www.nasulgc.org/publications/land_grant/Hatch.htm.

National Association of State Universities and Land Grant Colleges. (2003). *The land grant tradition: What is a land grant college?* Retrieved July 7, 2003 from http://www.nasulgc.org/publications/land_grant/land.htm.

National Association of State Universities and Land Grant Colleges. (2003). *The millennium partnership initiative: Preparing Americans for the 21st century.* Retrieved May 25, 2003 from http://www.nasulgc.org/publications/mpifinal2.pdf.

National Association of State Universities and Land Grant Colleges. (2003). *NASULGC membership information.* Retrieved on PLAUSIBLE DATE from http://www.nasulgc.org/About_Nasulgc/nasulgc_membership.htm.

National Center for Education Statistics. (1999). *Digest of education statistics, 1998*. Washington, DC: United States Department of Education.

National Center for Education Statistics. (2000). *Integrated postsecondary education data system (IPEDS): Finance FY2000 survey*. Washington, DC: Author.

National Center for Education Statistics. (2003). *Distance education at degree-granting postsecondary institutions: 2000-2001*. Washington, DC: United States Department of Education, Institute of Educational Services.

National Center for Education Statistics. (2004) *About IPEDS*. Retrieved May 25, 2004 from http://nces.ed.gov/ipeds/AboutIPEDS.ays.

National Science Foundation. (2004). *Federal funds for research and development, fiscal years 1970-2003.* Retrieved September 1, 2004 from http://www.nsf.gov/sbe/srs/nsf04335/tables.htm.

Neal, E. (1999). Distance education. *National Forum, 79*(1), 40-44.

Neuendorf, K. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage Publications.

Newman, F., & Scurry, J. (2000). *The Futures Project: Higher education in the digital rapids.* Retrieved April 21, 2003 from www.futuresproject.org/publications/digitalrapidsreport1.pdf.

Noble, D. F. (1998). Digital diploma mills: The automation of higher education. *First Monday, 3*(1), September 15, 2005 from http://www.firstmonday.dk/issues/issue3_1noble/index.html.

North Central Association Commission on Institutions of Higher Education. (2000). *An overview of accreditation.* Retrieved September 18, 2000 from http://www.ncacihe.org/overview/orintro.html.

O'Neil, R. (1999). Academic freedom: Past, present and future. In P. Altbach, R. Berdahl & P. Gumport (Eds.), *American higher education in the twenty-first century* (pp. 89-109). Baltimore, MD: Johns Hopkins University Press.

Oblinger, D. (1998). *What business wants from higher education*. Phoenix, AZ: Oryx Press.

Oblinger, D.. (2004). *The next-generation learner*. Retrieved October 31, 2005 from http://www.educause.edu/TheNext%2DGenerationLearner/2839.

Oblinger, D..& Kidwell, J. (2000). Distance learning are we being realistic? *Educause* May /June. 30-39.

Oblinger, D., & Rush, S. C. (1997). *The learning revolution*. Bolton, MA: Anker.

Oblinger, D..& Oblinger J. (2005). Is it age or IT: First steps toward understanding the net generation. In Oblinger, D. & Oblinger J.(Eds.) Educating the net generation. Educause e Book

Olsen, F. (2003). *Survey sets information-technology benchmarks for campuses, and suggests a lingering 'digital divide'*. Retrieved October 8, 2003 from htttp://www.chronicle.com/infotech.

Olsen, F. (2003, October 31). Harvard will offer lifetime E-mail accounts to its alumni. *The Chronicle of Higher Education,* p. A33.

Olsen, F. (2003, May 16). Internet 2 at a crossroads. *The Chronicle of Higher Education,* pp. A32-A35.

Olsen, F. (2002, November 1). Phoenix rises. *The Chronicle of Higher Education,* pp. A29-A31.

Owen, H. (1968). The whole picture. In C. Dobbins, & C. Lee (Eds.), *Whose goals for American higher education?* (pp. 187-189). Washington, DC: American Council on Education.

Parker, W. E. (1924). *The life and public service of Justin Smith Morrill*. Cambridge, MA: The Riverside Press.

Parrish, D., & Parrish, A. (2000). *Developing a distance education policy for 21st century learning.* Washington, DC: American Council on Education.

Pattenaude, R. (2000). Administering the modern university. In J. Losco, & B. Fife (Eds.), *Higher education in transition: the challenges of the new millennium* (pp. 159-177). Westport, CT: Bergin and Garvey.

Peebles, C., & Antolovic, L. (1999). Cost (and quality and value) of information technology support in large research universities. *Educom Review, 34*(5), pp. 20-23, 46-49.

Peng, S. (1999). *Integrated postsecondary education data systems (IPEDS): An improved system*. Washington, DC: National Center for Educational Statistics.

Penrod, J. (2003). Creating a realistic IT vision: The roles and responsibilities of a chief information officer. *The Technology Source*, http;//ts.mivu.otg/default.asp?show=article&id=1034.Retrived August 3, 2003.

Peterson, M. (1997). *Planning and management for a changing environment: A handbook on redesigning postsecondary institutions*. San Francisco: Jossey-Bass.

Petrides, L. (2000). *Case studies on information technology in higher education: Implications for policy and practice*. Hershey, PA: Idea Group Publishing.

Phipps, R., & Wellman, J. (2001). *Funding the infostructure: A guide to financing technology infrastructure in higher education*. Washington, DC: The Institute for Higher Education.

Pittman, V. (1990). Correspondence study in the American university. In M. Moore (Ed.), *Contemporary issues in American distance education* (pp. 67-80). Oxford, England: Pergamon Press.

Raphael, A. B. (2005). *Beyond admission: The expressed needs for student services by distance learners*. Unpublished doctoral dissertation, University of Georgia, Athens.

Rasmussen, C. (2003). *State tuition, fees, and financial assistance policies, 2002-03*. Denver, CO: State Higher Education Executive Officers.

Rea L., & Parker, R. (1997). *Designing and conducting survey research*. San Francisco: Jossey-Bass.

Read, B. (2002). *10 ways colleges can cut IT costs.* Retrieved September 30, 2002 from http://chronicle.com/chi2-bin/printable.cgi.

Regional Accrediting Commissions. (2003). *Best practices for electronically offered degree and certificate programs.* Retrieved July 7, 2003 from www.wiche.edu/telecom.

Resmer, M., Mingle, J., & Oblinger, D. (1995). *Computers for all students: A strategy for universal access to information resources*. Denver, CO: State Higher Education Executive Officers.

Richardson, J. R., Bracco, K., Callan, P., & Finney, J. (1998). *Higher education governance: Balancing institutional and market influences*. Retrieved July 19, 2002 from http://www.highereducation.org/reports/governance/governance.shtml.

Robbins, G. (1973). Understanding the college budget. In L. Leslie, & R. Anderson (Eds.), *ASHE reader on finance in higher education* (pp. 25-57). Needham Heights, MA: Ginn Press.

