Spring 2010

Strategies Used by The Georgia University Registrar When Implementing Technology Change

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STRATEGIES USED BY THE GEORGIA UNIVERSITY REGISTRAR WHEN IMPLEMENTING TECHNOLOGY CHANGE

by

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(Under the Direction of Teri Denlea Melton)

Abstract

The purpose of this study was to investigate strategies used by University System of Georgia registrars for implementing technological change and how those strategies align with Kotter's (1996) eight-stage model of change and registrars' readiness for change. The purposive sample was comprised of the respondents from the thirty-five University of Georgia System institutions. Eleven registrars revealed experiences, perceptions, concerns and ideas that were similar to the steps outlined by Kotter's eight-stage model. The study was a mixed methods approach that involved collecting and analyzing both quantitative and qualitative research data. Three major themes emerged regarding the strategies needed to implement planned change: engaging partnerships; planning, directing and encouraging; and, reengineering of processes. Two minor themes captured the experiences and readiness of registrars: readiness of registrars limited by institution timelines and growth; and, the registrar's enhanced preparation for growth due to technology demands. In terms of being effective, among other issues, registrars must be able to overcome barriers for change. This study provided information and an inventory of strategies that could be beneficial to registrars and practitioners in positions of leadership. Implications for future research, practices and strategies are also discussed.

INDEX WORDS: Registrar, Implementing Change, Technology, Registrar Strategies, Qualitative research, Phenomenology, Descriptive study

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B.A., Winston Salem State University, 1979

M.Ed., Ohio University, 1990

A Dissertation Submitted to the Graduate Faculty of Georgia Southern University in

Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

STATESBORO, GEORGIA

2010

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Electronic Versions Approved:
May 2010

DEDICATION

This dissertation is dedicated in loving memory of my parents

Mr. Freddie F. Stokes and Mrs. Lucille B. Stokes

Thank you for instilling in me the love of GOD and a strong work ethic.

To my amazing husband Dr. Willie Burden

Thank you for always being there to provide support, love, hope and clarity.

I LOVE YOU!

ACKNOWLEDGEMENTS

First and foremost thank you GOD for your goodness and grace. I am grateful to my husband Willie, for all of his patience, devotion, support, and love. I am grateful to my sons Willie Jr. and Freddie for their understanding and sacrifices during this effort. My legacy lies with you and I am confident that you will each make a difference in this world. You are my strength and I offer my deepest appreciation to you. I am grateful to my sisters (Eliouse, Maxine and Norma) and brothers (Willie, Larry and Donald) for your love and encouragement along the way. Also, to my other family members and friends, thank you--you gave me the confidence to continue on.

I thank my doctoral committee for shaping my experiences, understanding, and education. Dr. Teri Melton, my dissertation chair, you are superb. Thank you for sharing your ideas and energy and for challenging me to be "the best." Your timely advice and guidance were invaluable. A heartfelt thanks to my dissertation committee members, Dr. Barbara Mallory and Dr. Linda Arthur, for their knowledge, support, generosity, and enthusiasm. I thank each of you for your time and effort and appreciate your unique perspective. You have all been extremely helpful and I am grateful.

I thank Mr. Mike Deal, my supervisor for believing in my abilities and for providing assistance and support on so many levels. You are the "most wonderful person" ever. Thank you, Dr. Teresa Thompson, for your inspiration and encouragement and for caring deeply about the people in your division.

Thanks also to all the many other individuals who contributed to the success of this project. Be blessed and encouraged, because you have truly been a blessing to me.

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CHAPTER I

INTRODUCTION

General Introduction

Technology is seductive. On any given day, one can expect to encounter yet another novel application, website, service, or device. Today, technological innovations are integrated and used by society more quickly than in the past. Technological advancements since the last millennium have contributed to global modernity. They have led to the development of global connectivity. The development of print, radio, television, telephone, and the Internet have made global communication possible and people now have different access to the world. Digital technologies are commonplace; computers can be found in the home, school, factory, and office. The 21st century is an age of globalization, where communication technology transcends national boundaries (Law, 2006; Resnick, 1997; Tapscott, 1997).

Technology continues to impact increasing segments of the professional and personal lives of all members of society, including the university community (faculty, staff, administrators, and students). Within many divisions of the university, technological advances have impacted the work. It is difficult to conceive of any student affairs practice operating without some technological applications, from hand-held devices to web-based processes (Connolly, 2005; Moneta, 2005).

The work of student affairs, which encompasses the registrar's office on many campuses, is designed to provide services across the university environment. Registrars' offices collaborate with various departments, such as housing, financial aid and many academic departments, to provide a continuum of services to students. Additionally, they provide support services to the overall college community. Within this context, registrars are

expected to fill multiple roles, often simultaneously, balance their responsibilities, and prioritize what is most crucial as technological changes occur. The registrar's office must administer its services to ensure accuracy, timeliness, fairness, and responsiveness to the needs of students, faculty, and staff. Thus, registrar practitioners are further pressed to deploy technological tools to meet the demands of the university community (Case, 2003; Kleinglass, 2005; Moneta, 2005).

Higher education institutions are dynamic, changing organizations. They are clearly not static; new leadership is in place frequently; information technology is introduced in every function area; and, new processes are introduced by many academic and administrative units. Once leaders have researched, planned, purchased, implemented, and evaluated one new product or process, it is time for the introduction of the next technological innovation designed to make life easier (Case, 2003; Salas & Alexander, 2008). The changes imposed by technology will continue to affect higher education environments including registrar offices, which are important units within the division of student affairs.

The operations of student affairs cover a spectrum of activities and many technical administrative processes. Typically, student affairs offices, such as the registrar's office, are at the forefront of assisting with many processes through on-line technology. For example, students, faculty and staff employ current technology to perform various activities, including registration and a host of other services on a twenty-four hour basis (Moneta, 2005). Such challenges as distance learning, virtual universities, proficiency-based education, and assessment learning opportunities can affect the way the registrar functions with registration and daily processes. For most colleges, embracing change means re-assessing the traditional ways of doing things. Beyond developing the skills to use technology, student affairs

professionals in general need to be receptive to change. Also, they should be capable of comprehending and envisioning the strategies needed to implement technology (Curry 2002).

Registrars will improve their influence and guide the role of technology within student affairs when they can articulate how technology influences outcomes, actions, expectations, and student behaviors. By understanding the conceptual and functional impact of technology on institutional goals, quality of service, and resources, and by being able to differentiate between the campus community interests and needs, registrars can better provide information to guide administrators in making effective decisions. These decisions can positively affect processes, retention, and use of resources and the overall student experience, especially in terms of technological services (Curry, 2002; Kleinglass, 2005).

As university professionals within the registrar's office continue to be faced with critical decisions about the use of technology to meet the ever changing demands of the community they serve, they must follow the same sound practices used in other areas of their work. The execution and change process for implementing new technological options should be theory-based, student-centered, and well-assessed in order to understand its effectiveness and impact (Boulais & Sturgis, 2003). Effective management of processes can keep a complicated system of people and technology running smoothly. With awareness and skill, errors can be avoided or at least mitigated. As the utilization of information technology in higher education administration continues, leaders need to look at whether higher education administrators have the skills, knowledge, and strategies needed for change in the new technology information age (Kotter, 1996; Roberts, 2005). Additionally, leaders must ensure that staff competencies provide for maintenance, upkeep, security, integrity and proper dissemination of academic records while being at the forefront of technological advancement

(Case, 2003; Montea, 2005).

Immense changes have taken place in the registrar's office in a short time, largely due to the introduction of the Internet. In the beginning of the twenty-first century, the Internet was the foremost resource used in education for finding information (Kleinglass, 2005). Today, technology and web-based processes continue to help registrars' link individuals to their studies and research, and connect individuals to various services within and outside the campus community. Technology mediates individual's relationship to the institution, especially within student affairs divisions. Information technology is a critical part of leadership and the services provided to students and the overall campus. Services such as email communications and web-based processes are both constant and overwhelming. Therefore, the educational and administrative functions of student affairs, especially within the registrar's office, are fully intertwined with various technologies (Connolly, 2005; Moneta, 2005). Registrar functions include management of documents such as transcripts, student registration processes, graduation tools, and the upkeep of student data base information due to state, local or federal policies. Changes in technology impact each of these functions, forcing registrars to adjust to shifting conditions. Major change efforts have helped registrar professionals adapt significantly to sifting conditions, but in too many situations the improvements have been disappointing and appalling (Kotter, 1996). Kotter's eight stage change process provides a guide for mastering the skills necessary for implementing change within the registrar's office.

Statement of the Problem

Technological innovations make change a constant part of higher education, especially in environments within student affairs offices, such as the registrar's office. Constant

advances in systems of delivery for student services have presented many challenges, both positive and negative, to registrar's offices throughout the country. These changes occur as rapidly as the technology becomes available. As a result, student affairs professionals, particularly registrars, must understand the importance of engaging as change agents and streamlining administrative processes through the use of technology within their divisions and institutions. To continue as proficient leaders of technological change will require registrars to become more competent in analyzing and understanding the business processes associated with various practices and models of change. However, little, if any research has been conducted to explore the leadership practices and preparedness of registrars in implementing planned technological change. Additionally, few proven models exist to guide planned technological change initiatives within the registrar's office.

The investigator of this study explored the readiness of registrars to plan and implement change efforts pertaining to the day-to-day administrative processes and service uses within their areas due to technological advances. From one perspective, technology changes so rapidly, it presents a challenge for registrar offices to stay current. From another perspective, registrar's offices are charged with providing extensive services concerning the use of technology to the overall campus. Registrar offices must have the capacity to embrace change as it occurs; the registrar should ensure that the latest technological advances are implemented properly; and, ultimately, registrars need a guide of proven strategies in order to facilitate the transformation.

Purpose of the Study

The purpose of this study was to explore University System of Georgia registrars' perceptions of the strategies needed to plan and effectively implement change related to

technological advances within registrars' offices. The researcher explored university registrars' current strategies for implementing planned technological change to understand registrars' readiness to implement planned technological change.

Technology continuously challenges the knowledge base and registrar offices must expand current practices to embrace change as it occurs. Kotter's (1996) had proven techniques (i.e., developing a clear vision) for leading change provides a guide for mastering the skills necessary for change within the registrar's office. Kotter's principles are based on the premise that the change process takes time and is not something that happens overnight. It is essential for program leaders and communications staff, such as those working in student affairs areas, to understand the steps needed to support any transformation during all phases of the change initiative.

Research Questions

Based upon Kotter's (1996) conceptual framework and relevant literature in the field (see Chapter II), the researcher developed a series of questions that explored registrars' perceived understanding and situational use of Kotter's model to effectively plan and implement technological change. Specifically, the study focused on registrars with one or more years of experience from institutions within the University System of Georgia Board of Regents Schools.

The following overarching research question concerning registrars from the University System of Georgia Board of Regents Schools guided the study: What are the University System of Georgia registrars' perceptions of the strategies needed to plan and implement change relating to technological advances within registrars' offices? In addition, the following sub-questions directed the study:

R_1: What strategies do University System of Georgia registrars use to implement planned technological change?

R_2: In what ways do current strategies by University System of Georgia registrars for implementing planned technological change follow Kotter's eight-stage model?

R_3: What are University System of Georgia registrars' perceptions of their readiness to implement planned technological change?

Significance of the Study

Technology use within the registrar's office has become more prevalent in recent years and new software becomes available almost daily. Concurrently, the expectations of customers (faculty, staff, administrators, and students) served by the registrar's office have increased. This phenomenon calls for continual change in the way registrars do business. Thus, there is a need for action, intervention, and collaboration among those responsible for technological change; however, few specific guides or models for implementing technological change have been established and shared as a starting point (Kleinglass, 2005). Throughout the literature, researchers (e.g., Boulais & Sturgis, 2003; Clark, 2004; D'Angelo & Woosely, 2007; Kleinglass, 2005; Shier, 2005) have called for more empirical studies of implementing change. Student affairs professionals are seeking answers and models regarding this topic; however, minimal exploration and little measurement have been achieved to date (Klienglass, 2005).

The researcher's interest in the leadership of registrars is inspired by her role as a veteran administrator in a registrar's office. Having worked at four major universities and with over twenty years of experience, the researcher has witnessed the impact a registrar's

leadership can have in terms of implementing new planned technologies. The changes experienced by the researcher have been characterized by a variety of implementation issues, including varying levels of resistance, resource and time constraints, inter-group conflicts, and other personnel issues, such as lack of training and staffing within the registrar office. Therefore, it was important to examine these highly complex issues from the registrar's leadership perspective using Kotter's eight-stage model. Kotter's model was chosen because it provides eight proven steps for implementing successful leadership and change.

The situational use of Kotter's eight-stage model for change may be useful to university registrars in identifying and cultivating appropriate strategies demanded by expanding technological challenges within higher education. Strategies must be properly implemented, as missing any single step in the transformation process could have serious consequences and could even cause the organization to fail (Kotter, 1996).

This study provided a clearer picture of the strategies and readiness of registrars relative to implementing technological change. Additionally, the research provided outcomes for a template or list of strategies for current and aspiring registrars within higher education.

Research Methods

This study used mixed methods to include a quantitative descriptive study as well as qualitative study in the phenomenological tradition as a means of soliciting feedback from registrars concerning their perceptions of what constitutes effective planned technological change within their offices. All thirty-five registrars within the University System of Georgia Board of Regents' Schools were invited to participate in the mixed methods study. Eleven of the thirty five participants responded and comprised the census sample. The first three respondents who used exceptional strategies or who provided descriptions of six to eight

strategies based on Kotter's eight-stage model, and agreed to an interview comprised the qualitative sample. The researcher employed purposive sampling as a means of selecting participants who could best help her answer the research questions (Creswell, 2003; Patton, 2002).

The 12-item instrument collected descriptive data about strategies used in implementing major technology change through the lens of Kotter's eight-stage process. Kotter's eight-stage model was used as categories to generate a description for the analysis. Descriptions involve a detailed rendering of information about events in a setting (Creswell, 2003). The final stage of the analysis required the researcher to develop some generalized conclusions based on the frequency, patterns, and themes that were identified in the data. In order to ensure that the instrument was properly designed and garnered the data that addressed the overarching research questions, the instrument was submitted to a panel of four registrar professionals outside the University System of Georgia. The registrars were asked to review and evaluate the instrument. Feedback received was used to improve the instrument.

The phenomenological tradition was the most appropriate qualitative technique for the second part of this study in that the real-life experiences of registrars are crucial in promoting the study's goals and objectives. This portion of the study took place in the realm of higher education with the researcher utilizing an open-ended questionnaire administered via an attachment through personal email to University System of Georgia registrars with one or more years of experience. A constant comparative analysis was utilized to generate themes which served to answer the research questions. The researcher followed Moustakas' Modification of the Stevick-Colaizzi-Keen method of data analysis (see Appendix E).

Limitations and Delimitations

This study was exploratory in nature and limited in scope by the researcher's selection of Kotter's eight-stage model, as opposed to one of the other numerous models available. The researcher reassured the respondents that their answers would not be connected to them or their institution, and that every safeguard was taken to assure confidentiality would be employed. This served to increase the potential for participants to fabricate or misrepresent the truth. It is assumed that all research participants believed that their responses accurately portray their perceptions regarding what is required for effective planned technological change. The study results rested on the assumption that all registrars were truthful in their responses to the questions asked by the researcher. Another possible limitation of the study concerns respondents self selecting to participate because they had experienced success implementing technology.

All the institutions selected report to the same Board of Regents, which was a delimitation of the study. The regional and cultural differences of these institutions may limit the applicability of these finding to other institutions. Thus, arguments could be made that participants in this study do not represent all registrars throughout the USA. However, qualitative studies are often characterized, if not distinguished, by the uniqueness of the groups sampled (Lichtman, 2006). In qualitative studies, the groups studied tend to be smaller with non-random selection (Denscombe, 2007; Lichtman; Scott, 2005). Therefore, the perceptions of registrar strategies‘ collected via questionnaire from this sample in no way diminished the value of their lived experiences, nor does it diminish the potential to learn from their experiences.

Definition of Key Terms

Important terms that shaped the research included:

Levels of Effectiveness: Levels of Effectiveness were standards used to measure efficiency of registrars in carrying out responsibilities relating to technological change. Effectiveness was determined by the extent to which registrar's aligned their strategies to Kotter's (1996) eight-stage model for implementing change.

Planned Technological Change: For the purpose of this study, planned technological change referred to the implementation of software systems and processes (e.g. Smart Catalog, Degreeworks, XML, etc.) utilized by university registrar offices that are intended to provide fast and efficient services to students, faculty and staff for continuous, quality improvement.

Registrar: Registrars are typically the higher education institutions' administrative leaders who work to improve programs and services in response to changing needs of students and other constituents. The registrar provides services to faculty, administrators, students, and the overall campus community. The registrar is the official recorder and keeper of student academic records and is charged with upholding the accuracy, integrity and delivery of data. Depending on the university structure, the registrar may report to the vice-president of academic affairs, student affairs, enrollment management or comparable senior officer. For the purpose of this study, the registrar reports to the division of student affairs and the terms "registrar" and "student affairs professional" were used interchangeably.

Strategies /Competencies: Strategies and Competencies referred to the management initiatives

needed to implement change. For the purpose of this study, strategies or competencies were aligned to Kotter's (1996) eight-stage model for implementing change ranging from communication to coercion. The two terms were used interchangeably.

University System of Georgia Board of Regents Schools: University System of Georgia Board of Regents Schools are higher education institutions in Georgia that are unified under the same governing and management authority. The researcher of this study examined the perceptions of registrars from major colleges and universities within the University System of Georgia. Major institutions were defined as two-year and four-year accredited, degree-granting institutions.

Chapter Summary

Technological change continues to impact increasing segments of the university community, especially within student affairs divisions. The advances in systems of delivery and the demands for student services in the changing environment of the twenty-first century present many challenges for registrars. The purpose of this study was to explore the readiness of registrars to plan and implement change efforts pertaining to the day-to-day processes and services within their area due to technological advances. The researcher explored university registrars' perceptions of how to plan and implement change relating to technological advances within the registrar's office using J Kotter's eight-stage model for leading change.

