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## Higher Education Business and Technology Leaders' Behaviors that Drive Outcome Alignment

Katherine Lynch-Holmes

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HIGHER EDUCATION BUSINESS AND TECHNOLOGY LEADERS' BEHAVIORS  
THAT DRIVE OUTCOME ALIGNMENT

by

Katherine Lynch-Holmes

A Dissertation  
Submitted to the Graduate School,  
the College of Arts and Sciences  
and the School of Interdisciplinary Studies and Professional Development  
at The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy

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## ABSTRACT

Higher education institutions (HEIs) face unprecedented challenges, including capacity alignment, financial sustainability, and even public confidence (Grajeck & Brooks, 2020; Grawe, 2019; Oblinger, 2019; Simone, 2020, Wheeler, 2020, Witt & Coyne, 2019). Financial challenges force HEIs to reduce costs by making decisions like cutting programs, laying off staff or merging institutions to reduce operating costs (Chen et al., 2019; Sellingo, 2017; Witt & Coyne, 2019). Higher education leaders (HELs) must act as trusted partners and broker technology to align processes, support, and outcomes (Luftman 2000; Petkovics, 2018; Reinitz, 2019). Unfortunately, higher education's business-technology (BITA) alignment remains lower than other national industries studied (Luftman & Kempiah, 2007). Organizations that align BITA strategies perform better, maximize the value of IT, pay less on IT per user and report higher customer satisfaction (Henderson & Venkatraman 1993; Reitz, 2019; Weiss & Anderson, 2004). Without alignment and value in technology investments, HEIs sustain higher operational costs, mis-aligned capacity and threatened financial sustainability, potentially leading to institutions closing or merging (Delany, 2019; Jesek & Lederman, 2018; Oblinger 2019; Witt & Coyne, 2019).

The study determined business and technology leaders' behaviors that demonstrate alignment competencies for higher education's BITA. The study identified and categorized 141 behaviors demonstrating Luftman's (2003) BITA competencies. The participants then determined the impact of the categorized behaviors. As a result, HELs identified the behaviors and their impact that demonstrate BITA competencies.

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## DEDICATION

A special thank you to my inspiring and supportive husband, Shannon. Your consistent encouragement, willingness to spend countless hours brainstorming and never-ending support helped more than you know. Your love, patience, genuine curiosity, commitment, humor, and cooking made this journey fun. I can never thank you enough and I am grateful to share my life and this accomplishment with you. KaKaw.

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## TABLE OF CONTENTS

ABSTRACT .....	iii
ACKNOWLEDGMENTS .....	iv
DEDICATION .....	v
LIST OF TABLES .....	xiii
LIST OF ILLUSTRATIONS .....	xv
LIST OF ABBREVIATIONS.....	xvi
CHAPTER I – INTRODUCTION.....	1
Background of the Study .....	4
Technology in Higher Education .....	4
Constituent Expectations .....	5
Digital Transformation in Higher Education .....	6
Transformation of the Technology Leader’s Role.....	8
Human Capital Development and BITA.....	9
BITA in Higher Education.....	10
Statement of the Problem.....	11
Statement of the Purpose .....	12
Research Question and Objectives.....	13
Conceptual Framework.....	14
Significance of the Study .....	15

Delimitations.....	16
Assumptions.....	17
Key Terms.....	18
Organization of the Study .....	21
Chapter Summary .....	21
<b>CHAPTER II – LITERATURE REVIEW .....</b>	<b>22</b>
Trends in Higher Education Landscape .....	22
Themes and Trends Converging .....	24
Contextual Theme .....	26
Public Trust Trend. ....	27
New Education Options Trend.....	28
Constituent Experience Trend.....	29
Economic Theme .....	31
Tuition Discounting Trend.....	32
Facilities and Amenities Spending Trend. ....	33
Operating Expense Trend. ....	34
Technological Theme.....	35
Cloud Acceleration Trend.....	36
Digital Transformation Trend. ....	37
Integrative Technology Leader. ....	39



Higher Education Leadership .....	40
Higher Education Leaders in The Current Landscape .....	41
Technology Leaders in Higher Education .....	42
History of Technology Leadership .....	43
Integrative Technology Leader .....	45
Common Behavioral Characteristics for HELs .....	47
Strategic Alignment .....	48
Strategic Alignment and Human Capital Development.....	50
Models for BITA.....	51
Henderson and Venkatraman’s Strategic Alignment Model .....	52
Luftman’s Strategic Alignment Maturity Model .....	54
BITA in Higher Education.....	57
Summary .....	58
<b>CHAPTER III – RESEARCH DESIGN AND METHODS .....</b>	<b>59</b>
Statement of the Problem and Purpose .....	59
Research Objectives.....	60
Research Design and Methods.....	61
Characteristics of Qualitative Research .....	61
Philosophical Assumptions and Epistemology.....	62
Type of Design.....	64

