Spring 5-2022

An Autoethnographic View from the Chair of a Higher Education Chief Information Officer

Thomas S. Hoover

AN AUTOETHNOGRAPHIC VIEW FROM THE CHAIR OF A HIGHER EDUCATION CHIEF INFORMATION OFFICER

by

Thomas S Hoover, B.S., M.P.P.

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education: Educational Leadership

COLLEGE OF EDUCATION
LOUISIANA TECH UNIVERSITY

May 2022

LOUISIANA TECH UNIVERSITY

GRADUATE SCHOOL

March 23, 2022
Date of dissertation defense

We hereby recommend that the dissertation prepared by

Thomas S. Hoover, B.S., M.P.P.

entitled **An Autoethnographic View from the Chair of a Higher Education Chief Information Officer**

be accepted in partial fulfillment of the requirements for the degree of

Doctor of Education, Higher Education Administration Concentration

Richard Shrubb
Supervisor of Dissertation Research

Dustin Hebert
Head of Curriculum, Instruction, and Leadership

Doctoral Committee Members:
Donna Johnson
Bryan Mccoy

Approved:

Don Schillinger
Dean of Education

Approved:

Ramu Ramachandran
Dean of the Graduate School

ABSTRACT

This autoethnographic study sought to answer the question: What is the impact of the chief information officer's (CIO) organizational structure on his/her ability to impact his/her influence as a university leader? This study used semi-structured mind mapping, a Venn diagram, a cubic framework, and a qualitative, autoethnographic interview of the researcher. The chief data officer (CDO) framework was modified for this study. This study combines CIO experiences at three public southern universities. The findings of the study suggest that university leaders should (1) recognize the importance of information technology (IT) and, specifically, the CIO and ensure that both meet the university's technology needs, (2) expand the reach of CIOs beyond their home departments, (3) recognize that the location of the CIO in the organization chart is flexible, (4) invest significant efforts to identify the appropriate skills and expertise needed by the university in its CIO, and (5) enable the CIO to be an institutional leader, not just a technology leader.

APPROVAL FOR SCHOLARLY DISSEMINATION

The author grants to the Prescott Memorial Library of Louisiana Tech University the right to reproduce, by appropriate methods, upon request, any or all portions of this Dissertation. It was understood that "proper request" consists of the agreement, on the part of the requesting party, that said reproduction is for his personal use and that subsequent reproduction will not occur without written approval of the author of this Dissertation. Further, any portions of the Dissertation used in books, papers, and other works must be appropriately referenced to this Dissertation.

Finally, the author of this Dissertation reserves the right to publish freely, in the literature, at any time, any or all portions of this Dissertation.

Author_____

Date _____

G.S. Form 14
(5/03)

DEDICATION

I dedicate this dissertation to my work to my ever-loving and supportive wife, Gretchen. Without your endless support and encouragement, this dissertation would simply be a dream.

I also want to acknowledge my father-in-law, John Sitton's consistent support for pursuing this doctorate. Unfortunately, we lost him to Parkinson's in October but he pushed me and encouraged until the end.

I also want to thank my five incredible children for their love and support. You all have given me my greatest title, "Dad". Thank you also to Linda "Grammy" Sitton for your endless love, support and editing skills.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGMENTS

I would also like to thank Dr. Richard Shrubb, Dr. Bryan McCoy, and Dr. Donna Johnson for the countless hours of support, consultation, and advice. It has been a privilege to work with you.

Finally, I would like to thank Dr. Terry McConathy for her assistance in helping this dissertation come to fruition. You have made Louisiana Tech a special place to work.

CHAPTER 1

INTRODUCTION

Information technology (IT) is changing the world, and technology is vital to today's businesses by transforming business and being a difference-maker between companies. No company could function without it (Neundlinger et al., 2018). As the business world has aligned IT with its strategic business needs, the IT leader's role has grown in importance. The IT leader is often referred to as the CIO (CIO), vice president for IT, or other similar titles depending on the organization and industry. Marcy Klevorn, the CIO of Ford Motor Corporation, sees her main role as linking IT and business strategy (Qualtrough, 2016). Technology is moving out of the IT department and into the boardroom, and CIOs have evolved into a bridge between these two areas (Macaulay, 2019).

IT is integral to the production and manufacturing of goods and financial systems, supply-chain logistics, human resources, websites, unified communication systems, and much more. Coltman et al. (2015) observe that:

> interest in understanding the antecedents and consequences of alignment between business and IT is now an established theme in IS (Information Services)

> research. Recent research continues to build on empirical evidence that reveals positive effects of alignment on business performance. (p. 4)

The term used to describe this alignment is strategic IT alignment (SAIT). Coltman et al. (2015) note that the information systems field – despite its relative youthfulness – can point to examples of seminal research by Davis (1989) on technology acceptance or Brynjolfsson and Hitt (1996) on IT payoffs as the foundation of whole new areas of research. (Coltman et al., 2015)

IT has radically changed how corporations and businesses have transformed, but IT has also had a significant impact on higher education. Overall, IT is still a relatively new and evolving concept in American higher education (Kark et al., 2018). Almost every service and system on today's college campuses are connected to or running on the university's network or somehow dependent on IT. Many facets of the institution, including the university's student information system; classroom technology; online learning; learning management system (LMS); human resources; financial systems; heating, ventilation, and air conditioning (HVAC); building controllers; irrigation systems; and campus lighting, rely on technology and networks.

IT can contribute to many aspects of higher education institutions. Reliance on IT in the education sector has increased, with a more significant expansion of the IT role in teaching and learning activities over the last two decades Before that, IT was primarily used for administrative and communication systems. With recent advancements in technology, including the internet of things (IoT), social media, and mobile computing, the need for and dependency on IT have increased significantly (Alghamdi & Sun, 2017).

As higher education has transformed into a bottom-line entity, it is encountering similar stresses that corporations have faced, including minimizing costs and increasing or maintaining revenue and growing enrollment, the customer-equivalent in the corporate environment (Dodd, 2014). In recent years, the higher education sector has operated under enormous pressure to reduce costs and improve outcomes. IT is seen as a way to help mitigate these pressures.

The last 2 years have clearly shown the importance and necessity of the CIO position and the IT department on campus. Because of the COVID-19 pandemic, 97% of universities nationwide pivoted to move all of their courses to an online format to address the quarantine mandates and restrictions on social distancing (Bustamante, 2021). Understanding how the CIO and the position's reporting structure impact effectiveness are key to understanding how to make such pivots quickly and efficiently.

Background of the Problem

This study will investigate the effect of the organizational alignment on the CIO's ability to be a change agent on a college campus. The research will focus on higher education, and its findings will be limited in scope to higher education.

The Context of the Problem of Practice

This study seeks to determine what effect the CIO's reporting structure affects his/her ability to make a positive change on campus. The study was guided by looking at

the impact of the CIO's organizational reporting structure on their ability to impact the institution as a university leader.

There appears to be a gap in the literature related to the higher education organization structure concerning the CIO position at universities. Meaningful findings are scarce regarding the CIO's ability to assist with change management. The goal of this research is to help fill the gaps in the literature and improve research and knowledge available in this area.

Statement of the Research Problem

This study will use semi-structured autoethnography to examine CIO reporting structures and how the university organizational structure affects the CIO's influence as a university leader.

Significance of the Research Problem

This study will examine the differences regarding the appropriate positioning of the top information officer in the institution's organizational structure that will facilitate the most significant positive impact on the university and its operations. As the last 2 years have demonstrated, the effective application of technology is crucial for today's universities. During the recent pandemic, classes moved abruptly to an online format to accommodate social gathering restrictions. Most employees at universities were mandated to work remotely for most of the 2020 calendar year. As universities continue to focus on dealing with significant budget shortfalls, IT departments are poised to help make systems and services more streamlined to reduce costs; assist with training students, staff, and faculty members; and improve or enhance efficiencies.

Presentation of Methods and Research Question

This study is designed to investigate the organizational structure of higher education institutions through an autoethnographic approach. Specifically, the researcher examined how three organizational structures impacted his influence as a change advocate in his role at three universities. The specific question that this study sought to answer is: What is the impact of the CIO's (CIO) organizational structure on his/her ability to impact his/her influence as a university leader?

This research represents a highly personalized account of the principal researcher's experience in being a CIO at three public universities. These experiences emerge from the organizational structures in which he worked and how those structures affected his ability to be an effective leader at those universities. At one university, his position as the CIO reported to the chief financial officer (CFO). At another institution, the position reported to the executive vice president. At the third institution, the position reported directly to the university president.

This research will be conducted as a semi-structured, autoethnographic qualitative reflection. It will provide personal insight and data regarding my experiences and observations from my last 9 years as a university CIO. Autoethnography is a type of qualitative research where the researcher describes his/her personal experience within a social context. In the case of this research, that context is the CIO's position.

Definition of Key Concepts

Autoethnography: This term refers to autobiographical genre of writing and research that displays multiple layers of consciousness connecting the personal to the cultural (Ellis et. al., 2000).

Centralized Information Technology Department: This term refers to consolidating the organization's IT resources, including staff and services (Lebeaux, 2014).

Decentralized Information Technology Department: This term refers to having computing resources spread out and local to the different areas on campus. This configuration allows for the local areas to have more control and the department to have its custom needs met (Michalak et al., 1999).

CIO (CIO): A person who oversees the IT operations, processes, and staff of an organization (Gartner Inc, 2022).

Information Systems (IS): Information Systems is the hardware, software, computer systems, databases, networks that enterprises use to interaction with customers and internal staff (Techopedia, 2020).

Enterprise Resource Project (ERP): This phrase refers to a collection of software that handles an organization's day-to-day business operations, including finance, human resources, procurement, and other applications that have company-wide capabilities (Oracle, 2022).

Chief Data Officer (CDO): This position helps to define the company's strategic priorities for data systems, identify new opportunities pertaining data, and represent this area to the company's executive team (Lee et al., 2014).

CHAPTER 2

LITERATURE REVIEW

This chapter presents a review of literature relating to higher education leaders, change management, and the role and evolution of the CIO position. The overarching goal of this research is to set the stage for a highly personalized account as a CIO at three different universities. The body of supporting literature for this personalized study of the CIO, in which the author is both the subject and the researcher, is considerable and diverse. First, I examine the role of the CIO from the perspective of the role of the technology support that the position provides for the university. Next, I investigate the history and the evolution of the role of the CIOs in higher education from the early stages of providing only technology support to participating as a university leader. These two key areas of literature support the qualitative form of inquiry as it relates to autoethnography.

I investigated the organizational structure of higher education institutions. Specifically, it will look at how the organizational structure impacts the university's CIO's influence as a university leader. Influence can be defined as "the capacity or power of persons or things to be a compelling force on, or produce effects on the actions, behavior, opinions, etc. Leadership is the application of influence in a manner that propels organizations forward" (Wilde & Messina, 2019, p. 26). For people to be

receptive to an individual's influence, there needs to be established trust between those people with whom they are working (Huer, 2018).

The role of the CIO first appeared in the 1980s. William Synnott and William Gruber first articulated the CIO concept in their 1981 book *Information Resource Management: Opportunities and Strategies for the 1980s* (Huer, 2018). The CIO is a senior executive of an organization responsible for information policy, management, control, and standards. Five primary functions are associated with the position of CIO: participation in corporate strategic planning, responsibility for information systems planning, leadership in the development of corporate or institutional information policy, management of the institution's information resources, and development of new information systems capabilities (Penrod et al., 1990).

Originally, the position was a response to the dissatisfaction of many organizations' leadership teams with how IT was performing. Organizational leadership desired more strategic focus and institutional improvement from their IT department (Penrod et al., 1990). There are now approximately 2,800 higher education CIOs (Brown, 2017).

Theoretical Framework

This section will introduce the conceptual framework for this research project and investigate the study from which the framework was obtained. It will also provide insight into how the framework was used in the present study to give the reader a good grasp of the study's structure and philosophical underpinnings. The description of the framework will be followed by an analysis of how that framework will be applied to this study's

research question. A research pathway and studies related to each pathway will then be introduced and discussed.

The Cubic Framework

This study will use the cubic framework for the CIO. This framework is a modification of the cubic framework for the chief data officer (CDO) presented by Lee et al. (2014). In their research study, Lee et al. (2014) developed a guide for organizations to determine when and if their organization needs a CDO. The CDO's primary role is to manage the institution's data. The position also conducts data-related functions, including ensuring data quality and integrity, performing data management, and creating an organizational data management policy or strategy. In addition, the CDO could also be responsible for data analytics, business intelligence, and data insights (Zetlin, 2020). The authors used a mixed-methods research format by examining informal case studies with multiple organizations, conducting detailed interviews, and creating structured surveys.

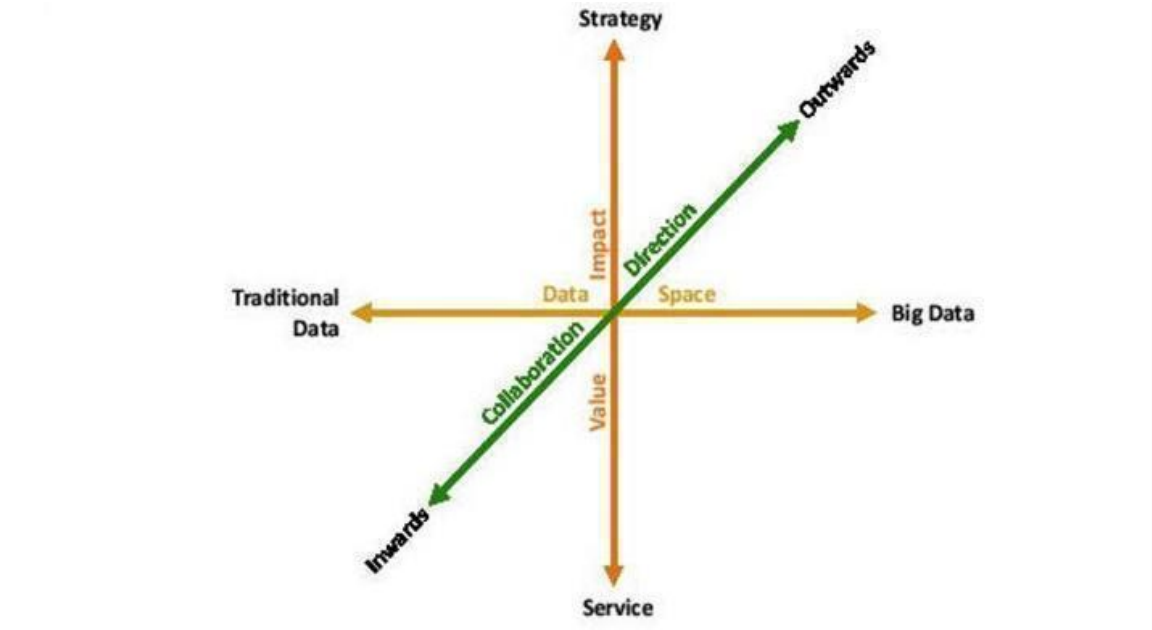
The study first introduces the reader to the CDO. The position of CDO is a relatively new executive position in most organizations. Among the early adopters in creating the CDO were Capital One, Yahoo, and Microsoft Germany, all in 2003. This trend has continued now where other organizations such as global investment banks, consumer banks, consumer credit institutions, healthcare institutions, and U.S. federal and state government entities are now adding a CDO to their structure. Some organizations do not always give their lead data executive the CDO title, but they have someone who is a data director or similar title performs that role across organizations (Lee et al., 2014).

Lee et al.'s (2014) study also looked at CDO reporting relationships. According to the study, 30% of CDOs reported directly to the organizations' chief executive officers (CEOs), 20% reported to the chief operating officer (COO), and 18% reported to the CFOs. The remaining CDOs said to other positions, including the CIO, chief technology officer, chief medical officer, and chief risk management officer (Lee et al., 2014).

Lee et al. (2014) advanced a three-dimensional cubic framework in the study. The dimensions outlined in the framework are (a) collaboration direction (inwards vs. outwards), (b) data space (traditional data vs. Big Data), and (c) value impact (service vs. strategy). The CDO study uses three different research methods. Those methods are (a) initial informal case studies by looking at multiple organizations, (b) detailed iterative interviews, and (c) structured surveys (Lee et al., 2014 P. 4). See Figure 1.

Figure 1

Three Chief Data Officer Dimensions



The first of the three key dimensions of the CDO role is the collaboration direction dimension. This dimension aims to capture the focus of the CDO's engagement both internally and externally to the organization. The CDO's inward engagement focuses on internal business processes with the company's stakeholders instead of customers, partners, or parties outside of the company that represents outward domains (Lee et al., 2014).

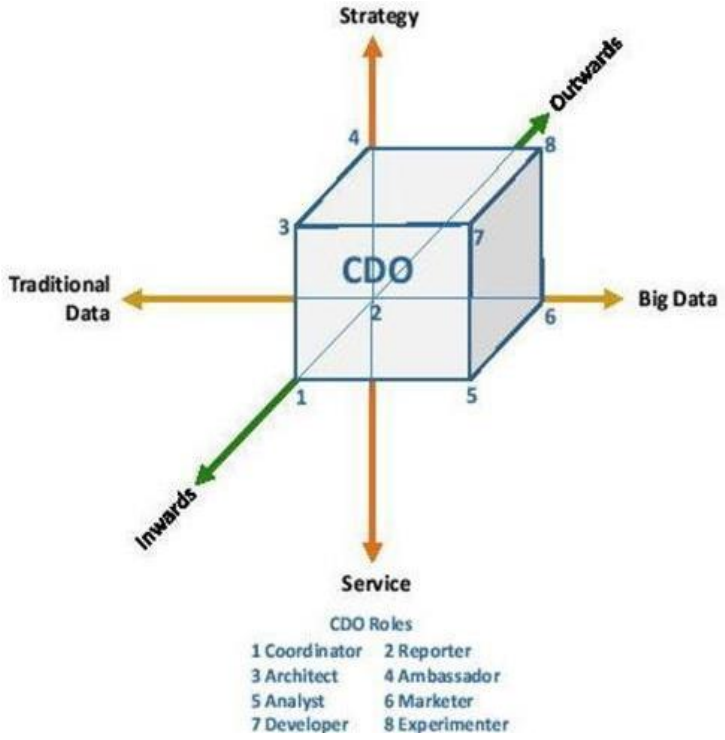
The second key dimension is the data space between traditional and Big Data. Traditional data are the backbone of the organization. The CDO needs to have a strong background in traditional data, or the organization's capabilities could be hindered. Large amounts of data are not connected with an organization's transactional data. Instead, they are concerned with innovative opportunities that can be used to improve business operations or develop key new business strategies that traditional data cannot provide (Lee et al., 2014).

The third dimension is the value impact dimension which is service versus strategy. In this dimension, the CDO's role is to improve service or create new strategic opportunities for the organization. Often the CDO's role responds to an ongoing need for someone to provide oversight and accountability to improve current operations. More and more institutions want (and perhaps need) their CDOs to develop new concepts or transform the company by creating more intelligent, responsive, and relevant products and services (Lee et al., 2014).

The next section in the study discusses the eight roles of the CDO (see Figure 2).

Figure 2

The Eight Chief Data Officer Roles



Note. This image was copied from Lee et al. (2014, p. 5).

The eight roles, according to Lee et al. (2014) are coordinator, reporter, architect, ambassador, analyst, marketer, developer, and experimenter.

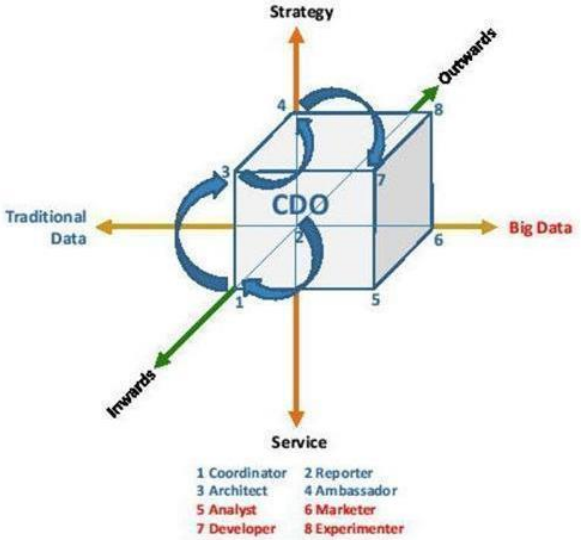
- The coordinator CDO manages the company's data resources and works to improve the collaboration across the internal departments. The coordinator role is inward-focused.
- The reporter CDO role focuses on enterprise data for external reports and compliance. This is particularly the case in the finance and healthcare industries.

- The CDO architect role is similar to the CDO's collaboration direction and data space functions because it focuses on inward and traditional data. However, this role uses these data and internal business processes to develop new opportunities for the business. This role is strategy-focused.
- The ambassador CDO encourages the development of inter-enterprise data policy for business strategy and external collaboration. Its focus is outward and strategic and uses traditional data.
- The analyst CDO is similar to the coordinator CDO. However, it focuses on improving internal business performance by utilizing Big Data, which requires different data-management and data-analysis capabilities.
- The marketer CDO develops relationships externally with the company with data partners and stakeholders to improve externally provided data services using big data.
- The developer CDO interfaces and works with internal divisions to create new opportunities to exploit Big Data.
- The CDO experimenter engages with external collaborators to seek new unidentified markets and products based on insights gained from Big Data.

The last part of the cubic framework for the CDO is the concept of the CDO role evolution (see Figure 3). Lee et al. (2014) point out that no two companies are the same. Their needs and priorities vary significantly. Therefore, the role of the CDO can (and must) change as the needs of the organization change.

Figure 3

Example Chief Data Officer Role Evolution



Note. This imaged from copied from Lee et al. (2014, p. 8).

Lee et al. (2014) conclude by discussing the importance of data to organizations. They point out that a growing number of government and private businesses are establishing a CDO position to leverage what data can do. The framework that Lee et al. (2014) created allows companies to determine if they need a CDO and help them choose the best profile for a CDO now and in the future.

Applying the Cubic Framework to the Chief Information Officer Role in this Study

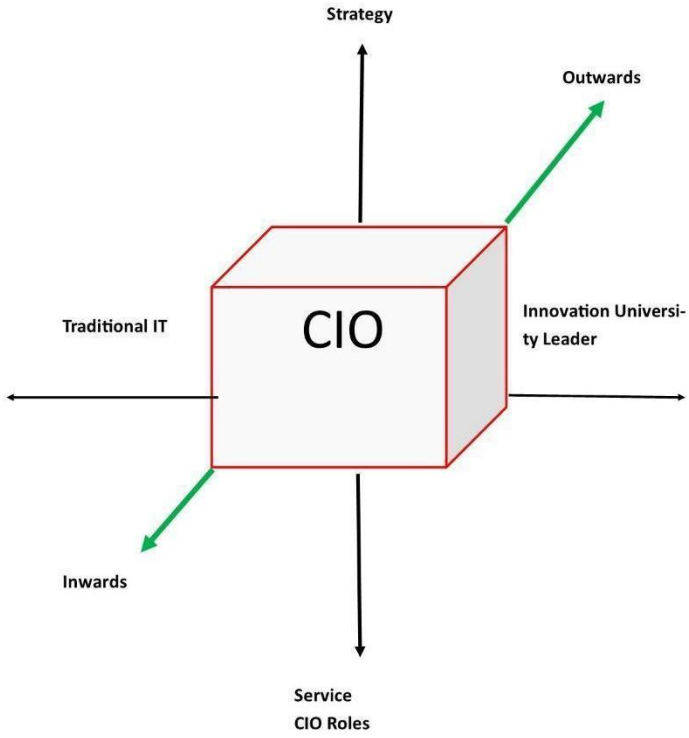
The cubic framework for the chief data officer is easily applied to this study of the role of CIO because there are quite a few similarities between the CIO and CDO positions in higher education. The CIO position is also a relatively new position at institutions. More universities have CIOs than universities that have CDOs, but the coordinator CDO role is comparable to features of the CIO's role.