The researcher used mixed methods to include a quantitative descriptive study as well as qualitative study in the phenomenological tradition to solicit feedback from purposively selected registrars from University System of Georgia Board of Regents' Schools. An open-ended questionnaire was administered via an attachment through electronic email. The purpose of questionnaire was to gather an understanding of the registrars' readiness of

implementing planned technology along with their perceptions of strategies used within their office. After an analysis of the responses, the researcher identified registrars who had employed strategies aligned to all stages of Kotter's eight-stage model. The first three who used exceptional strategies or who provided descriptions of six to eight strategies based on Kotter's eight-stage model who agree to an interview comprised the qualitative sample. The study was relevant in that registrar's offices must continue to be at the forefront of technological advancement due to customer expectations and demands. Limitations within the study included the method of data collection as well as the uniqueness of the group of institutions from which the sample was selected. This study attempted to provide a guide or model for planning and implementing planned technological change within registrars' offices.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Changing technologies have affected nearly every aspect of society today, and higher education is no exception. For example, the use of computerized record-keeping systems on college campuses is increasing at a tremendous rate and, eventually, electronic data will replace most paper documents (Ausiello & Wells, 1997; Wilson, 2003). Technology is a way of life for the campus community (students, faculty and administrators) today. From e-mail, e-postcards, and college face books to online applications for admissions and orientation programs, the campus community today has a high comfort level with technology as a part of everyday lives. Many have come to expect technological services relating to their educational experiences to be automated, online, and available twenty-four hours a day (Shier, 2005). Many want everything to be at their fingertips when they enter an environment, whether real or virtual. Beyond registering for classes and researching papers online, students, faculty, and administrators want the ability to stay connected with services through online methods. The push for e-mails, voice mail assignments to inboxes, or on-line course discussions is in demand, which means that colleges and universities need to rethink the way they provide services to their customers. Some envision this as a portal or portfolio, whereas others see a self-generated and self-determined point through which the learners (and the instructors) select how and where they access the functions that are needed to achieve their goals and outcomes as a result of the services and policies offered by the university. Colleges and universities must find ways to use customer-friendly technology to address problems within

their existing technological, judicial and overall campus structures (Ali, McGee, & Carmen, 2006; Shier, 2005).

While the specialists in electronic technology keep upgrading the hardware, system and application software specialists continue to upgrade existing systems and create new systems and programs to increase access to new technology for the masses. However, a great majority of end-users are not up to par with the required repertoire of technical knowledge and skills to exploit the capabilities of available information technology. This is most certainly true in higher education and many registrar offices (Petrides, 2000).

In addition, methods of delivering traditional services (i.e. processes such as transcripts, registration, graduation, etc.) have changed dramatically over the years; as a result, institutional personnel responsible for service delivery to the campus must change by enhancing their awareness, knowledge, and skills in order to meet customers' expectations. Rapid advancements in quality and versatility of products in information technology bring new challenges to every working environment (Petrides, 2000). While theoretical discussions are occurring, researchers have begun to empirically examine the issue of change and technology in higher education. During the last quarter of the twentieth century, universities around the world found themselves under increasing pressure to change the way they operate. University administrators are being called upon to lead the way for transformation and they need the competencies to successfully provide constantly changing day-to-day services due to technology (Clark, 2004; D'Angelo & Woosely, 2007; Shier, 2005). As this study examined registrars' perceptions of the strategies needed to effectively plan and implement change relating to technological advances within registrars' offices, the literature was presented in the following areas; the registrar; the impact of changing technologies; strategies and readiness

needed by registrars to effectively implement planned change relating to technological advances; the leadership role of the institution's registrar in a time of change; the internal and external pressures that have driven and inhibited such change; and, a systems model for change.

The Registrar

The university registrar dates back to at least the fifteenth-century at Oxford University and has served an important role through five phases of university development. The first phase began with the domineering "antebellum college" church, an era in which the faculty bore all administrative responsibility, and it was followed by the "age of the president" in which the registrar emerged as the official recorder of an expanded curriculum. Then came the "age of the faculty" in which the registrar was viewed as a clerk of the faculty, and next the "age of expansion" where the registrar had to learn techniques of crowd control (Quann, 1979). Currently, opinions vary as to exactly where the registrar's role falls in the phase of the creation of a modern academic specialist position. Some say the registrar position is second only to the president; others contend the vice president precedes the registrar (Lauren, 2006). As the role of registrar evolved, it shifted from being essentially the number-two leadership position responsible for handling many aspects of administration to filling a role more narrowly focused but vital to the life of all institutions of higher learning by supporting faculty and administration. The expansion of institutions and students necessitated the formation of an academic specialist position, which in turn resulted in a careful definition of the role and responsibilities of the registrar (Lauren, 2006; Young, 2000).

The registrar usually reports to the vice president for academic affairs, student affairs, or enrollment management, and manages a staff that may vary from a few members to more

than one hundred, depending on the institution size. In the University System of Georgia, student affairs divisions typically include responsibility for such functions as enrollment management, financial aid, housing, registrar, counseling, student health, judicial programs, career services, recreational sports, and student activities. The registrar's office administers a number of specific services, which include class scheduling, registration, record functions, grade reporting, transcript services, and commencement. Services may also include the following: transfer credit; student enrollment verifications and certifications; development of an academic calendar; enrollment reporting and forecasting; publications including catalogs, class schedules and commencement programs; and, tuition classifications (CAS, 2006; Lauren, 2006). In addition, the registrar develops position descriptions for and employs, trains, and supervises office staff, and oversees day-to-day activities. The registrar determines the organizational structure for the office and ensures the availability of adequate facilities, equipment, supplies, and services (Lauren; Young, 2000).

As a primary focal point on the college campus, the registrar's office is responsible for upholding the value of courses taken and degrees conferred by superintending the accuracy, integrity and delivery of such data. The registrar remains the keeper of student information and is charged with the protection of data integrity and confidentiality. One of the registrar's greatest challenges in the data driven environment of the modern university is being ready for change and knowing how to make the appropriate information available to the correct constituencies in a manner that provides ease of access while at the same time rigorously safeguards the privacy of each individual (Lauren, 2006; Sandeen, 2004; Young, 2000).

Registrars have expanded their professional interests and reject any suggestion that they are just "service providers" (Sandeen, 2004). They see themselves as an integral part of

the academic programs of their campuses and as active contributors to student learning. As a profession, the registrar continually analyzes and examines processes to determine what is most effective and efficient for the university and the customers they serve. In the day-to-day and the term-to-term work that is done in the registrar's office, one of the defining characteristics is the registrar's readiness for, adapting to, embracing, and often encouraging change. In many respects, dealing with change is part and parcel of the work of any registrar's office. Even in as short a time span as the last five years, every registrar's office can list the enormous changes in the areas of registration, degree audits, grade submission, enrollment verification, and on and on (Sandeen, 2004; Watts, 2004). Leaders of registrar programs and services must identify and find means to address individual, organizational, or environmental conditions that inhibit goal achievement. Leaders must continuously improve programs and services in response to the changing needs of students and other constituents, and evolving institutional priorities (CAS, 2006). From the medieval origins of the office of the registrar to its challenges in the twenty-first century, its central mission has remained remarkably the same: to preserve the integrity, accuracy, and privacy of all academic records; and, to interpret institutional and governmental policies to members of the academic and general community.

The role of registrar in a college is largely influenced by internal factors such as the distinctive character and traditions of the institution, its history, and its academic mission (Lauren, 2006). Priorities of the governing board, the vision and goals of the chief executive officer and the availability of resources influence the array of services provided by student affairs offices. Ultimately, the registrar's office serves the mission of the university, which necessarily includes serving students and the entire community, both internal and external (Grace, 2002; Lauren). The registrar assumes a major leadership role in facilitating a campus-

wide approach to policy development initiatives. Given the registrars' broad scope of responsibility within the institution, they are in a unique position to serve in an advisory capacity to faculty and the administration in the development of policy (Lauren).

A successful registrar must possess political skills that allow integration of the student affairs division with the campus (Lovell & Kosten, 2000). Registrar programs and services must provide channels within the organization for regular review and documentation of administrative policies and procedures. The registrar program and services staff members must be knowledgeable about and responsive to laws and regulations that relate to their respective responsibilities concerning technology (CAS, 2006; Shier, 2005). Emerging technologies such as information technology as well as continual change on an institution wide basis are two of the important challenges registrar offices will face as regulatory agents of technological advancement.

Technology in Higher Education

As technological advances continue to impact society at an astounding rate, it is imperative that higher education institutions develop systems to assess the usefulness and the appropriateness of incorporating these new technologies into the campus communities (Boulais & Sturgis, 2003). Technology, acting in combination with other environmental elements such as increasing competition for students, changing students' needs, and increasing expectations of institutional personnel, has become the catalyst for change in higher education. Undoubtedly, the new information age is a powerful force categorized by ongoing developments in multimedia and information technology that have opened new possibilities for faculty, administrators, and students. The possibilities are endless, difficult to predict, and will provide challenges for institutions of higher education. Institutions should

remain attentive to evolving technologies in order to take full advantage of the opportunities that changing technology promises (Shier, 2005).

Society in general has entered a new information age and higher education administration remains far behind its counterparts in the business sector. Many academics resist the business term “consumers” being applied to students. The fact, however, is that students are exhibiting a more consumer-like approach to making their education choices, and the educational enterprise needs to be in a position to respond. Such external forces are some of the major challenges that are putting greater pressures on the traditional university to change (Case, 2003).

Change in higher education continues to occur in both processes and structure. Many processes once paper-based have been streamlined and timelines shortened by the use of technology in such areas as student registration, advising and application. For instance, in the past, thousands of human hours had been wasted annually by both students and administrative staff in completing a variety of administrative paperwork. But now with the orientation toward greater technology use, student services processes are facilitated with much greater efficiency on campuses. The new information age has opened new opportunities for faculty, administrators, and students to restructure numerous activities encompassing professional and institutional areas. Areas such as application, advising, teaching and registration are improved by technological advances (Boulais & Sturgis, 2003).

However, educational information technology information is still being drastically underutilized, therefore, rendering it ineffective. An example of underutilizing technology within the university might involve campuses where existing databases within a registrar’s office are used exclusively for record keeping purposes, as an end in itself and not as possible

sources of input for others on campus (CAS, 2006; D'Angelo & Woosely, 2007; Petrides, 2000). Additionally, technology may be underutilized because few empirical studies have been conducted regarding implementing technology change within student affairs divisions. However, in 1997 the American College Personnel Association (ACPA) and the National Association of Student Personnel Administrators (NASPA) developed a joint document entitled the Seven Principles of Good Practice for Student Affairs. The principles outlined theory and practice based work to serve as a solid framework for examining the educational and developmental benefits of technology. Some principles included using resources effectively to achieve institutional missions and goals, and building supportive and inclusive communities. To fully understand how the Seven Principles of Good Practice for Student Affairs can, and should, impact individual decisions about technology, it is essential that individual practitioners understand their own knowledge and skill as well as the culture of the institution and department in which they work (ACE, 2005).

Technological advances continue to change the way students and the campus community live, learn, and interact with their colleges and universities. Accordingly, institutions must change the way they use technology, both in how they provide day-to-day services for customers and how they connect with the overall campus in a less structured but equally meaningful way (Petrides, 2000; Shier, 2005; Smith, 2000). Many colleges and universities have welcomed the promise of information technology (IT) with open arms, but they are experiencing the consequences of providing such broad-based access to their resources (Petersen & Hodges, 1997). With technology so pervasive throughout work environments, it would be worthwhile for student affair's practitioners to consider what

strategies are essential to apply technological tools most effectively so as to optimize educational and administrative efforts (Moneta, 2005).

Information technology (IT) is one of the most powerful emerging forces within the university, especially student affairs offices. IT represents one of the many challenges impacting student affairs operations because of the marked disparity in the services and technological practices needed to meet customer needs. The causes for this disparity may stem from policy, equipment, or increasing demands of services that have expanded the range of essential skills and resources (e.g. web design, shared databases) that may be useful for a registrar's office to posses. With the use of IT services, existing databases that have been used exclusively for record keeping purposes can provide institution-wide student record applications that share student information among various offices. The need for IT services in working with student record systems are continually more integrated and complicated. These very expensive and extremely complicated applications reinforce the need for access to technological expertise within the planning models and careful consideration of the business processes to be advanced and improved. Therefore, a registrar's office needs to use IT to merge resources within the university to provide the best technological advances for educational and administrative efforts for all consumers whether students, faculty, or staff. As the primary point of contact for students and staff, the registrar's office is central in collecting information, and sharing and coordinating IT services with the overall campus (Moneta, 2005).

Typically a registrar's office has more advanced practices due to new technology and the registrar needs people who are capable of merging policy, procedures, and technology. This is another reason why practices in registrar offices need to be grounded in values, theory,

and research, which enables the unit to effectively meet the needs of all their customers (Barratt, 2001). Additionally, new combinations of service offerings and policy considerations will need to be advanced carefully to ensure technology is implemented properly. The registrar and staff must operate all times in a highly accurate, honest, and ethical manner when providing services. Only recently has serious attention been given to the legal, ethical, and policy considerations that should inform decisions on the uses of information technology on campus (Petersen & Hodges, 1997).

The Internet provides the biggest challenges related to regulations and legal and ethical responsibilities concerning new information technology. Universities must ensure that appropriate policies are established to protect the confidentiality of all records, that faculty, administrators, staff, and students are educated about the policies, and that policies are enforced. The same principles of confidentiality must be applied to electronic data as apply to paper documents. Because of legal requirements and technical limits on data transfer, registrars have become one of the primary police of the Internet (Ausiello & Wells, 1994). Possible breaches of conduct can occur with email, web pages, and databases. These breaches occur because ownership of individual student and group homepages can question academic security. Additionally, releasing student information via the Internet can violate legal policy. The legal and ethical ramifications of these breaches seem endless and need to be continually addressed. In response, colleges and universities need a set of policies and guidelines that outline the evolving legal and ethical issues that have emerged. The Family Educational Rights and Privacy Act of 1974 (FERPA) provides institutions with a framework for assuring privacy and the right of students and others to access their educational records. Information technology in student affairs has the potential to provide student services, programs, and

activities that promote ethical and legal use of technology while also improving the quality, efficiency and effectiveness of administrative operations (Ausiello & Wells: Lauren, 2006).

Student affairs professionals can be campus guides and pathfinders in educating the campus community in technology use and bring a useful set of values and principles in the context of higher education (Komives & Petersen, 1997). For example, Locke and Guglielmino (2006) stated that the organizational culture within higher education encompasses the shared philosophies, ideologies, values, assumptions, beliefs, expectations, attitudes and norms that guide decisions. This presents the foundation on which registrars could assist others in terms of establishing sets of expectations for personal and professional conduct in technology use campus-wide.

Change

Changes in technology are important in higher education because an organization cannot remain laggard and hope to be great. Vision, readiness, and leadership toward tomorrow are of paramount importance to moving institutions forward, and student affairs professionals need to make themselves known as important players in the technology revolution (Ausiello & Wells, 1994; Collins, 2001; Giannini, 2001). Enhancing the organizational status, morale, and career mobility of professional staff and faculty will be increasingly necessary to ensure that institutions maintain the expertise they need to realize the college mission (Schuetz, 2002). Given technological advances, demographic shifts, and other sociopolitical and economic changes throughout the world, registrar offices need to recognize and understand the university's role in interpersonal and intergroup interactions when implementing change (Outcalt, 2000).

Change occurs when there is a shift in the organization's internal or external environment. Even minor shifts in procedures and technology, or small differences in the external environment, have been labeled as "changes." Leaders are constantly reminded that change is the only real constant (Kotter, 1996). The rate of change in the business world and higher education is not going to slow down anytime soon. If anything, competition in most industries will probably speed up over the next few decades (Kotter). External forces of change that are political, economical, legal and societal seem to bring about campus crises, but they can also bring about possible solutions. Often, these solutions come from the general business community (Kotter). The idea of adopting management concepts and practices from the business world is not new to higher education.

Since World War II, colleges and universities have experimented and adopted, with various degrees of success, a wide array of business practices as a means of holding staff accountable, implementing checks and approvals, and conducting institutional planning. In the spirit of innovation and at times trial and error experimentation, institutions have looked for more encompassing systems of change (Grace, 2002). In order to be tomorrow's successful student affairs administrators, institutional personnel will be required to have more and different skills, knowledge bases and personal readiness for change. Some change is relatively frequent, and to be successful, individuals and organizations must become skilled and comfortable with adapting to alterations in the workplace (Jaffee & Scott, 1999; Lovell & Kosten, 2000; Watts, 2004). Change in a campus environment can be positive or negative, progressive or regressive, and change can provide movement of the organization toward its goals (Hoy & Miskel, 2008). To effect significant, lasting change, educational leaders must not only be cognizant of the dominant culture of their institution, they must also identify and

understand the subcultures that often form around functional roles, demographics, divisions, disciplines or geographic locations (Jaffee & Scott, 1999).

A challenge facing institutional administrators is forecasting change in an uncertain environment. It is difficult to categorize all the changes one is likely to confront in student affairs because of the unpredictable nature of both the profession and the process of change itself. However, according to Dalton and Gardner (2002), some of the most important and challenging changes are the following: new laws, regulations, policies that evolve from external sources such as the legislature, boards of trustees, and federal and state governments; new technology procedures and technology infusion; emerging trends in students' college preferences, career interest and personal values; and, major new institution-wide initiatives.

A restructuring of procedures for information technology functions represents a major change in the work lives of a number of individuals within higher education (Kelman, 2005; Yang, 2006). Successful change begins and ends at the individual level. Even when change is introduced to every member of the organization at the same time, the rate of making the change and of developing the skills and competences will vary individually (Cheng, 2007; Kotter, 1996). For example, some older employees, including a number of managers, comfortable with the status quo, may have a more difficult time adjusting to the newer technologies than younger workers who are more engaged with the times. Therefore, managers who have to deal with workers who have different needs should work gradually to change individual mindsets (Kelman, 2005)

Change and Leadership

Change is an inevitable and continuous process in social situations, locally, nationally, as well as globally. Leaders need to understand the extent to which they can have control over

its nature. Leaders need to know what kinds of things that change involves and its direction (Somekh, 2005). The secret to successful change is to make each step along the path of change have some recognizable value. Leading change is one of the most complex skills of leadership. Change can completely reorient the nature of what is done so that individuals are forced to think and act in radically new and different ways in order to adjust to fast-moving forces. Leaders need to decide how to implement the change, what their role should be, as well as how to communicate change effectively. Change initiatives and communications must be enacted in a prompt, accurate and thorough manner (Cheng, 2007; Dalton & Gardner, 2002).

Cheng (2007) recommended that a leader stand behind the change and take the risks to make a case for change in a very reasonable and valuable way. Leaders should lead by doing, setting an example, and building consensus. These are critical actions needed for a major strategic change to work, and they are essential to winning support from key team members (Cheng). This is best done incrementally, reaching out to individuals, for it is their support, or lack thereof, that will see a change initiative succeed or fail. For student affairs leaders, such as registrars, this means working together with the entire campus to identify effective methods of implementing and communicating change. Because registrars are in constant contact with students, administration, faculty and the general public, they are in a unique position to implement, interpret, and communicate change (Cheng; Lauren, 2006).