Data Collection Process .....	66
Semi-Structured Focus Groups .....	67
Electronic Delivery .....	69
Focus Group Location.....	71
Population and Sample .....	73
Sample Size.....	75
Confidentiality and Data Security.....	76
Institutional Review Board .....	77
Research Methods.....	78
Participant Recruitment, Registration, and Communication .....	79
Data Collection .....	82
Focus Group Delivery, Questions, and Prompting Questions .....	87
Chapter Summary .....	91
CHAPTER IV – RESULTS AND FINDINGS .....	92
Data Analysis .....	92
Create Notes and Observations.....	95
Cluster Themes .....	97
Identify Themes or Patterns Across Cases.....	98
Trustworthiness.....	99
Participant and Participant Institutional Demographics .....	101

Institutional Leader Demographics .....	102
Institutional Demographics .....	105
Behaviors and Competencies .....	109
Behaviors Exemplified by Participating Institutions .....	110
Participant Identified Behaviors Aligned to SAM Competencies .....	111
SAM Competency Dimensions and New Themes.....	117
SAM Competency Dimensions Defined.....	118
New Themes. ....	120
Theme 1: Relationship Building .....	122
Theme 2: Change Management .....	123
Theme 3: Project Management .....	124
Theme 4: Leadership.....	124
Theme 5: Problem Solving .....	125
Theme 6: Rewards and Recognition .....	126
Impact .....	128
Impact of Behaviors in Participating Institutions .....	129
Summary .....	134
CHAPTER V – CONCLUSION.....	135
Summary of the Study .....	135
Summary of the Results .....	136

Findings, Conclusions, and Recommendations .....	137
Finding 1: Technology Leadership Represented on Executive Cabinet Can Impact Institutional Technology Alignment Ratings.....	138
Finding 2: Understanding and Executing Change Management Is Critical for Alignment and Successful Completion of a Cross-Collaborative Project. ....	140
Finding 3: Newly Identified Themes Relationship-Building and Leadership Represent the Need for Strategically Aligned Leadership.....	142
Recommendations for Future Research .....	144
Implications of Limitations.....	146
Conclusions.....	148
Summary.....	151
APPENDIX A –Recruiting emails.....	152
APPENDIX B –Informed Consent .....	157
APPENDIX C –Participant Registration Survey .....	158
APPENDIX D –Calendar Invitation.....	163
APPENDIX E –IRB Approval letter .....	164
APPENDIX F –Participant Identified Behaviors and Competencies .....	165
APPENDIX G –SAM Competency Dimensions and New Themes Aligned With Participant Identified Behaviors and SAM Competencies .....	173

APPENDIX H –Participant Identified Impact Ratings by SAM Competency and Behaviors .....	179
REFERENCES .....	195

## LIST OF TABLES

Table 1 Contextual Theme and Trends Descriptions.....	26
Table 2 Economic Theme and Trends Description.....	31
Table 3 Technological Theme and Trends Description.....	36
Table 4 Strategic Alignment Maturity Model Competencies Definitions .....	55
Table 5 Semi-structured Interview Questions and Prompts .....	68
Table 6 Invitation and Solicitation Schedule .....	80
Table 7 Research Objectives Aligned to Semi-Structured Focus Group Questions.....	82
Table 8 Research Objectives and Data Collection Details .....	88
Table 9 IPA Phases Aligned to Researcher’s Process .....	94
Table 10 Participant Demographic Information .....	103
Table 11 Participating Institution’s Demographic Characteristics .....	105
Table 12 Summary of New Themes Identified.....	122
Table 13 Identified SAM Competency Dimensions and New Themes Aligned to Frequency of Participant Identified Behaviors and SAM Competency.....	127
Table 14 Average SAM Competency Impact Rating .....	130
Table 15 Competencies and Impact for BITA, IT Leader and Business Leader .....	131
Table 16 Average Impact Rating for SAM Competency Dimensions and New Themes .....	132
Table 17 New Themes and Impact for BITA, IT Leaders, and Business Leaders .....	133
Table A1. Participant Identified Behaviors Demonstrating Communication SAM Competency .....	165

Table A2. Participant Identified Behaviors Demonstrating SAM Competency	
Demonstrate Value Metrics .....	166
Table A3. Participant Identified Behaviors Demonstrating Governance SAM	
Competency .....	167
Table A4. Participant Identified Behaviors Demonstrating Job Skills and Proficiency	
SAM Competency.....	169
Table A5. Participant Identified Behaviors Demonstrating “Other” Competency.....	169
Table A6. Participant Identified Behaviors Demonstrating Scope & Architecture SAM	
Competency .....	171
Table A7. Participant Identified Behaviors Demonstrating Partnership SAM Competency	
.....	172
Table A1. New Themes and SAM Competency Dimensions aligned to SAM Competency	
and Participant Identified Behaviors.....	173
Table A1. Participant Identified Impact Ratings by SAM Competency and Behaviors	179