The CIO position plays a comprehensive leadership role that may not be required of a CDO. The exact position at two institutions could have the positioning functioning very differently. Yet, the parallels between the traditional data CDO function and the transactional CIO are very similar. Transactional CIOs focus more of their time on the support or technical services part of the IT. Traditional or transactional CIOs would also include infrastructure and classroom technology as well (Bergquist, 2017). As referenced in the CDO framework, the CIO's role is multifaceted on many different levels. Consequently, the framework could be altered to describe the role that a CIO provides at an organization.

However, there are differences between the two roles which would need to be addressed in adapting the CDO framework, as seen in Figure 4. One of the key differences can be conceptualized as the role of servicing large amounts of data versus the role of transformational/innovative leadership.

Figure 4

Adapted Cubic Framework for Chief Information Officer



This framework is the best theoretical lens to inform this research topic. This cubic framework can help the reader understand the different dimensions of the CIO job in higher education. This framework, when applied to the CIO position, can best explain the day-to-day operations or transactional IT functions, interaction with internal IT staff, engaging with the university leadership and management teams, and using innovation and transformation technology to improve and advance the institution. No other conceptual frameworks allow for the deep understanding of how the CIO can influence various people both on campus and in the greater community. Most of the other frameworks reviewed did not consider the diversity of issues and functions. However, the cubic framework achieves this function.

Theoretical Assumptions

Research Pathway: Executive Technology Officer

The research pathway of this literature review examines the role of the executive technology officer. The 2018 *Higher Education Technology the CIO and Technology Leader* by Dr. Wayne Brown from the Center for Higher Education CIO Studies (CHECS) is a survey that has been administered annually for 15 years from 2003 to 2018 and was based on Dr. Herb Smaltz's 1999 doctoral healthcare research. The survey investigated the primary antecedents of the CIO's role effectiveness as assessed by the institutions' top management teams (TMTs). These surveys mostly gathered demographic and professional information about higher education CIOs. That information includes their ages, educational background, gender, professional affiliations, previous title, reporting structure, membership in the IMT, and the scope of responsibility. The higher education study analyzed the CIO's roles as a business partner, provider of traditional IT, handler of IT contracts, integrator of IT systems, IT strategist, and IT educator. See Table 1 for detailed information about each of the roles.

Table 1

Chief Information Officer Roles

CIO Role	Responsibility
Business partner	Organizational strategic planning and revising business processes
Classic IT support provider	Foundations of IT support and responsive department
Contract oversight	Relationships with IT vendors, contract negotiation, and contract supervision
Integrator	Integration of all internal and external systems
Informaticist and IT strategist	Ensure security and accuracy of institutional data and alignment of IT department with the institution

CIO Role	Responsibility
IT educator	Evangelist for computer use and understanding and educator of employees on how IT innovations bring value to the organization

The study also looked at the CIO attributes and job description checklist in Table 2. The examined attributes were communication skills, political savvy, IT knowledge, strategic business knowledge, education, and the reporting structure of the institution.

Table 2

Chief Information Officer Attributes and Job Description Checklist

Attributes	Job Description
Communication Skills	Fluent in business language Fluent in higher education language Able to communicate and present information without technical terms
Political Savvy	Able to assess situations that might be confrontational and act tactfully Able to work well with a majority of people
IT Knowledge	Understands how IT is applied in the organization Able to use current IT resources to fill institutional requirements Uses new technology for the institution Familiar with the acquisition of IT
Strategic Business Knowledge	Knowledge of institutional offerings Understanding of market and business processes Familiar with the competition
Education	Master's or doctoral degree
Reporting Structure	Academic or administrative leader of the institution, reporting within one level of the CEO

Cohen et al. (2010) researched the effects of CIO demography, CIO competencies, and organizational positioning of the IT in relation to business performance. The data were collected from 111 South African public companies. The purpose of the study was to improve knowledge about competencies and the

organizational alignment of the lead IT person by examining the influence of CIO competence, demographics, and the relation of organizational positioning of IT to business performance. The research model the authors used was underpinned by an upper echelon perspective as well as a politics perspective on organizations (Cohen & Dennis, 2010). Cohen and Dennis (2010) discussed how structural power provides the CIO with a base to influence the organizational action. It also discussed another source of power being political influence which is characterized by building coalitions with other key executives.

The sample for the study was 421 organizations in South Africa. There was a 27% response rate to the survey. The research found that CIO competence had an effect on CIO position in the organization, as well as the structural power and political relationship. The CIO's work experience also had an impact on IT contribution (Cohen & Dennis, 2010). Applegate and Elam (1992) also noted that, historically, the lead IT position had been viewed as a functional line manager and technical expert. This view of the CIO is more of a transactional view where the CIO is seen as a person in charge of making sure that the information systems are functioning correctly. Ensuring that the infrastructure and the network were functioning optimally would be part of these duties (Applegate & Elam, 1992).

Marks and Rezgui (2011) conducted a study to investigate what key qualifications universities look for in a CIO. They felt that this study was necessary because of the shortage of CIOs in higher education. For their study, they examined 374 active and archived web advertisements between 2007 and 2009. Of those advertisements, 282 were for higher education institutions, while 92 were from other industries (Marks & Rezgui,

2011). The questions that they sought to answer were (a) What are the key qualifications?, (b) What are the main roles expected of higher education CIOs?, and (c) What information might be stated in the job posting? The essential qualifications were education, work experience, management, and technical skills. The study found that the main role was managerial (Marks & Rezgui, 2011).

History of the Evolution to Chief Information Officer into Higher Education

The role of the CIO first appeared in the 1980s. William Synnott and William Gruber first articulated the CIO concept (Huer, 2018). The CIO is a senior executive of an organization and is responsible for information policy, management, control, and standards. Five primary functions are associated with the position of CIO: participation in corporate strategic planning, responsibility for information systems planning, leading the development of corporate or institutional information policy, managing the institution's information resources, and developing new information systems capabilities.

Initially, the position was a response to the dissatisfaction of many organizations' leadership teams with how IT was performing. Organizational leadership desired more strategic focus and institutional improvement from IT departments (Penrod et al., 1990). The creation of the CIO's role came about from IT pivoting from a support role in organizations to becoming one of innovation and strategic change.

Previously in the context of higher education, the IT department focused on automating manual tasks at the university. However, higher education experienced shifts in practice similar to those seen in business. To that end, the higher education CIO is expected to look for ways to drive technology to improve the organization. This new role makes it more important for the CIO to use business approaches and fully utilize IT. IT

would become a critical resource for the university, which bolstered its value (Peppard, 2010). Higher education institutions found that IT was a way to achieve a competitive advantage and differentiate themselves from other institutions. Because of the importance of IT, higher education institutions followed the corporate model by establishing the CIO position (Pinho & Franco, 2017).

Furthermore, higher education has experienced successive budget cuts over the last few decades, which made it necessary to look for new financial sources and adjust the university's strategy. One of the ways to respond to these increasing economic pressures was to optimize their resources (Tang & Zairi, 1998) and eliminate inefficiencies. Higher education institutions looked to IT as the optimal way to respond to these pressures. Therefore, the need for the CIO to guide IT operations to support the institution became greater (Peppard, 2010; Pinho & Franco, 2017).

Consequently, the CIO then became a fundamental role in higher education management and governance (Dalmini, 2013). CIOs continue to face challenges while operating in a time of reduced budgets while improving information systems and better understanding the strategic objectives to develop IT plans (Pinho & Franco, 2017). As one scholar stated, "CIOs are given more strategic roles than ever before, yet they simultaneously see their budgets being cut while expectations remain unrelenting" (van Blokland, 2018, p. 1).

Higher Education Leadership

Instrumental to the success of the CIO is the verbal and nonverbal communication of the institution's CEO, often identified as the president. Historically, establishing this tone was the first election of an American college president in 1640 when Henry Dunster

took office at Harvard College. A university president is a position of high responsibility and high visibility (Freeman & Kochan, 2013). The position is also very complex and critical because the university president is the attitudinal leader as well as the CEO for the university. As such, the president speaks for the image of the entire institution, including issues of technological innovation and adoption of new technology. A university does have other leaders; however, the president is in charge of institutional strategy and gives authority to the university's initiatives (Luxton, 2005). The president's role is both symbolic and substantive, and represents multiple university constituencies (Freeman & Kochan, 2013).

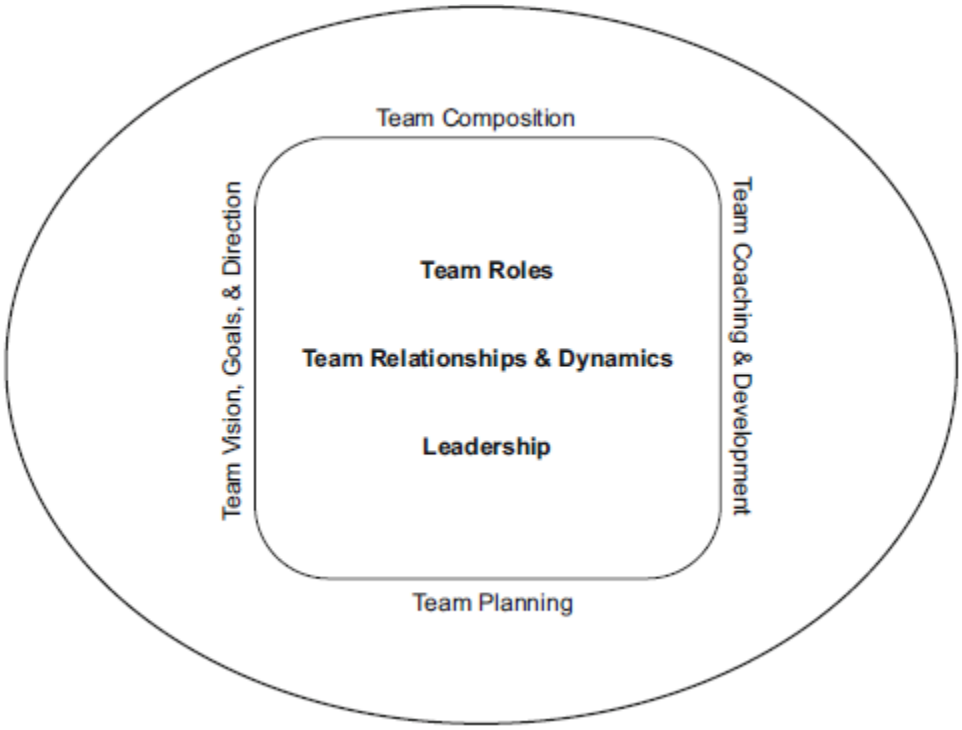
In higher education, the senior leadership team is typically the president's cabinet or a smaller group composed of staff members. This team works with the president to create a vision and direction, priority setting, policymaking, and the institution's decision-making (Kezar et al., 2020). Senior leadership teams (SLTs) are defined as critical decision-makers who have authority and work collectively to achieve goals for the organization as a whole (Hambrick & Mason, 1984). Woodfield and Kennie (2008) in their research found that direction and strategy in higher education is far different from business. Higher education SLTs typically comprise a dozen people, while a business team is eight to 10 people. There are eight themes (Kezar et al., 2020) identified about senior leadership teams in higher education (Figure 5):

- team vision, goals, and direction
- team planning
- team coaching and development
- role of team members

- team relationships and dynamics
- leadership of teams
- external environment of teams

Figure 5

Themes of Senior Leadership Teams in Higher Education



Note. This diagram was copied from (Kezar et al. 2020, p. 106).

In their literature review, Kezar et al. (2020) found that the behavior of a president or CEO of an organization was significant in the senior leadership team's success. Contained in this finding is the premise that reporting structures for the CIO will help establish the success of the CIO. Literature correlates leadership success with styles of empowerment (sharing power with those on the team), collaborative (encouraging everyone to play a leadership role), relational (encouraging positive relationships among team members), and transformational (inspiring, persuading, caring, and intellectually

stimulating group members) as aligned with different team goals and activities (Carmeli et al., 2012; Kezar et al., 2020; Srivastava et al., 2006). Figure 5 presents a visual of how the different roles interact.

Higher education leaders are less prepared to be leaders of the senior leadership team compared to private enterprises. Given that they typically have less management and training experience. For 80% of college and university presidents, this position is their first appointment as a CEO, so they usually do not have the experience in developing and fostering a strong SLT and often have difficulty removing themselves from the work they have previously done. Often these presidents served as a provost (Kezar et al., 2020)

Other institutions have actively sought to cultivate the transformational capacity of their leaders. For example, Mississippi State University recently created and hired the chief transformation officer position that reported to the provost and had the CIO as its direct report (Salter, 2021). In 2021, George Washington University looked to create a vice president and chief data officer position that reported to the president and had all of the technology staff at the university reporting to this person (Trivedi, 2021). The University of Cincinnati's vice president and chief data officer is a new position that reports to the president and is on the president's executive team (EDUCASE, 2022). Most of the positions report directly to the president. All of the positions have the IT departments under this newly created position. It would be interesting to know more about the backstory of these positions and the reason for their creation.

These new positions show the importance and necessity for the IT department and the CIO to assist with technology across the entire university and not just in particular

university areas. Administratively, IT plays a vital role in creating workflows for documents and contracts. It also maintains the Enterprise Resource Planning (ERP) systems, collaboration systems, unified communication systems, student success software systems, learning management systems, distance learning, classroom audiovisual system, and research computing resources, in addition to the actual network and technology infrastructure. The CIO's role is not confined to academics or administrative areas but to the entire enterprise (Battista, 2018).

Summary

The role of the CIO at universities is an evolving position. As the literature verifies, the CIO position is approximately 30 years old and has gone from a transactional technology leader on campus to an innovative university leader. The literature demonstrates that the CIO position has evolved from a position that is the technology leader of the university handling transactional IT needs to being a position of dramatic leadership that can transform and lead bold innovation across the campus and beyond. Based on this literature, it is clear that aligning IT to the institution's overall governance strategy is critical. The partnership between IT and the organization is key to allowing IT to genuinely transform the institution (Tan & Li, 2009).

Literature addressing the role of higher education CIOs over the past 30 years is sparse compared to other influential roles within higher education, substantiating a need for additional research in this area. Dr. Wayne Brown's Center for Higher Education CIO Studies (CHECS) offers the most surveys and data, but even those surveys mostly gather demographic information about higher education CIOs and do not offer leadership guidance regarding CIO reporting structures. The studies do not address the issue that is

the focus of this research endeavor because it does not address the question of CIO reporting that will have the most significant ability to influence the university overall. Also, too few studies have examined the governance implications of the CIO (Cohen & Dennis, 2010).

CHAPTER 3

METHODOLOGY

Introduction

This study investigated the organizational structure of higher education institutions. Specifically, this research will examine how the organizational structure impacts the CIO's influence in his/her role at the university. This study will include whom the person interacts with and the types of projects the IT department handles on campus. It will also look at how the structure affects who CIOs consider their peers at the university.

Research Question

This study sought to answer the specific question: What is the impact of the CIO's organizational structure on his/her ability to impact his/her influence as a university leader?

Typically, the CIO reports to one of four different areas in the organization. In the United States, 51% of CIOs report to the company's CEO, 28% report to the company's CFO, 17% report to the COO, and 4% report to some other position (Hunter, 2010).

In the context of higher education, the most common office to which a CIO directly reports is the head of the university. At most higher education institutions, the

head of the university is either the university president or the university chancellor. The second most frequent position to which CIOs report is the chief academic officer (CAO), such as a provost or vice president for academic affairs at the institution. The CFO is the third most common position that the CIOs report to in the organization. This position is typically a vice president for finance and operations. The fourth most common role or office to which CIOs often report is a combination of other divisions or offices at the university. These variations in reporting structure bring with them varied and differing spheres of influence.

Purpose of the Study

This research represents a highly personalized account of the principal researcher's experience as a CIO at three public universities. These experiences focus on whom the researcher reported to as a CIO and how that relationship affected one's ability to influence the university. In this study, the CIO reported to three different administrators: the CFO, the executive vice president, and the president, respectively.

Through the autoethnographic lens, this research provides personal insight and data regarding the experiences and observations the researcher obtained in the last 9 years as a university CIO. Autoethnography is a type of qualitative research where the researcher describes their personal experience within a social context. In the case of this research, that context is CIO's position.

The researcher currently serves as the CIO at a public research-intensive university in the United States. The researcher has held this position at three institutions over the last 8 years at this writing. Several doctoral faculty advisors supported the

researcher throughout this process to minimize the impact of personal bias in this project's research, analysis, and recommendations.

Research Design

Highly personalized accounts that come from the author's experiences attempt to broaden his/her understanding of the culture at the center of their research (Sparkes, 2000). While there are several ways to obtain and analyze such experiences, the approach selected for this research is autoethnography.

History of Autoethnography

Autoethnography is an approach to research and writing that seeks to describe and systematically analyze personal experience (auto) to understand cultural experience (ethno). Exploration (graphy) of social reality (ethno) draws attention to feelings that fact evokes in researchers themselves (auto) from their own experiences and can be rich sources of data (Murphy, 2008). In an autoethnographic study, a researcher uses autobiographical and ethnographical approaches to a make the research process and product (Ellis et al., 2011).

The term *autoethnography* has been in existence since the mid-1970s. David Hayamo is credited with coining the term for cultural-level studies by anthropologists of their "own people." The researcher is an insider because they are an insider, members of the group being studied (Ellis & Bochner, 2000). During the 1980s, researchers in women's and gender studies, sociology, communication, performance, and anthropology began to advocate using personal narrative in their research without using the "autoethnography" term. They were interested in storytelling and enactments of storytelling (Ellis et al., 2011).

Why Autoethnography?

Autoethnography offers researchers and readers some unique benefits over other research study methods. This approach can be advantageous for researchers and allow the readers to obtain a far greater understanding than more traditional methods of research (Harder et al., 2020). Since the researcher can share his/her personal experiences first-hand, he/she can offer more detail and observations compared to someone who is simply observing. Ethnography uses prospective participant observation, which is more likely to record actual behavior (versus behaviors and feelings) because most external researchers remain with an organization and its constituents for the research project's duration (Sutherland & Hall, 2018). In an autoethnographic study, the reader might be getting a more accurate or detailed portrayal of what is occurring in the study since it includes the participant's behavior and feelings.

There is an effect in social sciences research known as the Hawthorne effect. This effect refers to when people may alter his/her behaviors while knowingly being observed (Oswald, 2014). Because the leaders modify his/her behaviors during the study, the data gathered may not accurately reflect the phenomenon being studied, which can affect the reliability and the validity of the data. This limitation can impact how the study's findings can be used and applied beyond the study itself. An autoethnographic approach can assist the researcher in avoiding this situation by giving a more accurate reflection of what is occurring naturally without behaviors changing or being influenced.

The semi-structured form of autoethnography was selected for this study because this approach would permit the researcher to share details and give the reader more descriptive information than a researcher on the outside merely observing could obtain.

This form of research allowed the researcher to be more candid and open about his/her experiences and not feel inhibited or influenced unduly by external forces.

Data Collection

Qualitative data include the forms of in-depth interviews, written documents, direct observation, narratives, quotes, or other verbal forms, retaining much detail from the original context (Trochim, 2020). Although data from case studies are typically given in words, the data are often analyzed using a coding system that assigns numbers to the terms according to themes (Trochim, 2020). These numbers can then be manipulated similarly to how numbers are used to make interpretations in quantitative research. However, the data are often still reported as a naturalistic and narrative-style interpretation rather than a statistical conclusion (Trochim, 2020).

The goal of research in self-study is to add value. Data collection methods for self-studies and autobiographical studies can vary tremendously. After working with a methodologist, it was determined that an autoethnographic survey would be a reliable research approach and contribute to the research in this particular area of higher education leadership. The researcher chose to examine three institutions where I have served as CIO. This means that the researcher had to recall as best as possible his experiences from the two previous institutions at which they served as CIO.

The data were gathered through a university colleague asking questions about the researcher's experiences at the three institutions where the researcher served as CIO. The list of questions is included in this chapter and Appendix A. A research technique known as mind mapping was used to help the researcher better reflect on the relationships they established at all three universities. Mind mapping is a brainstorming technique that

allows researchers to deconstruct complex topics by creating a graphical representation of subtopics and related themes. Mind mapping is ideal for problem-solving, organizing ideas, memory enhancement, storytelling, and brainstorming (Kernan et al., 2018). Mind mapping was also used to develop and ask the right questions to prompt valuable reflections on the researcher's time at the three universities. Mind maps created for each of the three work locations can be found in Appendix B.

The interview was audio-recorded, and the researcher took handwritten notes. The audio recording was processed through an artificial intelligence (AI)-driven transcription service, Otter.ai. The data were labeled and indexed according to the particular institution to which it applied. The universities were referred to as University A, University B, and University C. This information was summarized and examined. Coding charts for these and all other data items can be found in Appendix C.

As for the actual data gathering, a colleague at my current institution reviewed the questions and was directed to ask further questions as they saw fit. The questions centered on getting to the heart of leadership in higher education, focusing on CIOs and what factors the researcher found to be limiting and empowering at the three different institutions at which they served in that capacity. The colleague has an ideal background to assist with this as prior to working in higher education, they were a technical editor in the publishing industry. Currently, the colleague is a vice president and provost at a university.

Data Analysis

One of the striking characteristics of qualitative data analysis is that it occurs throughout the research process (Stake, 1995). Often, impressions and interpretations are

recorded along the way and can be aggregated into a more concrete analysis of the phenomenon retrospectively when looking back at notes or journal entries (Stake, 1995). While this aggregation can create meaning, qualitative researchers also find meaning in discrete occurrences (Stake, 1995). Analysis of data from case study research also uses the observance of patterns to establish purpose from what has been observed and recorded (Stake, 1995).

As mentioned in the Data Collection section, coding is one of the primary forms of data analysis for case studies. Coding allows the researcher to observe themes and find meaning from them in the context they appear by discovering the conditions under which those themes are present (Stake, 1995). Naturalistic generalizations are an essential type of analysis for case studies (Stake, 1995). Qualitative researchers allow readers to determine his/her meaning(s) from the research based on his/her knowledge and experiences (Stake, 1995).