Models of Change

One of the cornerstone models for understanding organizational change was developed by Kurt Lewin back in the 1950s, and involves changing individual attitudes. Lewin, a physicist as well as social scientist, explained organizational change using the

analogy of changing the shape of a block of ice. His model is known as Unfreeze, Change, Refreeze, and refers to the three-stage process of change he describes. His model assumed that people resist change and need the application of a force sufficient to break the habit to divert them from continuing current behavior. Success, therefore, requires “unfreezing” existing attitudes. Unfreezing is necessary to overcome the strains of individual resistance and group conformity. Unfreezing can be achieved by the use of three methods. First, increase the driving forces that direct behavior away from the existing situation. Second, decrease the restraining forces that negatively affect the movement from the existing equilibrium. Third, find a combination of the two methods listed above. Some activities that can assist in the unfreezing step include: motivate participants by preparing them for change, build trust and recognition for the need to change, and actively participate in recognizing problems and brainstorming solutions within a group. Kurt Lewin refers to the final stage as freezing (or 'refreezing'), a segment of the process that could take considerable time. During this stage stability is established and the changes have taken place. They have not only been accepted but have become the new standard, new relationships among the stakeholders have been formed and individuals have become comfortable with their routines (Kelman, 2005).

Another model by Deming (1986) suggested that profound knowledge and the lean theory is the framework needed to successfully redesign administrative, academic, and business processes due to technological change in higher education. The lean theory model is built on the foundation of strong leadership commitment. It is reliant on the notion that employee participation and waste elimination are needed for change. The main principle is that organizations are a collection of interrelated processes and people, which create the system’s operating components. The success of all work within the system is dependent on

the delicate balance of each component. For example, a redesign of registrar processes are often due to technological changes and administrative changes may depend on a fine balance of competencies needed through leadership, policies, procedures and technology (Deming; Waterbury; 2008).

According to Kelman (2005), one of the most important prescriptive literatures on change is work by management "gurus" with a practitioner-oriented bent like Kotter's Eight-stage Change Process. According to Kotter (1996), one of the world's leading experts on leadership and change, there are many forces at work creating a dynamic, complex, and messy environment when implementing change. While the registrar may not be involved in the decision making on all the issues, it is important for him or her to be aware of the answers and to contribute to the discussions when implementing change. The registrar must manage the change, and understand the complexities required and utilize successful competencies when implementing planned technological change. The registrar's ability to manage both the complexity and the changes will define the success of the operation and institution. Proper leadership and management of a set of processes can keep a complicated system of people and technology running smoothly (Kotter, 1996; Lauren, 2006).

Kotter (1996) designed an eight-stage change process based on the premise that major change will not happen easily for a number of reasons. To be effective, leadership is needed to alter strategies, reengineer processes, and address barriers to prevent some common errors**.** A brief depiction of how Kotter's eight-stage model may apply within a registrar's office is outlined on pp. 40-45. Leaders have to work hard to change an organization successfully. When leaders plan carefully and build the proper foundation, implementing change can be much easier, and this improves the chances of success. If leaders are too impatient, and if they

expect too many results too soon, their plans for change are more likely to fail. Change is a common thread that runs through all organizations regardless of size, industry, and/or age. The world is changing fast and, as such, organizations like universities must change quickly too (Kotter, 1995, 1996; Jackson, 2006).

Registrar and Technology Planning

In many ways, the recent report by the Federal Commission on the Future of Higher Education simply affirms what American higher education has been grappling with for quite some time--that higher education is both the lamp and the mirror for the world, in that it sheds light upon as well as reflects the increasingly complex issues that must be confronted. The world is getting simultaneously smaller and more global and technology is racing along at a frantic pace. The knowledge-based economy is not just a theory anymore; it is a reality, and technology is power. The organizational hierarchy within higher education is giving way to a technological web (DiCroce, 2006). Higher education institutions must successfully confront the impact of globalization and rapidly evolving technologies. The impact of computer technology on people and processes within higher education in general are an example of a transforming environment (Dalton & Gardner, 2002; “Preamble,” 2006; Somekh, 2005).

According to Grace (2002) and Morrill (2005), institutions engaged in the technology planning process should identify the changes occurring within their environment. They should access particular strengths and competencies of the technological change, and match them in a plan for achieving future opportunities. Effective strategic planning involves examining demographic, social, economic, technological, and political trends, and determining the likely impact those trends might have on an institution and its technology use. Strategic campus leadership should address deep and continuing issues relating to strategy, governance,

management, and leadership in higher education during a period of rapid change. Each of these themes is at the heart of current debates about the capacity of universities to respond to new expectations, market realities, reduced state funding, globalization, technology, and a long list of other challenges. However, strategic planning can greatly diminish these challenges and mobilize colleges and universities. However, institutions must be careful to not become so market-driven that they sacrifice their own legacy of academic values (Grace, 2002; Lauren, 2006; Morrill, 2005).

Kotter (1996) pointed out that enterprises everywhere will be presented with more hazards and wonderful opportunities driven by the globalization of technological trends. The typical twentieth-century academic organization, such as a registrar's office, is often challenged in a rapidly changing environment. Over the past ten years, integrating technology into the previous labor-intensive model of moving people and paper through physical processes has transformed service delivery in the registrar's office (Shier, 2005). Registrars need to manage the effects of a turbulent environment on the dynamics of an institution and know the locus of that changing technology. Issues related to technological change in higher education have important implications for both research and practice, and the leadership component is critical for the successful integration of that technology (Case, 2003; Riley & Louis, 2000).

As technology plans develop, it is critical to ensure they are consistent with the mission and values of the college or university. Through an ongoing dialogue, registrars can draw connections between the institutional mission and the information technology vision, thereby helping constituents identify with the planning process (Ausiello & Wells, 1994). Embracing the new at the expense of the old is an exceedingly complex and difficult process.

It is a choice of integrating the best of the academic traditions of the past with the new culture of innovations to meet the complex, ever-evolving challenges of the information age (Johnson et al. 2003).

Barratt's (2001) pilot study examined how information technology practices were being conducted in student affairs. The study involved use of a conceptual model for analyzing core management functions by comparing common practices against exemplary programs and best practices which encompassed policy, staffing, technology and practice as the best way to describe the current practices of information technology in student affairs. Interviews and observations were conducted with vice presidents, professionals from the Career Center and Student Activities, and technical support staff of five colleges. Barrett used the collected data to devise his model which encompassed policy, staffing, technology, and practice as the best ways to describe the current usage of information technology. Many similarities and differences were found among the campuses in the use of information technology; however, it was discovered that most campuses did not take full advantage of it. The study found that while integrated student affairs technology plans are just beginning to be developed on campuses, most are not yet engaged in campus-wide information technology planning and decision making. Campuses need a plan for testing, staffing, and technology to meet the need and to address emerging issues for tomorrow (Barratt, 2001).

Traditionally, student affairs staffs have been users, not developers of information technology, and therefore, they have been looking to others on campus for expertise. Professionals in computing services, information services, or academic services hold a great deal of knowledge about information technology. Once registrars plan for change, they should

pull these information technology experts together to create a shared knowledge base of campus community members (Ausiello & Wells, 1997; Wilson, 2003).

Technology has automated many administrative, academic, and student support services and enabled distributed teaching and learning models that provide online access to college courses practically anytime, and anywhere (Johnson, Hanna & Olcott Jr., 2003). The only certainty about technology is that its demand and interest will grow and registrars, along with other student affairs administrators, will most likely need to be more technology competent. In fact, some registrars have entered into contractual agreements with private corporations to launch a change process to meet the challenges of the new information age. It is too early to comment on the impact of such partnerships on restructuring educational information management. Current evidence seems to indicate that initial efforts are being directed toward building the information technology infrastructure and issues related to upgrading hardware and software. Therefore, it would be unrealistic to assume that such partnerships will be able to bring about the kind of restructuring of educational information management processes needed. Furthermore, in the case of financially struggling institutions of higher education, the probability of establishing new information management systems is very low or nonexistent. As a result, every effort must be made to integrate existing and new technology with competence (Edirisooriya, 2000).

Registrar and Managing Change

Competent student affairs leaders such as registrars should possess the skills necessary to drive effective organizational change. Registrars should develop efficient and effective programs that serve their customer needs and be able to successfully integrate new models of change in a culture of uncertainty and, deliver the appropriate organizational structure to carry

it all out. Structures, systems, and practices have often been more of a drag on change than a facilitator. In the academic organization, seeking change, or accommodation to new trends, ideas, contexts, political or fiscal realities, is not for the fainthearted. Anyone seeking to transcend the status quo will be met with opposition; those who can neutralize or overcome opposing constituencies or individuals will succeed (Hoffman, 2000). Implementation of change is hard work and the change efforts can fail, but there are numerous examples of successful change efforts. Major change efforts have helped some organizations adapt significantly to shifting conditions or have improved the competitive standing of others, and have positioned a few for a far better future. But in too many situations the improvements and levels of readiness have been disappointing. Having personal readiness, planning, and leading can make or break change efforts. Getting everyone organized and moving in the right direction requires a different mindset, and a vastly different set of skills and behaviors. Developing excellent interpersonal skills, exercising the ability to communicate effectively, thinking strategically, and understanding how to develop the potential in others become a prime concern for leaders (Hoffman; Lauren, 2006; Kotter, 1996).

According to Johnson, et al. (2003), in these turbulent and uncertain environments universities leaders are being challenged to develop a more integrated set of skills that will be necessary for effective leadership in the twenty-first century. Leaders must take risks, pilot different strategies and select the right people to develop effective change formulas that fit their organizations. Cultural interpretations, leadership, and technology are essential. There is no silver bullet process or set of processes that every leader can employ to enable systemic change that moves the organizational ship on a new course and into uncharted waters. Therefore, one of the greatest attributes of an effective leader can be the ability to drive

change. The benefits of big changes are always clear, but getting change off the ground is highly challenging and often fails. For leaders to push change through, it is essential to first lay a strong foundation with employees, many of whom will likely fear, if not actively resist major changes (Cheng, 2007).

Today's colleges and universities operate in a complex environment characterized by rapid and unrelenting change, and nowhere does the challenge inherent in change more directly impact the campus community than in the delivery of student services. The need to integrate new models of service delivery, data-driven approaches to enrollment management, greater accountability for student success, stronger emphasis on customer service, and provision of "anytime, anyplace" services through technology are readily evident. Yet, many institutions are finding that their internal cultures are unreceptive, even hostile, toward adopting needed changes (Locke & Guglielmino, 2006).

Change itself often threatens efficiency, given that organizational changes are frequently made because of a need for increased efficiency. Johnson et al. (2003) found that the academic institution is a philosophical contradiction that embraces academic freedom, creative expression, utilitarian applications of empirical research data, and collegial co-existence among the university community. Even though, these attributes appear to be conducive to and supportive of organizational change, the academic institution has also been characterized as embedded in tradition, defendant of the status-quo academic culture, resistant to real innovation, and paralyzed by a decision-making change strategy of consensus and deliberation (Johnson, et al.) Nonetheless, registrars are guided by an overarching intent to ensure student learning and development and serve the campus community. Registrars who are effective leaders are always looking for opportunities to inspire confidence within their

constituency, so registrar programs and services must be structured purposefully and managed effectively to achieve stated goals. Evidence of appropriate structure must include current and accessible policies and procedures, written performance expectations for all employees, functional workflow graphics or organizational charts, and clearly stated service delivery expectations (CAS, 2006). Technological challenges faced by university administrators within the registrar's office regarding organizational management must be carried out in a manner that ensures their continued availability, confidentiality, and integrity of planning and programs.

Evidence of effective management of change must include use of comprehensive and accurate information for decisions, clear sources and channels for authority, effective communications practices, decision-making and conflict resolution procedures, responsiveness to changing conditions, accountability and evaluation systems, and recognition and reward processes. Useful change tends to be associated with power and motivation that is sufficient enough to overwhelm all the sources of inertia. This process is never employed effectively unless it is driven by high quality leadership. Therefore, the effectiveness of institutional leadership cannot be determined by any single local measure, nor by one grand measure composed of the additive results of a multitude of smaller ones. Successful leadership depends on managerial approaches coupled with moral and political persuasiveness (Hoffman, 2000; Kotter, 1996; "Preamble," 2006; Romero, 2004).

It is critical for registrar professionals to understand a variety of organizational theories and managerial approaches in order to determine for themselves what structures and approaches might be appropriate for their organizational unit and for the interactions with the larger university. Such planning is typically focused broadly, either formally or informally,

and linked to critical and real issues confronting the institution. Registrars are central to such institutional planning processes because of the very nature of the strategic issues facing higher education in the twenty-first century (Grace, 2002). The registrar should be responsible for implementing services congruent with the institutional mission, goals and objectives and be at the forefront of technological advancement. Presidents, provosts, academic deans, and faculty members should expect student affairs leaders, such as registrars to be efficient administrators, effective problem solvers, and sensitive handlers of student information. But, most importantly in the decade ahead, registrars should be expected to contribute significantly to services due to changing technology provided on their campuses (CAS, 2006; Sandeen, 2004).

Registrars, Change, and Technology

Registrars are often unable to respond effectively or quickly enough to changing societal forces and needs. According to an Educause Core Data Summary Report Survey, 60 percent of institutions have changed or are planning to change their administrative systems (Hawkins, Rudy, & Nicolich, 2005). This fact is easily confirmed by discussions with colleagues at conferences and meeting. Most institutions are in various stages of technology change--either planning for it, managing it or preparing again for the next change. Throughout the body of literature on leadership and change, some parallels have been drawn concerning the integration of leadership and change within higher education. Change can be seen as a threat, a challenge, or an opportunity depending on the registrar's comfort level with change. The leader's individual change style preference reflects the most basic level relationship to structure, rules and authority when implementing change. As important change agents, registrars should prepare staff for the change, and they should communicate and guide the

campus through the change. The registrar plays a key role in helping the campus adapt to change. Faculty, students, and administrators will look to the registrar's office for information about new processes, functions, and services. Having readiness, understanding, and planning how the implementation and training will take place will ensure that the implementation of planned technology happens and that it is effective. Registrars should take advantage of the educational environment and models, and seek out people with the expertise to help (Johnson et al., 2003; Lauren, 2006).

There is an enormous amount of literature available on achieving organizational change. For example, Jackson (2006) stated that while previous research has examined the competencies necessary to successfully implement technology change in organizations, little information is available regarding the competencies used by change agents such as registrars to implement technological change. This is a critical piece as registrars are one of the higher education leaders that often inspire change and make it happen despite the obstacles. The proliferation of educational technology has served as a catalyst and tool for change; however, technology by itself cannot transform the academic culture or make a leader out of a manager at the push of a button (Johnson et al. 2003). Leadership defines what the future should look like, aligns people with that vision, and inspires them to make it happen despite the obstacles. The interconnected roles of leadership, change and understanding of one's culture are needed in planning and implementing organizational change. Leaders who do not understand their existing culture will be unable to navigate that culture successfully to lead organizational change. Similarly, leaders who do not grasp the vast potential of technology, its impacts, and the resistance factors within their organizational cultures will be unable to employ their tools in ways that transform the organizational and its members (Jackson, 2006; Johnson et al.).

Leaders of new professionals must set clear examples of how to implement technological change. Implementation projects can involve using consultants or models that can help with the content of a change initiative as well as the process. Also, use of models can result in greater continuity and consistency as the project moves along, and can minimize time lost by having to bring a consultant up to speed (Jackson; Kotter, 1996; Lauren, 2006). Therefore, as the unit responsible for many change efforts, the registrar is faced with many management approaches and decisions. However, little is known about registrars' strategies or readiness for implementing planned technology change; therefore, it is essential to gain a better understanding of the change process used by registrars. It is well documented that while many registrars enjoy the early stages of a new implementation initiative, some find it challenging to continuously follow through with the myriad of obstacles.

According to Kotter (1996), when implementing a change initiative it is important to go through all eight stages in sequence, but normally leaders operate in multiple phases at once. A purely linear, analytical plan is likely to fail. In order to accomplish the goals of this study, the researcher utilized John Kotter's Eight-stage Change Process for avoiding errors in leading change to examine the strategies and readiness of registrar practitioners within the University System of Georgia Board of Regents' Schools. Based on Kotter's theory, registrars' perceptions in terms of implementation of technological change were investigated. The researcher collected statistical descriptive data to explore registrar' perceptions regarding the impact of implementing planned technology change to their organization. The most general lesson learned from Kotter (1996) was that the change process goes through a series of phases that, in total, usually require a considerable length of time. Skipping steps creates only the illusion of speed and never produces satisfactory results; making critical mistakes in

any of the phases can have a devastating impact, slowing momentum and negating hard-won gains. The process has eight stages and each are associated with eight errors that undermine transformation efforts.

Kotter's Eight-stage Model

Kotter's model for leading change provides a framework that may be used in any organization (Kotter, 1996). Each step is outlined to illustrate how it relates to higher education, specially the registrar's office.

Step 1: Establish a Sense of Urgency

Talk of change typically begins with a system office or high level administration noticing vulnerability in the organization. The threat of losing resources in some way sparks an organization into action, and they in turn try to communicate that sense of urgency to others. Ausiello and Wells (1997) stated one of the most critical tasks beyond the creation of an information technology mission statement is the identification of fiscal resources to support new initiatives. In the registrar's office, it is typically implementation of new software or new initiatives that require individuals to move out of their comfort zone. Kotter (1996) noted that over half the companies he has observed have never been able to create enough urgency to prompt action. Without motivation, people will not help and the effort goes nowhere. Thus, it may be helpful to use outsiders from other registrar offices or bring in consultants, regional or national staff people who can share the big picture from a different perspective and help broaden the awareness of staff. Kotter has suggested that the urgency level is high enough when seventy-five percent of leadership is honestly convinced that business as usual is no longer an acceptable plan.

Step 2: Create the Guiding Coalition

Change efforts often start with just one or two people, and should grow continually to include more and more who believe the changes are necessary. The need in this phase is to gather a large enough initial core of believers. This initial group should be pretty powerful in terms of the roles they hold in the university, the reputations they have, the skills they bring and the relationships they have. Regardless of organization's size, the "guiding coalition" for change needs to have 3-5 people leading the effort. This group should represent all parts of the task that will be changing. It should be a powerful group not of the top tier, but consisting of the up-and-coming leaders who want to make a difference. This group, in turn, helps bring others on board with the new ideas. The building of this coalition broadens their sense of urgency, their sense of what is happening and what is needed is crucial. Involving respected leaders from key areas of the university in this coalition will pay great dividends later (Kotter, 1996; Jackson, 2006; Jaffe & Scott, 1999).

Leaders need to put together a team of people with enough power to lead the change and to get this group to work together as a team. Traditionally, registrars have been users, not developers of information technology. Therefore, registrars need to look to others on campus for expertise. Professionals in computing services or information services or academic services hold a great deal of knowledge about information technology. Registrars can pull these information technology experts together to create a shared knowledge base of campus community members (Ausiello & Wells, 1997; Kotter, 1996).