Rocheleau, B. (1999-2000). Computing in higher educational institutions in an era of sea change. *Journal of Educational Technology Systems, 28*(2), 159-169.

Rowley, S., Lujan, H., & Dolence, M. (1998). *Strategic choices for the academ: How demand for lifelong learning will re-create higher education.* San Francisco: Jossey-Bass.

Rudolph, F. (1990). *The American college and university*. Athens: The University of Georgia Press.

Rudy, J., & Kobulnicky, P. (2002). Third annual EDUCAUSE survey identifies current IT issues. *EDUCAUSE Quarterly,* (2).

Rumble, G. & Keegan, D. (1982) General characteristics of the distance teaching universities. In G. Rumble & K. Harry (Eds.) *The distance teaching university.*London. Cromm Helm

Russell, A. (2000). *Issue priorities and trends in state higher education.* Denver, CO: State Higher Education Executive Officers.

Sachs, D., & Hale, N. (2003). Pace university's focus on student satisfaction with student services in online education. Retrieved on October 11, 2005 from http://www.sloan-c.org/publications/jaln/v7n2/index.asp.

Saettler, P. (1990). *The evolution of American educational technology*. Englewood, CO: Libraries Unlimited.

Sauder, W., & Foster, J. R. (1991). Comprehensive university extension in the 21st century. In R. Sims, & S. Sims (Eds.), *Managing institutions of higher education into the 21st century* (pp. 157-177). Westport, CT: Greenwood Press.

Schafer, D., & Dillman, D. (1998). Development of a standard E-mail methodology: Results of an experiment. *Public Opinion Quarterly, 62*(3), 378-397.

Schonlau, M., Fricker, R., & Elliott, M. (2002). *Conducting research surveys via E-mail and the web.* Santa Monica, CA: RAND Corporation.

Shannon, D., Johnson, T., Searcy, S., & Lott, A. (2002). Survey professionals using electronic surveys. *ERIC Digests.* Retrieved October 5, 2003 from http://www.ericfacility.net/ericdigests/ed470202.html.

Shannon, T., & Schoenfeld, C. (1965). *University extension*. New York: The Center for Applied Research in Education, Inc.

Shedd, J. (2003). The history of the student credit hour. In J. Wellman, & T. Ehrlich (Eds.), *How the student credit hour shapes higher education: The tie that binds* (pp. 5-13). Hoboken, NJ: Wiley Periodicals, Inc.

Sheehan, K., & Hoy, M. (1999). *Using E-mail to survey Internet users in the United States: Methodology and assessment.* Retrieved September 9, 2003 from http://www.ascusc.org/jcmc/vol14/issues3/sheehan.html.

Sherow, S., & Wedermeyer, C. (1990). Origins of distance education in the United States. In D. Garrison, & D. Shale (Eds.), *Education at a distance: From issues to practice* (pp. 7-21). Malabar, FL: Krieger Publishing Company.

Shoemaker, C. (1998). *Leadership in continuing and distance education in higher education.* Needham Heights, MA: Allyn and Bacon.

Slaughter, S. (1981). Academic freedom in the modern university. In P. Altbach, & R. Berdahl (Eds.), *Higher education in American society* (pp. 77-107). Buffalo, NY: Prometheus Books.

Smallen, D., & Leach, K. (2002). Seven benchmarks for information technology investments. *Educause Quarterly*, (3), 22-27.

Smallen, D., & McCredie, J. (2003). Getting beyond budget dust to sustainable models for funding information technology. In P. McClure (Ed.), *Organizing and managing information resources on your campus* (pp. 45-58). San Francisco: Jossey-Bass.

Smith, C. (1997). *Casting the net: Surveying an Internet population.* Retrieved August 8, 2003 from http://www.ascusc.org/jcmc/vol3/issue/smith.html.

Smith, T. W. (1998). Distance education as a strategy: What is the objective? *The American Journal of Distance Education, 12*(2), 60-69.

Smith-Lever act. (2003). Retrieved May 24, 2003 from http://www.usda.gov

St. John, E. (1991). The transformation of private liberal arts colleges. *The Review of Higher Education, 15*(1), 83-106.

Sudman, S., & Bradburn, N. (1974). *Response effects in surveys: a review and synthesis*. Chicago: National Opinion Research Center.

Swenson, C. (1998). Customers and markets: The cuss words of academe. *Change, 30*(5), 31-37.

Tapia, J. (1997). *Circuit Chautauqua: From rural education to popular entertainment in early twentieth-century America*. Jefferson, NC: McFarland and Company, Inc.

Taylor, A., & Schmidtlein, F. (2000). *Creating a cost framework for instructional technology.* Retrieved September 13, 2003 from http://ts.mivu.org/default.asp?show=article&id=815.

Texas Higher Education Commission. (1996). *Texas higher education distance learning master plan.* Retrieved July 17, 2002 from http://www.thecb.state.tx.us/reports/HTML/0198/198PROGDEV.HTM.

Thorton, J. W. (1964). *State colleges and universities*. Washington, DC: The Center for Applied Research in Education.

Tierney, W. (2002). Mission and vision statements. In R. Diamond (Ed.), *Field guide to academic leadership* (pp. 49-59). San Francisco: Jossey-Bass.

Twigg, C. (2003). Improving learning and reducing costs new models for online learning. EDUCAUSE Review, September/October, 28-38.

Twigg, C., & Oblinger, D. (1996). *The virtual university*. Washington, DC: Joint Educom/IBM Roundtable.

United States Congress. (1862). *The Morrill act.* Retrieved July, 7, 2003 from http://www.nasulgc.org/publications/Land_Grant/LGTrad_FirstMorrillAct.htm.

United States Department of Education. (1999). *Distance education at postsecondary education institutions: 1997-98*. Washington, DC: Author.

Van Dusen, G. (2000). Digital dilemma:Issues of access, cost, and quality in media –enhanced and distance education. San Francisco. Jossey-Bass

Walther, J. (2000). Copyright Concerns in the Age of Discrimination (Ed.), (pp. 10.1-10.18) Educause.

Waits, T., & Lewis, L. (2003). Distance education at degree-granting postsecondary institutions: 2000-2001. *Education Statistics Quarterly, 5*(3), 2004.

Waksberg, J. (1995). *What is a survey?* (2nd ed.). Alexandria, VA: American Statistical Association.

Wahlquist, J. and Thornton, J. (1964). *State colleges and universities*. Washington, DC: The Center for Applied Research in Education, Inc.

Walther, J. (2000). *Copyright concerns in the age of distance education.* Retrieved October 28, 2005 from http://www.ericdigests.org/2001-3/copyright.htm.

Web-based Education Commission. (2000). *The power of the Internet for learning: Moving from promise to practice*. Washington, DC: United States Department of Education.

Weingartner, R. (1996). *Fitting form to function: A primer on the organization of academic institutions*. Phoenix, AZ: Oryx Press.