The researcher used mind mapping exercises, Venn diagrams, and case study narratives to analyze the data for this study. The mind mapping exercise served as a brainstorming method to visually look at the different relationships and projects completed during the researcher's tenure at each institution. This form of ceramic research allowed the researcher to organize the material and identify categories (Wheelden et al., 2009). The Venn diagrams were used to find common themes among the three different institutions. The case study narratives allowed the researcher to illustrate some of his/her understanding of how his/her reporting structure determined his/her influence on campus. These methods were used to articulate the researcher's professional experiences at the three universities.

Reliability and Validity

Reliability in research indicates that the study results are reproducible using the same methods to yield the same or similar outcomes under different conditions. In other words, if a different researcher replicated the same way of data collection and analysis in the same context, they should obtain the same or similar results. A quantitative study's reliability is critical because the purpose of the study is to explain something in a way that is generalizable to other contexts (Trochim, 2020). Reliability is impossible if the study cannot reliably produce the same or similar results under consistent conditions each time the analysis is performed (Trochim, 2020).

Many qualitative researchers consider reliability inapplicable to their research (Yilmaz, 2013). Logically speaking, if case study research seeks to understand a context based on the relationship between the researcher and the participants and the interpretation of the meanings found in experiences, this research would not be replicable in an identical way because each individual would have a slightly different understanding. Instead, case study researchers prefer to determine their research's dependability and suitability (Yilmaz, 2013). This measure of reliability focuses more on the idea that the study process is the same across contexts and researchers, but not necessarily that the outcomes or interpretations are the same (Yilmaz, 2013).

Validity ensures that a study measures what it intends to measure. It also provides that no outlying factors may explain the results apart from what is reported in the findings. Validity looks at the similarities and differences in participants, environments, and other factors, and the methods of study and analysis chosen to ensure that the conclusions can be reasonably confirmed and attributed to the variables in the

study. Validity can be critical in quantitative research in terms of controlling for variables in statistical analysis (Morse et al., 2002).

However, qualitative research does not seek to remove outside variables to accomplish control because, as stated in its purpose, this type of research aims to understand. This understanding must consider the many variables that contributed to the experience or finding (Stake, 1995). Additionally, case study research assumes that individuals experience reality uniquely and that a singular, absolute interpretation of a phenomenon may not always be correct (Trochim, 2020). The validity of case study research can be strengthened through practices of triangulation. Still, in general, qualitative research does not seek to be valid because it corresponds accurately to the real world. In the view of a qualitative researcher, the real world is subjective, and its representation depends upon who is experiencing it (Trochim, 2020). Consequently, many case study researchers seek to establish transferability, credibility, dependability, and confirmability instead of validity (Trochim, 2020).

Table 3 demonstrates recognized research methods. Shenton (2004) advises that when these four categories are present that it adds to the validity of the study.

Table 3

Research Methods

Quality Criterion	Possible Provisions Made by the Researcher
Credibility	Using the proper research methods. Background, skill, and qualifications of the researcher. Using a reflective commentary. Investigation previously done on the subject to give context to the results.
Transferability	The ability of the study in question to enable comparisons to be made because of the background data.
Dependability	A detailed account of the methodology used allows the study to be replicated.
Confirmability	Triangulation to minimize researcher bias. Understanding of limitations of the study's methods and the impacts on the study. Detailed description of the methodology to allow for feedback.

The researcher in this study took steps to ensure that research bias was as minimal as possible. A colleague with whom the researcher worked closely from each of the three institutions reviewed all the questions used to collect data and the data itself to ensure that the researcher's recollections were as accurate as possible. This step was important because some of the experiences described in the interview occurred close to 10 years ago, and the researcher wanted to ensure the accuracy of those recollections. One person from each of the three institutions reviewed the data from his/her institution to add validity to the results.

Researcher Bias and Assumptions

Researchers can significantly affect or influence many aspects of a study, depending on their roles. Researchers must be mindful from the outset of their roles and which part will most benefit the purpose of the research and best answer the nature of the

research question. The researcher seeks to be intimately involved with the research context (Stake, 1995). Qualitative researchers believe that the best way to comprehend any phenomenon is to understand it in its context, and they can do this by immersing themselves in it (Trochim, 2020).

For a case study, the researcher may take the role of a teacher, an advocate, an evaluator, a biographer, an interpreter, and many others (Stake, 1995). Depending on the researcher's style and the goal of the research, these roles can be chosen and played out methodically to make the best interpretation of the case being studied (Stake, 1995). In this qualitative research study, the researcher conducted a more personal approach to data gathering because the researcher was the data source. The researcher added as much detail and information as could be recalled so that the reader could fully understand it without actually being part of the study.

Feldman (2003) has developed four means on which data collection is based:

- Provide a clear and detailed description of collecting data and making what counts as data in our work.
- Provide clear and detailed descriptions of how we constructed the representation from our data. What specifics about the data led us to make assumptions?
- Extend triangulation beyond multiple data sources to explore various ways to represent the same self-study.
- Provide evidence that the research changed or evolved the educator and summarize its value to the profession. This can convince readers of the study's significance and validity. (pp. 27-28)

It is important to note that the researcher's background as a CIO is different from most CIOs who come from a computer science or computer information background. To better understand the data from the mind mapping and interview, it is essential to learn more about the researcher's experience. Therefore, the researcher's personal and professional background is included.

Background of the Researcher

The researcher wanted to share their personal and professional background to illustrate that they come from a unique experience as a CIO. The researcher's perspectives regarding how organizations work and especially the importance of IT to higher education's business will differ from someone from a strictly hard science background. The public policy background also influences how the researcher understands higher education's place and importance in society.

The researcher grew up in southern California and went to college in northern California. The researcher's academic background is probably different from most people working in IT. The researcher studied political science and history as an undergraduate, not computer science or a technologically related field, and was also involved in student government. The researcher interned for a California state assemblyman for 2 years during college before being hired as a legislative intern during his senior year of college.

Two years later, the researcher returned to school, getting a master's degree in public policy. During the second year of graduate school, the researcher started to work in the undergraduate computer lab. This was his first time working in technology. After graduation, the researcher took a full-time job managing the undergraduate computer labs and technology. The researcher stayed at the same university and continued to get

promotions and increased responsibilities every 2 to 3 years. The next significant progression was to be put in charge of technology at the university's largest graduate campus, then be responsible for all of the technology and support at all graduate campuses. During the next promotion, the researcher became an IT director and was responsible for the university's audio/visual technology, instructional technology, and undergraduate support personnel. The researcher had worked in IT for about 12 years when he was selected to be a CIO at University C.

The question topic about to whom or what office the CIO reports within the organizational structure had interested the researcher long before becoming a CIO. While interviewing for his first CIO position and serving as an IT director, the researcher began to examine the offices of the CIO position reported at different universities. At one university, the researcher acted as CIO for almost 6 years. At two other universities, the researcher served for 2 years. The researcher has served at his present institution for 2 years. Consequently, the researcher will be able to provide more detail about this institution. Yet, the researcher will also be able to supply more comprehensive information about the position in which they served just under 6 years, given the length of time he served in that position.

Limitations and Delimitations

Limitations are potential weaknesses that are usually out of the researcher's control and are associated with the chosen study design, statistical model constraints, funding constraints, or other factors (Theofanidis & Fountaouki, 2018). The limitation is the effect that the COVID-19 pandemic has had on higher education. In the researcher's third month at the third institution, where they currently serve as CIO, the pandemic hit

and significantly impacted the United States and higher education. The COVID-19 pandemic had and continues to dramatically impact higher education, which has no parallel compared to the researcher's time at the other institutions.

Theofanidis and Fountaouki (2018) define delimitations as the limitations consciously set by the authors themselves. They are concerned with the definitions that the researchers decided to set as the boundaries or limits of their work so that the study's aims and objectives do not become impossible (Theofanidis & Fountaouki, 2018).

The first delimitation to state is this study only involves three public universities, all located in the southern United States, selected by the researcher. The sample is restricted to the three universities where the researcher has served or currently serves as the CIO. Therefore, the analysis and outcomes from this study might not apply to private higher education institutions, and some findings might not apply to other regions of the country where the budgets, demographics, and other factors are different. These schools also fall within U.S. News and World Report's 298-389 rankings (U.S. News and World Report, 2022). Therefore, these schools would not be considered top-tier institutions nationally, so some research conclusions might not apply to a top 100-ranked institution. All three institutions are four-year institutions, potentially excluding the application of the results to 2-year institutions.

A second delimitation is that this research is limited to personal experience because this is an autoethnographic study. These delimitations are choices the researcher made, and they must be mentioned so that readers and researchers are aware of them.

Summary

This study sought to investigate the impact of the CIO's organizational structure on their ability to impact their influence as a university leader This question will be explored using a semi-structured autoethnographic method. The researcher will share their first-hand experiences as a CIO at two previous institutions where he served as the CIO and the current institution where he serves in the same capacity.

In this study, many names and pronouns have been changed or altered to secure some degree of anonymity. The researcher still works in higher education and serves as a CIO and higher education leader. Additionally, the observations, descriptions, and perceptions of the events related to the questions' answers are subjective and may not reflect what others witnessed or experienced. The data gathered come from the researcher's experiences as a CIO at three different universities. This research aimed to allow other university leaders and CIOs an opportunity to use this information to enable them to become better leaders and help create better universities.

Chapters 4 and 5 contain data gathered for this research based on the researcher's experiences as a CIO at the three different institutions. In reading this study, the researcher intends to provide readers with knowledge that can positively impact their careers, whether on a college campus, in an organization, or at a company. This investigation allowed the researcher to step back and see many things he could not comprehend or understand as they were working when those things occurred. The study gave the researcher a better understanding of how he led IT departments and appreciation for the different leadership styles of the people to whom he reported and with whom he worked.

The goal was (and is) to contribute more research into IT, leadership in higher education, and the CIO's role. The researcher genuinely believes in what he does and feels that IT is the circulatory system of today's university campuses. The researcher's ambition is to use IT to make the university the best it can be – not just about academic instructional technology but also for the entire campus. This means the library, the athletic department, the residential life unit, and other moving parts make a university.

CHAPTER 4

RESULTS

This research represents a highly personalized account of a CIO at three universities. This semi-structured autoethnography study gathered data by using a list of questions asked by the researcher and using mind maps developed for each institution that showed a visual relationship of the projects and partnerships created at each institution. These methods were determined to be the most effective way for a reader to understand how and where the CIO reports affect his/her ability to influence campus decisions and lead change. The questions led me to discuss the person to whom I reported directly and the other people who also reported to that person. They also focused on the leadership style of the direct supervisor and his/her background. Figures 6 through 9 represent many of the projects or initiatives that were accomplished while I was at the universities. They are placed on the CIO cubic based on the type of initiatives. Figure 6 has initiatives for the three universities in one combined cubic. The cubic shows whether the project was more strategic in focus versus service-oriented and whether it could be considered more transactional IT versus more transformational or innovative.

Figure 6

Initiatives for the Three Universities in One Combined Cubic

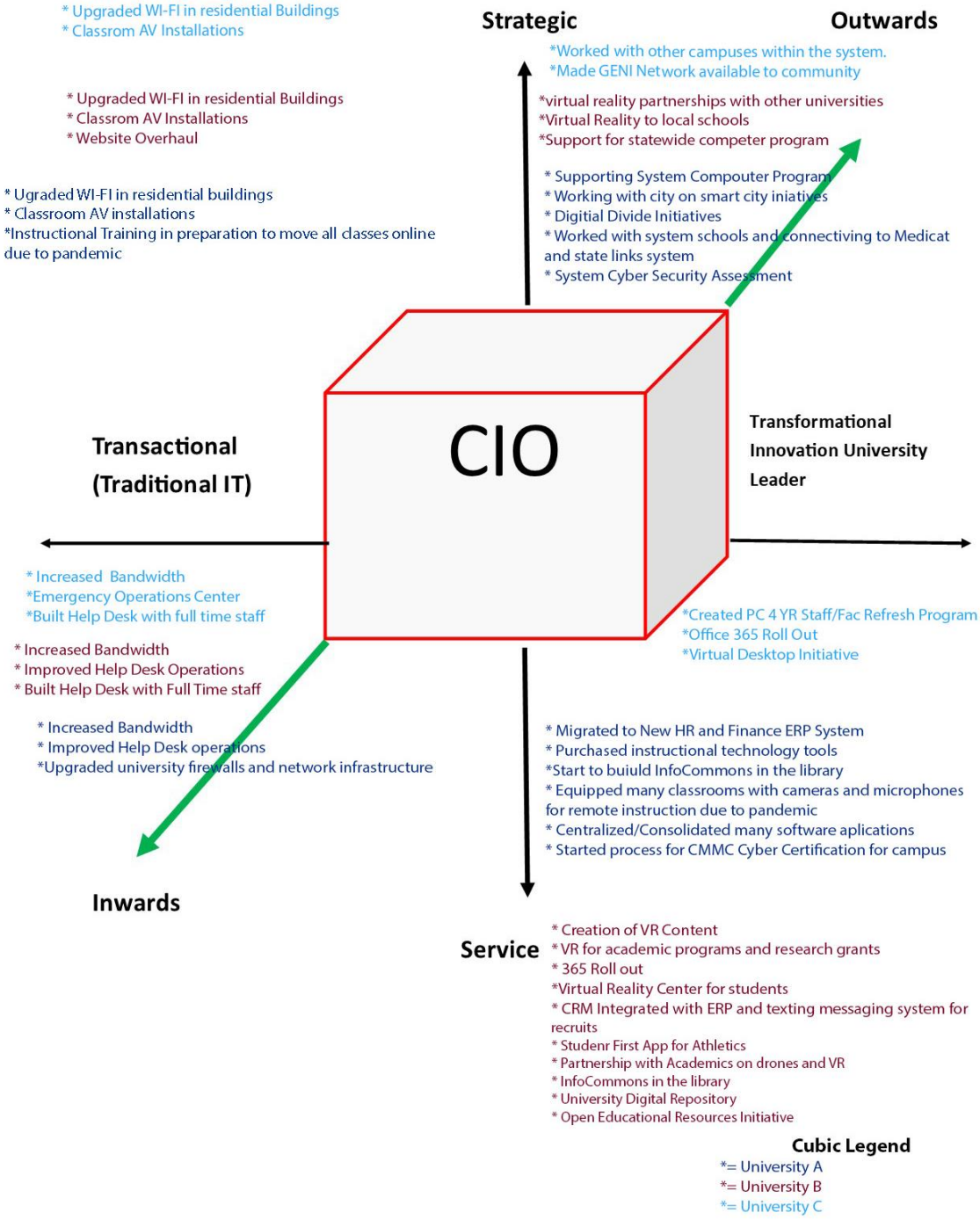


Figure 7 shows the initiates that occurred while I was CIO at University A.

Figure 7

Initiatives for University A

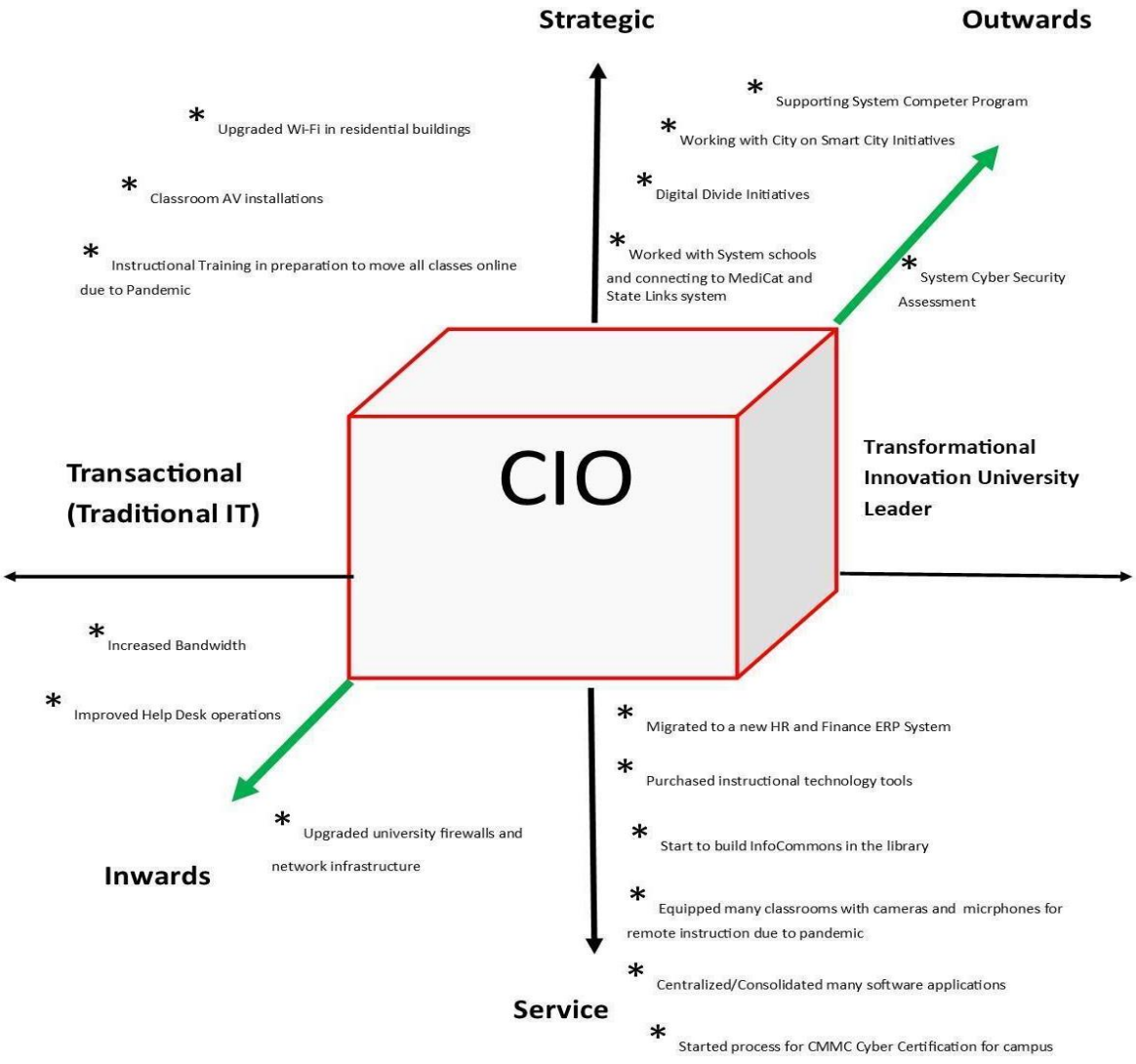


Figure 8 shows the initiates that occurred while I was CIO at University B.

Figure 8

Initiatives for University B

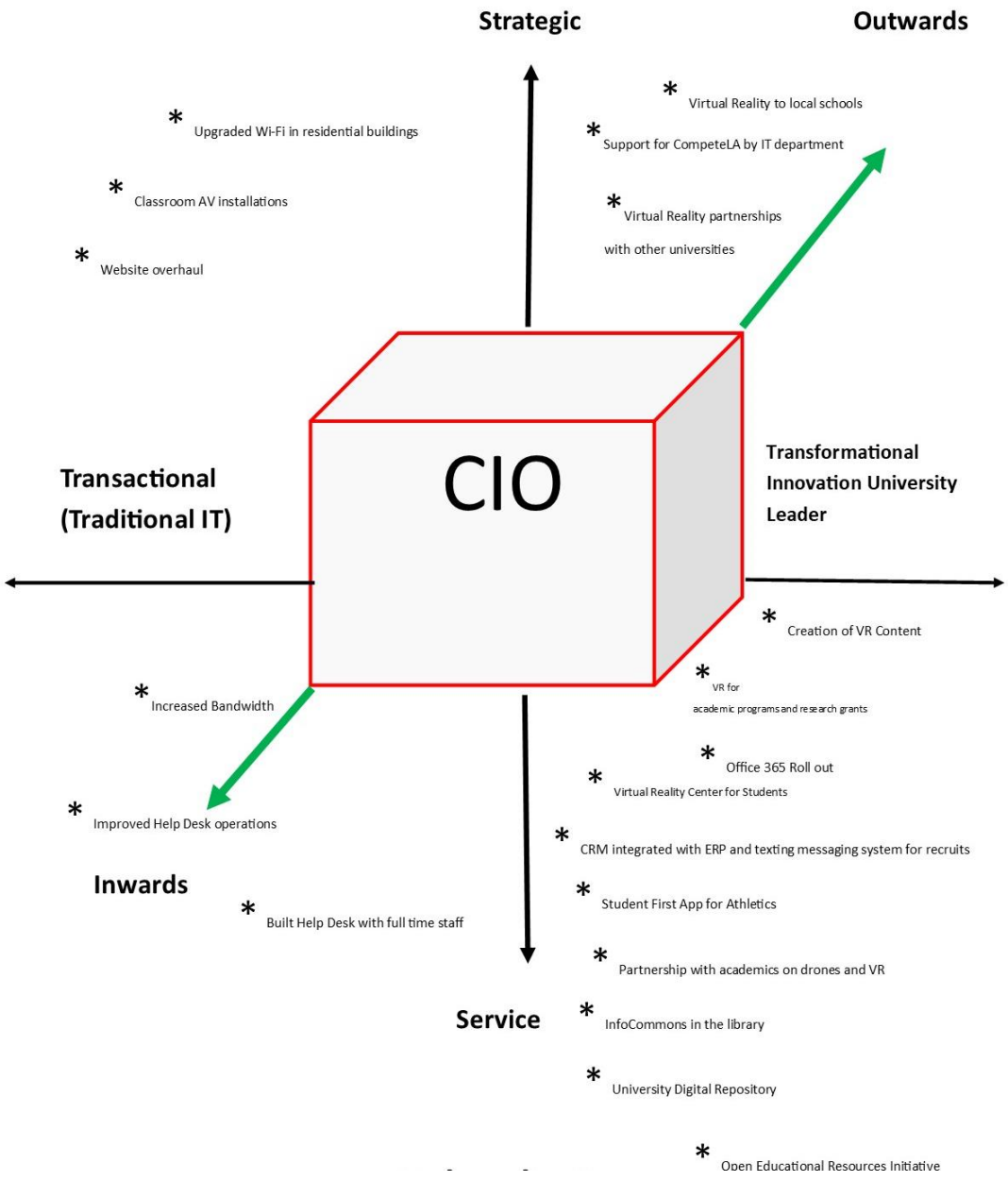
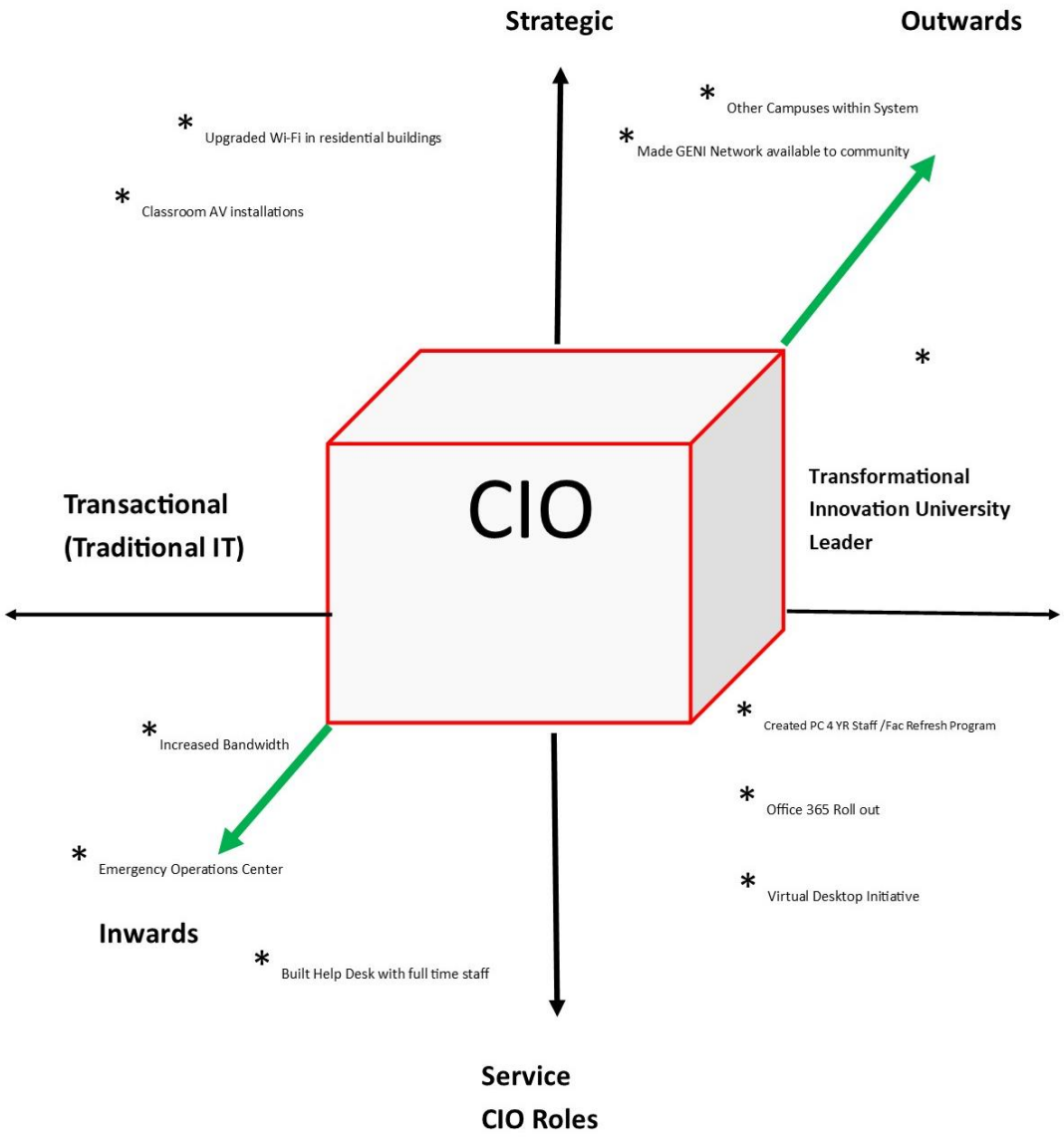


Figure 9 shows the initiates that occurred while I was CIO at University C.