Step 3: Develop a Vision and Strategy

Successful transformations rest on a picture of the future that is relatively easy to communicate and appeals to customers, stakeholders, and employees. A vision helps clarify

the direction in which an organization needs to move. The vision functions in many different ways: it helps spark motivation, it helps keep all the projects and changes aligned, it provides a filter to evaluate how the organization is doing, and it provides a rationale for the changes the organization will have to weather. A vision or mission is essential for an organization such as a registrar's office to navigate through change (Jaffee & Scott, 1999).

Student affairs leaders should become "architects of strategy." As architects they should take a leadership role in initiating and seeking consensus on a strategic planning process as it relates to technology in the twenty-first century (Ausiello & Wells, 1997; Kotter, 1996). Through an ongoing dialogue, registrars can draw connections between the institutional mission and the information technology vision, thereby helping constituents identify with the planning process. The strategy process can include how technology can reshape current work activities and how the registrar should connect with the campus community through the use of information technology. For instance, registrars must develop a comprehensive information security and privacy strategy that involves balancing a culture of openness with a need for security and privacy. Effective privacy management and information security requires understanding both technical and human dimensions as well as acknowledging the need to address not only what is required by law, but also what is expected from the university community (Anderson, 2006; Ausiello & Wells, 1997).

Step 4: Communicate the Change Vision

Kotter (1996) suggested that leadership should estimate how much communication of the vision is needed, and then multiply that effort by a factor of ten. It should not be limited to one meeting, a workshop by the registrar, or a couple of emails to the campus community. Leaders must be seen "walking the talk," another form of communication, if people are going

to perceive the effort as important. Deeds along with words are powerful communicators. The bottom line is that a transformation effort will fail unless most of the staff understand, appreciate, commit, and try to make the effort happen. The guiding principle is simple; use every existing communication channel and opportunity, keeping in mind that communication must be ongoing. Making an announcement in a meeting or sending an email does not mean that everyone got the message (Hall & Hord, 2006; Kotter, 1996). Communication skills are one of the most important skills for student affairs administrators. Registrars must be effective communicators of change efforts and ensure that relevant policies and procedures are communicated widely (CAS, 2006; Lovell & Kosten, 2000).

Step 5: Empower Broad-based Action

This action involves removing any systems or structures that undermine the change vision and it encourages risk taking in non-traditional ideas and activities (Kotter, 1996). According to Jaffe and Scott (1999), this entails several different actions. Leaders should allow staff to start, try new ways, and to make changes in their areas of involvement. Leaders should allocate budget money to the new initiative. Leaders also facilitate empowerment by carving out time in staff meetings to talk about new ideas and innovations. If necessary, leaders may change the way the office is organized and align people based on the efforts needed. They must make decisions on what people can do; not personal relationships. This could mean freeing up key people from existing responsibilities so they can concentrate on the new efforts. In short, leaders should remove any obstacles or barriers that will prevent the change. Nothing is more frustrating than believing in the change but then not having the time, money, help, or support needed to implement the change. Therefore, a leader should remove as many obstacles as possible, especially the biggest ones.

Step 6: Generate Short Term Wins

In order to be successful change leaders, registrars must plan for visible improvements which can be implemented during the course of the project, deliver "wins," and publicly recognize and reward those who made them possible.

Since real transformation takes time, the loss of momentum and the onset of disappointment are real factors. Most people will not go on a long march for change unless they begin to see compelling evidence that their efforts are bearing fruit. In successful transformation, leaders actively plan and achieve some short term gains which people will be able to see and celebrate. This provides proof to the organization that their efforts are working, and adds to the motivation to keep the effort going. When it becomes clear to people that major change will take a long time, urgency levels can drop. Commitments to produce short-term wins help keep the urgency level up and force detailed analytical thinking that can clarify or revise visions (Kotter, 1996).

Wins should be fast enough to energize the change helpers, enlighten the pessimists, and defuse the cynics and build momentum for the effort. Leaders in successful organizations place a few target goals on the horizon and adhere to guiding principles that point the way. When activity occurs that is consistent with the goals, leaders should take time to recognize the relationship and the message by providing encouragement, necessary resources, and support for the next step (Kotter, 1996). Registrar should have the capacity to motivate, inspire and help staff members develop a team atmosphere in the office (CAS, 2003).

Step 7: Consolidate Gains and Produce More Change

Leaders of successful efforts use the feeling of victory as the motivation to delve more deeply into their organization to explore changes in the basic culture, to expose the systems

relationships of the organization which need tuning, and to move people committed to the new ways into key roles. They use credibility gained from earlier “wins” to bring other structures and processes into alignment with the change vision. They have the people who can and will implement these new changes re-invigorate the process with new projects and themes (Kotter, 1996). The performance metric must be aligned with the organization’s goals. After the baseline performance metric is established the team should measure the impact of the change and continue working to improve the process (Waterbury, 2008). Organizations such as the registrar’s office should use best practices or look at what other offices are doing with similar processes. Innovative individuals often seek best practices from industries different from their own (Grace, 2002; Sandeen, 2004).

Step 8: Anchor New Approaches in the Corporate Culture

This step involves creating better performance through customer-and-productivity oriented behavior, better leadership, and more effective management. Leaders must articulate the links between the new behavior and organizational success, and develop ways to ensure that leadership remains effective by further leadership development and succession (Kotter, 1996). Throughout the world, the role of the university is critical to national development and central to the progress of society. And as such, universities will continue to be the engine of change for every nation; all citizens, from the richest to the poorest, will look within its walls for the keys to their future. And not just their economic future; the main aim of higher education in a globalize setting must be for human beings and societies to develop a deeper understanding of each other's values, traditions and cultures and work to enhance new technologies (Gregorian, 2006).

Registrars can help make the connections between the effort and the outcome.

Registrars in higher education must vigorously pursue a plan of action to change the use of technology in higher education administration in order to meet the customer needs of the new information age. Among those practices in need of immediate attention are crises-driven management and inefficient and outdated administrative practices. The reevaluation and reorganization of the functions within registrar areas are necessary in light of the information technology opportunities that are becoming available every day (Edirisooriya, 2000).

Chapter Summary

Technology continues to impact increasing segments of the professional and personal lives of all members of the university community. The acceptance of information technology has become a necessity for colleges and universities. Students, faculty and staff demand access to technologies in order to gain the knowledge and skills they need to compete. Student affairs professionals have the responsibility to meet this need. Given the registrars' broad scope of responsibility within the institution, registrars are in a key position to facilitate change efforts for technological advances and serve in an advisory capacity to faculty and the administration in the development of policy impacted by change (Lauren, 2006).

Technology and planned change are well-established. Research (e.g. Kotter's and Deming's Change Models) indicated the success or failure of planned change often rests predominantly on the leader's ability to understand, manage, and discern the necessary steps to reshape the organization's success with change. Change occurs on the continuum, with evolutionary or incremental change defining one end and revolutionary or radical change defining the other (Johnson et al., 2003). In the areas of planning, implementation and campus wide collaboration of technology change efforts, registrars can significantly improve campus services and change the way technological services are implemented for years to come

(Ausiello & Wells, 1994). By managing change as they shepherd technology, these educational leaders can significantly promote organizational success (Locke & Guglielmino, 2006).

Readiness and perseverance is the key to successful, long-term change (Jackson, 2006). Advances in systems of delivery for student services occur as rapidly as the technology becomes available. As a result, student affairs professionals, particularly registrars, must understand the importance of engaging as change agents and streamlining administrative processes through the use of technology within their divisions and institutions. What is not known is the strategies needed and the readiness of registrars to plan and implement change efforts pertaining to the day-to-day processes and services within their areas due to technological advances.

CHAPTER III

METHODOLOGY

Introduction

This exploratory mixed methods study focused on investigating the relationship between registrar's perceptions of strategies for implementing planned technological change and Kotter's eight-stage model. This mixed methods approach included a quantitative descriptive study and a qualitative study in the phenomenological tradition as a means of soliciting feedback from registrars concerning strategies used to implement planned technological change within their offices. Additionally, the alignment of these strategies to Kotter's eight-stage model and registrars' perceived readiness to implement change was investigated. All thirty-five registrars from the University System of Georgia Board of Regents' Schools were invited to participate in the survey portion of the study. In addition, three of those respondents were invited to participate in an interview. This study used concurrent procedures in which the researcher converged quantitative data from the questionnaire, qualitative data from the interview, and the researcher's own experience in order to provide a comprehensive analysis of the research problem. Concurrent triangulation between the evidence produced by different research methods is thought to be a simple and common form of combining methods (Creswell, 2003; Gorard, 2004). The mixed method design utilized in this study explored several strategies to answer the overarching research question and specific sub-questions.

Research Questions

In order to explore registrars' implementation of a major planned technological change, the following research question concerning registrars from the University System of

Georgia Board of Regents Schools guided the study: What were the University System of Georgia registrars' perceptions of the strategies needed to plan and implement change relating to technological advances within registrars' offices? In addition, the following sub-questions directed the study:

R_1: What strategies do University System of Georgia registrars use to implement planned technological change?

R_2: In what ways do current strategies by University System of Georgia registrars for implementing planned technological change follow Kotter's eight-stage model?

R_3: What are University System of Georgia registrars' perceptions of their readiness to implement planned technological change?

Research Design

Methodology is the theory or set of ideas about the relationship between phenomena of how researchers gain knowledge in research contexts, and why. The why question is critical since it is through methodological understanding that researchers and readers of research are provided with a rationale to explain reasons for using specific strategies and methods in order to construct, collect and develop particular kinds of knowledge about educational phenomena (Scott, 2005).

Creswell (2003) maintained that the use of mixed methods research encompasses procedures using both predetermined (quantitative) and emerging (qualitative) methods along with the use of both open-and close-ended questions. Mixed methods approach is based upon pragmatic knowledge claims which permit the researcher to collect both quantitative and qualitative data sequentially or concurrently.

Rationale Quantitative Descriptive Study

There is no general agreement on the classification of descriptive studies. A survey involves the clear definition of the problem, requires systematic collection of data, careful analysis and interpretation of the data, and intelligent reporting of the findings. It may be broad or narrow in scope. The survey method has been widely used in educational research for many years, and data have been collected through the use of questionnaires, interviews, standardized tests and other techniques (Verma, 1998).

The descriptive method of research was primarily concerned with portraying the present. In actual fact, the descriptive method in the educational field is not exactly a method, since it embraces many approaches to the collection of data. However, each approach has one element in common--each endeavors to depict the present position of a given situation. Descriptive research in education can be classified into the following categories: surveys; case studies; development studies; comparative studies; ethnographic studies; evaluation studies; and, action research. The survey method is frequently employed to indicate prevailing conditions or particular trends (Verma, 1998).

Descriptive research can be used in both qualitative and quantitative studies, and its central purpose is to develop valid definitions of a concept, describe a process, or yield beginning theories that explain the phenomenon under study. Data is collected in order to increase the validity of the concept being developed; samples are usually quite small from one to twenty. Due to data being collected concurrently, the time spent collecting the data is significantly reduced (Creswell, 2003; Miller, 1998).

Rationale Phenomenology

The development of phenomenological thought from its early articulations in the latter part of the nineteenth century to the mid-twentieth century is significant to observing how social philosophy develops into social theory and sociology. The further one moves in time, the more grounded the theorizing becomes in explaining human life in all its dimensions. It is clear that phenomenological philosophy itself diverges with limits and validity, although its proponents hold similar presuppositions. Husserl's (as cited in Moustakas, 1994) approach to phenomenology was that analysis should focus not on the phenomena of lived experience themselves, but on the perceptual processes or mental constructs humans create in order to make sense of those experiences. These in other terms might be called the organizing frames or lenses or conceptual boxes that structure perception and comprehension of that reality. The challenge was to describe things as they are in order to understand meanings and essences in the light of intuition and self-reflection. Phenomenology is not an easy concept to understand. It is said to be both philosophy and a method (Creswell, 2003; Litchtman, 2006; Moustakas, 1994; Yanow, 2005). It is self-conscious reduction and construction, which is a process of categorizing, synthesizing, and differentiating phenomena. What has survived from the early writings on phenomenology is the emphasis on the way social actors build up understandings of the world by understanding personal meaning or lived experience of data and re-working previous understandings of the same phenomena set within the context of other people going through the same processes (Scott, 2005).

This study employs phenomenological methodology for several reasons. Working in a registrar's office for over twenty years, the researcher had some preconceived biases to the questions asked of the participants in this study; therefore, the researcher followed Patton's

(2002) recommendations to bracket out the world and presupposition to identify the data in pure form, uncontaminated by extraneous intrusion. However, according to (Moustakas, 1994), use of perception and conceptualization is needed in every situation, where the aim is to describe the phenomena in a clear and full sense. Spontaneous encounters with phenomena enable fresh points of view that occur largely through perceptions. Once this is completed, data was then treated with equal value and the text was examined with all elements and perspectives having equal weight. In textural descriptions nothing is omitted; every dimension or phase is granted equal attention and included (Moustakas). The research questions were concerned with the experience of the participants, as phenomenology is concerned with the essence of the lived experiences for several individuals about a concept or the phenomenon and exploring the structures of consciousness in human experiences. The procedures of phenomenology involve studying a small number of subjects to develop patterns and relationships of meaning (Creswell, 2003). Therefore, this methodology worked to help understand the meaning of strategies that existed among registrars from institutions that are in the University System Board of Regents Schools. In addition to finding out the meaning of the experience, phenomenology was also concerned with the inward consciousness of the participants. Since the registrars' perceived readiness to implement planned technological change was an issue full of personal feelings, it was also important to investigate the underlying consciousness beneath their experiences in order to grasp a broader picture of the phenomenon.

The researcher's goal was to use the competencies and experiences shared by participants to explore the perceptions of the strategies needed to effectively plan and implement change relating to technological advances within the registrar's office. The

researcher began a process of phenomenological reduction in which the researcher continued to return to the essence of the experience to understand the complete meaning of the phenomena (Moustakas, 1994). The researcher was also a participant in the study, first following the procedures that were eventually assigned to the participants.

Sample and Sampling Procedures

The population of the study consisted of thirty-five University System of Georgia institutions registrars and the census included these registrars. The first three completing and returning the questionnaire that used exceptional strategies or who had provided descriptions of six to eight strategies based on Kotter's eight-stage model who agreed to an interview comprised the sample for this qualitative study.

Registrars representing the thirty-five institutions, including seven two-year and twenty-eight four-year colleges within the University System of Georgia Board of Regents' Schools, were invited to participate in the research. Registrars with more than one year of experience working in a university setting were asked to complete and return the criteria for inclusion form along with the informed consent form and questionnaire (see Appendix B).

Registrars from the University System of Georgia were chosen because of their daily exposure to the complexity of academic issues and their knowledge of the need to implement planned technology. The researcher chose registrars within the University System of Georgia Board of Regent's because they are all unified under the same governing and management authority. Participants' interest in the study was evident, due to the functions they are expected to perform. The research topic resonated, due to the challenges faced by implementation of technology.

Purposive sampling was used as a means of selecting participants who could best helped the researcher understand the problem and research questions. Patton (2002) described a purposeful sampling method as selecting cases that are information-rich with respect to the purposes of the qualitative study (Creswell, 2003; Patton, 2002). Participants were recruited through a cover letter emailed to them along with an informed consent form and criteria for inclusion form (see Appendix A and Appendix B). The cover letter detailed the proceeding and provided an explanation as to why participants were asked to participate in the study. In addition, the informed consent form provided clear and thorough information regarding participant' rights and participants' roles in the study, time required, and risk and rewards relative to the study.

Participants' email addresses was obtained from the University System of Georgia Board of Regent's official web site (http://www.usg.edu/inst/directories/). The researcher is also a full-time employee in a registrar's office within the University System of Georgia Board of Regent's Schools. The researcher encouraged participants to take part in this study since they, like the researcher, were definite stakeholders in the realm of implementing planned technology within the registrar's office**.**

Instrumentation

The questionnaire (see Appendix D) consisted of two sections with a total of twelve items. Section one included closed demographic items that were specified for this study. Demographic information collected included: the type of institution, years of experience in a university setting, gender, age range, range for highest degree earned, and subject's level of comfort with technology. This information was used to describe participants of the study. Section two included six open-ended questions, with the first open-ended question consisting

of eight parts. The eight questions were designed to elicit participants' explanations and perceptions of implementing planned technology change. Each question included a "yes" or "no" response to items asking participants to indicate their role while thinking about implementation of a major change within their office. If the participants answered "yes" they were also asked to describe the strategies they used in the space provided. Prior to the distribution of the survey, the instrument was submitted to a panel of four registrars outside the University System of Georgia (see Appendix G), and the registrars were asked to review and evaluate the instrument. Feedback received was used to improve the instrument. For the second part of the study, telephone interview questions were asked based on the subjectivity of the researcher. All of the participants were asked to respond to eight questions (see Appendix F) and depending on the responses from the open-ended questionnaire, participants were invited to further discuss their responses by using one or all of the following prompts: You wrote that… (insert ambiguous phrase). Could you talk a little more about this…?"

Validity and Reliability

Validity is seen as strength of research. The trustworthiness of findings was checked by using different sources of information, such as comparing data from different informants. Concurrent triangulation was used to convert the different data sources by examining evidence from the sources or data collection techniques. The convergence of information provided by participants through multiple data collection techniques helped to address issue of credibility and dependability (Creswell, 2003; Denscombe, 2007). Whether the aim was to get improved accuracy or to get a fuller picture, the use of triangulation gave the researcher added confidence in his/her research data and findings. The opportunity to support findings

and the chance to see things from a different perspective enhanced the validity of the data (Denscombe).

Response Rate

In mixed method studies, concurrent data collection results in a shorter data collection time period, and samples are usually quite small, from one to twenty (Creswell, 2003; Miller, 1998). On the other hand, in the case of quantitative research there is a different logic for the size of the sample, but the selection of participants in the sample should be considered. According to Denscombe (2007), the researcher needs to predict the kind of response rate he or she is likely to achieve, based on the kind of survey being done. For this study, the researcher conducted a descriptive study using a questionnaire survey for which a response rate of 30 percent was anticipated. A small sample size is acceptable with qualitative data since data is collected in order to increase the validity of the concept being developed (Denscombe; Lichtman, 2006). However, interviews, arranged by personal contact between the researcher and the interviewees, were the kind of approach at the other end of the spectrum where very high response rates were expected, possibly even one hundred per cent (Denscombe). One hundred percent of the respondents participated in the telephone interviews.

Data Collection

Participants' email addresses were obtained from the University System of Georgia Board of Regent's official web site. The University System of Georgia's directories website was last updated as of September 16, 2009. The researcher verified that the registrars listed are still current by checking each institution's website and verifying the list of current

registrars with the professional organization of the Georgia Association of Collegiate Registrars and Admission Officers (GACRAO) 2009 membership directory.