Wellman, J. (1999). *The tuition puzzle.* Retrieved May 25, 2004 from http://www.e-guana.net/organizations.php3?action=printContentItem&orgid=104&typeID=906&itemID=9263.

Wellman, J. (2003). The credit hour and public budgeting. In J. Wellman, & T. Ehrlich (Eds.), *How the student credit hour shapes higher education: the tie that binds* (pp. 83-99). Hoboken, NJ: Wiley Periodicals, Inc.

Wellman, J., & Ehrlich, T. (2003, September 26). Re-examining the sacrosanct credit hour. *The Chronicle of Higher Education,* p. B16.

Western Cooperative for Educational Telecommunications. (2000). *The guide to developing online student services.* Retrieved July 7, 2003 from http://www.wcetinfo/resources/publications/guide/guide.htm.

Western Cooperative for Educational Telecommunications. (2003). *Introduction: About the guide to developing online student services.* Retrieved July 7, 2003 from htpp://www.wcetinfo/resource/publications/guide/guide.htm.

Western Governors University. (2002). Retrieved January 21, 2002 from http://www.uwex.edu/disted/definition.htm.

Western Governors University. (1999). *Distance learning.* Retrieved July 5, 1999 from http://www.wgu.edu./wgu/academics/dist_learning.html.

Whittingham, N. (1990). Characteristics of good state instructional telecommunications policy for higher education: some research recommendations. In M. Moore (Ed.), *Contemporary issues in American distance education* (pp. 353-364). New York: Pergamon.

Workman, J., & Stenard, R. (1996). Student support services for distance learning *DEOSNEWS, 6*(3), July 29, 2004.

Young, J. (2000). *Distance education transforms help desks into '24-7' operations.* Retrieved May 30, 2000 from http://www.chronicle.com/free/v46/i38a04901.htm.

Zastrocky, M., & Schiler, F. (2000). The higher education CIO in the 21st century. *EDUCAUSE Quarterly,* (1), 53-59.

Zeller, N. (1995). Distance education and public policy. *The Review of Higher Education, 8*(2), 123-148.

Zimbler, L. J. (2001). *1999 national study of postsecondary faculty: Background characteristics, work activities and compensation of faculty and instructional staff in postsecondary institutions, fall 1998*. Washington, DC: National Center for Education Statistics, U.S. Department of Education.

Appendix A

Chief Academic Officers

hanletr@auburn.edu, judy.bonner@ua.edu, gdavis@u.arizona.edu, Glick@asu.edu, bobsmith@uark.edu, sdallen@astate.edu, vshinshaw@ucdavis.edu, dspence@calstate.edu, provost@provost.colostate.edu, Phil.Distefano@Colorado.EDU, fred.maryanski@uconn.edu, lopeze@so.ct.edu, drich@udel.edu, rparikh@desu.edu, lable@mailer.fsu.edu, jglover@aa.ufl.edu, amace@uga.edu, rhenry@gsu.edu, theprovost@iastate.edu, michael-hogan@uiowa.edu, ljmorris@uidaho.edu, lawsjona@isu.edu, cgardner@uic.edu, jupresl@ilstu.edu, sfmason@purdue.edu, grosloui@indiana.edu, provost.nellis@k-state.edu, dshulenburger@ku.edu, nietzel@pop.uky.edu, jfleming@gwmail.kysu.edu, rpalm@lsu.edu, rea@latech.edu, wdestler@umd.edu, jbrennan@towson.edu, rab@MIT.EDU, hudzick@msu.edu, pnc@umich.edu, sulli059@umn.edu, LehmkuhleS@umsystem.edu, prabideau@provost.msstate.edu, lwstaton@olemiss.edu, dmdooley@montana.edu, lois.muir@umontana.edu, jhf@unr.edu, Chris_Chairsell@uccsn.nevada, bruce.mallory@unh.edu, vbarry@plmouth.edu, FURMANSKI@OLDQUEENS.RUTGERS.EDU, lynder@mail.montclair.edu, provost@nmsu.edu, blfoster@unm.edu, cam18@cornell.edu, larry_nielsen@ncsu.edu, bataille@northcarolina.edu, Craig.Schnell@ndsu.edu, martha.potvin@und.nodak.edu, snyder.7@osu.edu, krendl@ohio.edu, marlene.strathe@okstate.edu, nmergler@ou.edu, Sabah.Randhawa@oregonstate.edu, provost@oregon.uoregon.edu, cygnet@uri.edu, RfJteal@scsu.edu, BIOL110@CLEMSON.EDU, Carol_Peterson@sdstate.edu, rcengstr@usd.edu, rlevy@utk.edu, Abankhead@tnstate.edu, dprior@tamu.edu, seo@mail.utexas.edu, Stan.Albrecht@usu.edu, david.pershing@utah.edu, John.Bramley@uvm.edu, gdb@Virginia.EDU, mmcnamee@vt.edu, bates@wsu.edu, thorud@u.washington.edu, acooper@wvsc.edu, gelang@mail.wvu.edu, tombuch@uwyo.edu, mcclain@hawaii.edu, fnpbr@uaf.edu, mahon@maine.edu, rae@psu.edu, cmarrett@uwsa.edu

Chief Business Officers

smithmc@auburn.edu, lgilbert@uasystem.ua.eud, jvaldez@u.arizona.edu, MERNOY.HARRISON@asu.edu, dom@uark.edu, jburton@astate.edu, senosek@ucdavis.edu, rwest@calstate.edu, keith.ickes@colostate.edu, Paul.Tabolt@colorado.EDU, LINDA.FLAHERTY-GOLDSMITH@uconn.edu, kedderisp@so.ct.edu, colm@udel.edu, rparr@desu.edu, jcarnagh@admin.fsu.edu, poppell@ufl.edu, huckaby@uga.edu, jracklif@gsu.edu, ellenr@iastate.edu, douglas-true@uiowa.edu, kentonj@uidaho.edu, prolkenn@isu.edu, skrugg@uic.edu, smbragg@ilstu.edu, jsalmond@purdue.edu, jclapacs@indiana.edu, tmr@ksu.eud, dschulenburger@ku.edu, fbutler@email.uky.edu, eorobinson@kysu.edu, vcbaud@lsu.edu, uajsd@latech.edu, jporcari@umd.edu, dharnage@towson.edu, jrcurry@MIT.EDU, poston@msu.edu, tslottow@umich.edu, pfutz001@umn.edu, krawitzn@umstystem.edu, crhayes@msstate.edu, jmw@olemiss.edu, croloff@montana.edu, DuringerRA@mso.umt.edu, zurek@unr.edu, buster_neel@uccsn.nevada.edu, Candace.corvey@unh.edu, bcrangle@plymouth.edu, APFEL@OLDQUEENS.RUTGERS.EDU, schuckelh@mail.montclair.edu, jmcdonou@nmsu.edu, duharris@unm.edu, hdc3@cornell.edu, ann_mitchell@ncsu.edu, jrd@norhtcarolina.edu, Richard.Rayl@ndsu.nodak.edu, bob.gallager@mail.und.nodak.edu, shkurti.1@osu.edu, corrigan@ohio.edu, bosserman@okstate.edu, nhathaway@ou.edu, mark.mccambridge@oregonstate.edu, daw@uoregon.edu, BobW@uri.edu, jesmalls@scsu.edu, sludlow@clemson.edu, Michael_Reger@sdstate.edu, gredlin@usd.edu, lcrabtr1@utk.edu, cbrooks@tnstate.edu, sueredman@tamu.edu, hegarty@mail.utexas.edu, ron.godfrey@usu.edu, acombe@park.admin.utah.edu, Michael.Gower@uvm.edu, ysr4n@Virginia.edu, jahyatt@vt.edu, mdoyle@wsu.edu, wihrig@u.washington.edu, whytec@wvstateu.edu, gary.rogers@mail.wvu.edu, eahardin@uwyo.edu, samc@hawaii.edu, mark.neumayr@uaf.edu, jwaldron@maine.edu, gcs2@psu.edu, dolien@uwsa.edu