Figure 9

Initiatives for University C



The reason for asking these questions was to give the reader a better understanding of the background at the university. The background would include information about the previous person in the position, if there was one. It would crucial to

know some of the university's major ongoing initiatives or other campus-wide projects. At two universities, I was the first person to be selected to be CIO. It is essential to know more about why those two universities were hiring a CIO. Understanding the background will give the reader a more informed ability to read the answers and have a clearer perspective of the myriad factors involved. Some of the questions look to understand who I considered peers at the institutions. Others look to learn about the university budgeting process and my role in it. Because the research question for this study involves change, some of the questions focus on how change and innovation were achieved at the three different universities.

The Interview Questions section was initially recorded using Zoom. The original audio from that Zoom recording was transcribed using Otter.ai and then edited to be more easily understood and read. The questions were conducted over 2 days in sessions of about 2 hours. The period covered while I was CIO at these three universities was 10 years. All text except headings in Interview Questions is quoted directly and verbatim.

Interview Questions

Question 1

Interviewer

Please discuss the organizational structures at the three universities that you've been at as a CIO. Please also explain the leadership structure and the makeup of the president's or the chancellor's executive team in detail. Also, how often do they meet? How often did the president's executive team meet?

Interviewee

Let me start with the most recent university I was at which would be University A. The makeup of the leadership team at University A was vice president for academic affairs, a vice president for athletics, a vice president for housing or residential living, an assistant vice president for facilities and chief innovation officer, CIO, and a vice president for research. Those people that reported directly to the university president made up the executive leadership team. That team met about every other week. There was also a larger group that met every other month which was comprised of the executive team of the president's direct reports plus other department heads, a communication person, and the academic deans. The team was called an Administrative Planning Council (APC). The COVID pandemic might have had some effect on the meeting schedules. I had only worked at University A for about three months before the pandemic reached the area where the University was located. During COVID the executive team did meet at least once a week at the outbreak of the pandemic because things were rapidly changing. We needed to meet a lot more to alter plans with respect to who was allowed to be on campus and also respond to the state and university system requirements that were being made of the University.

This University A was part of the larger state university system. Because of all the urgent things occurring, I did not meet the president's direct reports individually very often except for the provost. I met with the provost more frequently because of all of the work that needed to be done to make sure that online classes were functioning smoothly, and the faculty had the support they needed. I did continue to meet with the President regularly. We would meet about every other week or more frequently if the need arose.

As mentioned before, I worked very closely with the provost. Of the executive leadership team, I have worked with them the most. Just before the pandemic the library was moved from reporting directly to the provost to reporting to me. Before the pandemic, the University did not have many classes online. Communication between myself and the other executive members was good but they were not used to having a CIO on campus. There were some projects and initiatives that did take place that I and the IT team were not involved in. I think that some of those projects would have gone better with my involvement.

At University B, I was reporting to an executive vice president who happened to be the provost previously. I was part of his team and also a member of the president's executive team. At University B I was also the dean of the library. I had a dotted lined reporting to the vice president for academic affairs because there were members of the library that were faculty. The executive vice president's direct report included a director of admissions and enrollment, financial aid, director of institutional research and effectiveness, auxiliary services, and student success. There were a lot of synergies between those areas. I had strong relationships and was heavily involved with admissions and recruitment at University B. One highly successful project was setting up text messaging through our CRM to potential students as a better way to communicate with them. I also attended recruiting events around the state. I was also involved in financial aid, student success, and auxiliary services. With auxiliary services I assisted the student residential areas with cable TV and wireless technology. The team under that executive vice president was close, and we met at least every other week.

The relationship with academics was good though not as close as at University A. I was more involved on the technology side and did not get involved in much of the academic or course delivery. There was a classroom technology group that was run by faculty members. The IT group had a group that did support for the learning management system (LMS) but they did not offer more academic support. At University B, I did not have the daily communications that I had at University A. At University B, I quarterly had a meeting with all the deans in person and met individually, a couple times a year.

University B had an executive council that was made up of the vice president for academic affairs, vice president for finance, executive vice president (my direct supervisor), associate vice president for academic affairs, and a chief communication officer. I was one of the few persons on the executive team that was not a direct report to the president. I was also part of the university's administrative council. It was the same team as the executive team except adding a few more people. Those people were the deans, the controller, and some of their direct reports. The executive team met every other week and the administrative council met once a month.

At University C, I reported to the vice president for finance, operations, and IT (CFO). This person also handled financial aid in addition to the contracts part of the university public safety and the police department. There was a dotted line to the provost. The CFO's direct report team met about every week. The positions that reported to the vice president at University C in addition to me were the head contracts person, budget person, financial aid, head of public safety, and human resources. I was heavily involved in projects with the emergency operations office and public safety that were under the direction of the CFO's office. At University C, the emergency phone number on campus

was connected to the city police 911 call system. When someone on campus called 911 it rang on campus and at the county's 911 operator. The IT group was also heavily involved with the new police headquarters and also created an Emergency Operations Center. We did a lot of disaster preparedness and disaster planning. This was most likely because the shootings at Virginia Tech happened a short time before, and it was fresh in everyone minds. We did biannual drills with the county, city, and state emergency operations groups.

During my first year at University C, the President's wife was sick, and he was out of the office often. I believe I only met with him one time briefly, and it was very informal. After that president retired there was an interim for a year whom I met with a couple of times. Once the new president was selected I met with them a couple of times a year, and one of those occasions was to talk about the IT budget needs. There was very little interaction with the other direct reports to the president at University C. I did not meet directly with many of the vice presidents or executives at the University.

Question 2

Interviewer

How would you describe the leadership style of your direct supervisor? Can you give some examples of situations that would better illustrate your perceptions? Would you please provide the background of your immediate supervisor?

Interviewee

At University C the vice president had been at the University a very long time. They were the CFO for the University and came from a non-academic background. Their background was more business, and their leadership style was that they were very, very

involved in most of the projects and operations. They liked to be involved and were present in all meetings with other vice presidents and university leaders that I met with. They wanted to be fully involved in and aware of everything.

At University B, this person was a provost previously and was one of the finalists for the president position at University B. I found out later after they left the University their leadership style was much different with me than other people they worked with previously. Two weeks after I started at the University, they announced their retirement.

We thought very much alike, and they pretty much gave me the "go" to just do whatever needed to be done. They were very supportive. They always asked me if I needed any support or if there was any way they could support me. We were able to accomplish a lot in a short time. We also were able to make improvements in a lot of different areas. There were several projects that we were able to forward that had previously stalled or were not completed. A lot of our meetings were just brainstorming sessions where we talked about what other projects we could do. He was incredibly supportive and very not micromanaging at all. This vice president was previously a dean and had a Ph.D. in mathematics.

At University A, the president was a previous dean and was an academic. They were hands-off and allowed me to lead. They stayed out of the way and only asked how they could support me. In fact, they typically end all our one-on-one meetings by just letting me know "how I can help you'' or "let me know if you need anything." Their leadership style is very much that brings solutions to them and not a micromanager. Their support has allowed my influence to grow on campus and be involved in projects that IT

has not been involved in the past. There are some areas that it has been difficult to work with still because of their unwillingness to involve other departments.

When I think about this again, I think that my experience at University C will be different because of the lack of the necessary resources that would have been needed to handle a pandemic. Starting my work at University A lacked some of the normality as far as being here for three months and then having the pandemic lockdowns and having to convert all classes to online. Without the pandemic, I might have been working more heavily with different departments and have had a slightly different understanding of the needs of the campus.

Another thing to note is that the University A president had a research and innovation background, which is in many ways similar to technology. They understood the importance of technology and how it could make transformational change at a university. There were many things that they wished the University could do but understood that it was difficult to do with a CIO.

At University B the executive was acting like a CIO before I got there. They were calling the directions, as far as what was going to be done. At University C the person did not have as good an understanding or knowledge of technology.

Question 3

Interviewer

Can you discuss the person who previously filled the role and the state of affairs at the University regarding IT before your hire?

Interviewee

At University C there previously was a CIO. I kept the previous CIO on as a chief technology officer when I was hired. They came from a military background where they did telecommunications. Their skill set was network and telecommunications, and the reason for bringing in a new CIO was to make the technology on campus more transformational. As a chief technology officer, I had them handle the technology infrastructure side of the University. The University was looking for somebody who understood what a modern university is. What I mean by this is someone who could assist with academic technology and innovative technology and not just the basic technology needs of the University. The state of information technology at the University needed somebody to make that change, that shift into becoming a true resource for the University, as opposed to again just to the electricians that continue to make the basic things work.

At University B there was an existing information technology director. The department did not have the reputation of being very creative and trying innovative things. In some respects, they just kept things going. They were known as the "NO" group, so if you wanted to, you knew that if you're going to ask them something, they were going to say no. My direct supervisor the executive vice president played that role of trying to push the information technology team, but many projects failed or were incomplete. On one occasion, a consultant was paid to set up an application but was never able to accomplish it. There were other projects that were never completed. The IT director's background was primarily in servers and networks. They did not have much instructional technology or innovation. They kept a solid network up, but they basically

did not try many new innovative things. They were unwilling to try other things out of fear that it would not work.

At University A there was no CIO before like University B. It was a new position. The information technology staff was disjointed because they were reporting to separate departments. There were many low-hanging fruits and things that could be done fairly easily to improve things. It was apparent that because of the lack of information technology leadership, senior leadership lacked trust in information technology. The IT staff felt that they were not necessarily poised to make advancements or make suggestions or make proposals because one of the roles of the CIO is to be that middleman between the university leadership and the information technology staff. The role of the CIO is to know the IT side of things and understand the business side and bring those two together.

Information technology people at University A were reporting to different university leaders. Some reported to the provost, some to facilities, some to finance, and others to other areas. They also needed to understand how other IT departments at other universities were aligned and organized. This was done by examining peer institutions.

Question 4

Interviewer

Would you please describe the information technology organization that you led? What department and responsibilities did that entail? Were academic technology and instructional technology part of your direct responsibility?

Interviewee

At University C, most of the information technology staff was centralized except for the library, and one of the colleges had a few information staff. The library had about ten IT staff members and their own IT staff, and they did their own thing. They had their servers and did their own thing. There was an academic technology group that wasn't in the central IT department when I started there. The academic department went back and forth between IT and academics a few times while I was CIO. The academic technology group was responsible for the learning management system. The enterprise ERP group was broken up into two groups. The technical people were under information technology, and the funky technical staff was under academics. The ERP was led by our associate vice provost and associate VP for finance, and me. The ERP had just been implemented not too long before I got there.

At University B, everything was centralized already. There were no other departments that I can remember. There was an academic technology group that was within the IT department. They referred to themselves as the learning management help desk. They were more of a support desk than a visionary group trying to look for innovative ways to use academic technology. The ERP group was entirely within the IT group. One person worked for the executive vice president who I worked for that did special projects. Those projects were mostly IT projects in nature. The library did not have any IT staff. Central IT handled the library's IT needs.

At University B, I was involved in many things across the campus, from the cable TV in the dorms to constructing a new medical school. I even flew on a private jet to Auburn University to see the facility there, which was terrific. This new medical school was a considerable achievement that the University had been trying to do for many years.

I was utilized across the University and all different across the campus. Because of the virtual reality work that I was leading, I met with a lot of different academic areas and was involved in many other grant possibilities. As mentioned previously, there was not an academic technology group. Still, it was made up of faculty that discussed technology instead of a group that looked for innovative ideas and did instructional technology support. We had conversations with the vice president for academic affairs about bringing that academic technology under me. That did not happen before their retirement. The group was more of a talking about technology group. We did get into a lot of virtual reality and augmented reality, which I led there. I tried to do partnerships with the College of Education and find professors.

At University A, it is semi-centralized. It was probably two-thirds centralized. One of the other IT groups was called technical services. They were comprised of telecom and technical services. They handled the University's telecommunication systems, the door access controls, and the security cameras. They worked on the bandwidth and the network.

Historically, the facilities group handled the university broadband and fiber connection. There was also an IT person that worked in financial aid, and also there were some in the academic areas. The university foundation also had someone that does information technology. I refer to these non-central IT staff as partner IT. They did collaborate with us as far as the department responsibilities. The vice president for the foundation was very supportive and understood the importance of the CIO role and how it can play a larger role across the institution. Especially in the academic area, the provost understood the importance of IT and how it could help. Because of that, some beautiful

things were done between IT and academic areas. COVID was a contributing factor to this.

While I was at University B, I was heavily involved in recruitment and admissions. Part of those things included the recruitment software and texting of prospective students. We also used text messaging to reach out to all the students to invite them to campus events. This was very successful on campus. I also helped to redo the website or at least part of it. One of the things that was added to the website was an interest webform. Prospective students could complete the brief form and then automatically trigger off an email and a text message to that prospective student. They would then get an email, and then it would also then input their data into our CRM. This was a big scenario that helped tremendously to get in touch with those prospective students. One event that this worked well for was preview days for the fall. The increased response that the University received from the text messaging communication versus email and mail was astounding.

At University A, I have barely been involved with admissions and recruitment. They have their systems, are very protective of them, and do not want others' inputs. They used the same event management system that I had used at a previous institution at University B. It was called EMS. At University B, I organized a group of potential and current software users. This group was made of people from the facilities department to the event and conference center staff, information technology, student affairs, and many other areas. I organized a workshop there. We did a partnership with all of them to utilize this system, this event system across campus. This was a very robust system that would reserve equipment as well as make room reservations, etc. The software could manage a

hotel with billing capabilities as well. It was also connected to the building HVAC units to adjust the temperature when the classroom or other room was not being used.

So academic technology and instructional technology are part of the responsibilities at University A. Because IT did so well in the transition to online classes because of the pandemic, there was a lot of trust built. I have been able to do areas that I saw needed to be done and that I have done at previous institutions or wanted to do in prior institutions. I saw there was a void. I have been able to step in and fill, and that's been welcomed and embraced.

Question 5

Interviewer

What would you say was your level of influence at the University? Can you give some examples of your perceived level and why you felt that way?

Interviewee

At University C, my primary level of influence was within the VP for Finance and operation CFO areas. We did have some other departments and areas. We also had a great partnership with residential life. We partnered to put a presentation together for a $2.2 million wireless project that ended up changing out every single access point in the dorms and adding density. It also helped to add redundancy for areas with spotty coverage. We also worked with Challenger Space Center there. We helped with new computers and new systems. We also assisted some of the new construction areas under the direction of the CFO. We assisted with the technology for the revamped police station as well. Because the CFO had a background in public safety and was in the county's police organization, public safety was a large focus. Because of that, every phone call

that rang, every 911 call that came from campus also was connected to the county 911 operator.

We had an Emergency Operations Center (EOC) at the University, which was partly funded by IT. We had disaster drills twice a year. The EOC room setup is just for disasters because at that time, Virginia Tech happened just a little bit before that, so we did drills, and we had the technology, and then we had video conferencing in there. We had some partnerships with academics, but not very much. I was hired by the provost and by the CFO but after a couple months the provost left to go to another university to become president. That relationship did not continue closely after that, on the academic side.

I would say that most of the projects we did were in the CFO areas. We did do campus-wide projects, but those were mostly IT projects that would benefit the whole campus. We did have a good relationship with the vice president for student services. Because of that relationship, we did a fair number of projects for the dorms which included construction projects and a replacement of the older wireless access points. We did not do very much on the library side because that group was more academic.

At University B, my level of influence was widespread across campus. I was on the executive team there with the president, and the executive vice presidents. My direct boss gave me lots of freedom to solve problems and look for solutions. They trusted me and encouraged me to meet with anybody and offer expertise. I was able to provide expertise to areas that I have helped in the past, and he encouraged it. An example of this was assisting with parking with the police department. At University C, I researched parking applications and how to handle university parking and tickets. I led the research

investigating how to meter parking lots using cameras and hockey pucks objects to put underneath parking spaces to identify if those spaces were free. All of this information was then available via a map on an app that would allow one to see what lots still had spaces and where open handicap spaces were. This University was in the middle of the city so parking was difficult to find.

People solicited and asked for help and feedback through a wide variety of campus departments at University B. At University B, I met with the vice president for academic affairs monthly. My relationship was more with the VP for Academic Affairs than the deans. I did meet with the deans twice a year or more if needed. I did help some of the colleges on some of the technology and active learning spaces. The other academic areas I did not really get too involved. At that time, I had not started my degree, and I think my degree also opened my eyes to some things more on the academic side that IT could do to assist.

My level of influence there was definitely campus wide. There are certain areas that I mentioned earlier, as far as academic and non-academic, as far as administrative, student success, admissions, and recruitment that I was able to contribute to a lot. I actually helped bring in the CRM that was a huge success. I also worked with athletics at University B on a student success application. I was fairly involved in the SASCOC accreditation process at University B regarding having staff support the on-site visit and the content to information technology and the library.

At University A, we have not really been involved with the CRM much at all. We have only been involved when they needed IT information. We did actually have

someone that is assigned to support athletics. I have also been heavily involved in the strategic planning for the university.

Overall, it felt that when I reported to the president and was a member of the executive team, I had a better awareness of the campus needs and was able to be able to assist those needs. I also felt that I had more of the authority and permission to help lead change as well. I think that I was involved heavily in all those things, and I think some of that is because of being on the executive team reporting to the president and being on that level.

Question 6

Interviewer

What barriers and obstacles did you encounter in cultivating a positive environment and an organization centered around learning?

Interviewee

Trying to think of why I wrote this question. We can come back to it. Let's come back to that one.

Question 7

Interviewer

Who did you consider your peers at the institutions?

Interviewee

At University C, I would say that I consider other associate vice presidents and directors. They were primarily within the same division that I reported to and the student affairs and residential living division. We did several projects with them, as I mentioned before.

At University B, I would say the people on the executive team and those who reported to the same vice president like me. The people in the executive team would include the director for communications and external affairs. I also worked closely with the vice president and CFO and did many projects. I also felt like I was a peer with my boss and other VPs. I felt more like a university leader there instead of feeling more like a layer lower than the university leaders. I was also invited to all major events at the University and was seated with the leaders at events. At University C, I met with the senior university leadership team a handful of times, maybe twice a year. At University B, I also met with faculty senate and staff senate quarterly to provide IT updates and take questions.

At University A, I consider my peers the other university vice presidents and other leaders. I also was asked to come to the faculty senate to take questions. I was also involved in the University's strategic planning and have been engaged in my campus-level events. I felt very comfortable reaching out to the other university leaders and felt that they valued and wanted input.

Question 8

Interviewer

How were you assessed? What measurements were used?

Interviewee

At University C, we had annual and mid-term assessments with goal setting. We had yearly department assessments that were part of the University's institutional effectiveness measurements. All of the department's assessments were then combined and put together into a larger report under each vice president. Those are part of the

institutional goals and those were again submitted to institutional research and then put into a big comprehensive project at the end of the year.

The IT assessments were primarily built around network upgrades, process improvement, and help desk feedback surveys. The IT department was working on the Baldrige Performance Excellence Program. It's a self-assessment that helps organizations assess whether they are developing and deploying a sound, balanced and systematic approach for running their organization. It is a process improvement program. The state that I was working in ran several Baldridge conferences. We also used an assessment tool called TechQual, an information technology survey. We did this survey annually and were able to track progress over the years.

We were also able to get feedback on things that needed improvement. In one case, we noticed that our help desk tickets survey numbers were poor for customer support. I used those poor feedback numbers to justify hiring new positions to help support the help desk. Before that it was a student-run help desk and had zero full-time employees. The next year, I was able to have three full-time employees on it, and you can see the numbers increase as far as from the survey. We also did 360 evaluations and evaluations from peers. Annual assessments were required to be completed. I usually put together an annual report as part of my self-evaluation. The University had a policy that you would not be eligible for a raise without a completed annual review. I would have one of my staff members actually work and put together a full annual report, sometimes 10-15 pages, as far as what we had accomplished.