The mixed method study was conducted via electronic email utilizing closed and open-ended questions. The quality of responses obtained through electronic survey research is much the same as that of responses produced by more traditional methods (Denscombe, 2007). A cover letter explaining the nature and importance of the study was included in the electronic correspondence (see Appendix A). The cover letter included detailed instructions on how to open and save to their personal computer the criteria for inclusion form, the informed consent form, and the questionnaire that were attached to the email. The criteria for inclusion form (see Appendix B) asked participants how long they had worked in a university setting as a registrar. If they checked 1 year or less, they were told that it is important for them to return the study, but there was no need for them to continue and they were thanked for their willingness to assist with the questionnaire; they were offered a copy of the finding once the study was complete. If they check more than 1 year, they were asked to complete the informed consent form and questionnaire. The informed consent agreement (see Appendix C) assures confidentiality and participants were told that completion of the questionnaire would serve as consent to participate in the study.

The questionnaire (see Appendix D) included a series of twelve questions aimed at evoking a comprehensive account of the person's lived experience. The questions were presented to participants in the form of a Microsoft Word document. The questionnaire provided participants with instructions on how to click the options box listed at the top of the word toolbar to enable the documents content. Participants were to respond to the close-ended questions by clicking on the response. No minimum or maximum response length restrictions

were specified for the open-ended questions. Rather, participants could write as much as necessary to convey their lived experienced. Participants had one week (7 business days) to complete the questionnaire. Participants who responded with the one or more years of experience were used in the study.

Additionally, interviews were conducted by telephone with the first three participants responding to the questionnaire who had used exceptional strategies or who have provided descriptions of six to eight strategies based on Kotter's eight-stage model and who agreed to participate in the interview based upon information gleamed from responses to the survey. Interview participants were contacted by email or telephone to schedule a time for the interview. Interviews were conducted within fourteen-days of receiving the questionnaire. Follow-up interview questions were generated for participants who agree to interview. Interview questions were asked at the discretion of the researcher and consisted of three questions and/or phases. Prompt questions were used if the researcher was uncertain about the intended meaning of participants' responses to the open-ended questionnaire questions. Participants were invited to further discuss the phrase by using the following prompts: You wrote that… (insert ambiguous phrase). Could you talk a little more about that?" A sample of the follow up questions is presented in Appendix F.

Data Analysis

Descriptive Analysis

Data analysis in mixed methods occurs within both the descriptive and qualitative approaches. In data transformation, quantitative data may be standardized, grouped, scaled factor analyzed or transformed into log linear form. Transformation may also take the form of data consolidation, whereby data are merged into one overall data set. It is also possible to

transform one form of data into another, notably quantitative to qualitative and vice versa. The primary purpose of transformation, including consolidation, is to enable further higher order analyses. Another reason that data can be transformed is to improve interpretability, even if no formal statistical analysis or visualization is to be performed. Data can be transformed to make it easier to visualize (Greene, 2007).

Therefore, using the data transformation analysis approach for validating procedures, the researcher grouped responses qualitatively by category, and then counted the number of times each occurred in the text data form. The next task was to identify ways in which the descriptive data could be grouped into categories. Each question in item number one, Section II of the instrument served as a category.

The categories acted as an umbrella term under which the number of individual responses can be placed. The researcher organized and prepared the data for analysis, which involved sorting and arranging the data into different groupings of information. Categories and sub-categories of data were analyzed using response frequency counts and reported in narrative form.

Concurrent triangulation strategy was used for data analysis and validating the accuracy of the findings. Various reasons have been advanced for the use of combined methods triangulation, including increasing the concurrent, convergent and construct validity of research, the ability to enhance the trustworthiness of an analysis by a fuller, more rounded account, reducing bias, compensating for the weakness of one method through the strength of another, and in testing hypotheses. Additionally, the researcher used triangulation of different data sources of information by examining evidence from the sources and used it to build a coherent justification (Creswell, 2003; Gorard, 2004). Data was collected in two distinct

manners, through “yes” and “no” responses to strategies used in implementation of planned change and through written responses to the open-ended questions. Triangulation was also evident in the manner the finding was identified in Section I. The researcher used each question of the instrument as a variable to report the characteristic of the participants. Frequency counts and count percentages was used to examine the categorical responses. This interpretation can either note the convergence of the finding as a way to strengthen the knowledge claims of the study or explain any lack of convergence that may result (Creswell, 2003).

Qualitative Analysis

Phenomenological research uses the analysis of significant statements, the generations of meaning units, and the development of an “essence” description (Creswell, 2003, p. 191). The process of analyzing and interpreting the data involved a series of tasks.

The researcher followed the steps outlined in Moustakas’ Modifications of the Stevick-Colaizzi-Keen Method of Data Analysis for the open-ended questions (see Appendix E). Responses from the telephone or face-to-face interviews were interwoven into the steps. The researcher described in detail the steps followed by the participants in examining collected data and record all relevant data in determining meaning units and themes.

It is important for qualitative researchers to document each step of the data collection and analysis process in order to illustrate how conclusions about the data are reached. The next step in the phenomenological process is to construct textural and structural descriptions of the phenomenon being studied (Moustakas, 1994). The researcher read through all data to gain a general sense of the information and reflect on its overall meaning. Intentionality, noema, and noesis are concepts central to phenomenology. Noema is that which is

experienced. Noesis is the way in which it is experienced and refers to the act of perceiving, feeling, thinking, and remembering or judging the experience. Both terms refer to meanings. When a person looks at something, what is seen intuitively constitutes its meaning. An intriguing component of qualitative research is that the researcher can become an instrument of analysis in the interplay that occurs between themselves and the research conducted (Creswell, 2003; Patton, 2002). This allows the researcher to give discussions an element of shared experiences (Moustakas, 1994). Thus, the researcher was able to provide a vivid account of the underlying dynamics of implementing technological change within a registrar's office. The analysis was generated according to the specifications posited by Kotter's eight-stage model. Through preconceptions and any other personal notions (perceiving, feeling. thinking), the researcher fulfilled the requirements of phenomenological reduction and developed a full textural description (Moustakas). With this, the data was analyzed directly to the phenomena in question.

Reporting the Data

Chapter IV describes the finding of the study. Questionnaire responses were reported in table, log linear, and narrative forms. Responses were reported in three sections. The first section included a table identifying the demographic characteristics of the participants. The researcher used each question of the instrument as a variable with corresponding categories to report the findings. Frequency and percent was used to examine the categorical responses. The researcher used narrative form to summarize the data.

Section II included "yes" and "no" responses to strategies used in implementation of planned change through the lens of Kotter's eight-stage model. Using the data transformation analysis approach, the researcher grouped the "yes" and "no" responses qualitatively by

category, and then counted the number of times each occurred in the text data form. Responses were reported by each question in table with log linear form.

Section III included a narrative based on the steps outlined in Moustakas' Modifications of the Stevick-Colaizzi-Keen Method of Data Analysis (see Appendix E). Responses from the telephone or face-to-face interviews were interwoven into these steps.

Chapter Summary

The purpose of the study was to investigate strategies used by University System of Georgia registrars for implementing technological change, and how those strategies align with Kotter's eight-stage model of change and registrars readiness for change. The census sample was comprised of the respondents from the thirty-five University of Georgia System schools. The study was a mixed method approach that involved collecting and analyzing both quantitative and qualitative research data. The mixed method was chosen by the researcher in order to examine multiple approaches in data collection for the study. The mixed method approach was based on the pragmatic knowledge claims that permit the researcher to collect both quantitative and qualitative data concurrently.

The data gleamed from responses helped build an understanding of registrars' perceptions as aligned with Kotter's eight-stage model. The researcher used the registrar's personal language, demographic information, and the results from a scale designed to elicit participants' explanations and perceptions of implementing planned technology change within their areas. Throughout the process of the content the analysis of the data, the researcher searched for patterns, constructs, comparisons, and themes. Data reduction of the interview data also helped the researcher draw conclusions of exceptional strategies from each of the interviewee's personal experiences. Each question was numbered, grouped by response and

categorized in an ordered manner in order to draw meaningful conclusions from the data. Findings were reported by demographic data as well as responses to “yes” and “no” questions and narratives.

CHAPTER IV

REPORT OF DATA AND ANALYSIS

Introduction

The mixed methods approach, which included a quantitative descriptive study as well as a qualitative study in the phenomenological tradition, was used as a means of soliciting feedback from registrars concerning strategies used to implement planned technological change. The results are presented in this chapter. This chapter includes a table identifying the demographic characteristics of the participants. Frequency and percentage were used to examine the categorical responses. The descriptive data questionnaire responses to questions about strategies as viewed through the lens of Kotter's eight-stage model are grouped by the "yes" and "no" responses by category, and then counted by the number of times each occurred in the text data form.

The researcher analyzed and synthesized the qualitative data collected utilizing steps outlined in Moustakas' Modifications of the Stevick-Colaizzi-Keen Method of Data Analysis. This method of organizing and analyzing data was applied to the open-ended responses, with the telephone interview responses interwoven into these steps. In examining the collected data, the researcher described in detail participants' perceptions and recorded all relevant data by determining meaning units and themes. The eleven registrars responded to the study are referred to as "participants" or "registrars" throughout the remainder of this study. The chapter concludes with a summary of the findings.

Research Questions

In order to explore strategies used by registrars in the implementation of a major planned technological change, the following research question concerning registrars from the

University System of Georgia Board of Regents Schools guided the study: What are the University System of Georgia registrars' perceptions of the strategies needed to plan and implement change relating to technological advances within registrars' offices? In addition, the following sub-questions directed the study:

R_1: What strategies do University System of Georgia registrars use to implement planned technological change?

R_2: In what ways do current strategies by University System of Georgia registrars for implementing planned technological change follow Kotter's eight-stage model?

R_3: What are University System of Georgia registrars' perceptions of their readiness to implement planned technological change?

Research Design

The questionnaire was the primary means of data collection in this mixed methods study. Through a review of the literature, including the roles and responsibilities of registrars, the strategies needed for implementing technology change within the registrar's office were identified. The experience questionnaire, a commonly used exploratory research technique, was also used. Prior to the distribution of the questionnaire, the instrument was submitted to a panel of four registrars outside the University System of Georgia (see Appendix G), and the registrars were asked to review and evaluate the instrument. The researcher used purposive sampling to select these panelists from two-year and four-year institutions outside the state of Georgia. Feedback received was used to improve the instrument where appropriate. Upon verification of its clarity and face validity, the questionnaire was finalized for use.

Data Analysis Procedures

This section further explains how the researcher analyzed and synthesized the collected data in accordance with the recommendations of the steps outlined in Moustakas' Modifications of the Stevick-Colaizzi-Keen Method of Data Analysis (see Appendix E). Responses from the three telephone interviews of participants whose strategies most aligned with Kotter's eight-stage model were interwoven into these steps.

Horizonalization

Horizonalization is the process of listing each statement, sentence, or phrase in a verbatim transcript that depicts a separate thought concerning the phenomenon (Moustakas, 1994). The researcher read every participant's transcript several times and considered all statements equal in value and weight. From the verbatim transcript of the researcher's own experience and the experience of each of the participants the researcher considered each statement in terms of its significance in describing the experience and recorded all relevant statements.

The researcher remained open, objective, and set aside all personal prejudgments as every transcript response was read. Data were considered valid to be representative of the essence of each participant's experience. An understanding and analysis of the data were accomplished by reading and re-reading the transcripts and reflecting upon the participant's meaning. Next, the researcher identified statements that stood out and revealed the phenomenon as viewed through the lens of Kotter's eight-stage model. Any repetitive, over-lapping, and vague statements were removed leaving only the invariant horizons or meaning units of the experience. Invariant constituents are statements that contain an element of the experience that is necessary for understanding it (Moustakas, 1994).

Textural Description

In the next step, the researcher reflected on her own *textural description* of the phenomenon and participants' descriptions are presented using their own words and expressions. These descriptions chronicled each participant's sensory experience and depicted clear images of what happened during the experiences being expressed. Moustakas (1994) described the essence of the textural description as an interweaving of a person, conscious experience, and phenomenon. In this process of explicating the phenomenon, qualities are recognized and described; every perception is granted equal value, non-repetitive constituents of the experience are linked thematically, and a full description is described to obtain a deeper understanding of beliefs and opinions of participants regarding their experiences.

Structural Description

Structural Description was obtained through the use of imaginative variation; essentially, the researcher constructed a description of the structures of each experience. Moustakas (1994) has defined imaginative variation as the seeking of possible meanings through imagination, varying the frames of reference and approaching the phenomenon from divergent perspectives. Describing the essential structures of a phenomenon is the major task. The ultimate goal is to arrive at structural description of the experience that reveal how the experience of the phenomenon came to be what it is. The structural description probes how the phenomenon was experienced, looking at all possible alternate meanings and perspectives (Moustakas, 1994).

Textural-Structural Description

The Textural-Structural Description is the final step in the analysis process. It required an integration of the textural and structural descriptions of the meaning and essence of the experience. The researcher continued to develop the meaning and essence of the phenomenon by blending the conscious experiences and perceptions' of the participants with the underlying structural interpretations of the researcher. This process required total immersion into the written data, moving from detail to detail from a position of imaginative variation to verification. Also, it required developing an enhanced and expanded version of the textural descriptions and seeking all possible meanings. The core invariant constituents were used to construct a textural-structural description.

Respondents

Eleven of the thirty-five participants responded for a 30% response rate. Denscombe (2007) suggested the researcher predict the kind of response rate based on the kind of survey being done. Eleven participants were the minimum number considered appropriate as a response rate for this original sample size. Each question in Section I of the instrument was used as a variable with corresponding categories to report the findings. Categorical responses are presented by frequency and percent. The first participant was from a two-year institution with over ten years of experience working in a university setting. She was between 41-60 years of age and she had a bachelor's degree. Participant two had a master's degree with more than ten years of experience, and worked at a four-year institution. She was comfortable using technology and she was in the same age range (41-60) as participant one. Participant three worked at a two-year institution with a master's degree. She was between 20-40 years of age with over ten years of experience working in a university setting. Participants four and

five were both females between the ages of 41-60. Both had masters' degrees, worked at four-year institutions, and had more than ten years of experience working in a university setting. Participant six also had over ten years of experience and she was from a four-year institution. She was 20-40 years of age and held a master's degree. Participants seven, eight and nine also worked at four-year institutions. All were between 41-60 years of age with over ten years of experience. They were comfortable using technology and each held a master's degree. Participants seven and nine were males. Participant ten and eleven were from four-year institutions, were between the ages of 41-60, and both held masters' degrees. Participant eleven responded she was comfortable using technology even though she had not implemented a major technology change. Demographic profiles of the participants are illustrated in Tables 4.1 and 4.2. Table 4.1 gives demographic data for each of the participants. Table 4.2 provides the participants' demographic data by frequencies.

Table 4.1

Demographic Profile by Participants

Institution Type	Experience University Setting	Highest Degree Earned	Gender	Age	Comfortable Using Technology
Two-Year:	**6-10 Years:**	**Four-Year:**	**Male:**	**20-40 Years:**	**Yes:**
Participants: 1; 3	Participant 11	Participant 1	Participants: 7; 9	Participants: 3; 6	Participants: 2; 7; 8; 9; 11
4 Year:	**10 Yrs +:**	**Masters:**	**Female:**	**41-60 Years:**	**No Response**
Participants:	Participants	Participants:	Participants:	Participants:	Participants
2; 4-11	1-10	2-11	1-6; 8; 10-11	1; 2; 4-5;7-11	1; 3; 5-6; 1

Table 4.2

Participants' Demographic Data by Frequencies

Variable	Category	Frequency	Percent
Institution Type	Two-Year	2	18%
	Four-Year	9	82%
	Total	11	100%
Experience	2-5	0	0
University Setting	6-10	1	9%
	10 or Over	10	91%
	Total	11	100%
Highest Degree	Two Year	0	0
Earned	Four Year	1	9%
	Masters	10	91%
	Doctorate	0	0
	Other	0	0
	Total	11	100%
Gender	Male	2	18%
	Female	9	82%
	Total	11	100%
Age	19 or Younger	0	0
	20-40	2	18%
	41-60	9	82%
	61 and Over	0	0
	Total	11	100%
Comfortable	Yes	5	45%
Using Technology	No	0	0
	Somewhat	0	0
	No Response	6	55%
	Total	11	100%

When asked about their type of institution, two participants (18%) indicated two-year institutions and nine participants (82%) indicated four-year institutions. None of the participants had two to five years of experience in a university setting; only 1(9%) had six to

ten years of experience in a university setting; and, the majority (10 or 91%) had ten or more years of experience working in a university setting.

None of the participants had a two-year, other, or doctorate degree. One (9%) had a four-year degree and ten (91%) had master's degrees. Nine (or 82%) of the participants were females and two (18%) were males. In terms of age, none of the participants indicated an age under 19 or over 61. Two (18%) participants were 20 to 40 years of age, and 9 (82%) were 41-60. Only five participants (45%) expressed comfort in using technology. The other six participants (55%) did not offer a response regarding their comfort level in using technology.

Findings

This section reviewed the descriptive data questionnaire "Yes" and "No" responses to strategies used in the implementation of planned change as viewed through the lens of Kotter's eight-stage model. Data was qualitatively grouped using data transformation by category. The data were counted by the number of times each occurred in the text data form and reported in Table 4.3with log linear form.

Table 4.3

Descriptive Data "YES" and "NO" Questionnaire Responses.

Constructs	"YES" Response	"NO" Response	Total
A. Establish a Sense of Urgency	10 (91%)	1 (9%)	11(100%)
B. Create a Guiding Coalition	8 (73%)	3 (27%)	11(100%)
C. Develop and Vision and Strategy	8 (73%)	3 (27%)	11(100%)
D. Create a Guiding Coalition	9 (82%)	2 (18%)	11(100%)
E. Communicate the Change Vision	8 (73%)	3 (27%)	11(100%)
F. Empower Broad Base Action	8 (73%)	3 (27%)	11(100%)
G. Generate Short-term Wins	8 (73%)	3 (27%)	11(100%)
H. Consolidate Gains and Produce More Change	8 (73%)	3 (27%)	11(100%)
I. Anchor New Approaches	8 (73%)	3 (27%)	11(100%)

As indicated in Table 4.3, a total of eleven registrars from University of Georgia Board of Regents schools participated in the study and responded to the questionnaire. "Yes" and "No" responses were tabulated for each of the nine questionnaire constructs. "Yes" frequencies ranged from 73% - 91% and "No" frequencies ranged from 9% -27%. The "Yes" responses had a mean of 8.4, median of 8, and mode of 8. The "No" responses had a mean of 2.6, median of 3, and mode of 3.

Strategies Needed by Registrars

The organization of data continued when the researcher read the transcriptions of interviews, and studied the contents through the prescribed methods and procedures of

phenomena analysis. The integration of experiences was organized as most relevant in describing the essence of the phenomenon in answering the overarching question: "What were the University System of Georgia registrars' perceptions of the strategies needed to plan and implement change relating to technological advances within registrar offices?" Each of the eleven participants shared his or her perceptions of the strategies needed by registrars; their responses have been summarized in the statements that follow.