Chief Information Officers

burnejr@auburn.edu, phancock@ua.edu, sjackson@u.arizona.edu, william.lewis@asu.edu, dop@uark.edu, sowens@astate.edu, jlbruno@ucdavis.edu, dernst@calstate.edu, Tony.Frank@Research.ColoState.edU, robert.schnabel@colorado.edu, LINDA.FLAHERTY-GOLDSMITH@uconn.edu, toedtm@so.ct.edu, sfoster@udel.edu, jgimbel@desu.edu, larry.conrad@fsu.edu, mhoit@ufl.edu, barbwhit@uga.edu, jlalbert@gsu.edu, davis@iastate.edu, steve-fleagle@uiowa.edu, hughett@uidaho.edu, duggbill@isu.edu, dchicoi@uic.edu, mswalbert@ilstu.edu, jb@purdue.edu, mcrobbie@indiana.edu, beth@ksu.edu, goodyear@ku.edu, gene@email.uky.edu, eorobinson@kysu.edu, kmumphrey@agctr.lsu.edu, nicklas@cab.latech.edu, jhuskamp@umd.edu, gchurch@towson.edu, jgrochow@mit.edu, gift@msu.edu, bridges@umich.edu, jones012@umn.edu, carusor@umsystem.edu, mike.rackley@msstate.edu, hale@olemiss.edu, sheehan@montana.edu, raymond.ford@umontana.edu, stevenz@unr.edu, seibert@nevada.edu, john.griffith@unh.edu, dcfischer@mail.plymouth.edu, mckay@rci.ruters.edu, chapele@mail.montclair.edu, hites@nmsu.edu, badkins@unm.edu, polley.mcclure@cornell.edu, carey.hatch@suny.edu, sam_averitt@ncsu.edu, rrr@northcarolina.edu, tom.moberg@ndsu.nodak.edu, dorette_kerian@mail.und.nodak.edu, rhimes.1@osu.edu, samsw@ohio.edu, swsm@okstate.edu, aebersold@ou.edu, Curt.Pederson@orst.edu, hugi@oregon.uoregon.edu, gandel@uriacc.uri.edu, jesmalls@scsu.edu, cjdck@clemson.edu, Michael.Adelaine@sdstate.edu, rambur@usd.edu, bbible@utk.edu, Dgendron@tnstate.edu, p-cantrell@tamu.edu, d.updegrove@its.utexas.edu, bwhite@cc.usu.edu, pierre.pincetl@hsc.utah.edu, Mara.Saule@uvm.edu, rreynolds@virginia.edu, blithe@vt.edu, mdoyle@wsu.edu, ronj@cac.washington.edu, hustnrh@wvstateu.edu, sid.morrison@mail.wvu.edu, raylward@uwyo.edu, david@hawaii.edu, steve.smith@alaska.edu, john.gregory@umaine.edu, jga@psu.edu, ncrabb@uwsa.edu

Appendix B

Chief Academic Officer Survey

Survey Description

Survey of Chief Academic Officers in public universities.

Opening Instructions

This is the survey about funding strategies for distance learning in relation to institutional mission and vision of administrators which Duane Nellis notified you about a few days ago via e-mail. This survey is a research project being conducted by a graduate student at Kansas State University. Your thoughts and experiences will be of great assistance.

Page 1

Please respond yes or no.

Question 1 ***** required *****

1 - Yes | 2 - No

	1	2
1.1 Does your institution have a distance learning program or offer distance learning courses?	☐	☐

Page 2

If you answered 2 (No) to the first question, you have completed the questionnaire. Thank you for your time. If you answered yes please continue to question 2. Select one response from the five point scale.

Question 2 ***** required *****

These reasons characterize your institution's MISSION or PURPOSE for offering distance learning.

1 - Strongly agree | 2 - Agree | 3 - Neutral | 4 - Disagree
5 - Strongly disagree

	1	2	3	4	5
2.1 Enhance the competitiveness of the institution	☐	☐	☐	☐	☐
2.2 Support degree completion for the institution's former students	☐	☐	☐	☐	☐
2.3 Support degree completion for former students of other institutions	☐	☐	☐	☐	☐
2.4 Strengthen visibility of the institution among relevant publics	☐	☐	☐	☐	☐
2.5 Provide life-long learning to alumni of the institution	☐	☐	☐	☐	☐
2.6 Generate funds for the institution	☐	☐	☐	☐	☐

2.7 Save money for the institution	☐	☐	☐	☐	☐
2.8 Serve business and industry	☐	☐	☐	☐	☐
2.9 Other	☐	☐	☐	☐	☐

Page 3

Select one response from the five point scale.

Question 3

As an Administrator, these reasons characterize YOUR VISION or INTENT for offering distance learning at your institution.

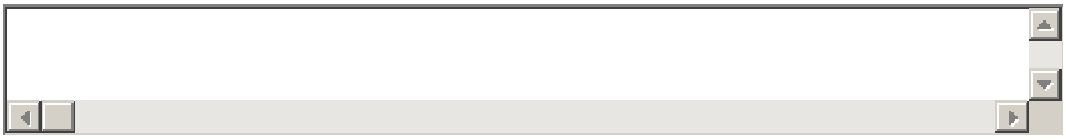
1 - Strongly agree | 2 - Agree | 3 - Neutral | 4 - Disagree
5 - Strongly disagree

	1	2	3	4	5
3.1 Support the core mission of the institution	☐	☐	☐	☐	☐
3.2 Support the institution's strategic plan	☐	☐	☐	☐	☐
3.3 Initiate a distance learning program for the institution	☐	☐	☐	☐	☐
3.4 Leader among other institutions in distance learning	☐	☐	☐	☐	☐
3.5 Encourage inter-institutional efforts through distance learning	☐	☐	☐	☐	☐
3.6 Extend the research findings of the institution through the technology used in distance learning	☐	☐	☐	☐	☐

3.7 Other reasons					

Question 4

As an administrator, where do you see your institution 10 years from now in the distance learning arena?