I did something similar to that at University B. There was also an annual library report that was generated and used for institution assessment and also accreditation

purposes. At University B, we never ended up doing TechQual. We did do annual assessments, and we did lots of surveys and assessments in conjunction with the library about user satisfaction. We also did conduct a lot of surveys about the Information Commons that was a joint project between IT and the library. The annual assessments were collected using an application and even had a blind peer review and 360 evaluation. I was reviewed by the people that reported to me anonymously. The IT applications development team in-house developed this comprehensive review system.

At University A, there was an evaluation process. It was not as elaborate as at University A or B. Having been at University A, I am hoping to create a more comprehensive assessment program. I think there are a couple of factors that are different with University A. One thing is that most of my time there was during the pandemic. The other aspect is that there was no previous CIO and that the prior IT was so decentralized.

Question 9

Interviewer

What was the university budgeting process? What was your involvement in your department's budget, and the universities budget?

Interviewee

This was interesting at University C. The budgeting process was pretty much a year-round exercise. We started in October for the following year. I don't remember the actual name of the budget planning group that I was a member of. The committee consisted of primarily associate vice presidents' deans and also large department heads. We met basically once a month. The state's budget was proposed in February but was not finalized and approved by the legislature until April or May. So, we had to have the

university's budget recommendation pretty set by then. Each department under the vice president, we came up with budget recommendations and picked a few priorities for the upcoming year. We gave our justification why a project was important and how it fit within the strategic mission of the university. Ultimately the vice president made the decision on what projects to move forward with. I was on the large university-wide budget committee, so I was more aware of the higher-level budget discussions and recommendations.

At University B, I was involved in the budget process. The budget process was much different than at University C. It involved a lot less people. At first, I was even more involved when I first started at the University. The budget time of the year happened to be about the same time that my direct supervisor was about to retire, which might be why I was more heavily involved. The budget discussions were basically at two levels. The first level I was very involved in. That level was the executive team that discussed the budget during our regular biweekly executive meetings. I made recommendations, and I worked with our team to come up with proposals and then presented them to the executive team. The executive team would then discuss it. The final decisions were made in meetings with the vice presidents and the university president meeting.

I felt I had a good amount of influence. What we're able to do there as far as being able to submit requests for IT, typically maintenance contracts, which are going up 8% per year. Every single year we were able to get every maintenance contract taken care of so we basically put together, we need $80,000 to be the same place that we were last year, and we've got that every year. There are some other projects that were in there. I

know that the information technology department did get probably got 70% of the budget increase money that was going to area that the executive vice president managed. I think that was obviously from influence that I had within the department and how those invest would have campus-wide effects. But also, I was on that executive leadership team, and no one else from that department was on the executive leadership team, except for the executive vice president.

A lot of it was just carry over from the previous year but asking for additional money for special projects. There was some with the tech fee, and I should have talked about the tech fee on the first University C; that was about $2.3 million that was within. Essentially it, so I managed that I, my assistant managed that, so that was about $500,000 that was for a bond repayment and the rest of the $1.7 million...there was about $70,000 that went to the library, as far as for a digital commons and for some other software for them. The rest of it was soft money, about $600,000 was soft money for staff so they had a ton of staff that would be paid off of the tech fee - primarily all your help desk and all your support people type people, those are all paid off of that, your hands-on staff members. Those are all paid off of the tech fee, and then there was about $500,000-$600,000 of system charges that were then paid from the tech fee. There were some other projects that were funded from the student tech fee that were all managed by me.

University B as far as for the tech fee, that was managed by me primarily. The President did have to sign off officially. We made recommendations and worked closely with the student government associate (SGA). While I was there, a lot went towards library information commons and some of the other things with the ERP system.

At University A, I had a decent say as far as how the budgets were. I will also add that most of my time at University A was during the pandemic, and there were more sources of funds both federally and through the state government. I will also add that because of the pandemic, there were many instructional technology systems and support systems that needed to be purchased to support online learning and remote work. I have not been really involved in the budget process. From what I could tell most budgets just roll over with the same amount as last year. I don't know again because of COVID and the last few years' universities have just been really trying to survive. I'm involved in the process as far as you know how the money is being used. I also have made numerous requests in working with the president and the VP for Finance and I have had those requests funded.

Question 10

Interviewer

Would you mind discussing your ability to be innovative?

Interviewee

At University C reporting to the CFO at the university it always felt like the bottom line was the money. How much will that cost versus how much is another non-IT project? One example would be the cost of getting rental cars, or a new building roof, versus an information technology project. That was how it felt when you were in the same bucket as an auxiliary or the same bucket as financial aid, same bucket as the other departments. This was as opposed to the role of information technology being able to make a difference across the entire campus. Some opportunities were lost, as far as being able to be innovative. Finances have been hard for higher education institutions over the

past ten years. The CFO had done an excellent job of keeping the university financially strong over those years, which was no small feat. Decades before, the university was a private college but encountered hard economic times. As a result of those tough times, the college became part of a state university system. This person was known for being very financial conservative.

At University B, I had a remarkable ability to be innovative. I had a web development team there. The group consisted of a webmaster and three or four full-time web developers, and two or three student workers. I had a fantastic ability to be innovative partly because of those resources. We were able to accomplish a lot of things that I considered a low-hanging fruit. Some of those easy wins were rolling out Office 365 and the applications associated with that.

With that web development team mentioned earlier, I had the ability to be able to develop applications. That group created a product called Flightpath, which was an online advising application. My boss there had the idea to create this application from scratch, and the application development team was able to do it. They also had developed some other applications, including ones for athletics and advising. We got the web team together with athletics to hear exactly what they needed, and I got together with the web development team after and asked if they could do it. They said yes, and six months later, the application was ready for use. We also were trying to do some interesting things with drones and virtual reality.

Unfortunately, we did not get full support from the academic support. As far as the drone technology and the people that were in the drone department did not seem to want to do very much. There were some huge potential projects that could have been

done. One thing that made working with drones difficult was the university's proximity to the airport. We had to get FAA permission to fly drones there on campus because it's so close to the airport. That did restrict some of the use of drones that were going to be used for innovation in virtual reality efforts.

Virtual reality came to the university in an odd way. Someone gave the IT department a couple of virtual reality headsets to try out. After seeing what they could do, I showed it to the university president and discussed the possible academic value it could bring. The president was blown away so much that I showed the university system provost how it worked. They were also very impressed. We then reached out to some donors, showed them how it worked and discussed how it could potentially be used in the future. The donors were very impressed and committed over $200,000 dollars to support it.

One of the reasons I was able to be innovative was because they had not had anyone in that role, and they hadn't had many of those things. So, there was desire to be creative, and the campus embraced it. The library was a great building with a lot of space that offered great opportunities. The first three floors in the building were pretty open so I could do some neat things with collaboration with students. So, we were able to have a virtual reality center with virtual reality headsets and totally immersive virtual reality experience area and a maker space that contained a 3D printing on the second floor. These were some fantastic resources for the students and, at the time, the state's only virtual reality lab. We were also working with local K through 12 schools to come to the VR lab and experience it in addition to university classes.

At University A, there was innovation but it was already spread out across the university in different areas. One group was doing virtual reality and working with students, and one of the colleges had an instructional technology group that was working with faculty on using innovation for their classes.

Being innovative has benefits. One of those benefits is that if an IT department can be innovative, it often is able to get more resources. Virtual reality was a great illustration of this. The innovation brings more credibility for the department as well. Because of the things we were doing with virtual reality, we did get other donors to support the effort as well. So, the ability to be innovative at University B was very good. I was also able to get support to create an augmented virtual sand table through a partnership with IT, the construction department, and geography. I also worked with the on-campus natural history museum about using virtual reality. I also co-authored several grants with faculty members for virtual reality projects.

University A was also focusing on some Smart Cities initiatives. With me being the first CIO, it has taken the campus some time to understand how to work with a CIO on projects. Often people from existing departments were doing tasks that I did at previous institutions. That has made it difficult to be involved with some projects that I would typically have already been involved in. I think the timing of my starting at University A and the pandemic occurring also has made it different than if there had not been a pandemic. Things have been a little more disjointed as far as the ability to view things.

The COVID pandemic was a big factor in what the priorities have been. The focus during the pandemic was keeping classes alive and keeping those things and getting

all those resources up and running. I think that some of the lack of staffing has also limited the amount of innovation. It is difficult to be innovative when the staff is working hard just to keep the basic information technology operations up and running. I think that's going to progress over the next couple years at University A.

Question 11

Interviewer

How difficult was it to make a change?

Interviewee

At University C it was difficult again to get buy off and sign off from the vice president. We were usually restricted by budget considerations or more pressing needs. The other part that made it more difficult more often than not - I was not the person that was explaining it to the executive team. The person explaining the project did not have the proper background to explain what it is and its importance. Sometimes, certain initiatives were lost in translation or were lost and not able to be fully utilized. There I did not have a seat at the table and therefore was not given an opportunity to discuss the campus-wide benefits of the project. Opportunities were lost because those opportunities were not always shared beyond the leadership team. The other side of that is that information technology also did not have an opportunity to solve a problem because I was unaware of it.

At University B change was pretty easy to do. I was given good resources, the right staff, and financial support. I think I got most of the things that I requested. This was especially true on the resource and financial side. It was helpful, especially being the new CIO, but also understanding the importance of technology.

At University C, I would say that technology was important, however, but only to a certain point. I don't think it was viewed as critical. I think it was measured against other expenses that are not as crucial to today's universities. It was not viewed as a transformational element as other universities view it.

At University B, I would say that change was easier there. There was an awareness that technologies and systems could be implemented that would greatly help the university. The campus had more of a desire to improve, making change easier to implement. One of the projects that we looked to implement was an analytic program that was connected to the university's ERP system. This analytic program would give the university leaders critical enrollment data and program cost information that allow for them to make truly informed data driven decisions. The program had not finished being implemented before I left the university. There were some things as far as trying to implement - one of the problems was trying to implement it, the analytic program. Having to get HR, having to get academics, and having to get the different areas, that was a struggle. Some departments, and also within it - to be honest, that's where some of the timing and change, I was dragging it along. To make a change when they didn't want to make a change and, in some respects, they wanted to keep things the way they were, so that was some struggle.

That was University A. University C, you know it wasn't necessarily - they weren't the problem or weren't the inhibitors as much as I would say it University B sometimes was. Those are the people that were the ones, the hardest ones, to try and move along when I was trying to implement or trying to make a change at University A. At University A I do think it had been fairly easy to make changes especially in the areas

academically and certain other areas. One example would be of adding wireless in the new dorms. Not too long after I started at the university I attended a construction meeting about the new dorm being built. I asked about the wireless for the building and discovered that they did not intend to put wireless in the building. I stressed the importance of having wireless added to the construction design and it was added. It's definitely easier to do at University A than, I would say, University C was.

I think that the change that we've done academically and with academic technology and those kind of things, I think that has been good. I think it has been fairly easy. I think that's because of being involved. I think that's again something I said earlier, is that - you know, if you have an opportunity to be involved. One example of this, I would say, was from COVID, as far as working with the provost and being involved with the deans at that table to be able to come up with suggestions. If I had not been at that table, we would not have been able to have those decisions, we would not have been able to move forward in those things. So, I think the opportunity there, I'd made a huge difference, and I think that the ability to make changes really comes down to being able to be a trusted leader but also given the opportunity to make that change.

At University A, I'd been able to make a lot of change, and I think, you know, coming out of the COVID and being able to, to do more things is going to only help as far as being able to make two more changes on campus. And it's also one of these things: once you prove change, once you do change, you then get the credibility to be able to do more and I think that's going to continue.

Question 12

Interviewer

Did you feel the ability to implement change across the campus?

Interviewee

At University C, I felt like I could make changes across most of campus. The library was an area that I felt like I was not able to implement much change. Trying to implement change with the library was very troublesome and very difficult to do. I think some of that might have to do with the difference between the administrative and the academic sides. There was not as much collaboration between those two areas as I have seen at other institutions. So, I think you know the ability to change there was restricted to certain areas. Those areas would include student housing where we did a two-million-dollar wireless upgrade project. There were some things that were done in academic areas, but I felt it was hard to convince them.

At University B, I definitely felt I had the ability to change across campus. I think part of that was being able to be on that level with the executive team and talk about things across campus. By being on that executive team, I was able to know and be aware of things across campus, which I think was extremely important. So, when that discussion was going on in the executive council, I felt like I was welcome to express my input, and often the university president would ask me what I thought in meetings. I felt the freedom to say "I have a solution that for that area" even if that's not in my area. I was often able to give ideas that I shared about how things were done at other universities that I had worked at. I felt the ability to be able to really exert influence across the entire campus.

At University A, I feel the same way as University B. In thinking back, I also might have felt more comfortable expressing my suggestions was that I had been a CIO for nearly ten years already, and I had experienced a lot in my twenty years of working in

higher education. I think some of the illustrations where I felt like I had campus-wide influence was the handling of the COVID pandemic and the implementation of Workday. Those are two things that affected every student, staff, and faculty member. That was an opportunity to be engaged with the right people and able to come up with the right solution. It is essential for a CIO to be able to have that opportunity to be able to know what's going on, so they can contribute. At University C, I was unaware of most of the things occurring on campus and someone else was at the table representing information technology when those important discussions and opportunities arose.

One of the things that I felt at University A was that it gave me more credibility because I was able to demonstrate strong IT leadership and accomplish things. That credibility then opened up other opportunities. I also think it helped that at University A, the President is very big into the collaboration and often says this person needs to talk to me. That has helped reinforce the notion that IT needs to be a central component of the university that we have going on to.

Question 13

Interviewer

Please discuss some of the significant projects that you implemented when you started the job.

Interviewee

At University C, one of the first projects increased the university's bandwidth. When I arrived on campus, the bandwidth was 500 MB. I upgraded that to 5 GB within the first six months and then doubled the bandwidth every couple of years. I believe it was 40 GB when I moved on to university B. We also had to upgrade the network hardware to handle the promotion as part of the bandwidth upgrade. We also created an emergency operations center to allow the university to handle any on-campus emergencies. This included on-campus shootings, tornadoes, and natural disasters.

At University B, we implemented Microsoft Office365 for all staff and faculty. The university had owned the Microsoft product but had not rolled out a use for it beyond the IT department. We rolled it out for use by all staff and faculty members. We also worked on the InfoCommons area in the library, which consisted of new furniture, collaboration areas, and new general use computers on the first and second floors. Another project was getting the CRM fully functional. It was purchased about eight months before I arrived but was not working. It took several months to get it fully functional after I started at the university.

Most of the significant initiatives at University A were centered around instructional technology and the pandemic. I had only been at the university for three months when the pandemic reached the university's region. Because of the pandemic and the need to limit the number of people on campus, all classes had to be moved to online course delivery. So 1,700 courses were moved online over a three-day weekend in March. To accomplish this, we have to purchase instructional technology tools such as Zoom, VMWare Horizon (which allowed staff, faculty, and students to access software

that was installed in on-campus computer labs), MediaSite (we had this tool but were not using it campus wide), and partially implemented Microsoft Office365 so all staff and faculty would have access to the applications. We also purchased hundreds of webcams to be used for meetings and classes. These cameras were available for check out from the library. In addition, we also upgraded some older laptops so that they could be used by students and faculty that did not have a computer at home.

Question 14

Interviewer

Was there a particular goal or theme that you felt was gathered through the interview process that you felt was the top priority?

Interviewee

I definitely felt that all three universities needed outside influence. At University A and C, they needed somebody with good experience at another institution that could come in and could bring cohesion and lead the IT group. I felt that there was a lot of low-hanging fruit. What I mean by that is moving to Office 365 and implementing things, getting hardware on a refresh schedule, those kinds of things would definitely go a long way. I also thought that it was important to listen to the staff and faculty to make sure that I got as good an understanding as possible about the universities. At all three schools I met individually with all of the IT staff and many of the executives. My goal was to establish trust which would help in trying to accomplish initiatives and get support.

After speaking to people in the interviews and the interview discussions, I was able to come up with the top five things that needed to be done. As mentioned before, I think the biggest thing needed was IT leadership. At several of the schools the

information technology department were referred to as the “no group.” What is meant by this is that when people ask for the information technology department to help or assist them, the IT department says no. There are many reasons for this. The bottom line is that department is seen as an obstacle and not wanting to help the campus. When this occurs, there are several different things that happen. One of those things is that the non-IT department will go ahead with the project and have another group complete it. That group that completes it might be another group on campus or it might be an off-campus consultant. Either way this brings in other non-standard technology and also starts to create a shadow IT group and shadow IT systems.

As mentioned before, a lot of the staff had only been at one institution, so it was important for them to understand the bigger picture of higher education information technology beyond the university level, across all of higher education. I did this by connecting with peer institutions and in some cases doing site visits at other universities. It was helpful for them to see how other universities were handling similar issues but also to develop support networks. One institution was very afraid to roll out Microsoft Office 365, yet - as I pointed out – 1,200 other universities in the United State are already using it.

I think that one of the top priorities was for helping the information technology staff to understand that they’re here to enable and enhance the learning experience. It is crucial for them to understand that they don’t just repair computers or classroom audio visual equipment but rather they’re actually allowing that technology to be used in a classroom to enable the educational experience. My goal was to change their perspective. I wanted them to understand the value they bring to the institution. They are not just

electricians, but we look at an institution, and we look at information technology. We work at an institution that is a higher education institution, so you know, we need to be going along those lines and looking to see how we can help them on the research side. Helping them, enabling them. Not by saying no. That does not necessarily help. Especially if that's what they need for research. By saying no, we need to work with them and look for solutions and creative ways to accomplish things.

For instance, at one university I worked at, we had a buoy in the Santa Monica Bay. The buoy was running old software that had no updated version of the software available. So, it had to be run on an old computer that could not be updated. So, to solve this, we isolated that one computer so that was not connected to the rest of the network. So, the same thing, if a professor needs to use a piece of software in order to do their research, we unplug that computer so it's not a threat to the rest of the network. We need to be creative and not just say no but give them an alternative or another thing to be able to do. It is important to try and solve it because the professor's livelihood might depend on it. Also, if IT is not going to work with them to solve this problem, they're going to do it a different way, and the IT department is most likely not going to be involved.

At University A, the theme was centralization. Again, providing that leadership in the information technology department. That includes bringing these different departments into one group and creating a central voice for information technology on campus. Developing a vision for and making sure that everyone was together to move the university forward was the theme. Another part of it was to be a leader for the university leadership as well. A trusted voice that they would respect and look to on information technology matters for the university. Before starting at University A, I had a good

understanding of the potential challenges that I would face. The goal was really to move the institution forward, and I think that has happened, we are in the process of doing that and we can continue to do that.

I think there are exciting days ahead and I think I saw through the process that university wants and needs the CIO to lead the Information Technology vision for campus because it is such an essential piece. Before the IT group could lead the university, they needed someone to lead them. The top priority again was to handle a lot of low-hanging fruit and lead the group forward. The group needed to know where to go and focus its efforts on. I provided vision and high-level leadership to get things done and headed in the right direction and gained credibility with the university leaders and the IT staff.

Interviewer

That was the end of the questions. Would you like to revisit question number six?

Interviewee

Absolutely.

Question 6

Interviewer

What barriers and obstacles did I encounter in cultivating a positive environment and an organization centered around learning?

Interviewee

Let's start with University C. As far as cultivating a positive environment, some of the staff had been at the university a long time and didn't want to do things differently because they thought that what they were doing was fine already. That was something

that was difficult to deal with. At University C, I actually ended up bringing in an outside consultant that does team building and leadership coaching. We did some sessions with him and the IT staff. I had worked with him numerous times before at a previous university. I wanted him to help with creating a positive environment to facilitate change. I wanted the team to embrace change and to embrace things differently and to see people in it differently. I noticed that there was so much cynicism among the IT staff about whether things would actually change. I found out that trying to create a positive environment by rewarding people was effective. I also thought it was important to communicate to the campus what things we were accomplishing. We did a monthly newsletter that was sent to campus in which we kept them up to date about our accomplishments. The point of the newsletter was twofold; one, to show campus what we were doing but also to show the IT staff what we're accomplishing.

Communicating what the IT department is doing is extremely important. I learned that from a great mentor who is now in Georgia. Also, my father-in-law thought it was crucial to communicate what you had accomplished to get support for your vision of what you are trying to accomplish. At this university I was dealing with people that had been there a very, very long time. They did not embrace change out of fear and fear of losing their job. This is something that is especially happening in IT where replacing IT systems means that people have to be retrained. Where you go from a modern programming language to programming in COBOL, which has been around for a long time. I tried to retrain and help staff adapt to work in a different environment.

At University C, there were several people that had started as mainframe programmers and had done that for decades. After the mainframe went away they were

retrained to be in charge of identity management. It was hard to get people to adapt and learn new skills. They had been there for 40 years working on the old mainframe, an IBM mainframe. Having to get people to buy into that kind of change was definitely a barrier and obstacle to creating an organized organization centered upon learning.

I learned from my days at the first university I worked at that one of my jobs as a supervisor was to invest in my staff. Every year during my one-on-one meeting, I would ask: what can I do to help you get to where you want to be? I learned that at Pepperdine because I knew I wasn't going to have people, have some of the talented staff there for a very long time, to be honest. I knew that I would have them for two, maybe three years at most, because all of the other better paying corporate jobs were in Los Angeles.

University B, there were barriers and obstacles also. One that was the same, was it was not wanting to change. The fear of change, the fear of doing things differently, the fear of losing jobs but definitely the fear of failing. They talked openly about failure on projects that they had previously tried which did not work out. There was fear of the university's IT security system being hacked. Several times I told the reluctant staff that I was responsible and if the project did not work I would take responsibility for it. I'm going to take the hit anyways because if it doesn't work just right, it's all me.

Again, a lot of the staff at University B and C were student workers, a lot of them went to school there. So, they were only familiar with that institution. I had to convince them at both places. I would do it through peer institutions as mentioned previously. This is how it's done and actually get some help from them so that's why my mentors have been incredibly helpful. But the fear there was very big, and this is more in the IT department and those barriers of change at a university.

University A has been really different about not really having any barriers or obstacles. The IT staff has done a lot. They have accomplished a lot more than they should have. That is something that I knew coming in, but something I also found out just in person. They have been very open to change and surprisingly haven't been very negative about it either.

At University B, I would hear "I haven't had a raise in 9 years" in almost all of my annual one-on-one meetings, almost in every single one of my yearly meetings. I would also hear about the lack of raises at University C also. This is something that I had never really thought about before.

This is good. I am doing this dissertation because I hadn't really thought about that, but the obstacles here are really more along the lines of limitations of staff in order to be able to accomplish things. The only limitation at University A had been not having enough staff resources. The environment was a much more positive environment compared to at University both B and C. What I mean by positive environment is that the IT staff were much more welcoming and displayed more of a desire to improve things at the university. I found out the university leadership had tried to give some salary adjustments to some of the IT staff at University A in the not so distant past which helped. It should be noted also that many of the IT staff at University A had worked in industry and at other institutions which might have something to do with the can-do attitude. Really interesting.