The importance of a clear mission, goal, and vision along with time management were communicated by four of the eleven registrars. The four participants, who represented both two-year and four-year institutions, emphasized the need for a clear vision as well as having an adequate amount of time to implement change. According to Participant Two "time management" is needed because implementation of new systems is extremely time and resource consuming and usually occurs simultaneously with daily office functions and requirements. Two of the participants added that strategies should not only include having a vision, but also the ability to manage a project plan, time to manage expectations and competing priorities, and the ability to effectively interact with various groups on campus. Participant eleven reported, "time management is a critical strategy," because the registrar must juggle normal duties as well as thoroughly test and review all aspects of the technology being implemented.

Having current knowledge and skills in the profession was a strategy suggested by Participant Two. The utilization of this strategy helps to change structures and policies to support the change. Registrars should be able to recognize those software systems available in the profession that are most cost efficient and that most effectively meet the needs of their campus environment. This strategy was also supported by Participant Four's suggestion of a

need for “project management, planning and the ability to show the benefits of change.” Additionally, “change management strategies,” according to Participant Two, are needed because a registrar must understand how changes will affect individual academic units as well as the campus globally. Also in order to reduce levels of distrust, resistance, or change anxiety, registrars must be able to effect the change within an environment that has been effectively prepared for the change. Similarly, participant six offered strategies such as having the ability to track details and problems; managing multiple projects at once; considering alternatives and potential problems; developing complete testing plans; and integrating information.

Participant nine suggested registrars need organizational skills that are detailed oriented, and experience with project planning and implementation. The management approach that participant nine focused on was the Introduction to Micro-EM. Micro-EM is an approach used by enrollment managers to manage enrollment dynamics. It contains five basic enrollment management concepts or steps whereby each step in the process determined the succeeding step as follows: (1) identify the source of the enrollment related to the concern;(2) measure impact of concern, budget, enrollment, processing; (3) identify possible solutions – reallocation or additional staff, infusion of technology, reengineering of processes; (4) implement solution and measure impact; and, (5) manage crisis. Micro-EM can be included within the overall framework of a university's strategic enrollment management plan.

In discussing strategies, respondents also revealed the need for creating partnerships and anchoring new approaches to the culture by communicating the advantages of the new process to ensure buy-in and long term success of the change effort. For instance, participant three commented, “registrars need to insure that Computer Services is on board with the

project" and make sure all involved "are on the same page with the vision and the potential outcomes." Participant five stated, having "a good publicity campaign is needed in order to win over support across the campus." Further, registrars need to announce that the change is coming and have demonstrations for faculty and staff to get them interested. Participant seven mentioned involving all of the proper stakeholders; receiving support/buy-in from all the participants; obtaining upper-level support to help facilitate changes in processes to remove obstacles from implementation; and keeping communication lines open. In the follow-up interview, participant seven added there should be a business plan to support the needed implementation. Participant eight also stated the registrar must have a plan, communicate well and often, build in time to celebrate along the way, and provide lots of praise, which creates short term wins.

Strategies Used by Registrars

The first sub-question that directed the study was: "What strategies did University System of Georgia registrars use to implement planned technological change?" After reviewing the meaning units and identifying similarities, the responses were clustered into themes. Initially, using a phenomenological approach, the researcher reflected on a full description of her own experience of the phenomenon. Through responses and interview conversations with the participants, the experiences of University System of Georgia registrars when implementing planned technology were described. Collectively, the fundamental nature of registrars' perceptions revealed strategies needed to implement planned technology within the registrar's office. As a result of coding, sorting, and arranging the data into different groupings of information, three themes and two minor themes captured the experiences of registrars. The meaning units and themes identified, along with verbatim

examples most relevant to sub-question one regarding what strategies were used were: engaging partnerships; planning, directing and encouraging; and, reengineering of processes.

Emerging Themes

Engaging Partnerships. Engaging partnerships involved creating a sense of urgency, creating a guiding coalition and encouraging groups to work together as a team. Six of the registrars (55%), all with over ten years of experience and from four-year institutions, reported as part of their change strategy, involving functional users for planning, implementing, and managing change. Offices such as Information Technology were often team members and in many ways they served as leaders of the projects. Staff members whose functional areas are directly affected by the technological upgrades were natural teammates. For instance, participant two commented "face-to-face meetings and visitations to academic areas occurred campus-wide before implementation began." E-mail and full community involvement and engagement were also used. Participant four established module teams (financial aid, registration, fees, curriculum, and degree audit) and used functional experts to lead groups. In the telephone interview, participant five stated, "my staff embraced the team concept and they worked together to support each other."

The researcher, who also had over ten years of experience, encountered a similar experience for planning, implementing, and managing change with engaging partnerships. Her school needed to enhance its degree audit system and she was involved in the system's implementation. Therefore, she worked as a member of a team to establish a campus coalition that had knowledge of campus policies and business practices as well as experience using the BANNER system on a regular basis. Team members held interviews and training sessions related to implementation activities. Also, the team worked with campus

departments and collected and interpreted requested documentation through email and telephone communications.

For some institutions the Deans made the determination as to who would serve on the various change teams. This was done so they could ensure school-level buy-in on the projects. In the interview, participant five mentioned how important it is to include everybody for buy-in on all situations that may occur. The actual project manager developed the "vision" and "strategy" to guide the project. The experience was successful for those that embraced the technology and when the technology was used to its full potential, while those that were resistant remained resistant throughout the process. Participant five used "teams" to implement software and stated “I was afraid technology would never work for some of my staff because they have refused to use it as they need to.” One of the female, veteran participants offered a different strategy concerning engaging partnerships. Participant eight had over ten years experience and was comfortable using technology. She noted giving her staff as much reassigned time as possible and setting manageable benchmarks. Participant eight built implementation teams allowing staff to chair their respective teams. She felt, “there were bumps along the way but worth it in the end.”

Participant seven was one of the two male participants; he reported having over ten years of experience feeling comfortable using technology. The communication methods at his institution involved team meetings including demonstrations of the software and testimonials from other software users. Implementing the Smart Catalog software allowed the implementation team to think of ways to change the curriculum approval process to include the use of the new software. Participant seven stated “some units involved in

catalog updates were apprehensive about the electronic process and that obstacle was removed by training sessions to help these staff members feel comfortable with the technology and to give them the opportunity to see the benefits the software implementation would provide them." The implementation also allowed the university to improve other processes including the curriculum change process and the publishing of the catalog and major information to the university's web site.

The other male participant was Participant nine who had over ten years of experience and was comfortable using technology. Participant nine created a Project Steering Committee and several work teams, both functional and academic. Participant nine reported, "team members were selected based on position of responsibility and skill sets." Participant ten formed teams within the office and established work groups and advisory groups outside the office. Staff completed a business process analysis and engaged others in setting operational goals and standards. As a result of this participant ten stated, "services were clearly improved and the reputation of the office was improved."

Planning, Directing, and Encouraging. The planning, directing, and encouraging theme included creating the vision to help direct the change effort. It also involved using every vehicle possible, such as emails and team meetings to communicate the vision and create excitement, certainty, and momentum around the change. Seven participants (64%) from both two-year and four-year institutions expressed similar strategies used that often resulted in different outcomes. These participants indicated that registrars are the catalyst for planning, directing, and encouraging and these are constant processes that must involve the appropriate staff, methods and feedback. Participant one had over ten years of experience and worked at a two-year institution. This participant implemented a project called EXtensible

Markup Language (XML) by holding department meetings to discuss progress, end goals and time-lines; scheduled training sessions; assigned roles to staff members within the department; and developed expectations. The participant believed the project has experienced limited success primarily due to the fact that they have only a limited number of trading partners in the University System of Georgia (USG) to test the XML product.

Participant two was from a four-year institution and had over ten years of experience. Her experience with technological change led to the autonomy of catalog entry and ownership of classroom space being stripped from academic areas. This was a change from the traditional way of doing business and caused much resistance and angst throughout the campus community. However, academic areas that embraced the new systems saw immediate positive results such as better classroom assignments and quicker and more accurate information. Participant two suggested that, "central control and processing of these functional areas was necessary in a college that is experiencing exponential growth."

In her ten or more years working at a four-year institution, participant four had implemented several major changes including a Student System. The need for one change was established through professional campus assessment and the need to move from old IT systems (mainframe) to strategic Enterprise Resource Planning (ERP). Participant four used all means of communication and on some projects she stated, "the team did behave as expected and on some they did not." As her office worked on more projects, trends developed among school units allowing team members to determine their level of support for as well as the level of resistance to the change effort. Eight of the registrars (73%) indicated planning is essential if the project is to accomplish its stated goals, and that a vision and strategy is needed to guide the project. It is important for the registrar to provide input on the

vision and strategy for completing the project. Participant ten conveyed that a technology plan needs to be part of the overall strategic plan for the office, as it "continues to be a component of the overall planning process."

Most projects of any size and scope require many hours spent in encouraging participants by recognizing project achievements. Participant nine worked at a four-year institution and noted giving a lot of "Can Do" talks to stakeholders. Creating excitement and acting quickly on momentum were critical to the success of their project. Yet, the experiences from some of the other four-year institutions were quite different. For example, participant two mentioned that staff who worked in the functional areas affected by technological upgrades were well aware of the need for assistance and embraced the changes without much encouragement. However, participant five, who also worked at a four-year institution, found that the more she encouraged and motivated her team, the more willing they were to take on the tasks at hand; and, they were more willing to participate and provide input and feedback on the decisions. Participant five added that her vice-president provided a customer service award each month to encourage staff for doing a good job. Participant six involved the entire campus in generating excitement about the upcoming change; shared correct information about the product being implemented; stressed benefits; provided regular updates to those not directly involved; and, provided "sneak peaks" to various audiences to generate additional anticipation. Participant eight recognized accomplishments of implementing major change with celebrations (including food) along the way. Participant ten added it is important to keep the level of encouragement and excitement up because every small step provides momentum.

Reengineering of Processes. The third major theme involved reengineering of processes which included thinking of nontraditional ways to implement the change;

consolidating gains; and, developing a means to ensure ownership and long term success of the change effort. Six participants (55%) plus the researcher, reported experiences of reengineering processes due to shifting responsibilities, procedural changes or embracing the change due to need. Three participants stated taking-risks and encouraging new ideas when they experienced reengineering of processes.

Participant three worked at a two-year institution and mentioned that staff re-designed processes in order for the change to be effective and for processes to work in this new environment. Participant three emphasized the call for, “continually speaking about the need for change to Vice Presidents and Computer Services.” It is important for staff to see the need and how the change can benefit their effectiveness. Changing old processes to better focus on new technology or giving more responsibilities to others can develop an efficient means for processing work in a new environment. She developed a plan for the changes and processes, and communicated the changes individually and as a group. For participant three, her institution has a ways to go but, “the feeling in the office is that change can only make things better for the students and the staff.” Participant five also commented about ensuring long term success by gaining buy-in from the various stakeholders and getting their input to make the change a more campus wide project at their four-year institution. Participant five was able to gain buy-in by asking staff how their processes needed to be "built" in order to meet their needs and her staff trained the departments on how the product worked. The researcher had a shift in her responsibilities to ensure implementation of the new change, but her staff was not involved in the training. Initially, the researcher had limited success with staff buy-in; however, with support of upper administration, eventually the office staff and departments found the product useful.

Participant nine identified time-consuming processes that could be eliminated; identified issues that could be avoided through the use of improved technology; used assessment ratings (particularly related to customer service) to show that change was desired and needed; and, helped staffs realize how implementation would diminish complaints and problems. In one case, he received and communicated intense timelines given by upper-level administrators. They changed policies, processes, and made various functions more efficient. They restructured and revamped job assignments. Participant seven discussed procedural changes to the curriculum process that were implemented to compliment the new process. Teams were encouraged to think of ways to change the curriculum approval process to include the use of the new software. Participant nine shared that many processes were reengineered and new business processes created/adopted to support implementation. Existing policies were reviewed and updated, if required. Participant nine also shared that, "good business process analysis and re-engineering requires fresh thinking and encourages risk-taking." Other risk-taking ideas were supported by participant three, from a two-year institution, who stated that her staff was encouraged to think of "out of the box" ideas. Participant five was also for risk taking and nontraditional ideas. She stated, "it is 'why not' instead of 'why'."

Registrar Strategies Alignment to Kotter's Eight-stage Model

Sub-question two that directed the study was: In what ways did current strategies used by University System of Georgia registrars for implementing planned technological change align with Kotter's eight-stage model? The three major themes, along with the composite textural description of the registrars' overall experiences, provided evidence of the strategies used by registrars. Table 4.4 represents the theme alignment to Kotter's eight-stage model.

Table 4.4

Major themes alignment to Kotter's Eight-stage Model

Major Themes	Kotter's Eight-stage Model
Engaging Partnerships	Step 1- Establish a Sense of Urgency Step 2 - Create the Guiding Coalition
Planning, Directing, and Encouraging	Step 3 - Develop a Vision and Strategy Step 4 - Communicate the Change Vision Step 6 - Generate Short Term Wins
Reengineering of Processes	Step 5 - Empower Broad-Based Action Step 7 - Consolidate Gains and Produce More Change Step 8 - Anchor New Approaches in the Corporate Culture

Composite Textural Description

Finally, a composite textural-structural description which reflected all the participants' experiences was developed. The researcher integrated all individual textural-structural descriptions into a universal description of the experience representing the group as a whole. This composite focused on those aspects of the experiences that were descriptive or common among respondents. Husserl's (as cited in Moustakas, 1994) work defined the composite description as having the condition or quality without which a thing would not be what it is. Also the composite textural description was used to detail strategies used by the University System of Georgia registrars that aligned with Kotter's eight-stage model.

Kotter's first step in the eight-stage model recommended establishing a sense of urgency and providing evidence that the change was needed. Ten of the eleven participants (91%) indicated that staff who worked in the functional areas affected by these technological upgrades was well aware of the need for assistance and/or the need was established through professional campus assessment. In the telephone interview, participant two stated that the

need for technology, especially when software is outdated, creates a sense of urgency. Participant five and participant seven both added that “buy-in” from the top creates a sense of urgency. Many similarities surfaced in providing evidence that change was necessary. Most participants agreed that, before starting work on any project, they had support from upper administration; therefore, gathering support from the top for the project was evident for the implementation. Ten of the eleven participants (91%) indicated that they had created several implementation teams--functional and academic. In all cases, team members were selected based on position of responsibility and skill sets. The staff members whose functional areas were directly affected by the technological upgrades became natural teammates. This is consistent with Kotter’s second step of creating a guiding coalition and encouraging teams to work together as indicated by the theme of engaging partnerships.

Steps three, four, and five of Kotter’s eight-stage model were evident from experiences related to the actual project manager, registrar, or team members who had the responsibility of developing the "vision" and "strategy" to guide the project. The plans included specific assignments related to skills and most team members had the responsibility for sharing project progress and vision with members of campus. Team meetings included demonstrations of the software and testimonials from other software users, and were used to successfully communicate the change vision. Communication involved email, individual, and group meetings. Ten of the eleven participants (91%) revealed that recognizing successes is important and they offered some type of acknowledgment to team members regardless of whether the implementation was a short or long term project. Some of the acknowledgements included “job well done” emails, campus-wide notifications, encouragement talks, and celebrations. One participant stated that when the project is complex and takes a while to

complete, it is important to keep the level of encouragement and excitement up. Every small step provides momentum. Three participants (27%) indicated they involved the entire campus in generating excitement about the upcoming change, shared correct information about the product being implemented, stressed benefits, provided regular updates to those not directly involved, and provided "sneak peaks" to various audiences to generate additional anticipation. All of the acknowledgements generated compared with Kotter's step 6 of short-term wins as outlined in the theme of planning, directing, and encouraging.

According to participants, as projects progressed to full implementation, new approaches included policy changes as well as providing staff training. Job requirements included an understanding of the new processes. In at least three cases, staff was encouraged to become risk-takers and think of "out of the box" ideas. One registrar said she was all for risk taking and nontraditional ideas, stating it is "why not" instead of "why." All participants had to re-design processes in order for the changes to be effective and for their processes to work in the new environment. Policies, processes, and various functions were revamped for more efficiency that supports the theme reengineering of processes, which resulted in consolidating gains and anchoring new approaches (Kotter's steps 7 and 8).

Once staff sees that things can be improved to their benefit and to those they serve, they are excited about the future. With the support of upper administration, and developing a sense of trust in the effectiveness of the new technologies whether inner office or campus-wide, participants can change the culture to ensure long term success when implementing planned technological change.

Registrar's Readiness to Implement Technology

Sub-question three that directed the study was: What were University System of Georgia registrars' perceptions of their readiness to implement planned technological change? The two minor themes that emerged from the third sub-question were: readiness limited by institution timelines and growth; and, readiness growth increased due to technology demands.

Minor Themes

Readiness Limited by Institution's Timelines and Growth. As a registrar, one must possess an extensive range of technical skills, as well as readiness to complete business processes such as implementing a technological change. However, often readiness can be limited by variables not within the individual's focus of control, like the institution's timelines and growth. Three participants (27%) indicated their readiness had been limited due to either timelines or growth within the institution. For instance, participant one would like to do more in regard to implementing technology, but her department is understaffed compared to the growing enrollment of their two-year institution. She stated that they have the same number of staff members today as they did in 1997 when the enrollment was less than 1,000 students. Currently, their enrollment is approximately 3,000. Participant two also pointed out the need for "central control and processing of functional areas" for a college that is experiencing exponential growth. This could help the registrar's readiness to implement change. Participant three exclaimed she "was ready for more change;" however, she is limited because they have to implement projects on the Computer Services time-frame at their two-year institution. Most institutions, whether two-year or four-year have to rely on the time-lines of their Computer Services department for technical help. This sometimes delays the registrar's

readiness and implementation because their timeline may not fit into Computer Services time frames.

Readiness Growth Increased due to Technology Demands. Readiness growth that has increased due to technology demands involves not feeling limited due to technological demands, but embracing the entire array of technological advances relevant to the campus. Six participants (55%) increased their readiness by embracing the technological demands. An example of this was illustrated by participant six when she stated, "I believe that my experience has prepared me well, most of which occurred at another institution than the one I work at now." She also indicated her current staff is getting better with change after a few positive experiences that they had working together on new technologies. Participant seven also stated, "I believe that through several major changes, my personal readiness and our department's readiness for implementing technological change have greatly improved." Participant nine shared that, "the Registrar's Office is always ready to infuse new technologies to affect positive change." The staff in participant nine's office had also seen and experienced a positive change with the implementation of new technologies. However, as the office became more technologically advanced, the skill sets required for the jobs changed. The challenge, as a manager, became keeping job descriptions current and compensation at a level to attract and retain qualified personnel. Participant ten reported, "being ready for change is not a choice," as those who are not ready to embrace technology will be quickly left behind in the world as it is today**.** Participant eleven stated on a personal note, "I welcome the opportunity to advance in technology as long as there is a benefit to our institution, staff, faculty and students." Highlighting the potential benefits to be realized is a key to bringing everyone on board in preparing for the change.