(maximum of 250 characters)

Page 4

Please check the best response.

Question 5 ***** required *****

Compared to RESIDENT on-campus students, what tuition and fees are charged to distance learning students?

- Resident distance learning students pay the SAME tuition and fees as resident on-campus students
- Resident distance learning students pay HIGHER tuition and fees than resident on-campus students
- Resident distance learning students pay LOWER tuition and fees than resident on-campus students
- Don't know

Page 5

Please check all that apply.

Question 6 ***** required *****

From the following list of funding sources, what sources does your institution use to fund TECHNOLOGY INFRASTRUCTURE for distance learning?

- ☐ State Funds
- ☐ Federal funds
- ☐ Private funds
- ☐ Tuition and student fees
- ☐ Institutional funds
- ☐ Combination of institutional funds and tuition and student fees
- ☐ New business lines
- ☐ Vendor incentives
- ☐ Commercialization of intellectual property
- ☐ Bonding
- ☐ For-profit entity created specifically for distance learning
- ☐ Other: _____

Page 6

Please check all that apply.

Question 7 ***** required *****

From the following list of funding sources, what sources does your institution use to fund CREDIT COURSE DEVELOPMENT for distance learning?

- [ ] State Funds
- [ ] Federal funds
- [ ] Private funds
- [ ] Tuition and student fees
- [ ] Institutional funds
- [ ] Combination of institutional funds and tuition and student fees
- [ ] New business lines
- [ ] Vendor incentives
- [ ] Commercialization of intellectual property
- [ ] For-profit entity created specifically for distance learning
- [ ] Other:

Page 7

Please check all that apply.

Question 8 *** required ****

From the following list of funding sources, what sources does your institution use to fund COURSE DELIVERY for distance learning?

- [ ] State Funds
- [ ] Federal funds
- [ ] Private funds
- [ ] Tuition and student fees
- [ ] Institutional funds

- [ ] Institutional funds and tuition and student fees
- [ ] New business lines
- [ ] Vendor incentives
- [ ] For-profit entity created specifically for distance learning
- [ ] Commercialization of intellectual property
- [ ] Other:

Page 8

Please check all that apply.

Question 9 *** required ****

Which of the following services does your institution provide to distance learning students?

- [ ] Student identification card
- [ ] Admissions application and registration forms
- [ ] Academic advising
- [ ] Library resources and services
- [ ] Academic learning and tutorial services
- [ ] 24/7 technology support
- [ ] Disabled and special student services
- [ ] Scholarships and financial aid
- [ ] Career and job placement services
- [ ] Books and materials from campus bookstore
- [ ] Student discount to lectures and cultural events

- [ ] Student discount to athletic events
- [ ] Campus recreational services
- [ ] None of the above
- [ ] Other:

Page 9

Please select one response from among the 5 options provided.

Question 10 ***** required *****

If your institution provides the following services to distance learning students, how are the services provided?

1 - Campus | 2 - On-line | 3 - Both campus and on-line
4 - Don't know
5 - Don't provide service

	1	2	3	4	5
10.1 Student identification card					
10.2 Admissions application and registration forms					
10.3 Academic advising					
10.4 Library resources and services					
10.5 Academic learning and tutorial services					
10.6 Scholarships and financial aid					

10.7 Career and job placement services	☐	☐	☐	☐	☐
10.8 Books and materials from campus bookstore	☐	☐	☐	☐	☐

Page 10

Please select one response from among the 5 options provided.

Question 11 ***** required *****

If your institution provides the following services to distance learning students, what funding sources does your institution use to fund the services?

1 - Tuition and student fees
2 - Institutional funds and student fees | 3 - Other funding sources | 4 - Don't know
5 - Don't provide service

	1	2	3	4	5
11.1 Student identification card	☐	☐	☐	☐	☐
11.2 Admissions application and registration forms	☐	☐	☐	☐	☐
11.3 Academic advising	☐	☐	☐	☐	☐
11.4 Library resources and services	☐	☐	☐	☐	☐
11.5 Academic learning and tutorial services	☐	☐	☐	☐	☐
11.6 24/7 technology support	☐	☐	☐	☐	☐
11.7 Disabled and special student services	☐	☐	☐	☐	☐

11.8 Scholarships and financial aid	☐	☐	☐	☐	☐
11.9 Career and job placement services	☐	☐	☐	☐	☐
11.10 Books and materials from campus bookstore	☐	☐	☐	☐	☐
11.11 Student discount for lectures and cultural events	☐	☐	☐	☐	☐
11.12 Student discount for athletic events	☐	☐	☐	☐	☐
11.13 Recreational services	☐	☐	☐	☐	☐

Page 11

The following are demographic questions about your institution. Please check the best response.

Question 12

What is your institutions Spring 2005 enrollment?

- ☐ Less than 10,000
- ☐ 10,001-20,000
- ☐ 20,001-30,000
- ☐ 30,001-40,000
- ☐ Over 40,000

Question 13 ***** required *****

What is your institutions designation?

- Land grant university
- State university
- Both land grant and state university
- Neither

Question 14

What is the total budget of your institution?

- Less than $150 million
- $150-300 million
- $301-450 million
- $451-600 million
- Over $600 million

Question 15

What percent of your institution's total budget is provided by state government?

- Less than 10 %
- 10-15%
- 16-20%
- Over 20%
- Don't know

Question 16 ** *required* **

What percent of your institution's courses are offered as distance learning courses?

- Less than 10%
- 10-15%

- 16-20%
- Over 20%
- Don't know

Question 17 *** required ****

What percent of your institution's budget is spent on distance learning courses?

- Less than 10%
- 10-15%
- 16-20%
- Over 20%
- Don't know

Closing Message

Thank you for your participation. Survey results will be distributed upon request.

- End of Survey -

Appendix C

The administrators at Kansas State University who sent the Invitation of Participation to their counterparts at the three types of higher education institutions.

- Dr. Duane Nellis, Provost representing Chief Academic Officers
- Dr. Thomas Rawson, Chief Business Officer representing same
- Dr. Elizabeth Unger, Vice- Provost for Academic Services representing Chief Information Officers

Appendix D

Dear Colleague,

I am asking you to take time out of your busy schedule to participate in a research project for distance learning in public universities. As the Chief Academic Officer I believe you are the most qualified individual in the institution to respond to an internet questionnaire.

The main purpose of this study is to investigate funding strategies for distance learning in relation to institutional mission and vision of administrators in land grant and state universities. For the purpose of this study, distance learning is defined as all aspects of teaching and learning events in which the student and instructor are separated. The study is being conducted by a graduate student at Kansas State University.

The internet survey instrument may be completed on line and should take no more than 15 minutes of your time. The questionnaire is composed primarily of a series of multiple choice questions. There are opportunities for the participant to further explain answers as well if they wish. Let me assure you that participant confidentiality is guaranteed and your name, position, or institution will not be used or distributed outside of this study.