Interviewer

Good luck. This finishes our questions.

Interviewee

Okay, let me stop recording. Thank you. {End of transcript}

Summary

The questions and answers have been designed to give the reader better insight into my responsibilities and the time that I have spent at the three universities where I have been a CIO. The questions have sought to focus more on the department that I was part of, the responsibilities that came with reporting to that area, my ability to influence others on campus and make change, and the people that I interacted with on the campuses.

As part of my data collection process, I also used two other methods. I used mind mapping exercises that helped to brainstorm and determine what the right questions to ask were. I also created a Venn diagram to help me visual the data that were being collected in a way that allowed me to see some of the patterns and better understand the connections between the three institutions. The mind mapping documents and Venn diagram are provided in Appendices B and C. The span of time covered by the experiences at the three universities is almost 10 years, so it was helpful to be able to reflect on circumstances that I had not done in the past.

This study has provided a highly personalized account of a university CIO, focusing on the differences in where the position reports and how that structure affects his/her influence across campus. To better explain the data from Chapter 4, I will give a detailed narrative for each of the three universities and explain how the reporting structure affected the types of projects that I worked on, the people with whom I interacted, and the influence that I had on campus.

The point of these illustrations is to offer a means to better understand my personal experiences at these three universities through case studies. These three narratives cannot fully explain the time spent at these institutions and the wide range of projects I accomplished. It was not until doing this research that I understood better the effects of reporting structure and how where I reported affected my ability to make an impact on campus.

The Case Narratives

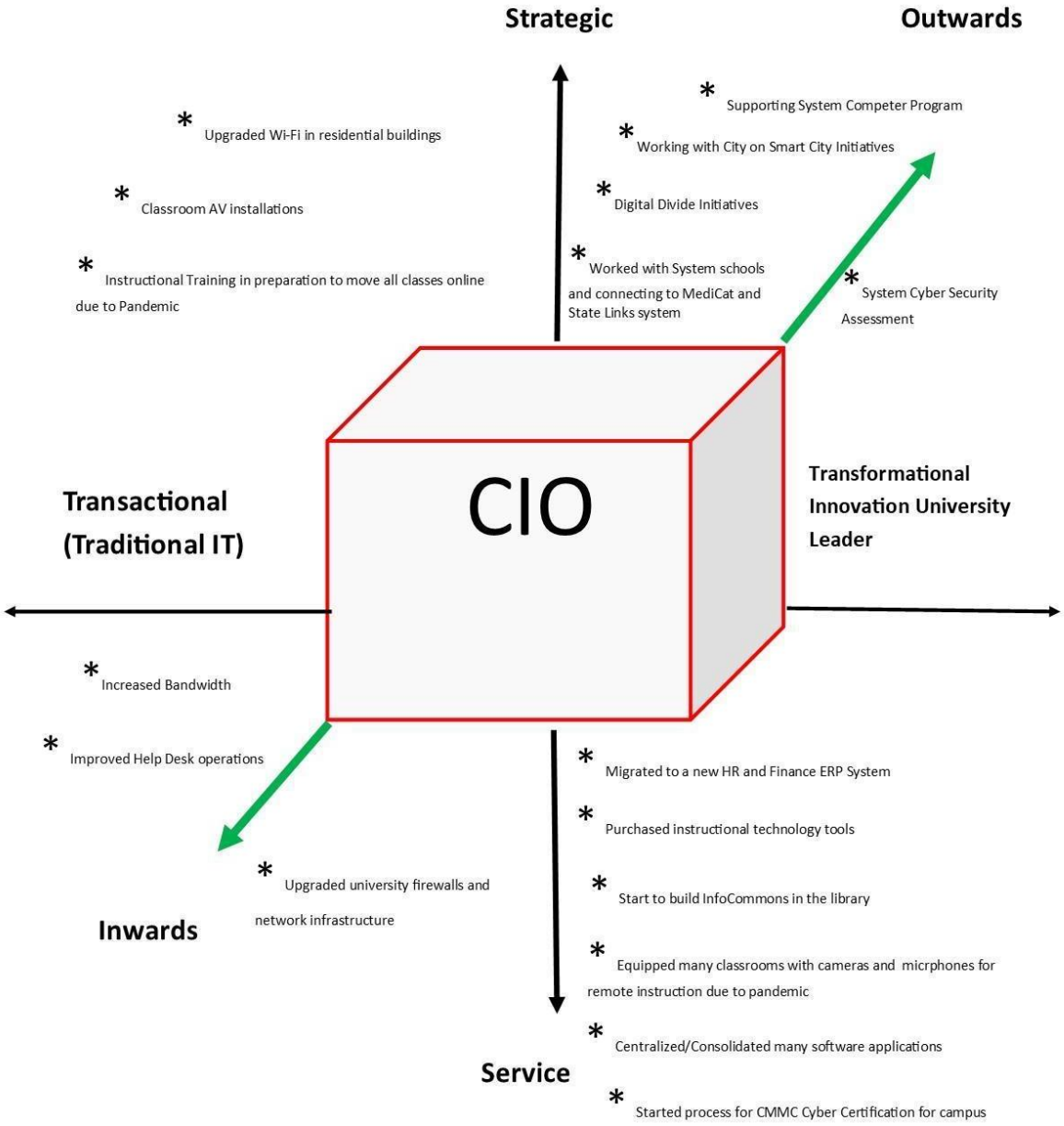
This next section contains a case narrative of each institution. The narratives provide examples and help illustrate and answer the research question. The purpose of this research study was to look at the differences in where the CIO position reports to and how that location affects their influence across campus.

University A

At University A, I reported to the university resident and was a part of the executive team. The other university leaders that reported to the president were provost, vice president for athletics, vice president for research, chief innovation officer, vice president for student affairs, and vice president for advancement. Based on my position with the university leadership at University A, I found my scope to similar to University B but broader. The scope and reach of my work were across the campus and not limited to the direct area to which I reported. I felt empowered to address issues that I came across as I discovered them. Being on the executive team, I also had purview of most of the important issues occurring at the university. Figure 10 represents many of the projects or initiatives that were accomplished while I was at the university. My tenure at University A was a little over 2 years.

Figure 10

University A



I started at University A as the university's first CIO in January 2020. While I was unboxing my personal belongings and meeting the staff on campus, we started to see information about COVID-19. As the pandemic spread across the country, the university

created an emergency response team (ERT) as a subgroup of the president's executive team. The ERT was made up of the provost, director of emergency relief, university counsel, chief of police, registrar, vice president for facilities, chief communications officer, and a few others. University A has an early childhood center and a K-8 lab school on its campus, so the school leader was also involved in these meetings.

This team was briefed on the discussions and information that the state's Department of Health was learning and sharing in conjunction with the federal government. I was involved in these discussions as part of the team that decided how the university should move forward in the face of the oncoming pandemic. The team developed a Pandemic Response Plan and recovery operations which included five different disease response levels, which go from level 1 (suspected or confirmed case(s) of human-to-human transmission of pandemic disease around the world) to level 4/5 (confirmed case(s) of human-to-human transmission of pandemic disease found on the campus, in the city, or in state administrative units).

As the pandemic spread globally, the team met more frequently. At the beginning of March, the first cases of COVID-19 were confirmed in the state and were starting to spread to the local region where the university is located. At the end of February and into early March, the pandemic became more prevalent in the city and made its way to campus. It was becoming apparent that we needed to look at changing the way classes were held, knowing that we had no choice but to move online.

University A's academic calendar uses quarter terms, and the quarter had just started when the pandemic began to affect campus. Many schools around the country gave students an extra-long spring break to try and decide the best way to respond to the

pandemic. In the same way, some schools paused to provide the university with time to respond. With the quarter just starting, the university did not have many options. Students could have dropped their courses without many penalties because it was still in the first 9 days of the quarter, which could have devastated the university financially.

Because of the necessity of ensuring that all classes could continue, I made suggestions on ways the institution could move all instruction to an online format. I was able to work very closely with the provost, also a direct report to the president. The provost invited me to all meetings with the academic deans to discuss the pandemic and its effects on the institution. As part of these efforts, I worked closely with the provost and the academic deans to ensure everyone worked collaboratively.

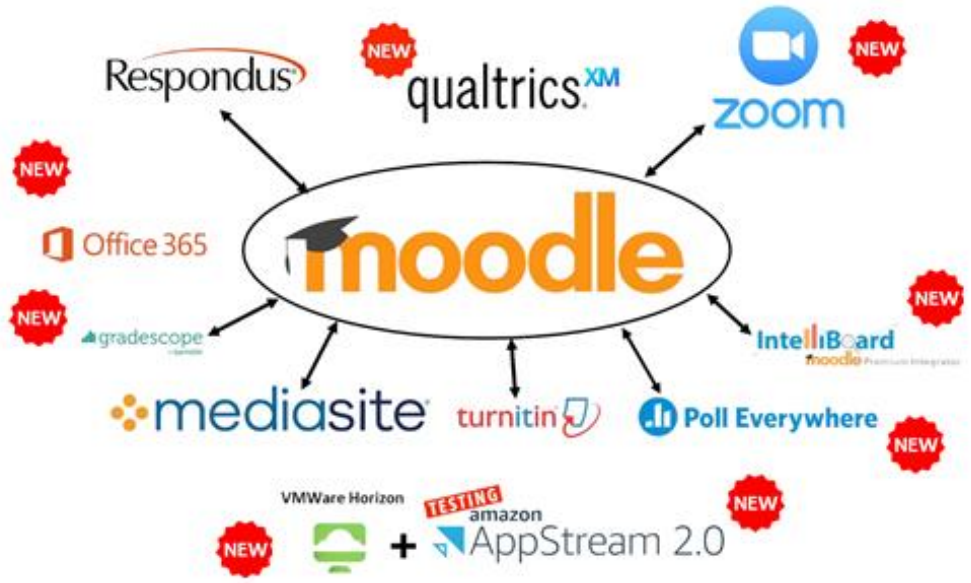
Being in those meetings, I was able to get their feedback and support for moving all of the classes online. This was a tremendous feat. Over 1,700 classes were moved from in-person to online, and faculty were trained over 3 days. We already had some of the instructional technology tools on campus but had to purchase other ones. I recall after meeting with the provost when we agreed on the necessity of buying Zoom, we walked over to the president's office, where the president signed the purchase order. I then hand-walked it over to the purchasing office to submit it to Zoom immediately. Three hours later, we had a campus-wide Zoom account working. We also had to integrate these new instructional technology tools with our learning management system. I continued to be invited to every weekly meeting with the deans during the pandemic and became a vital part of the academic team. I helped make crucial academic decisions about the university.

The graphic in Figure 11 illustrates the purchased new software to support the instructional technology needed to assist with moving to online instruction. It is

important to note that these tools are not exclusive to online education but helped the university respond to the pandemic.

Figure 11

New Software Purchased



This narrative illustrates a situation at University A where to whom I reported affected the type of projects in which I participated. This example shows the importance of being involved and included in critical decisions on campus. Because of my reporting to the president and being a member of the president's executive team, I was part of the team deciding what the university should do as the pandemic hit the university. I was included in the discussions and offered solutions for consideration.

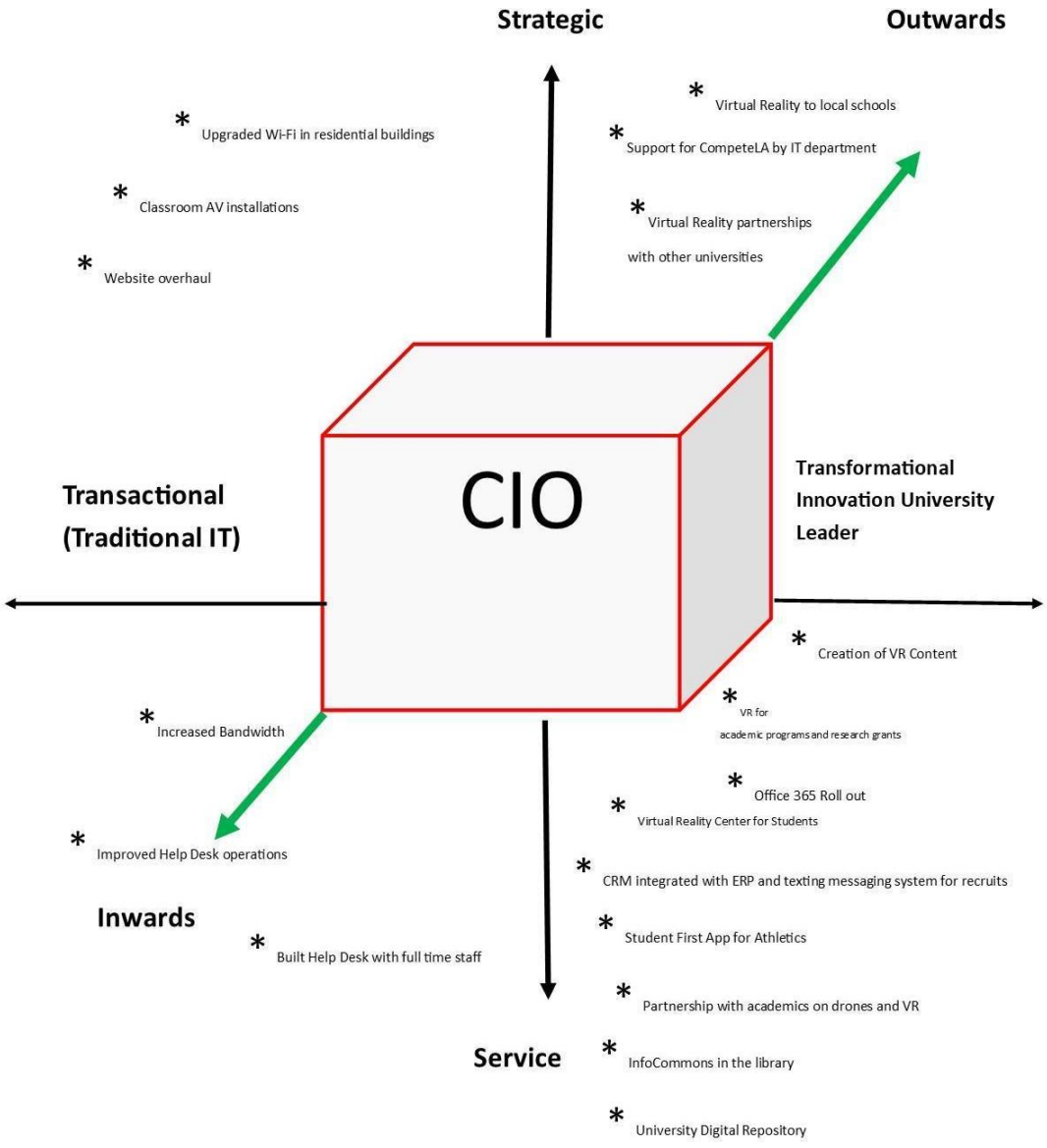
University B

At University B, I reported to an executive vice president and was on the executive team. Under this person's supervision were student success, financial aid, registrar, information technology, auxiliary services, and institutional research. Based on

my position with the university leadership at University B, I found my area of influence to be much broader than at University C. The scope and reach of my work were across the campus and not limited to the direct area to which I reported I felt I was much more aware of the university-wide projects, and, because of being on the executive team, I also felt that I could offer more direct input on projects. Below is a graphic Figure 12 that represents the many of the projects or initiatives that were accomplished while I was at the university. My tenure at University B was a little over 2 years as opposed to the almost 6 years that I served at University C.

Figure 12

University B



When I arrived at University B, I knew that the university had purchased a customer relationship manager (CRM) system to assist with recruitment and admissions about 9 months before I started as CIO. The goal of the CRM was to take potential students and enter them as recruits in the ERP Student Information Systems (SIS). The IT department and the ERP vendor had not made any progress in implementing the program.

University B had moved to a hosted ERP system a few years before I arrived at the institution. A hosted ERP system means that the computers and software running the system are not located on campus but rather in an off-site data center. This case was hosted by the ERP provider in one of their data centers. The vendor and the institution had not been successful in launching the CRM. Auxiliary services under this vice resident encompassed the dorms and residential buildings and third-party vendors such as the bookstore, campus food providers, and other services. This CRM would affect several areas within the areas that reported to this vice president.

In my interview and initial meetings after I accepted the CIO position, it was apparent that this CRM issue was a problematic frustration for the university. I immediately established a personal relationship with the vendor. I then met with the IT team, admissions, and enrollment services to listen to and determine those areas' expectations and ensure that those expectations were met when the product was rolled out to the campus.

After numerous meetings with the ERP company and their two different support teams, the problems were finally isolated and resolved. It was discovered far too long into the implementation that this particular CRM had not been configured to work with a cloud-hosted ERP before. The vendor did not realize that element caused numerous communication and file transfer issues because of the conflicts between the CRM and the ERP system. One of the other difficulties was dealing with two different support teams at the ERP company. The communication and awareness between their internal teams were not efficient. There was very little interaction between the internal groups, making the situation much more complicated and unnecessarily delayed.

This narrative illustrates a situation at University B where to whom I reported affected the type of projects for which I was responsible and demonstrated the areas over which I had influence. In the end, the CRM project was very successful and paid significant dividends to the university. The project directly increased participation in fall recruitment events. Consequently, the number of students who applied for admission increased. The CRM allowed students to complete an online interest form which would then send them a text message asking if they would like more information about the school. Once the student's information was entered into the CRM, the information was transferred to the SIS for prospective students' statuses. The recruitment team could then notify prospective students of upcoming recruitment events via text message.

This project was very helpful and significantly increased the number of prospective students at these events. We were getting very poor feedback from these potential students by communicating via email or phone. The text message feedback was well-received. Two years after this initiative was implemented, the university had record enrollments. Other factors contributed to this enrollment increase, but the CRM did play a vital role. This technology integration led to a transformational change.

University C

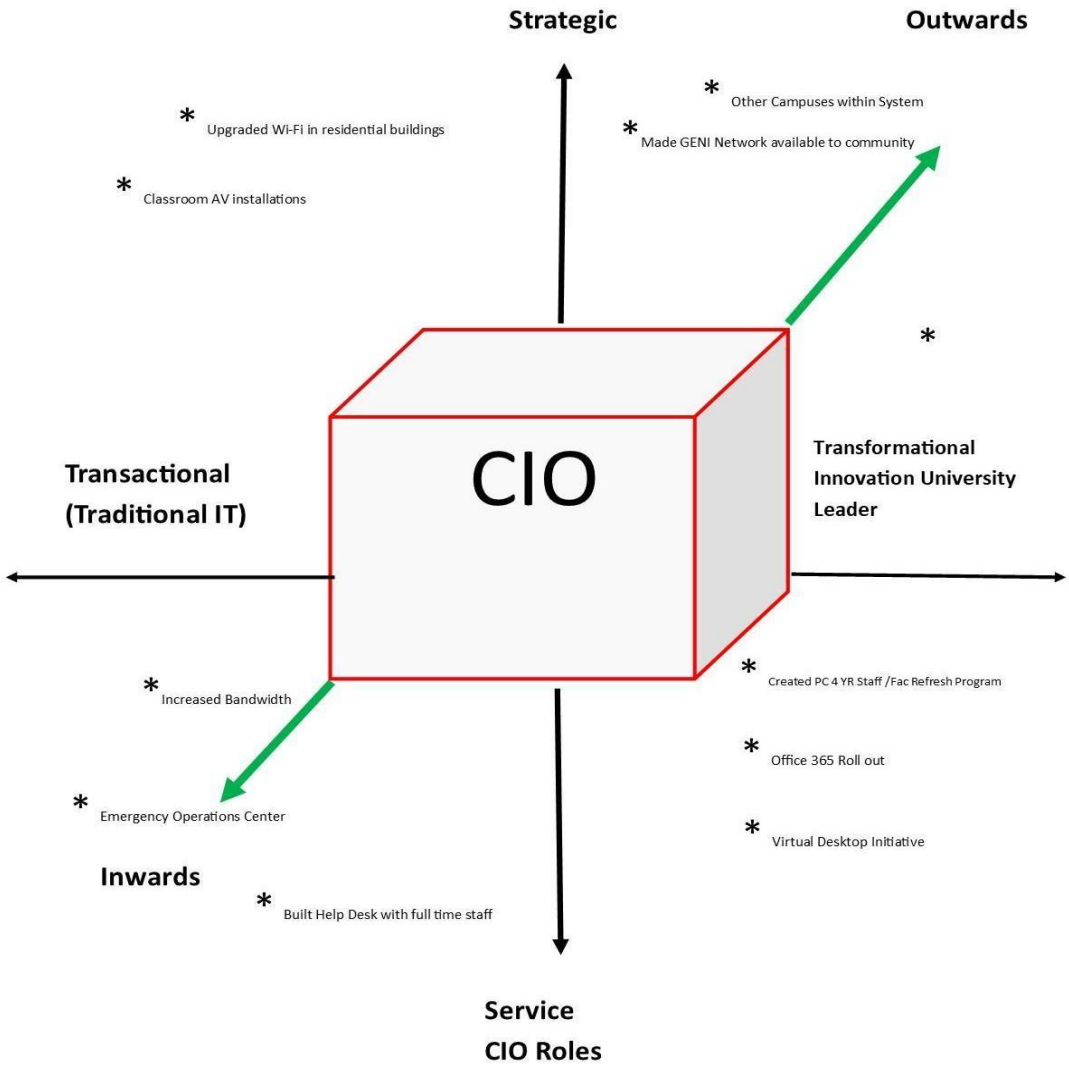
At University C, I reported to a vice president for finance, IT, and operations. Under this person's supervision, the other areas were the contracts office, registrar, procurement, financial aid, public safety, human resources, axillary services, and budget office. Based on my position with the university leadership at University C, I found my area of influence to be mostly within the direct reports of the vice president to whom I reported. Not being on the university's executive team, I felt that I did not have a solid

gasp of the critical university projects occurring and the opportunities where technology might have had a broader effect across the campus.

Figure 13 Represents many of the projects or initiatives that the information technology department accomplished while I was at the university.

Figure 13

University C



The projects are plotted on a cubic model with the four directional arrows representing Strategic, Transactional IT, Transformational Innovation, and Service. Strategic refers to the project moving the organization forward or improving the university. Outward indicates the CIO working with partners or members outside of the organization, for example as a member of a larger state university system. Inward would be a project that was strictly focused inward primarily for the IT organization and does not significantly benefit the university. Service would indicate the project was more an IT service, for example the help desk support or audiovisual classroom support. The function is necessary at any institution but does not set the organization apart from other universities by having it. A transformational or innovative university leader indicates that the project could make a profound difference at the university, something that gives the university a competitive edge. As the Deloitte Global CIO Larry Quinlan states, "transformations are undertaken for some strategic reason," and they are "initiatives that truly change the way we do business or the way we operate" (Schlegel & Yousif, 2020, p. 15).