Chapter Summary

The purpose of this research was to explore registrars' perceived understanding of the strategies needed to implement planned technology. Data analysis for this mixed methods occurred within both the descriptive and qualitative approaches. The descriptive data questionnaire as viewed through the lens of Kotter's eight-stage model was tabulated by each construct and reported by "Yes" and "No" responses. The analysis of qualitative data used steps outlined in Moustakas' Modifications of the Stevick-Colaizzi-Keen Method of Data Analysis (see Appendix E). Responses from the telephone interviews were interwoven into these steps. This process allowed the researcher to review the meaning units, identify similarities, and then cluster the responses into themes. The researcher presented a full description of her own experience of the phenomenon, as well as a textural-structural description of the participants' responses. One overarching research question and three sub-questions guided this study. Sub-question one and sub-question three led to the emergence of three major themes and two minor themes. The major themes were (1) Engaging Partnerships (2) Planning, Directing, and Encouraging and (3) Reengineering of Processes. Sub-question two sought the alignment of registrars' strategies to Kotter's eight-stage model using the composite textual description. These descriptions provided details of the connection of the alignment of strategies used by registrars to Kotter's eight-stage model. The two minor themes were: (1) Readiness limited by institution timelines and growth, and (2) Readiness growth increased due to technology demands provided evidence of registrars' readiness for implementing technology. The completion of the research design allowed the overarching research question and sub-questions to be studied. This project helped to provide a clearer

picture of how strategies used by registrars align to strategies outlined in Kotter's eight-stage model. Registrars employed all of the strategies; however, not everyone used all eight steps all the time.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

This chapter summaries the research finding from this mixed methods study that included a quantitative descriptive study as well as a qualitative study in the phenomenological tradition. These methods were used as a means of soliciting feedback from registrars concerning their perceptions, of the strategies needed to implement effective planned technological change within their offices. The summary of the research section is organized by chapters. The research findings are presented by themes that emerged from the research data and are discussed in relation to the review of literature. Additionally, the implications of the outcomes for this study are discussed in terms of Kotter's eight-stage model.

In Chapter I, the research began with an introduction of technology. Technology impacts increasing segments of the professional and personal lives of all members of society, including the university community (faculty, staff, administrators, and students). It is difficult to conceive of any student affairs practice operating without some technological applications, from hand-held devices to web-based processes (Connolly, 2005; Moneta, 2005).

The operations of student affairs cover a spectrum of activities and many technical administrative processes. Typically, student affairs offices, such as the registrar's office, are at the forefront of assisting with many processes through on-line technology. Registrars will improve their influence and guide the role of technology within student affairs when they can articulate how technology influences outcomes, actions, expectations, and addresses the needs of the campus community (Curry, 2002; Kleinglass, 2005).

As university professionals within the registrar's office continue to be faced with critical decisions about the use of technology to meet the ever changing demands of the community they serve, they must follow the same sound practices used in other areas of their work (Boulais & Sturgis, 2003). Technological innovations make change a constant part of higher education, especially in environments within student affairs offices, such as the registrar's office. Constant advances in technology-based systems of delivery for student services have presented many challenges, both positive and negative, to registrar's offices throughout the country.

The results of the study identified the University System of Georgia registrars' perceptions of the strategies needed to plan and effectively implement change related to technological advances within registrars' offices. The researcher explored university registrars' current strategies for implementing planned technological change for the purpose of offering information that would close the gap between those strategies used and the steps outlined by John Kotter's eight-stage model (Kotter, 1996) for implementing change. Kotter's model is recognized as one of the most useful models for practitioners (Kelman, 2005). In addition, the researcher explored university registrars' perceptions of their readiness to implement change relating to technological advances within their area. The study was significant in that it provided a clearer picture of the strategies and readiness of registrars relative to implementing technological change. Additionally, the research provided outcomes for a template or list of strategies that will provide guidance and training techniques for current and aspiring registrars within higher education.

Limitations of the study were primarily due to the researcher's selection of Kotter's eight-stage model, as opposed to one of the other numerous models available. Additionally,

limitations within the study included the method of data collection as well as the uniqueness of the group of institutions from which the sample was selected. All of the institutions selected report to the same Board of Regents, which was a delimitation of the study. The study results rested on the assumption that all registrars were truthful in their responses to the questions asked by the researcher.

In Chapter II, the researcher presented a review of literature on the concepts of the registrar, technology in higher education, and change. First, the researcher discussed how changing technologies in higher education has affected nearly every aspect of society today, and the registrar's office is no exception. The expansion of institutions and students has necessitated the formation of an academic specialist position to handle the role and responsibilities of the registrar (Lauren, 2006; Young, 2000). The registrar's office administers a number of specific services, which include class scheduling, registration, record functions, grade reporting, transcript services, and commencement. Services may also include the following: transfer credit; student enrollment verifications and certifications; development of an academic calendar; enrollment reporting and forecasting; publications including catalogs, class schedules and commencement programs; and, tuition classifications (CAS, 2006; Lauren, 2006).

Change in higher education continues to occur in both processes and structure. For example, many processes once paper-based have been streamlined and timelines shortened by the use of technology in such areas as student registration, advising, and application. In the day-to-day and the term-to-term work that is done in the registrar's office, defining characteristics include the registrar's readiness for, ability to adapt to, willingness to embrace, and often, inclination to encourage change. For instance, in the past, thousands of human

hours had been squandered annually by both students and administrative staff in completing a variety of administrative paperwork. But now with the orientation toward greater technology use, student services processes are facilitated with much greater efficiency on campuses. The new information age has opened greater opportunities for faculty, administrators, and students to restructure numerous activities encompassing professional and institutional areas. Areas such as application, advising, teaching, and registration are improved by technological advances (Boulais & Sturgis, 2003).

Technological advances continue to change the way students and the campus community live, learn, and interact with their colleges and universities. Accordingly, institutions must change the way they use technology, both in how they provide day-to-day services for customers and how they connect with the overall campus in a less structured but equally meaningful way (Petrides, 2000; Shier, 2005; Smith, 2000). Many colleges and universities have welcomed the promise of information technology (IT) with open arms, but they are experiencing the consequences of providing such broad-based access to their resources (Petersen & Hodges, 1997). With technology so pervasive throughout work environments, it would be worthwhile for student affair's practitioners to consider what strategies are essential so that technological tools can be applied most effectively in optimizing educational and administrative efforts (Moneta, 2005).

Changes in technology are important in higher education because an organization cannot remain laggard and hope to be great. Vision, readiness, and leadership toward tomorrow are of paramount importance to moving institutions forward, and student affairs professionals need to make themselves known as important players in the technology revolution (Ausiello & Wells, 1994; Collins, 2001; Giannini, 2001).

Several models of change were also discussed in Chapter II including Kotter's Eight-stage Change Process. Kotter (1996) designed an eight-stage change process based on the premise that major change will not happen easily for a number of reasons. To be effective, leadership is needed to alter strategies, reengineer processes, and address barriers to prevent some common errors relating to the change process**.** A brief depiction of how Kotter's eight-stage model may apply within a registrar's office was also outlined. It is critical for registrar professionals to understand a variety of organizational theories and managerial approaches. The registrar plays a key role in helping the campus adapt to change. Faculty, students, and administrators will look to the registrar's office for information about new processes, functions, and services. Having readiness, understanding, and planning how the implementation and training will take place will ensure that the implementation of planned technology happens and that it is effective.

In Chapter III, the researcher explained the methodological design for this research study. This exploratory mixed methods study focused on investigating the relationship between registrars' perceptions of strategies for implementing planned technological change and Kotter's eight-stage model. Additionally, the alignment of these strategies to Kotter's eight-stage model and registrars' perceived readiness to implement change was investigated. All thirty-five registrars from the University System of Georgia Board of Regents' Schools were invited to participate in the questionnaire portion of the study. In addition, three of those respondents were invited to participate in an interview. This study used concurrent procedures in which the researcher converged quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. A rationale for using a quantitative descriptive study and the phenomenological paradigm was provided. The appropriateness of

using phenomenological methodology, sampling strategy, collection, validity, response rate, and management of data were discussed. The researcher followed the steps outlined in Moustakas' Modifications of the Stevick-Colaizzi-Keen Method of Data Analysis. The chapter concluded with an overview of how the data was reported.

In Chapter IV, the findings of the study were described. Questionnaire responses were reported in table and narrative forms, and responses were reported by identifying the demographic characteristics of the participants. The researcher used narrative form to summarize the data. Participants' reactions to the descriptive data questionnaire were presented by "yes" and "no" responses in terms of strategies used to implement planned change according to Kotter's eight-stage model. Using the data transformation analysis approach, the researcher grouped the "yes" and "no" responses by category, and then counted the number of times each occurred. A narrative based on open-ended responses and telephone interviews followed Moustakas' Modifications of the Stevick-Colaizzi-Keen Method of Data Analysis, which employed horizonalization in the identification of meaning units. A textural-structural description was created for each participant by using the process of phenomenological reflection, imaginative variation and analysis. Three themes and two minor themes emerged from the textural structural data. The chapter concluded with a composite textural-structural description that was utilized to reference the alignment of Kotter's eight-stage model.

Analysis of Research Findings

This study was conducted to explore University System of Georgia registrars' perceptions of the strategies needed to plan and effectively implement change related to technological advances within registrars' offices. Both quantitative and qualitative

information were represented in the final analysis. Comparative analysis was accomplished through the triangulation of data sources which permitted the researcher to compare and cross-check the consistency of information. Data from the descriptive data questionnaire ("yes" and "no" responses to strategies used in the implementation of planned change as viewed through the lens of Kotter's eight-stage model) were consistent with data gleamed from the interviews and registrars perceptions. The results indicated that, indeed, participants of this study used many of the steps outlined in Kotter's eight-stage model.

Registrars' responses to the overarching research question made available a listing of strategies that are needed to plan and implement change relating to technological advances (see Appendix H). The first sub-question, "What strategies did University System of Georgia registrars use to implement planned technological change?" studied collectively, revealed three major themes: (1) Engaging Partnerships, (2) Planning, Directing and Encouraging, and (3) Reengineering of Processes, that represent strategies used to implement planned technology within the registrar's office. Sub-question two, "In what ways did current strategies used by University System of Georgia registrars for implementing planned technological change align with Kotter's eight-stage model?" sought the alignment of registrars' strategies to Kotter's eight-stage model using the composite textual description. From examining the literature, it was obvious to the researcher that registrars employ many of the strategies outlined in Kotter's eight-stage model.

Two minor themes, (1) Readiness limited by institution timelines and growth, and (2) Readiness growth increased due to technology demands, provided evidence of registrars' readiness for implementing technology. These two themes emerged to answer sub-question three, "What were University System of Georgia registrars' perceptions of their readiness to

implement planned technological change?" The findings provided a clearer picture of the strategies and readiness of registrars relative to implementing technological change. The goal of the research outcomes was to provide a template or model of "Strategies" (see Appendix H) for current and aspiring registrars within higher education.

Discussion of Research Findings

Situating the findings of this study within the framework of relevant literature allows the researcher to compare and contrast findings with existent literature. The literature was presented in the following areas: the registrar; the impact of changing technologies; strategies and readiness needed by registrars to effectively implement planned change relating to technological advances; and, a systems model for change**.** Findings in this investigation supported the assertion that university administrators, such as registrars, are being called upon to lead the way for transformation and they need the strategies to successfully provide constantly changing day-to-day services due to technology (Clark, 2004; D'Angelo & Woosely, 2007; Shier, 2005). This study revealed several strategies needed to effectively plan and implement change relating to technological advances within registrars' offices. The integration of experiences in describing the essence of the phenomenon provided eleven separate, but interrelated strategies used by registrars. These strategies are essential for student affair's practitioners so that technological tools can be applied most effectively in optimizing educational and administrative efforts (Moneta, 2005). The study was conducted in part due to the researcher's belief that the strategies obtained could provide guidance and be of value by providing a template or list of "Strategies" (see Appendix H) for current and aspiring registrars within higher education.

The meaning units identifying similarities in the responses were clustered into themes. Using a phenomenological approach, the researcher reflected on a full description of her own experience of the phenomenon along with the essence of participants' perceptions that generated three themes with verbatim examples. The major themes were (1) Engaging Partnerships (2) Planning, Directing, and Encouraging and (3) Reengineering of Processes. The first theme, Engaging Partnerships, entailed participants working as members of a team in establishing campus coalitions that had knowledge of campus policies and business practices. Also, the effort gained support from key team members. Eight out of eleven participants (73%) reported having staff members who became natural teammates for working with the implementation. Participants detailed numerous face-to-face meetings and visitations to academic areas that occurred campus-wide. Cheng (2007) recommended leaders should lead by doing, by setting an example, and by building consensus. These are critical actions needed for a major strategic change to work, and they are essential to winning support from key team members.

In the study there was a strong emphasis on the second major theme, Planning, Directing and Encouraging. In the literature, it was suggested that leaders need to decide how to implement the change, what their role should be, as well as how to communicate change effectively. Change initiatives and communications must be enacted in a prompt, accurate and thorough manner (Cheng, 2007; Dalton & Gardner, 2002). Ten (91%) of the eleven participants developed the "vision" and "strategy" to guide the project and communicated the change. Participants' roles included communicating to individuals as well as the entire campus. Participants generated excitement about the upcoming major change; accomplishments of implementing the change included celebrations and giving numerous

“Can Do” talks. Creating excitement and acting quickly on momentum were critical to project success. Participants indicated that it was important to keep the level of encouragement and excitement up. Every small step provided momentum for the implementation. They indicated that the secret to successful change was to make each step along the path of change have some recognizable value.

The third major theme involved the reengineering of processes. Well over half of the participants (64%) re-designed processes in order for the change to be effective and for processes to work in the new environment. The literature suggested restructuring of procedures for information technology functions represents a major change in the work lives of a number of individuals within higher education (Kelman, 2005; Yang, 2006). This study clearly recognized the importance of changing policies, processes, and making various functions more efficient by restructuring and revamping job assignments. Staff were encouraged to think of "out of the box" ideas and, in some cases, to become risk takers and execute nontraditional ideas. As one respondent stated, it is “why not” instead of “why.” Good business process analysis and re-engineering requires fresh thinking and encourages risk-taking. Cheng (2007) recommended that a leader stand behind the change and take the risks to make a case for change in a very reasonable and valuable way.

Successful change begins and ends at the individual level. Even when change is introduced to every member of the organization at the same time, the rate of making the change and of developing the skills and competences will vary individually (Cheng, 2007; Kotter, 1996). Kelman (2005) suggested some older employees, including a number of managers, comfortable with the status quo, may have a more difficult time adjusting to the newer technologies than younger workers who are more engaged with the times. Less than

one half (45%) of the participants indicated they were comfortable with using technology, which reflects Kelman's perspective. It should also be noted that in the demographic data, 82% of the participants indicated an age range of 41 to 60 years of age. Ninety-one percent were seasoned veterans with over ten or more years of experience.

Technology and planned change are well-established. According to Kelman (2005) one of the most important practitioner base models is one by John Kotter. Kotter (1996) designed an eight-stage change process based on the premise that major change will not happen easily for a number of reasons. To be effective, leadership is needed to alter strategies, reengineer processes, and address barriers to prevent some common errors**.** Sub-question two sought the alignment of registrars' strategies to Kotter's eight-stage model. Considering Kotter's (1996) immense scope and complementary nature, it is not surprising that the participants in this study use many of the steps in accordance with Kotter's change model presented in the literature. It is possible that the participants may embrace the very practices that comprise specific steps without recognizing Kotter's eight-stage model. It is also possible that participants may very well know Kotters' eight-stage model by heart.

Grace (2002) and Morrill (2005) proposed institutions engaged in the technology planning process should identify the changes occurring within their environments. They should access particular strengths and competencies of the technological change, and match them in a plan for achieving future opportunities. Effective strategic planning involves examining demographic, social, economic, technological, and political trends, and determining the likely impact those trends might have on an institution and its technology use. For registrars, one of the greatest challenges in the data driven environment of the modern university is being ready for change. Also, the registrar must know how to make the

appropriate information available to the correct constituencies in a manner that provides ease of access while at the same time rigorously safeguarding the privacy of each individual (Lauren, 2006; Sandeen, 2004; Young, 2000). In many respects, dealing with change is part and parcel of the work of any registrar's office and one of the defining characteristics is the registrar's readiness for, adapting to, embracing, and often encouraging change. One of the two minor themes that emerged in the study that represented participant's readiness included: Readiness limited by institution timelines and growth. Participants described that they would like to do more and are ready for change, but are understaffed due to growing enrollments. One registrar suggested "central control and processing of functional areas are necessary in colleges that are experiencing exponential growth." Other statements indicated the registrar's readiness for change is sometimes delayed due to timelines of others involved in the change.

The second minor theme that emerged in the study that represented participant's readiness included readiness growth increased due to technology demands. Participants reported that technological demands prepared them well, and that personal readiness and the department's readiness for implementing technological change have greatly improved due to the demands. Participants welcomed the opportunity to advance in technology as long as there was a benefit to their institution, staff, faculty, and students. As one participant stated "being ready is not a choice." Those who are not ready to embrace technology will be quickly left behind in the world as it is today**.**

The literature noted that many colleges and universities have welcomed the promise of information technology (IT) with open arms, but providing broad-based access to their resources and skills have presented many consequences (Petersen & Hodges, 1997). The study supports the literature in that successful student affairs administrators, such as

registrars, will be required to have more and different skills, knowledge bases, and personal readiness for change. Some change is relatively frequent, and to be successful, individuals and organizations must become skilled and comfortable with adapting to alterations in the workplace (Jaffee & Scott, 1999; Lovell & Kosten, 2000; Watts, 2004). Having personal readiness, planning, and leading can help remove barriers to change efforts. Developing excellent interpersonal skills, exercising the ability to communicate effectively, thinking strategically, and understanding how to develop the potential in others have become prime concerns for leaders (Hoffman, 2000; Lauren, 2006; Kotter, 1996).

Conclusions

Data analysis of the lived experiences of eleven registrars and the researcher from the University System of Georgia revealed similar experiences, perceptions, concerns and ideas. Participants in the study described comparable experiences to the steps outlined by Kotter's (1996) eight-stage model: establishing a sense of urgency, creating a guiding coalition, developing a vision and strategy, communicating the change vision, empowering broad-based action, generating short term wins, consolidating gains and producing more change, and anchoring new approaches in the corporate culture. Participants experienced engaging partnerships, planning, directing and encouraging staff and partners, as well as reengineering of processes. Participants also revealed the need for buy-in from all stakeholders, and changing job descriptions and revamping processes to change the culture to ensure long-term gains. As indicated in Kotter's model, barriers to change could lead to one or more of the common errors associated with the change effort, however, having appropriate leadership (interpersonal, communication and critical thinking skills, etc.) could help remove these obstacles.