The questionnaire will be sent directly to your e-mail address within two days of this letter. As a participant you will be notified and given access to the results upon completion of the study in the next few months.

Again I can not stress enough how valuable your input is to this research study. Thank you very much for your cooperation and participation on this study.

Duane Nellis
Provost
Kansas State University
provost@ksu.edu

Dear Colleague,

I am asking you to take time out of your busy schedule to participate in a research project for distance learning in public universities. As the Chief Business Officer I believe you are the most qualified individual in the institution to respond to an internet questionnaire.

The main purpose of this study is to investigate funding strategies for distance learning in relation to institutional mission and vision of administrators in land grant and state universities. For the purpose of this study, distance learning is defined as all aspects of teaching and learning events in which the student and instructor are separated. The study is being conducted by a graduate student at Kansas State University.

The internet survey instrument may be completed on line and should take no more than 15 minutes of your time. The questionnaire is composed primarily of a series of multiple choice questions. There are opportunities for the participant to further explain answers as well if they wish. Let me assure you that participant confidentiality is guaranteed and your name, position, or institution will not be used or distributed outside of this study.

The questionnaire will be sent directly to your e-mail address within two days of this letter. As a participant you will be notified and given access to the results upon completion of the study in the next few months.

Again I can not stress enough how valuable your input is to this research study. Thank you very much for your cooperation and participation on this study.

Thomas Rawson
Chief Business Officer
Kansas State University
tmr@ksu.edu

Dear Colleague,

I am asking you to take time out of your busy schedule to participate in a research project for distance learning in public universities. As the Chief Information Officer I believe you are the most qualified individual in the institution to respond to an internet questionnaire.

The main purpose of this study is to investigate funding strategies for distance learning in relation to institutional mission and vision of administrators in land grant and state universities. For the purpose of this study, distance learning is defined as all aspects of teaching and learning events in which the student and instructor are separated. The study is being conducted by a graduate student at Kansas State University.

The internet survey instrument may be completed on line and should take no more than 15 minutes of your time. The questionnaire is composed primarily of a series of multiple choice questions. There are opportunities for the participant to further explain answers as well if they wish. Let me assure you that participant confidentiality is guaranteed and your name, position, or institution will not be used or distributed outside of this study.

The questionnaire will be sent directly to your e-mail address within two days of this letter. As a participant you will be notified and given access to the results upon completion of the study in the next few months.

Again I can not stress enough how valuable your input is to this research study. Thank you very much for your cooperation and participation on this study.

Elizabeth Unger
Vice-Provost for Academic Services
Kansas State University
beth@ksu.edu

Appendix E

Survey E-mail Message

This is the survey about funding strategies for distance learning in relation to institutional mission and vision of administrators which Tom Rawson notified you about a few days ago via e-mail. This survey is a research project being conducted by a graduate student at Kansas State University. Your thoughts and experiences will be of great assistance.
Please click on the Web address (URL) below to complete and submit
the survey by 04/14/05. All responses are kept confidential.

https://surveys.ksu.edu/TS?key=-3637722784222389063

This Survey URL is for your use only. It cannot be used by anyone else.
If you cannot click on the Web address, please copy the underlined
text and paste it into the address field of your Web browser.
If you experience any difficulties please contact Technical Support
at (800) 865-6143 or 532-7722, email: help@surveys.ksu.edu
If you do not want to participate in this survey visit

https://surveys.ksu.edu/TS?key=-3637722784222389063&action=opt_out
to remove your email address.

If you have any questions contact help@surveys.ksu.edu

Appendix F

Reminder Message

This is a reminder to please complete the survey included in this message. This survey is a research project being conducted by a graduate student at Kansas State University. Your thoughts and experiences will be of great assistance.

Please click on the Web address (URL) below to complete and submit
the survey by 04/14/05. All responses are kept confidential.

https://surveys.ksu.edu/TS?key=-6054379335183820927

This Survey URL is for your use only. It cannot be used by anyone else.
If you cannot click on the Web address, please copy the underlined
text and paste it into the address field of your Web browser.
If you experience any difficulties please contact Technical Support
at (800) 865-6143 or 532-7722, email: help@surveys.ksu.edu

If you do not want to participate in this survey visit

https://surveys.ksu.edu/TS?key=-6054379335183820927&action=opt_out

to remove your email address.
If you have any questions contact help@surveys.ksu.edu

Appendix G

IRB Status for Protocol #3202

Training Materials
Application
About the IRB
Links
Compliance Home Page
IRB Home

Your application was approved on March 4, 2005.

1 Fairchild Hall
Manhattan, KS
532-3224
comply@ksu.edu

Appendix H

Content Analysis Themes

Lead the field

We will be the primary leader in supporting the UW System's institutions effort to provide BA degree completion via distance learning. We will be a national leader in distance learning programming, innovation, and research

Already among top 10 nationally in scope and number of online courses, degrees and certificates. Similar relative position 10 years from now, with greatly expanded numbers

Leading in the field with the nation's first Virtual Tribal University fully established

Hopefully we will be a nationally recognized leader in the field but to achieve that we need to break down the silo mentality and put the distance learning area on a profit incentive system

As a national leader in selected on-line academic programs, and with an expanded clientele predominately residential institutions do not now serve.

We will be among the leaders in world-wide distant learning programs

I hope that we will continue to be leaders in this field, serving students in the state, the nation, and throughout the world.

We will have a set of high quality programs, primarily at the graduate level

well established

We're a leader now, and we intend to stay in the lead

With many more offerings than we currently have.

Ten years from now, we should have a vastly increased number of courses offered on the internet, both for outreach education purposes, and to facilitate student completion. Our growth in this area will be driven entirely by demonstrated student need.

As the leading regional institution in our area for distance offerings. Those offerings ten years from now will be much more oriented toward internet-based courses than they are now.

The primary reason for our dl program is to provide access to higher education throughout the state; in 10 years we will have expanded that effort and most likely increased our national and international offerings.

Fulfill mission and secure necessary resources

Selective use in areas where it serves our mission, both serving the Colorado community and our own residential students

A percentage of our program, but traditional graduate education will be the predominate mode.

Hopefully we will be a nationally recognized leader in the field but to achieve that we need to break down the silo mentality and put the distance learning area on a profit incentive system

We wil respond to the needs of current and prospective students in this area as needed.

Continuing to expand our program offerings in selected areas that are financially profitable

Great involvement in undergraduate distance learning.

I see our institution focusing its distance education efforts in several discipline areas where we have constituents -- business and industry, K-12 teachers and adminis, etc. -- that are key service groups in our institutional mission

Key elements: 1. Support university's goals of access and affordability 2. Enhance university's land-grant mission of engagement 3. Support university’s aspirations of supporting education in developing countries

Depends if we put adequate resources into related programs and realize that at its core distance/distributed learning is more about increasing access, than making money. The jury is still out....Right now we talk a good story...