One of the first projects that I worked on after taking the job was creating an emergency operations center (EOC). I noticed that public safety was a significant concern for the university, particularly the person I reported directly to. The university is in the middle of a medium-sized city in the south. It was common to hear sirens while at work. I can also remember several times when students' cars and dorms were broken into on campus.

I was also aware that the vice president I reported to had begun his career at the university in the public safety area. The city also had been hit by a tornado within the past

10 years. The shooting at Virginia Tech University was also still in people's memories because it had happened within the past 5 years. The project was significant enough that I was asked to use some of the startup money I was given to make strategic purchases with safety in mind.

The project described herein was to create a university EOC very similar to what has been portrayed in movies or TV shows. The EOC would basically be a command center where the essential university staff would have access to technology that would provide reliable communications internally between the president's executive team and the EOC team and with state, city, and county emergency operations staff. The EOC staff was composed of the university police chief, head communications officer, a representative from the registrar, someone from the ERP team, a representative from student life, a representative from academic affairs, an information technology representative, another IT staff person to assist the technology in the facility, the lead public safety person, and representatives from several other departments.

The center was located in a reasonably large room, partly an old converted data center with a raised floor. The raised floor was very helpful with getting connections and cables placed all around the room. The room had three very large video displays which could display connections from any of the 25 computers in the room, cable TV (to monitor new stations and The Weather Channel), and a video conference unit that could connect to the county emergency operations center or the president's executive conference room if needed. Each of the people in the EOC had a computer, desk, university phone, and notebook that contained a vast amount of information that might be needed during an emergency. This information included emergency operations guides

and key personnel data, including phone numbers. A secondary internet provider was added to the room if the university's primary provider went down.

We conducted monthly drills and had two day-long disaster drill practices per year. Those practices included the city and county emergency operations and had the university's nursing students simulate injuries. The disaster drills were very elaborate with very realistic scenarios, and the emergency operations center was very well conceived. I recommended some of the concepts I observed in emergency operations while designing the one for University C.

This narrative demonstrates that my location in the organizational structure enabled my participation in this project and illustrates that that I could have been involved in more projects that could have had a more significant impact on the entire university in a more centralized or elevated reporting structure.

CHAPTER 5

DISCUSSION

The purpose of this research study was to look at the differences in where the CIO position reports to and how that location affects their influence across campus. Chapter 5 discusses the findings, a discussion, followed by a discussion on information technology and institutional leadership, recommendations for professional practice, recommendations for further research, and a conclusion.

Discussion

The findings of the study suggest that university leaders should (1) recognize the importance of IT and, specifically, the CIO and ensure that both meet the university's technology needs, (2) expand the reach of the CIO beyond his/her home department, (3) recognize that the location of the CIO in the organization chart is flexible, (4) invest significant efforts to identify the appropriate skills and expertise needed by the university in its CIO, and (5) enable the CIO to be an institutional leader, not just a technology leader.

University leaders should recognize the importance of information technology and, specifically, the CIO and ensure that both meet the university's technology needs. Decision-makers should think about how technology can enable the institution to fulfill

its mission and strategic goals. Technology should be viewed as an instrument of change in teaching projects, admissions projects, financial aid projects (Chester, 2006). Technology has become embedded into the university and cannot be separated from it. The goal for the CIO is to use technology to solve today's problems facing universities (Chester, 2006).

CIOs are now seen as critical and strategic partners in the organization. They should have "a seat at the table in all critical business decisions. IT is now considered a strategy so the CIO now contributes to the mission or goals of the institution" (Battista, 2018, p. 1). The time has come that IT and the central role of the CIO are vital and indispensable elements of the success of the organization.

It is important for university leaders to expand the scope of influence of the CIO beyond those within their home department. Battista (2018) asserts that "CIOs are now transformative and innovative because the expectation is that IT services will help drive strategy and effective business processes" (Battista, 2018, p. 1). The university leadership must acknowledge that the ability of the CIOs to improve and solve problems is not restricted to specific departments but can have enterprise-wide effects.

Domain-specific projects are not IT projects but broad-based projects, which could affect any department on campus and evolve into campus-wide solutions (Chester, 2006). The CIO becomes a key player who assists any department on campus regardless of its location in the organizational chart. The alignment between business strategy and information technology strategy is directly associated with the organization's success (Sabherwal et al., 2001). For information technology professionals to support the entire

university, they need to be a campus-wide influencer tool and not confined to a specific unit.

The IT strategy needs to be communicated to senior management because that is most likely where the major technology initiatives will be approved. Therefore, senior management must understand the importance of information technology (Battista, 2018). Building strategic partnerships and identifying and communicating opportunities are critical for the CIO's role. The CIO's solving problems across the university will bring success to the university and to the CIO (Sabherwal et al., 2001; Toor, 2017).

There is no perfect place on the organizational chart for the CIO to reside at a university. Still, there are differences in whether he/she reports to the university president, provost, or vice president for finance. There is some research in the literature about where the CIO reports. Deloitte in 2018 analyzed more than 500 global CIOs in 2018 and found that 46% of those surveyed reported to the highest levels of the organization. It also found that 28% reported to the CFO, and 11% reported to the COO, while 16% reported to somewhere else in the organization. They found that "regardless of their reporting lines, CIOs should elevate technology to be on the organizational agenda to be a strategic business leader" (Kark et al., 2018, p. 1). The placement of the CIO was more about what the organization needed than about appearances. If the CIO was leading the enterprise through a digital transformation, they found that he/she was most often reporting to the CEO. If the CIO was only a supporter or a strategist, 51% of those CIOs reported to the CFO.

There are several reasons why it is not ideal for CIOs to report to the CEO. In many instances, the CEO is juggling too many direct reports and cannot give the CIO the

support or direction he/she needs (Overby, 2019). There also might be an advantage for the CIO to report to the COO, which allows for more direct collaboration between the two positions. This collaboration allows for the COO to gain a deeper involvement in and understanding of information technology. It also allows the CIO to have a superior knowledge of the institution's strategic focus and operations. There is a natural alignment that could benefit both those positions and the organization and thereby still allow the CIO to make presentations to the organization's leadership board and help guide senior leadership (Overby, 2019).

The CIO's ability to meet with the institutional management team is more important than reporting to the CEO. According to a follow-up study, there was a negative correlation when the CIO reported to the CEO when the CIO acted in a classic IT support model (Brown, 2006). That study did not explain the reasoning for the making this conclusion. This citation supports the claim that there is no perfect place for the CIO to report at a university but rather they can achieve success regardless of where they are located in the organization.

It is important to develop a deep understanding of what kind of CIO the university needs. Does it need a transactional CIO who should concentrate on the basic IT needs like network, customer service, and classroom audiovisual, or does the university need a transformational CIO who needs to focus on initiatives that can genuinely transform the university?

The most important step in hiring a CIO is to ask the question: Why? Is the executive leadership team trying to replace a seated CIO? If so, it is important to investigate why the previous person failed. Often a new CIO is hired to resolve

frustrations with the information technology team, thinking that their hiring will solve all the problems. In that case, the university administration has not been realistic about the position. Setting expectations and determining what the university needs is a group effort. The group includes the executive team and the search committee that hires the CIO. The campus commitment to information technology is another essential element to finding the right person to serve as CIO. Budgetary and resource needs for the position must be considered to set realistic expectations (Hawkins, 2004).

A transformational CIO can lead initiative change that can significantly enhance the technology on campus by process improvement or positive and strategic change. A CIO is a business strategist responsible for the network infrastructure, purveyor of information technology services, and enterprise leader (Schlegel & Yousif, 2020).

Enabling the CIO to be a business leader, not just a technology leader, is critical. For this to happen, it is essential to allow the CIO to have opportunities to provide solutions across the whole organization, not merely in specific or isolated areas. Becoming more business-like would allow universities to incorporate technology into the academic world, thereby positioning the CIO to be an even greater asset to the university. The CIO would be seen as a critical and strategic partner and show the value they could bring to all-important business decisions (Battista, 2018). Businesses have become increasingly dependent on the contributions that IT makes to the organization, especially with leading business chances and business strategies. The CIO facilitates and enables the business to respond to technology opportunities that will better position the organization. The CIO is seen as a change agent influencing business strategy (Earl & Vivian, 2000).

Deloitte in 2020 conducted the *2020 Global Technology Leadership Study* to learn more about the evolution of organizations while specifically looking at their technology functions. They defined a "kinetic" leader as a "tenacious, future-focused innovator who can guide business-technology strategy, communicate effectively with the c-suite and the board and drive mission critical enterprise transformation" (Schlegel & Yousif, 2020, p. 16). This leader is able to guide the organization through massive transformation and every change that lies ahead. The kinetic leader positions the organization where it needs to be to succeed.

The study further discussed how information technology leaders' responses to COVID-19 should be not only focus on stabilizing the organization for the short-term but also look for ways to position the organization for long-term success. The report also points out that over the past 5 years, the CIO's focus has evolved from an operational approach to partnering with the business to drive strategy (Schlegel & Yousif, 2020).

Most importantly the organization should o recognize strategic importance of the CIO as a change agent to bridge the gap between information technology and the business. As the CIO accomplishes this, the other senior university management team members will recognize how information technology and the CIO can improve functional areas across the institution (Hunter, 2010).

Recommendations for Leadership Practice

Based on a review of literature in Chapter 2 and the research conducted, the CIO needs to be a critical member of today's university leadership team. Currently, IT is the circulatory system of every higher education organization, and this circumstance is likely to continue to expand either because of leadership effectiveness among institutions that

embrace it or because institutions that do not embrace this reality will cease to exist. For CIOs to be strategic leaders at the university, they need to lead transformational change, which includes having strategic alliances with crucial university players. The CIO needs to be a member of the university's executive committee. The CIO needs to have an awareness of current projects and potential challenges or threats that the university might face in the future. It is important that the CIOs see themselves as influential transformational university leaders, not just transactional technology managers. The power and ability of a university leadership team needs to be appreciated. A team that is strong, united, and aligned can accomplish meaningful innovation and change for a university (Kezar et al., 2020).

Recommendations for Further Research

The three institutions used in this study are all public universities of similar size, mission, and governance. With that in mind, the generalizability of this study needs to consider differences in other types of higher education institutions. For instance, the function of CIOs at larger or smaller universities may be different than the three institutions contained in this study. Also, differences between the mission of public and private institutions could be a factor in the role of CIOs. An additional direction for further study could be the pathways that lead CIOs into their roles, specifically because they were leaders who gained technical expertise, or because they were people with technical backgrounds who gained leadership expertise.

Conclusions

The past several years have recorded a growth in the importance of information technology in higher education. Because of this growth, for CIOs to be truly transformational, visionary, and influential university leaders, they need to have the ability to lead transformational change. If CIOs are limited to merely maintaining the technology infrastructure of a university, the greater impact they could have overall is limited. If their scope is narrow, their influence is narrow.

The IT department is one of the few departments on campus that can enable and assist all university areas. To be truly a transformational partner with the university, the CIO needs to be in a position to provide solutions and engage in the business of the university's requirements and needs beyond academics. In addition to instruction, each university is, essentially, a small city. The university operates with food vendors, lighting, security systems, HVAC, etc. Information technology systems manage this overall infrastructure based on data usage from the university's student information system or enterprise resource project (ERP). If CIOs are restricted to addressing academic solutions for the university, they cannot utilize all their capacities to enhance the overall cost effectiveness, efficiency, and image of their institutions.

This autoethnographic study has made me think deeply about my role at these three institutions. It has allowed me to honestly look back and see how much happened during my service period at each institution and has made me a better university leader. My goal in sharing this research is to help others become aware of the impact that reporting structure for the CIO can have in higher education and how it can play a role in university success. This research has highlighted my understanding that a CIO can and

often do occupy different roles in an organization and, with the right support, can be successful in various functions. As the literature and autoethnographic research in this dissertation has illustrated, the effectiveness of people and departments fluctuates based on to whom the CIO reports.

My experience leads me to believe that CIOs are more effective when they report to the president; however, as this study shows, other factors must be considered as well. Some of those factors are related to one's role on the leadership team. For instance, at University B, I did not report directly to the university president; however, I was a member of the president's executive team, which made a positive difference and allowed me to play a significant role on campus. I was also able to affect the other areas under the same executive vice president and be on the president's executive team. This gave me greater access to the critical events occurring on campus. At University C, I neither reported to the university president nor was on the executive team and did not feel as connected to the university as I did at either of the other two universities. At University C, I assisted the department areas aligned under the same vice president, which made my relationships with those departments stronger than with other university departments.

The importance of IT and its vital role on campus cannot be overstated. In both my research and in my experience, one of the most important factors for CIO effectiveness is for the CIO to be empowered to provide solutions for the entire institution. Because of this finding, it is critical for a CIO to be a true senior organizational leader.

REFERENCES

Alghamdi, H., & Sun, L. (2017). Business and IT alignment in higher education sector. *International Journal of Technology and Engineering Studies*, *3*(1), 01-08. https://dx.doi.org/10.20469/ijtes.3.40001-1

Applegate, L. M., & Elam, J. J. (1992). New information systems leaders: A changing role in a changing world. *MIS Quarterly, 16*(4), 469-490. https://doi:2089/10.2307/249732

Battista, R. (2018, July 13). *From the backroom to the top of mind: The evolving role of the strategic CIO*. The EvoLLLution. https://evolllution.com/managing-institution/higher_ed_business/from-the-backroom-to-the-top-of-mind-the-evolving-role-of-the-strategic-cio/

Bergquist, V. (2017, December 8). *How a transformational CIO can help your institution grow.* The EvoLLLution. https://evolllution.com/managing-institution/higher_ed_business/how-a-transformational-cio-can-help-your-institution-grow/

Brown, W. (2006, February 6). *CIO effectiveness in higher education*. EDUCAUSE. https://er.educause.edu/articles/2006/1/cio-effectiveness-in-higher-education

Brown, W. (2017). *2017 study of higher education CIO roles and effectiveness.* EDUCAUSE. https://library.educause.edu/-/media/files/library/2019/1/2017checscio.pdf

Bustamante, J. (2021, February 06). *Distance learning Statistics [2021]: Online education trends*. Education Data Initiative. https://educationdata.org/online-education-statistics

Cartwright, C. A. (2002, January/February). *Today's CIO: Leader, manager, and member of the executive orchestra*. EDUCAUSE. https://er.educause.edu/~/media/files/articles/2006/1/erm0205.pdf?la=en

Chester, T. M. (2006, November 2). *A roadmap for IT leadership and the next ten years*. EDUCAUSE Review. https://er.educause.edu/articles/2006/1/a-roadmap-for-it-leadership-and-the-next-ten-years

Cohen, J. F., & Dennis, C. M. (2010). Chief information officers: An empirical study of competence, organizational positioning and implications for performance. *South African Journal of Economic and Management Sciences, 13*(2), 203-221. http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S2222-34362010000200007&lng=en&tlng=en.

Coltman, T., Tallon, P. P., Sharma, R., & Queiroz, M. (2015). *Strategic IT alignment: twenty-five years on*. *Journal of Information Technology, 30*, 91-100.

Dalmini, R. (2013, March). The role of the strategic and adaptive chief information in higher education. *Education and Information Technologies, 20*, 1-29. https://www.researchgate.net/publication/271573225_The_role_of_the_strategic_and_adaptive_Chief_Information_Officer_in_higher_education

Dodd, D. (2014, December 8). *Three ways institutions are using technology to improve efficiency and effectiveness*. The EvoLLLution.

https://evolllution.com/opinions/ways-institutions-technology-improve-efficiency-effectiveness/

EDUCAUSE. (2022). *Vice president & chief digital officer in Cincinnati, OH for University of Cincinnati*. https://jobs.educause.edu/jobs/16154522/?utm_source=556181&utm_medium=recentJobs&utm_campaign=mainLanding&utm_term=

Earl, M. J., & Vivian, P. D. (2000). *The new CIO: A study of the changing role of the IT director.* ITWorld Canada. https://www.itworldcanada.com/article/the-new-cio-3/39437

Ellis, C., Adams, T. E., & Bochner, A. P. (2011*). Autoethnography: an overview*. *Historical Social Research, 36*(4), 273-290. https://doi.org/10.12759/hsr.36.2011.4.273-290

Ellis, C., & Bochner, A. (2000). *Handbook of qualitative research*. Sage Publications, Inc.

Feldman, A. (2003). Validity and quality in self-study. *Educational Researcher, 32*(3), 26-28.

Freeman, S., & Kochan, F.K. (2013). University presidents' perspectives of the knowledge and competencies needed in 21st century higher education leadership. *Journal of Educational Leadership in Action*. https://www.researchgate.net/publication/317880389_University_Presidents'_Perspectives_of_the_Knowledge_and_Competencies_Needed_in_21st_Century_Higher_Education_Leadership

Gartner Inc. (2022). *Definition of chief information officer (CIO).* https://www.gartner.com/en/information-technology/glossary/cio-chief-information-officer

Hambrick, D.C., & Mason P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review, 9,* 193-206.

Hawkins, B. (2004, January 1). *Selecting a CIO.* EDUCAUSE Review. https://er.educause.edu/articles/2004/1/selecting-a-cio

Harder, R., Nicol, J. J., & Martin, S. L. (2020*).* "The power of personal experiences": Post-publication experiences of researchers using autobiographical data. *The Qualitative Report, 25*(1), 238-254.

Huer, J. (2018, August 13). *A brief history of the CIO*. EDUCAUSE. https://er.educause.edu/articles/2018/8/a-brief-history-of-the-cio

Hunter, G. (2010). The chief information officer: A review of the role. *Journal of Information, Information Technology & Organizations, 5*, 125-43. https://doi.org/10.28945/1328

Kark, K., Shaihk, A., & Brown, C. (2018). *Who's the boss? Trends in CIO reporting structure*. Deloitte Insights. https://www2.deloitte.com/us/en/insights/focus/cio-insider-business-insights/trends-in-cio-reporting-structure.html

Kernan, W. D., Basch, C. H., & Cadorett, V. (2018). Using mind mapping to identify research topics: A lesson for teaching research methods. *Pedagogy in Health Promotion, 4*(2), 101-107. https://doi:2089/10.1177/2373379917719729

Kezar, A., Dizon, J. P. M., & Scott, D. (2020). Senior leadership teams in higher education: what we know and what we need to know. *Innovative Higher Education*, *45*(2), 103–120. https://idm.oclc.org/10.1007/s10755-019-09491-9

Langer, A. (2011). Next-gen IT leaders. *CIO Insight, 117*, 14.

Lebeaux, R. (2014, February 18). *What is it centralization (information technology centralization)?* SearchCIO. https://www.techtarget.com/searchcio/definition/IT-centralization-information-technology-centralization#:~:text=Information%20technology%20(IT)%20centralization%20is,of%20an%20organization's%20technology%20resources.

Lee, Y., Madnick, S., Wang, R., Wang, F., & Hongyun Zhang. (2014). A cubic framework for the chief data officer: Succeeding in a world of Big Data. *MIS Quarterly, 13*(1), 1-13.

Luxton, A. (2005). *Strategic planning in higher education - core.* Strategic Planning in Higher Education. https://core.ac.uk/download/pdf/232856308.pdf

Macaulay, T. (2019, June 4). *CIO career paths – majority of CIO 100 come from it backgrounds, but other backgrounds also prominent.* CIO. Retrieved May 1, 2022, from https://www.cio.com/article/197792/cio-career-paths-majority-of-cio-100-come-from-it-backgrounds-but-other-backgrounds-also-prominent.html

Marks, A. & Rezgui, Y. (2011, May-June). IT leadership in higher education: The CIO candidate. *IT Professional, 13*(3), 52-56. doi:10.1109/MITP.2010.102.

Michalak, S. C., Facelli, J. C., & Drew, C. J. (1999). *Decentralized information technology requires central coordination!* EDUCAUSE. https://www.educause.edu/ir/library/html/cem/cem99/cem9948.html

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods, 1*(2), 13-22. https://doi-10.1177/160940690200100202

Murphy, S. A. (2008). The role of emotions and transformational leadership on police culture: an autoethnographic account. *International Journal of Police Science & Management, 10*(2), 165-178. https://doi.org/10.1350/ijps.2008.10.2.72

Neundlinger, K., Vogel, S., Rack, S., & Gucher, J. (2018, January 1). *The CIO's balancing act, leading digital change by developing social skills*. EconStor. http://hdl.handle.net/10419/179992

Overby, S. (2019, November. 5). *CIO role: Who should the CIO report to?* The Enterprisers Project. https://enterprisersproject.com/article/2019/11/cio-role-who-should-cio-report#:~:text=%E2%80%9CThe%20CIO%20is%20required%20to,sense%2C%20regardless%20of%20industry.%E2%80%9D

Penrod, J. I., Dolence, M. G., & Douglas, J. V. (1990). *The chief information officer in higher education* [Professional Paper Series, #4]. CAUSE: The Association for the Management of Information Technology in Higher Education.

Peppard, J. (2010). *Unlocking the performance of the chief information officer.* CIO. https://www.ucipfg.com/Repositorio/MATI/MATI-10/BLOQUE-ACADEMICO/Unidad-02/lecturas/3.pdf

Pinho, C., & Franco, M. (2017). The role of the CIO in strategy for innovative information technology in higher education institutions. *Higher Education Policy, 30*, 361-380. https://doi.org/10.1057/s41307-016-0028-2

Qualtrough, E. (2016, February 10). *Business and IT alignment: How CIOs are aligning the business and technology.* CIO UK. http://www.cio.co.uk/it-strategy/it-alignment-how-cios-align-business-it-3622362/

Rutberg, S., & Bouikidis, C. D. (2018). Focusing on the fundamentals: A simplistic differentiation between qualitative and quantitative research. *Nephrology Nursing Journal, 45*(2), 209-213.

Sabherwal, R., Liang, H., Tsou, H.-T., Banker, R., Saldanha, T. J. V., Steelman, Z. R., Havakhor, T., Ravishankar, M. N., Preston, D. S., Chari, M. D. R., Saraf, N., & Mitchell, V. L. (2001). Alignment between business and is strategies: A study of prospectors, analyzers, and defenders. *Information Systems Research, 12*(1), 11-33. https://pubsonline.informs.org/doi/abs/10.1287/isre.12.1.11.9714

Salter, S. (2021, April 19). *MSU announces changes in its leadership structure.* Mississippi State University. https://www.msstate.edu/newsroom/article/2021/04/msu-announces-changes-its-leadership-structure

Schlegel , D., & Yousif, A. (2020, May 26*). The kinetic leader: Boldly reinventing the Enterprise.* Deloitte Switzerland. https://www2.deloitte.com/ch/en/pages/technology/articles/the-kinetic-leader-boldly-reinventing-the-enterprise.html

Shenton, A. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education Information, 22,* 63-75. https://www.pm.lth.se/fileadmin/_migrated/content_uploads/Shenton_Trustworthiness.pdf

Sparkes, A. C. (2000). Autoethnography and narratives of self: Reflections on criteria in action. *Sociology of Sport Journal*, *17*(1), 21-43. https://doi.org/10.1123/ssj.17.1.21

Srivastava, A., Bartol, K. M., & Locke, E. A. (2006). Empowering Leadership in management teams: effects on knowledge sharing, efficacy, and performance. *The Academy of Management Journal, 49*(6), 1239-1251. https://doi.org/10.2307/20159830

Stake, R. E. (1995). *The art of case study research.* Sage Publications, Inc.