Although there were limitations set forth in this study due to the data collection procedures, the data provided a clear understanding of how strategies used by registrars aligned to Kotter's eight-stage model. Through the phenomenological approach, the researcher sought to describe the quality of the lived experience by describing the expression of lived experiences (Moustakas, 1994). The roles and positions held by the participants involved working with many different strategies when implementing planned technological change. Much common ground was found through the generation of themes that aligned with Kotter's eight-stage model. At the outset of this study, the researcher reflected on her own perceptions along with understanding the perceptions of eleven registrars from the University of Georgia System schools. Data were treated with equal value and text was examined with all elements and perspectives having equal weight. Along with providing a rich experience for the readers of this research, a positive outcome for the researcher was the sense of appreciation for the manner in which the intricacies of each participant's lived experience was put into a learning context. The researcher perceived each participant as a resilient, intuitive, and purposeful leader practicing with a commitment to change the way they use technology, both in how they provide day-to-day services for customers and how they connect with the overall campus in a less structured but equally meaningful way.

Implications

One must extrapolate the learning carefully from this study. In accordance with Husserl's (as cited in Moustakas, 1994) approach the analysis focused not on the phenomena of lived experience themselves, but on the perceptual processes or mental constructs the participants created in order to make sense of their experiences. The researcher's role was to reflect on her own experience and the meaning of the participants' experiences by weaving a

shared tapestry of these reflections. This study's intention was to discover the strategies used by registrars by examining their lived experiences and to determine what commonalities shed light on the strategies needed for successful implementation of planned technology along with the registrar's perception of their personal readiness for change. To continue as proficient leaders of technological change, registrars must be ready for change and feel competent in analyzing and understanding the business processes associated with various practices and models of change.

Constant advances in systems of delivery for student services have presented many challenges, both positive and negative, to registrar's offices throughout the country. Throughout the literature, researchers (e.g., Boulais & Sturgis, 2003; Clark, 2004; D'Angelo & Woosely, 2007; Kleinglass, 2005; Shier, 2005) have called for more empirical studies of implementing change. Student affairs professionals are seeking answers and models regarding this topic; however, minimal exploration and little measurement have been achieved to date (Klienglass, 2005). In order to be more effective in implementing change, registrars must be given the opportunities to understand and explore their challenges, barriers, and options. This requires use of appropriate strategies and/or models.

This study should prove beneficial to registrars and practitioners of leadership. While part of the analysis referred to registrars or student affairs leaders, there is certainly learning contained for instructional and college services staff. It is the researcher's belief that the universal truths contained in the participant's lived experiences should be accessible to anyone working in a learning institution; and, the outcomes from this research could provide a template or model of "strategies" (see Appendix H) for current and aspiring registrars within higher education.

Recommendations

Recommendations for Implementing the Results of the Study

Several research studies could develop out of this dissertation in the areas of management training and leadership within and outside the registrar's office. Therefore, the researcher makes the following recommendations:

1. Analyze the results to determine if there is a correlation between the registrar's age and comfort level with implementing planned technology.
2. Analyze the results to determine if there is a correlation between registrar's years of service and comfort level with implementing planned technology.
3. Analyze the use of Kotter's Eight-stage model and the actual success rate of the technological change.

Recommendations for Future Research

To provide deeper insights into how registrars can help bridge the gap between theory and practice for practitioners and scholars, the researcher makes the following recommendations for future research:

1. Future research to assess the readiness of registrars in a university setting and determine if their student affairs experience holds any bearing on their skills, knowledge, and readiness.
2. Future research to compare and contrast the registrar's competencies with other practitioners.
3. Future research to provide a more comprehensive and practical exposure to strategies and readiness of registrars to ensure preparedness from multiple models.
4. Future research to determine registrar's satisfaction with technology.

5. Future research study to determine if there is correlation between registrar's age and comfort level in using technology.
6. Future research to incorporate the order of the steps used by registrars (to ascertain another level of experiences) as they align to Kotter's eight-stage model.
7. Future research to utilize the results of this study to develop a set of questions to create a survey instrument to test the finding across a larger population.
8. Future research to utilize the findings of this study to provide insight as to the similarities and differences of other university settings when comparing strategies.
9. Future research to identify specific barriers to change.

Dissemination

The researcher's program required that each student share a plan for presenting and publishing the findings of this study. This dissertation will be released through the normal channels as instructed by the College of Graduate Studies. Six of the eleven participants requested a copy of the study upon completion; an electronic copy will be provided to them as soon as the document is finalized.

The overarching research question and each of the three sub-questions are adequately full and rich enough for generation of a publishable article. Higher Education in general and, more specifically, student affairs publications are dynamic arenas for practitioners as well as scholars. The articles will be submitted and published as soon as possible. Articles with be submitted to "Successful Registrar" and College and University Bulletin of the American Association of Collegiate Registrars. An abstract will be sent in response to the call for proposals for the regional conference of the Georgia Association of Collegiate Registrars and Admission Officers.

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APPENDIX A
EMAIL INVITATION TO PARTICIPATE

Dear Registrar,

In this information age, registrars are faced with many new challenges and pressures when implementing planned technological change. You are receiving this email to request your participation in a study exploring registrars' perceptions of the strategies needed to implement planned technological change. I am a student at Georgia Southern University, and I am conducting this study as part of my dissertation requirements for a doctoral degree in Higher Education Administration.

As a student services professional, I understand registrars are extremely busy and your time is valuable. However, no one else can provide the level of valuable insight needed for assessing effective planned technological change within the registrar's office. Your personal perspective is critical to the validity and value of this research. This is why I am asking you, personally, to participate in this research.

Participation in this study is completely voluntary and should take no more than 10 minutes. Your participation will be kept confidential; the data will be used in a manner that will not link responses to any individual or institution. The criteria for inclusion form, informed consent form and questionnaire are attached to this email. To be eligible to participate, you must have served as a registrar for one or more years.

Instructions:

1. Open the inclusion form and save to your desktop for your records; indicate your years of experience as a registrar and follow appropriate instructions listed on the form.
2. If applicable, open and read the informed consent form. Save a copy to your desktop for your records. Completion of the questionnaire will automatically indicate your consent to participate.
3. Open and save the questionnaire to your desktop. Open the questionnaire and click the options box at the top of the word toolbar to enable the content.
4. Please save this as a word document and complete the questions in sections I and II. Save the completed questionnaire and return it to the researcher at vburden@georgiasouthern.edu .

I greatly appreciate your willingness to participate. Please return the questionnaire by Monday, January 11, 2010. Thank you for your time and support.

Sincerely,

Attachments (3)

Velma S. Burden

APPENDIX B
CRITERIA FOR INCLUSION

1. INSTRUCTIONS: Please check your years of experience and save this as a word document. Please return this completed document to the researcher within seven days. Email as an attachment to vburden@georgiasouthern.edu by January 11, 2010.

How long have you worked in a university setting?

_____**1 year or less:** If you have been a Registrar for 1 year or less, it is important that you return this form, however there is no need for you to continue. I do thank you for your willingness to assist me with this questionnaire and would be happy to provide you with a copy of the finding once the study is complete. If you are interesting in receiving this information, please email me at vburden@georgiasouthern.edu. Thank you again!

_____ **more than 1 year**: If you have been a Registrar for more than 1 year, please complete the Consent Form and Questionnaire.

APPENDIX C

GEORGIA SOUTHERN UNIVERSITY INFORMED CONSENT FORM

DEPARTMENT OF EDUCATIONAL LEADERSHIP, TECHNOLOGY, AND HUMAN DEVELOPMENT

COLLEGE OF EDUCATION

The title of the study is: *Strategies Used by the Georgia University Registrar When Implementing Technology Change.* The research is being conducted by Velma S. Burden, a doctoral candidate in the College of Education, at Georgia Southern University. I am conducting this study in order to meet the dissertation requirements for a degree in Higher Education Administration and to address key gaps in the literature concerning leadership in higher education and planned technological change within the Registrar's Office.

The chief aim of the study is to enhance the leadership practices by exploring the registrars' perceptions of the strategies needed to implement planned technological change. This questionnaire has been sent to all registrars in the University System of Georgia Board of Regents Schools.

The objective of this research is to solicit feedback from registrars' concerning their perceptions of what constitutes effective planned technological change within their offices. In accordance with this purpose, the participants are asked to complete an online open-ended questionnaire via email attachment. To be eligible participate you must have served as a Registrar for one or more years.

There are not any known psychological, physical or emotional risks or discomforts expected beyond your normal daily routine for participating in the study. Any results of the study will be reported as registrar's perceptions only and no names will be used in the study.

Although there is no direct benefit to you for participating in this study, this study will provide a clearer picture of the strategies and readiness of registrar practitioners relating to implementing technological change. The results of this study will also allow registrars to examine their perceptions in relationship to those of a proven authority on leadership and leading change. Additionally, this study will attempt to provide a template or list of "strategies" for current and aspiring registrars within higher education.

The questionnaire consists of closed- and open-ended questions that will ask for your thoughts and opinions as to what strategies constitute effective performance for planned technological change. You are asked to respond within seven days of receipt of the questionnaire. The questionnaire consists of twelve questions in two sections. Question one in Section II includes eight sub questions. The questionnaire will take approximately ten minutes to complete. Obviously, participation in this study is voluntary. As a research participant, information you provide will be kept confidential**.** No names or other identifiers will be collected on the survey used in this study, and you are asked to avoid any references that could be used to identify you or your institution. Data will be maintained in a secure location following completion of the study and all data will be destroyed after five years.

If you have questions about this study, you may contact me (Velma Burden) at (912) 478-5754, or you may contact Dr. Teri Denlea Melton, Dissertation Committee Chairperson at (912) 478-0510. For questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at 912-478-0843. Your consent to participate in this research is strictly voluntary and you may decline to participate, refuse to answer any question(s), or withdraw anytime during the study without penalty or retribution.

Please note that your completion of this questionnaire will serve as consent to participate in this study.

Title of Project: *Strategies Used by the Georgia University Registrar When Implementing Technology Change*

Principal Investigator: Velma S. Burden, P.O. Box 8092, Georgia Southern University. Statesboro, GA 30460. vburden@georgiasouthern.edu
Faculty Advisor: Dr. Teri Denlea Melton, P.O. Box 8131, Georgia Southern University, Statesboro, GA 30460, tamelton@georgiasouthern.edu

_____ _____

Participant Signature Date

I, the undersigned, verify that the above informed consent procedure has been followed.

_____ _____

Investigator Signature Date

APPENDIX D
QUESTIONNAIRE FOR REGISTRARS WITH ONE OR MORE YEARS OF EXPERIENCE

INSTRUCTIONS: Please save this as a word document and complete the questions in sections I and II. Save the completed questionnaire and return it to the researcher at vburden@georgiasouthern.edu by [insert date].

Section I

1. What is your institution type?
   - ☐ Two Year
   - ☐ Four Year
2. What are your years of experience in university setting?
   - ☐ 2-5
   - ☐ 6-10
   - ☐ 10 or Over
3. What is the highest degree you have earned?
   - ☐ Two Year
   - ☐ Four Year
   - ☐ Masters
   - ☐ Doctorate
   - ☐ Other
4. What is your gender?
   - ☐ Male
   - ☐ Female
5. What is your age?
   - ☐ 19 or younger
   - ☐ 20-40
   - ☐ 41-60
   - ☐ 61 and Over
6. Are you comfortable with using technology?
   - ☐ Yes
   - ☐ No
   - ☐ Somewhat

Section II

For the purpose of this study, major technological change refers to the implementation of software systems and processes (e.g. Smart Catalog, Degree Works, XML, etc.) provided by registrar offices that are intended to provide fast and efficient services to students, faculty and staff for continuous, quality improvement.

1. Have you implemented a major technological change in your office?

☐ Yes ☐ No

If you clicked yes, please identify the change in the box below and complete the remaining questions.

If you clicked no, please provide an explanation in the box below, such as did not think it was important, time frame did not allow, etc.

A. In thinking about this major change, did you establish a sense of urgency (ex. did you provide evidence that the change was necessary; identify and discuss a potential crisis; did you make your employees feel compelled to address the problem)?

☐ Yes ☐ No

If yes, please describe strategies/procedures/process used in doing so.

B. In thinking about this major change, did you create a guiding coalition (ex. encourage the group to work together as a team; did you create a team of individuals with the skills and influence to affect the change)?

☐ Yes ☐ No

If yes, please describe strategies/procedures/process used in doing so.

C. In thinking about this major change, did you develop a vision and strategy for the change (ex. vision is the explanation of why a change is needed- did you create a vision to help direct the change effort)?

☐ Yes ☐ No

If yes, please describe strategies/procedures/process used in doing so.

D. In thinking about this major change, did you communicate the change vision (ex. did you use every vehicle possible, such as emails and team meetings to communicate the vision; did the team model the behavior expected)?

☐ Yes ☐ No

If yes, please describe strategies/procedures/process used in doing so.

E. In thinking about this major change, did you empower broad-based action (ex. did you remove obstacles to the change; encourage risk taking and nontraditional ideas in the change effort)?

☐ Yes ☐ No

If yes, please describe strategies/procedures/process used in doing so.

F. In thinking about this major change, did you generate short-term wins (ex. recognize and reward those involved in the change; create excitement, certainty, and momentum around the change)?

☐ Yes ☐ No

If yes, please describe strategies/procedures/process used in doing so.

G. In thinking about this major change, did you consolidate gains and produce more change (ex. reinforce the behaviors that led to the change; work to change structures and policies to support the change)?

☐ Yes ☐ No

If yes, please describe strategies/procedures/process used in doing so.

H. In thinking about this major change, did you anchor new approaches in the culture (ex. articulate the connections between the new behavior and the university success; did you develop a means to ensure ownership and long term success of the change effort)?

☐ Yes ☐ No

If yes, please describe strategies/procedures/process used in doing so.

2. Overall did you feel that the particular technological change was successful? Please explain why or why not:

3. How do you feel about your personal readiness and the department within which you work's readiness for implementing effective planned technological change?

4. What do you believe are the most important organizational skills (methods, approaches) needed by registrars to implement effective planned technological change? Please justify your choices.

5. Would you be willing to participate in a brief interview? If yes please, provide your name and telephone number below.

☐ Yes ☐ No

6. THANK YOU FOR PARTICIPATING IN THIS STUDY. Would you like a copy of this study upon completion? If so, please provide your name and email address below.

☐ Yes ☐ No

APPENDIX E

Moustakas' Modification of the Stevick-Colaizzi-Keen Method of Data Analysis

Moustakas presents his version of the Stevick-Colaizzi-Keen method, which is constructed from his modification to methods of analysis used by the three authors.

The steps for this are given as follows:

1. Using a phenomenological approach, obtain a full description of your own experience of the phenomenon.
2. From the verbatim transcript of your experience complete the following steps:
    a. Consider each statement with respect to significance for description of the experience.
    b. Record all relevant statements.
    c. List each nonrepetative, nonoverlapping statement. These are the invariant horizons or meaning units of the experience.
    d. Relate and cluster the invariant meaning units into themes.
    e. Synthesize the invariant meaning units and themes into a description of the textures of the experience. Include verbatim examples.
    f. Reflect on your own textural description. Through imaginative variation, construct a description of the structures of your experience.
    g. Construct a textural-structural description of the meanings and essences of your experience.
3. From the verbatim transcript of the experience of each of the co-researchers, complete the above steps a to g.
4. From the individual textural-structural descriptions of all co-researchers' experiences, construct a composite textural-structural description of the meanings and essences of the experience, integrating all individual textural-structural descriptions into a universal description of the experience representing the group as a whole.

You will see from this how crucial the idea of inter subjectivity is both as a finding of phenomenological research and as a means to the application of phenomenological ideas to social science - or practically any - research question.

Moustakas, C. E. (1994). *Phenomenological research methods.* Thousand Oaks, CA: Sage Publications

APPENDIX F

QUESTIONS/PHRASES FOR REGISTRARS WHO AGREED TO PARTICIPATE IN AN INTERVIEW

Participants will be invited to discuss the following questions:

1. What strategies would you suggest for implementing planned technological changes?
2. What is the best way to establish a sense of urgency?
3. How do you get your office to work together as a team?
4. Did you create a plan or vision for the change? If, so how did you communicate that vision?
5. Did any obstacles exist for the change, and to what extent did you remove those obstacles?
6. To what extent did you recognize and award those involved in the change?
7. To what extent did you reinforce the behaviors that led to the change?
8. To what extent did you articulate the connections between the new behavior and the success to the university?

Further discussion may occur by using one or all of the following phrases or prompts:

1. You wrote that… (insert ambiguous phrase).
2. Could you talk a little more about ?”

APPENDIX G

EMAIL TO REGISTRARS OUTSIDE OF UNIVERSITY SYSTEM OF GEORGIA

11/10/09

Dear [insert registrar's name],

My name is Velma Burden, a doctoral candidate in the College of Education at Georgia Southern University. In order to meet the dissertation requirements for my degree, I am conducting a study entitled: *Strategies Used by the Georgia University Registrar When Implementing Technology Change.*

I am contacting you to see if you would be willing to serve on my "expert panel" to review the interview questions since you serve as a registrar outside of the University System of Georgia. I cannot tell you how appreciative I would be if you are willingness to assist me. The questionnaire is attached.

Please review, and any feedback and/or suggestions you have would be used to improve it. Your input is greatly appreciated and it would be helpful to have your input by November 20, 2009. Please let me know if you need any additional information to assist in this process.

Sincerely,

Velma Burden

APPENDIX H

STRATEGIES

FOR IMPLEMENTING PLANNED TECHNOLOGICAL CHANGE

WITHIN THE REGISTRARS' OFFICE

The fourteen strategies listed below have been aligned with the three major themes that emerged from the study.

ENGAGING PARTNERSHIPS

1. Creating a collaborative atmosphere that fosters interaction to facilitate the change process.
2. Developing a shared vision, collaboration with and commitment from Computer Services/Information Technology.
3. Fostering involvement and support of all stakeholders and participants.

PLANNING, DIRECTING & ENCOURAGING

1. Establishing a clear mission, goals and strategy.
2. Having a commitment to and preparation for sound project planning and implementation.
3. Possessing the competence necessary to effectively communicate the benefits of change.
4. Having the knowledge or comprehension of how change will impact internal and external campus communities.
5. Providing clear and frequent communication.
6. Planning time to celebrate.

REENGINEERING OF PROCESSES

1. Setting high standards and expectations to support the change.
2. Providing flexible structure for effective time management and management of competing priorities.
3. Acknowledging and using available software systems that are most cost efficient and that most effectively meet the needs of the campus environment
4. Possessing detailed oriented organizational skills that facilitate tracking progress while considering potential problems and alternative solutions.
5. Designing and developing plans to test the change in affected areas.