Access

Serving state clientele who are non traditional place bound and need to further their education

Continuing to provide education throughout a very large and sparsely educated state, and serving those outside the state with content-specific courses.

Serving as the source for a select few specialized programs, and brokering others offerings for on-campus students.

We will be providing many courses on line to both campus based and distance students. We will have about 10 degree programs available totally on line.

Depends if we put adequate resources into related programs and realize that at its core distance/distributed learning is more about increasing access, than making money. The jury is still out....Right now we talk a good story

Using whatever state-of-the-art technology is available to reach isolated students who have access to high bandwidth communications. Remaining an early adopter of new technologies

The primary reason for our dl program is to provide access to higher education throughout the state; in 10 years we will have expanded that effort and most likely increased our national and international offerings.

Extend education to citizens in the state and rural areas

Serving state clientele who are non traditional place bound and need to further their education

We currently offer 22 degree programs at a distance. Where I see my institution is providing additional degree programs, finding new ways to provide student services at a distance, using a combination of technologies in offering programs

Continuing to provide education throughout a very large and sparsely educated state, and serving those outside the state with content-specific courses.

We train 60 faculty annually in the summer to use on-line courses to teach their discipline. We believe that our course offerings will increase; however, we find that the growing population of students taking these courses is already on campus.

Continued development and extensive usage in rural areas.

As a State with a very large rural population, distance education for us is primarily an issue of access. Our legislature recently appropriated money for this purpose and I suspect distance education will be put on the front burner.

Our goal is to make distant learning a greater part of the curriculum of our on campus students (summer programs for example) as well as to extend the impact of the institution throughout our state.

Fulfilling very specific market driven educational needs, contributing to the education our States workforce and extending our offerings to a broader regional and global audience of learners.

We'll continue to offer degree programs statewide to serve the needs of the state. We will probably enhance our online offerings, but continue other methods of delivery as well. Our concern is access to higher education for citizens in a rural state

Using whatever state-of-the-art technology is available to reach isolated students who have access to high bandwidth communications. Remaining an early adopter of new technologies

Offer graduate programs, career education, and degree completion programs

We will be the primary leader in supporting the UW System's institutions effort to provide BA degree completion via distance learning. We will be a national leader in distance learning programming, innovation, and research.

Provide more learning style environments 4. I would see that the number of students in the residential programs and distance programs are equal. Serving out graduates to maintain professional edge is a major reason for DL

I see public universities, including ours, becoming more like trade schools that meet the narrowly focused career needs of our service area. DE fits that model; so I see us merging DE and on-campus offerings, with an emphasis on DE.

Focused professional programs for degrees and professional continuing education

We train 60 faculty annually in the summer to use on-line courses to teach their discipline. We believe that our course offerings will increase; however, we find that the growing populations of students taking these courses are already on campus

We will have a set of high quality programs, primarily at the graduate level.

We will offer select degree programs and the necessary general education courses to support the degrees.

I see our institution focusing its distance education efforts in several discipline areas where we have constituents -- business and industry, K-12 teachers and administrators etc. -- that are key service groups in our institutional mission.

Key elements: 1. Support university's goals of access and affordability 2. Enhance university's land-grant mission of engagement 3. Support university's aspirations of supporting education in developing countries

Most on-campus courses will have DL components that students can engage in no matter where they are. True DE courses will be almost entirely web-based & will mostly enroll grad & professional students.

Offering degrees that nontraditional students need in ways that are accessible to them.

Fulfilling very specific market driven educational needs, contributing to the education our States workforce and extending our offerings to a broader regional and global audience of learners.

Offering targeted credit and non-credit distance learning opportunities to degree and non-degree students to aid degree completion and serve the university land grant mission.

Offering more degree completion options

Blur the lines between on and off campus

With several different options for distance learning, including traditional video conferencing, web and audio conferencing, etc, distance learning will be more seamlessly incorporated into the "learning experience" of our constituents.

Provide more learning style environments 4. I would see that the number of students in the residential programs and distance programs are equal. Serving out graduates to maintain professional edge is a major reason for DL

Both on and off campus courses (distance ed) are seamlessly provided to all students.

Distance Learning has evolved into e-learning that permeates all curricula across the organization. The lines are blurred as campus based and students at a distance both participate in online learning w/in a flexible, personalized schedule.

Our expansion will be to current traditional degree seeking students by expanding the availability of courses.

Serving as a complement to our core academic pursuits.

We train 60 faculty annually in the summer to use on-line courses to teach their discipline. We believe that our course offerings will increase; however, we find that the growing populations of students taking these courses are already on campus.

Serving as the source for a select few specialized programs, and brokering others offerings for on-campus students.

Much of distance learning has become web-based courses for on-campus students who prefer the convenience. Conventional wisdom suggests that providing complete programs will be more successful than just a collection of courses.

Most on-campus courses will have DL components that students can engage in no matter where they are. True DE courses will be almost entirely web-based & will mostly enroll grad & professional students.

We will be providing many courses on line to both campus based and distance students. We will have about 10 degree programs available totally on line.

Our goal is to made distant learning a greater part of the curriculum of our on campus students (summer programs for example) as well as to extend the impact of the institution throughout our state.

Efforts more integrated with the instructional mission of the colleges; less differentiation between distance and on-campus instruction; expansion into more graduate level programs; more fee-based programs

There will be a great deal more distances learning than currently, although I expect that most of it will be still have a strong residential component as well. DL technologies are very useful for residential programs.

Enhance and utilize technology

We currently offer 22 degree programs at a distance. Where I see my institution is providing additional degree programs, finding new ways to provide student services at a distance, using a combination of technologies in offering programs.

We will continue developing courseware that meets the needs of our constitutions.

There will be an increase in these types of programs as technology improves and individuals can participate at their convenience.

Appendix I

Factor Analysis

A principal component (PC) factor analysis method was used to reduce the number of variables in the responses and to determine whether there was a linear combination of responses within the five questions on the questionnaire. The entire survey group of administrators was used in the analysis. A series of five PC factor analyses were conducted. The first analysis used eight response options from Survey Question 2 that related to institutional mission. The second analysis used six response options from Survey Question 3 regarding the administrator's vision. The third through fifth analyses used response options within Survey Question 6 (12 response options), Survey Question 7 (10 response options), and Survey Question 8 (10 response options) related to funding sources employed for technology infrastructure as well as credit course development and delivery for distance learning. The 45 items from the five survey questions were reduced to 10 factors.