Sutherland, Kathryn & Hall, Meegan. (2018). The 'impact' of academic development. *International Journal for Academic Development, 23,* 69-71. doi:10.1080/1360144X.2018.1451595.

Synnott, W. R., & Gruber, W. H. (1981). *Information resource management: Opportunities and strategies for the 1980s*. Wiley.

Tan, C., & Li, Y. (2009). *Aligning CIO characteristics to business strategy: An empirical investigation* [Paper presentation]. 42nd Hawaii International Conference on System Sciences, Big Island, HI. doi:10.1109/HICSS.2009.568

Tang, K .H., & Zairi, M. (1998). Benchmarking quality implementation in a service context: A comparative analysis of financial services and institutions of higher

education. Part I: Financial services sector. *Total Quality Management & Business Excellence, 9,* 407-20.

Techopedia. (2020, August 7). *What is an information system?* Techopedia.com. Retrieved March 27, 2022, from https://www.techopedia.com/definition/24142/information-system-is

Theofanidis, D., & Fountaouki, A. (2018). Limitations and delimitations in the research process. *Perioperative Nursing*, *7*(3), 155-163. https://doi.org/10.5281/zenodo.2552022

Toor, T. (2017, January 1). The strategic chief information officer. *Strategic Direction*, *33*(3), 15-18. https://www.semanticscholar.org/paper/The-strategic-Chief-Information-Officer-Toor/87f89763ffa944cd053cf2ce8461fe4c412ed271

Trivedi, I. (2021, December 11). *Officials to resume chief digital officer search 'in the near future'*. The GW Hatchet. https://www.gwhatchet.com/2021/12/06/officials-to-resume-chief-digital-officer-search-shortly/

Trochim, W. M. K. (2020, March 10). *Research methods knowledge base*. Conjoint.ly. https://conjointly.com/kb/.

U.S. News and World Report. (2022). *Best national university rankings*. https://www.usnews.com/best-colleges/search?schoolType=national-universities&_sort=rank&_sortDirection=asc

van Blokland, S. (2018, July 31). *The ever changing role of the CIO*. Odgers Berndtson. Retrieved May 10, 2020, from https://www.odgersberndtson.com/en-nl/insights/the-ever-changing-role-of-the-cio

Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *European Journal of Education, 48*(2), 311-325. https://2089/10.1111/ejed.12014

Oracle. (2022). *What is ERP?* https://www.oracle.com/erp/what-is-erp/

Wheeldon, J., & Faubert, J. (2009). Framing experience: Concept maps, mind maps, and data collection in qualitative research. *International Journal of Qualitative Methods, 8*(3), 68-83. https://doi-/10.1177/160940690900800307

Wilde, R., & Messina, P. (2019). Leadership and influence. *Public Management, 101*(4), 26-29.

Woodfield, S., & Kennie, T. (2008), 'Teamwork' or 'working as a team'? The theory and practice of top team working in UK higher education. *Higher Education Quarterly, 62*, 397-415. https://doi.org/10.1111/j.1468-2273.2008.00399.x

Zetlin, M. (2020, September 28). *What is a chief data officer? A leader who creates business value from data*. CIO. https://www.cio.com/article/3234884/what-is-a-chief-data-officer.html

APPENDIX A

INTERVIEW QUESTIONS

Interview Questions

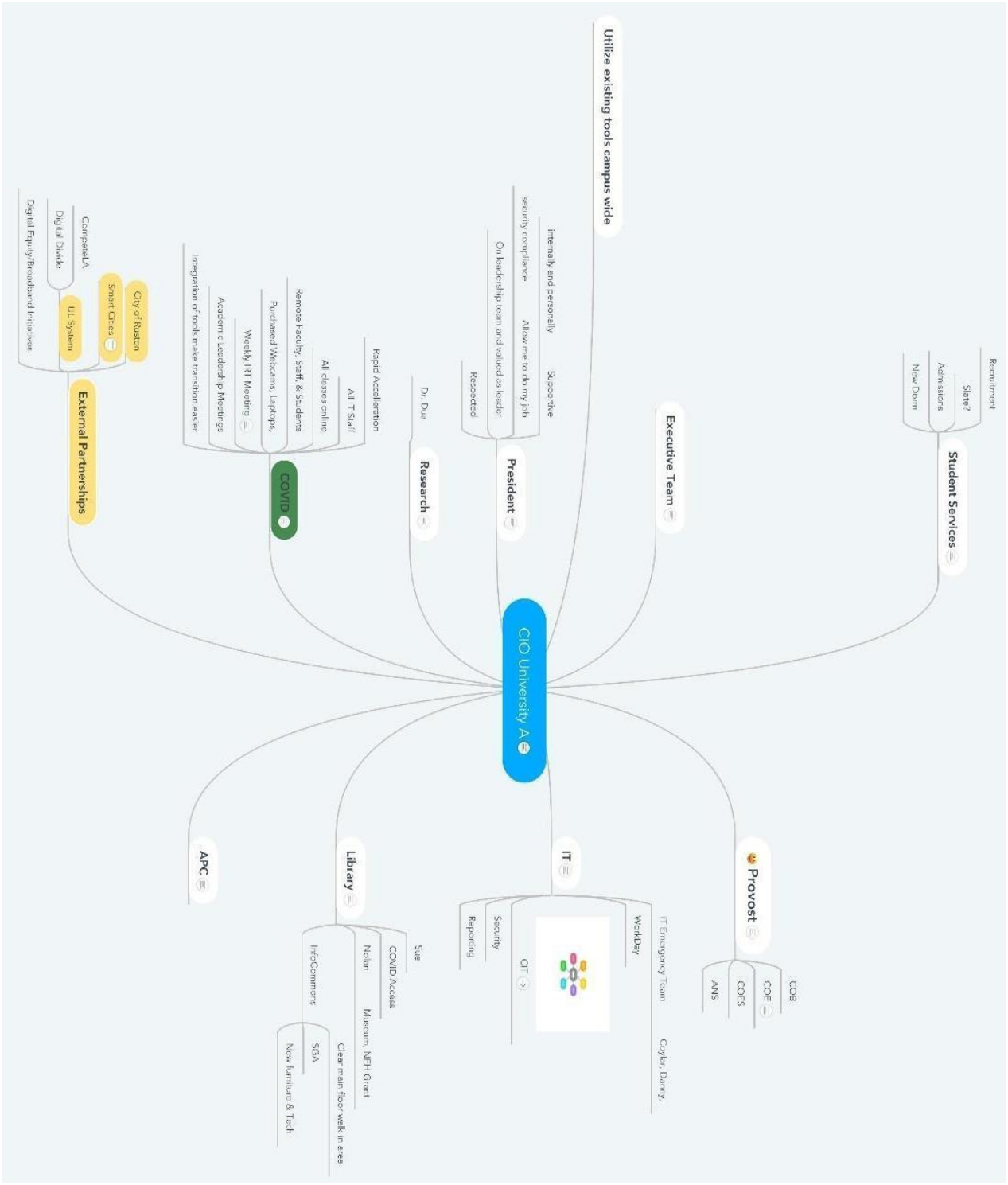
1. Discuss the organizational structures at the three universities that you have been as a chief information officer. Please also explain the leadership structure and the make-up of the president's or chancellor's executive team in detail. How often do they meet? How often did you attend, if at all?
2. How would you describe the leadership style of your direct supervisor? Can you give some examples of situations that would better illustrate your perceptions? Would you please give the background of your immediate supervisor?
3. Can you discuss the person who previously filled the role or the state of affairs at the university regarding information technology before your hire?
4. Would you please describe the information technology organization that you lead? What department and responsibilities did that entail? Were academic technology and instructional technology part of your direct responsibility?
5. What would you say was your level of influence at the university? Can you give some examples of your perceived level and why you felt that way?
6. What barriers and obstacles did I encounter in cultivating a positive environment and an organization centered around learning?
7. Who did you consider your peers at the institutions?
8. How were you assessed? What measurements were used?
9. What was the university budgeting process? What was your involvement? On your department's budget? University budget?
10. Would you mind discussing your ability to be innovative?
11. How difficult was it to make a change?

12. Did you feel the ability to implement change across campus?
13. Please discuss some of the significant projects that you implemented when you started the job.
14. Was there a particular goal or theme that you felt was gathered through the interview process that you felt was the top priority?

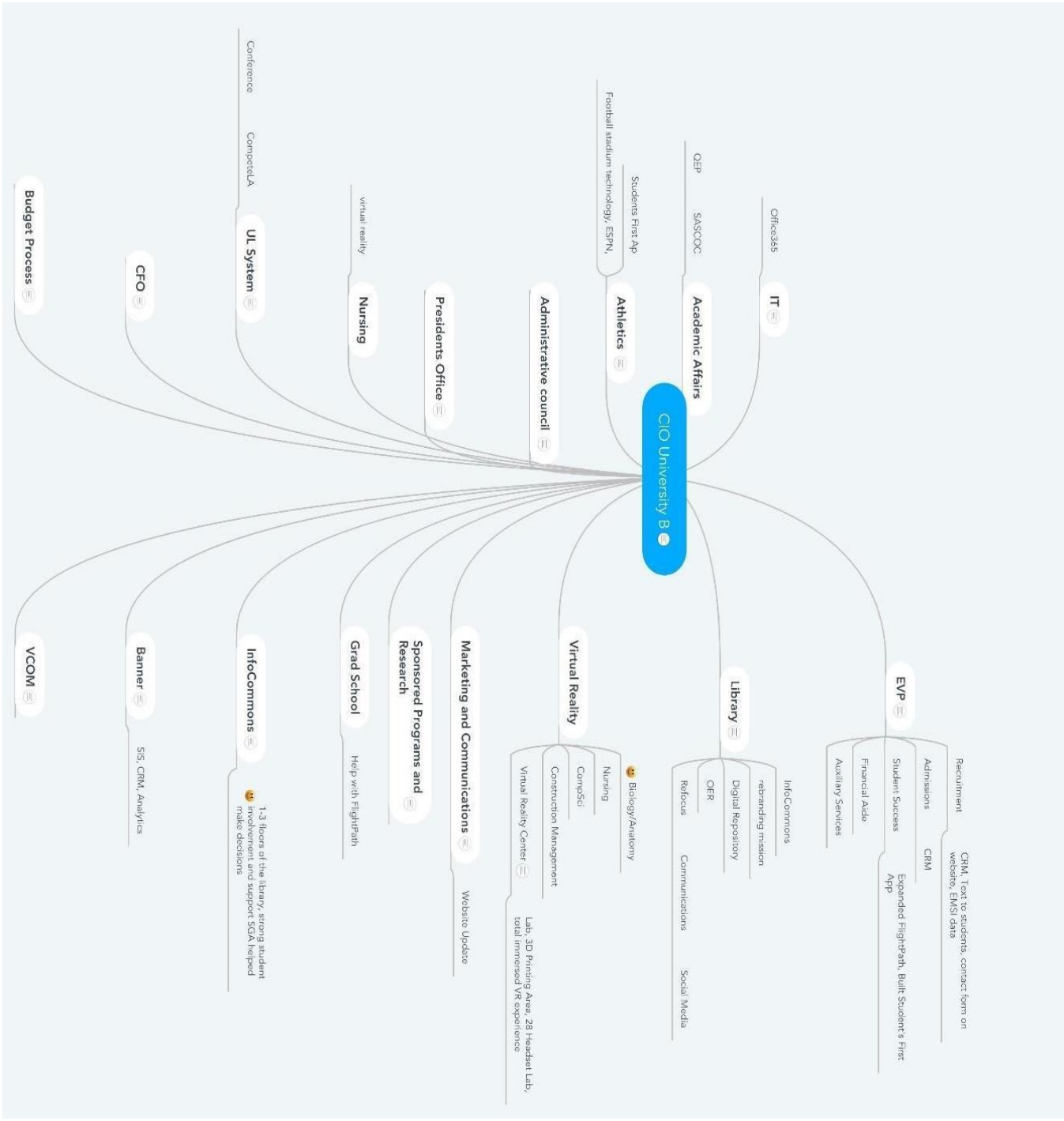
APPENDIX B

MIND MAPS FOR UNIVERSITIES A, B, AND C

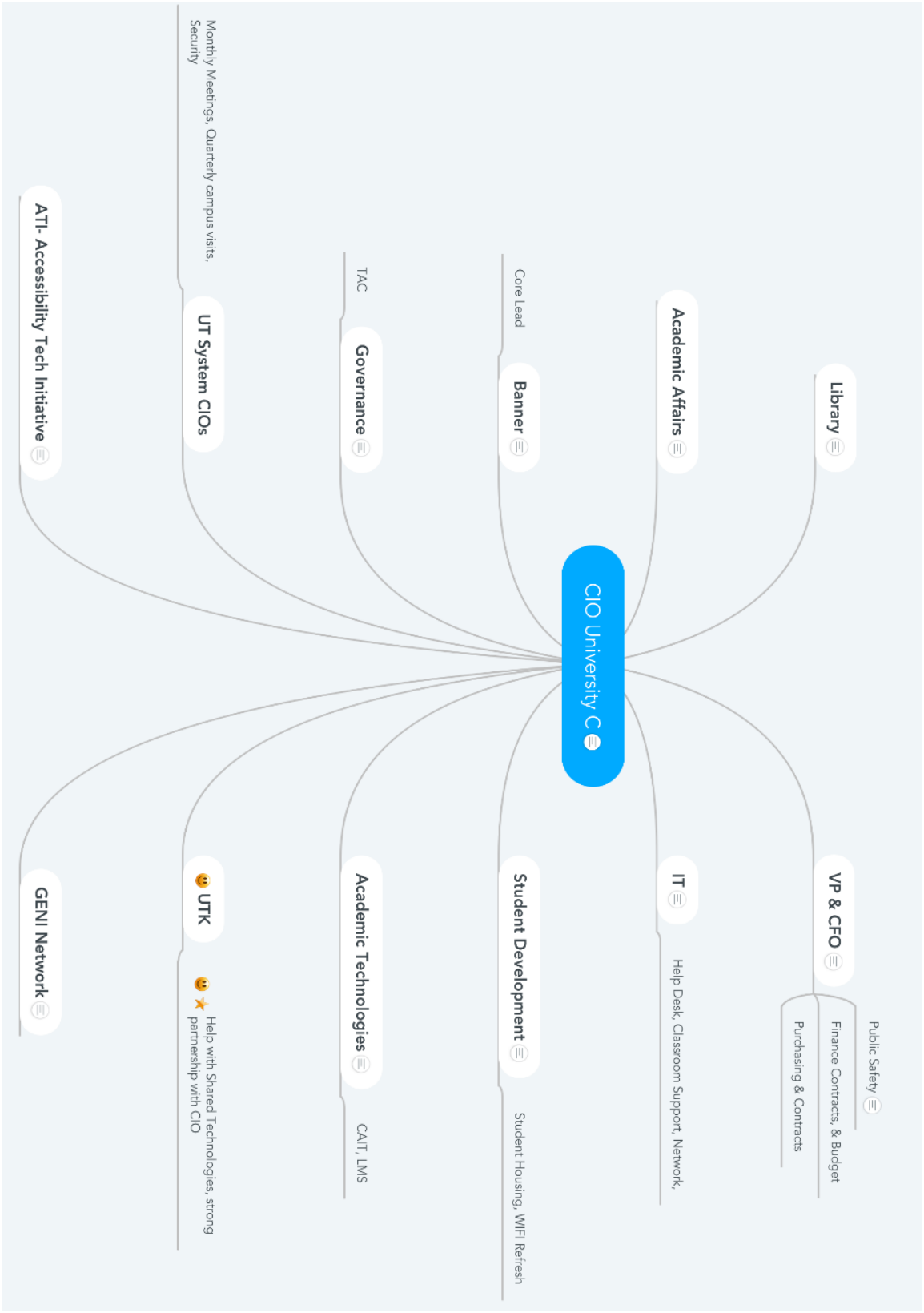
University A



University B

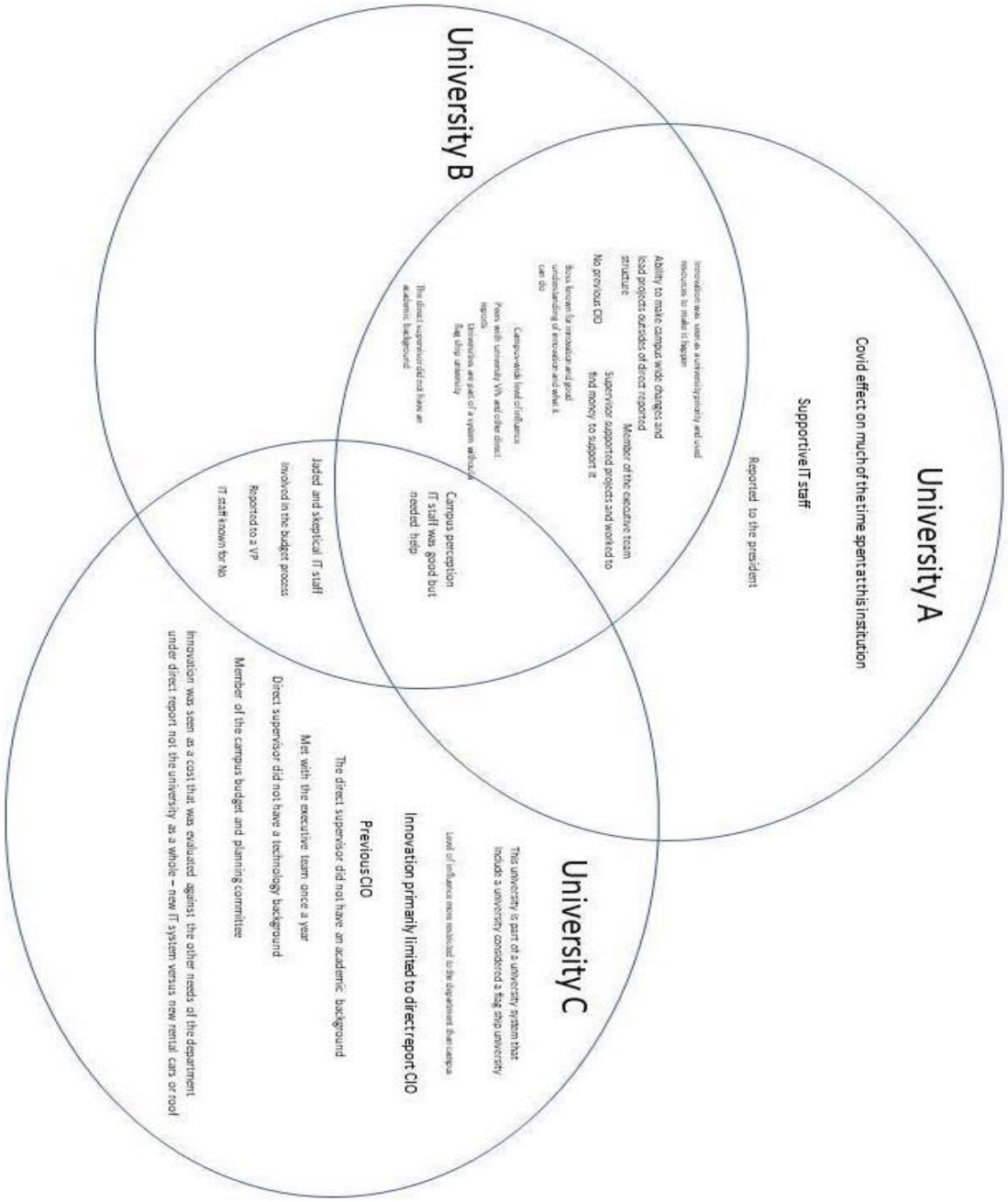


University C



APPENDIX C

VENN DIAGRAM


University A
Covid effect on much of the time spent at this institution
Supportive IT staff
Reported to the president
Innovation was seen as a university priority and used resources to make it happen
Ability to make campus wide changes and lead projects outside of direct reported structure
Member of the executive team
No previous CIO
Supervisor supported projects and worked to find money to support it
Boss known for innovation and good understanding of innovation and what it can do
Campus-wide level of influence
Peers with university VPs and other direct reports
Universities are part of a system with a flag ship university
The direct supervisor did not have an academic background
University B
Campus perception IT staff was good but needed help
Jaded and skeptical IT staff
Involved in the budget process
Reported to a VP
IT staff known for No
University C
This university is part of a university system that include a university considered a flag ship university
Level of influence more restricted to the department than campus
Innovation primarily limited to direct report CIO
Previous CIO
The direct supervisor did not have an academic background
Met with the executive team once a year
Direct supervisor did not have a technology background
Member of the campus budget and planning committee
Innovation was seen as a cost that was evaluated against the other needs of the department under direct report not the university as a whole – new IT system versus new rental cars or roof

APPENDIX D

HUMAN USE APPROVAL LETTER

LOUISIANA TECH
UNIVERSITY.

MEMORANDUM

OFFICE OF SPONSORED PROJECTS

TO: Mr. Thomas Hoover and Dr. Richard Shrubb

FROM: Dr. Richard Kordal, Director of Intellectual Property & Commercialization (OIPC)
rkordal@latech.edu

SUBJECT: HUMAN USE COMMITTEE REVIEW

DATE: April 19, 2021

In order to facilitate your project, an EXPEDITED REVIEW has been done for your proposed study entitled:

"Autoenthnographic View from the Chair of a Higher ED CIO"

HUC 21-089

The proposed study's revised procedures were found to provide reasonable and adequate safeguards against possible risks involving human subjects. The information to be collected may be personal in nature or implication. Therefore, diligent care needs to be taken to protect the privacy of the participants and to assure that the data are kept confidential. Informed consent is a critical part of the research process. The subjects must be informed that their participation is voluntary. It is important that consent materials be presented in a language understandable to every participant. If you have participants in your study whose first language is not English, be sure that informed consent materials are adequately explained or translated. Since your reviewed project appears to do no damage to the participants, the Human Use Committee grants approval of the involvement of human subjects as outlined.

Projects should be renewed annually. ***This approval was finalized on April 19, 2021 and this project will need to receive a continuation review by the IRB if the project continues beyond April 19, 2022.*** **ANY CHANGES** to your protocol procedures, including minor changes, should be reported immediately to the IRB for approval before implementation. Projects involving NIH funds require annual education training to be documented. For more information regarding this, contact the Office of Sponsored Projects.

You are requested to maintain written records of your procedures, data collected, and subjects involved. These records will need to be available upon request during the conduct of the study and retained by the university for three years after the conclusion of the study. If changes occur in recruiting of subjects, informed consent process or in your research protocol, or if unanticipated problems should arise it is the Researchers responsibility to notify the Office of Sponsored Projects or IRB in writing. The project should be discontinued until modifications can be reviewed and approved.