Extraction for the factor analyses used eigen values greater than one and an orthogonal varimax rotation was used. The initial analyses were performed to determine if there were cross loadings in the rotated structure matrix and if any factors contained a very small number of items. A number of cross loadings were found, making factor interpretation unclear. A second series of oblique rotations did not eliminate crossloadings. The researcher then examined the scree plots to reduce the number of factors. The scree plots were used to reduce the number of factors, which yielded clarity to the factor interpretation. The resultant factors (Appendix H) for the final rotated factor loading) for each of the five questions are listed:

Institutional—responses 1, 4, 6, 7, 8

Student–oriented—responses 2, 3

Mission/strategic planning—responses 1, 2, 4

Program development—responses 3, 5, 6

Institutional revenues sources–external—responses 1, 2, 3, 5, 7, 8, 9

Institutional revenue sources–internal—responses 1, 4, 5, 6, 11

Institutional revenues sources–external—responses 2, 7, 9

Institutional revenues sources–internal—responses 1, 4, 5

Institutional revenues sources–non-student—responses 1, 2, 3, 5, 8, 10

Table A-1

Means[1], Standard Deviations, and Factor Loadings[2] for Reasons that Characterize the Institution's Mission for Distance Learning (N=65–73)

Reasons for mission	Mean	Standard deviation	Factor 1: Institutional	Factor 2: Student–oriented
1. Competitiveness	2.02	0.90	0.77	—
2. Degree completion	2.52	0.93	—	0.88
3. Degree completion/all students	2.75	0.86	—	0.89
4. Visibility	2.18	0.83	0.66	—
5. Lifelong learning for alumni	2.30	0.96	—	—
6. Generate funding	2.40	0.97	0.62	—
7. Save money	3.15	0.83	0.48	—
8. Business and industry	1.91	0.67	0.68	—
Percent Variance for Each Factor			26.9%	25.8%

[1]Lower means equal lower reasons that the mission of the institution impacts the offering of distance learning.

[2]Only factor loading of 0.30 or greater are shown.

Dashes represent no loading

Table A-2

Means[1], Standard Deviations, and Factor Loadings[2] for Reasons that Characterize Administrators' Vision for Distance Learning (N=66–72)

Administrators' vision	Mean	Standard deviation	Factor 1: Mission strategic planning	Factor 2: Program development
1. Support for mission	1.64	0.76	0.81	—
2. Support for strategic plan	1.72	0.79	0.87	—
3. Starting a program	2.66	0.96	—	0.48
4. Leader	2.56	0.90	0.68	—
5. Inter-institutional efforts	2.39	0.81	—	0.84
6. Extend research	2.57	1.03	—	0.77
Percent variance for each factor			37.5%	18.1%

[1]Lower means equal lower reasons for administrators' vision to offer distance learning.

[2]Only factor loading of 0.30 or greater are shown.

Dashes represent no loading.

Table A-3

Means[1], Standard Deviations, and Factor Loadings[2] of Funding Sources to Fund Technology Infrastructures (N=71)

Funding Sources for Technology Infrastructure	Mean	Standard deviation	Factor 1: Institutional revenue sources–external	Factor 2: Institutional revenue sources–internal
1. State	1.26	0.45	0.47	0.47
2. Federal	1.80	0.40	0.74	---
3. Private	1.76	0.43	0.75	---
4. Tuition/student fees	1.36	0.48		0.91
5. Institutional funds	1.57	0.49		0.55
6. Combination	1.42	0.50	---	-0.64
7. New business lines	1.90	0.30	0.44	---
8. Vendor incentives	1.87	0.33	0.51	---
9. Bonding	1.94	0.23	0.72	---
10. For-profit entity	1.96	0.20	---	---
11. Commercialization/ intellectual property	1.96	0.20	---	-0.40
Percent variance for each factor			23.2%	18.2%

[1]Lower means equal lower sources of funds for technology infrastructure.

[2]Only factor loading of 0.30 or greater are shown.

Dashes represent no loading.

Table A-4

Means[1], Standard Deviations, and Factor Loadings[2] for Funding Sources Used to Fund Credit Course Development (N=71)

Funding sources for course development	Mean	Standard deviation	Factor 1: Institutional revenue sources–external	Factor 2 Institutional revenue sources–internal
1. State	1.39	0.49	---	0.63
2. Federal	1.86	0.35	0.64	---
3. Private	1.80	0.40	---	---
4. Tuition/student fees	1.42	0.50	---	0.79
5. Institutional funds	1.60	0.50	---	0.54
6. Combination	1.46	0.50	---	---
7. Vendor incentives	1.96	0.20	0.71	---
8. New business lines	2.00	0.00	---	---
9. Commercialization/intellectual property	1.99	0.12	0.71	---
10. For-profit entity	1.98	0.167	---	---
Percent variance for each factor			23.20%	22.59%

[1]Lower means equal lower sources of funds for credit course development.

[2]Only factor loading of 0.30 or greater are shown.

Dashes represent to loading.

Table A-5

Means[1], Standard Deviations, and Factor Loadings[2] for Funding Sources Used to Fund Course Delivery (N=71)

Funding sources for course delivery	Mean	Standard deviation	Factor 1: Institutional revenue sources– non-student	Factor 2: Institutional revenue sources– student
1. State	1.43	0.49	0.57	---
2. Federal	1.91	0.28	0.60	---
3. Private	1.81	0.38	0.84	---
4. Tuition/student fees	1.39	0.49	---	0.87
5. Institutional funds	1.71	0.45	0.68	---
6. Combination	1.50	0.50	---	0.41
7. New business lines	1.96	0.20	---	0.31
8. Vendor incentives	1.98	0.11	0.57	
9. Commercialization / intellectual property	1.98	0.11	---	-0.36
10. For-profit entity	1.94	0.23	0.70	---
Percent variance for each factor			29.00%	17.40%

[1]Lower means equal lower sources of funds for course delivery.

[2]Only factor loading of 0.30 or greater are shown.

Dashes represent no loading.

Appendix J

Table A-6

Does your institution have a distance learning program or offer distance learning courses?

	Mean	SD	Percent
Yes	1.01	.1	98.7
No			1.3

76 Respondents

Table A- 7

Compared to resident
on campus students
what tuition and fees
are charged to
distance
learning students

	Percent	Cumulative
Pay the same as on campus	43.1%	43.1%
Pay Higher than on campus	45.8%	88.9%
Pay lower than on campus	5.6%	94.4%
Don’t Know	5.6%	100.0%

76 respondents

Table A-8

What percent of the institutions
total budget is provided by
state government?

	Percent	Cumulative
Less than		
10%	6.0%	6.0%
10 - 15%	13.4%	19.4%
16 -20%	16.4%	35.8%
over 20%	59.7%	95.5%
Don’t Know	4.5%	100.0%

Table
A-9

What percent of the institution's courses are offered as distance learning courses?

	Percent	Cumulative
Less than 10%	72.1%	72.1%
10 - 15%	17.6%	89.7%
16 - 20%	2.9%	92.6%
Over 20%		
Don't Know	7.4%	100.0%

Table 11

What percent of the institutions budget is spent on distance learning courses?

	Percent	Cumulative
Less than 10%	86.8%	86.8%
10 - 15%	2.9%	89.1%
16 - 20%		
Over 20%		
Don't Know	10.3%	100.0%