## LIST OF ILLUSTRATIONS

Figure 1. Determine Behaviors to Achieve Technology and Institutional Alignment .....	15
Figure 2. Higher Education’s Current Landscape Themes and Trends .....	25
Figure 3. Participant Recruitment and Data Collection Steps .....	67
Figure 4. Recruiting, Registration, Data collection, and Communication process .....	78
Figure 5. Focus Group Question and Instructions .....	84
Figure 6. Visual Illustration of Behavior and Competencies.....	85
Figure 7. All Identified Behaviors with Aligned Competencies.....	86
Figure 8. Rating to Determine Impact for a Behavior .....	87
Figure 9. SAM Competencies Aligned to Participant Identified Behaviors.....	112
Figure 10. SAM Competencies and Competencies Dimensions .....	118
Figure 11. SAM Competencies, SAM Competencies Dimensions and Themes .....	121
Figure 12. SAM Competencies, SAM Competencies Dimensions and Themes .....	137



## LIST OF ABBREVIATIONS

<i>BITA</i>	Business-IT Alignment
<i>HEI</i>	Higher education institution
<i>HEL</i>	Higher education leader(s)
<i>SAM</i>	Strategic Alignment Model

## CHAPTER I – INTRODUCTION

The core mission of higher education has not changed but rather context of the mission (Oblinger, 2019). Over the last decade, the United States higher education institutions (HEIs) faced unprecedented challenges that include capacity alignment, financial sustainability, constituent expectations, and even public confidence (Oblinger, 2019; Wheeler, 2020). HEIs faced similarly themed challenges in the past, but current industry competition and demand challenges create an unprecedented, heightened level of urgency (Haggans, 2016). Additional challenges, such as technological complexity, increased market competition, under-employment, and high levels of student debt necessitate increased operational efficiency and disrupt the traditional degree attainment format (Haggans, 2016; Oblinger, 2019; Wheeler, 2020; Witt & Coyne, 2019). “As such, higher education is in the middle of a lively debate about what direction it needs to take to meet all the challenges it is facing in a rapidly changing world” (Freedman, 2017, p. 1).

Since 2017, the U.S. higher education sector received a negative credit outlook from Moody’s Investor Services (Crowe, 2018; Selligno, 2017; Witt & Coyne, 2019). This negative rating demonstrates that annual operating revenue—mainly tuition and development dollars—remains approximately a 3% increase while operating expenses—mainly salaries, benefits, and technology—increased to 4% in 2018 (Crowe, 2018; Witt & Coyne, 2019). High operating costs, such as salaries of upper administration and tenured faculty, maintaining physical structures, previous investments in lavish facilities, inefficient processes, and sustained technology spending represent ongoing industry challenges (Crowe; 2018; Selligno, 2017; Witt & Coyne, 2019). However, high operating

costs coupled with revenue challenges, such as the intolerance for additional tuition increases, decreased population of traditionally aged youth, and the questioned efficacy of a higher education degree are contributing factors to Moody's negative rating (Crowe, 2018; Witt & Coyne, 2019).

The fact that expenses outweigh incoming revenue since 2017 creates a challenging business environment (Crowe, 2018; Wheeler, 2020; Witt & Coyne, 2019). The pressure from high operating expenses likely leads to forced closures, mergers, or drastic cuts in many HEIs (Oblinger, 2019; Witt & Coyne, 2019). A 2018 survey of college and university presidents found that 13% of the leaders expect to close their doors or merge within five years (Jaschik & Lenderman, 2018). While many HEIs look at financial alternatives, like tuition decreases, other more progressive institutions challenge their operating expense models (Lapovsky, 2018; Witt & Coyne, 2019). HEIs must use technology to modernize processes, cut costs, and find cost-efficiencies on campus to sustain (Heur, 2018; Post, 2017; Wheeler, 2020).

The industry must undergo significant changes to maintain its viability in the 21<sup>st</sup> century (Grajek, 2018; Simone, 2020; Wheeler, 2020). Institutions have, therefore, focused on digital transformation, defined as a "profound transformation characterized by the strategic integration of technology and business" (Reinitz, 2019, para. 1). The industry relies on the strategic adoption and integration of technology for organizational advancement (Grajek, 2018). Morse (2017) states that technology alone cannot make an institution great rather technology however, it is the glue that holds HEIs together. Therefore, technology is essential for success (Grajek, 2018; Wheeler, 2020). Specific advances like automation, cloud computing, and wireless dependability remain critical

success components for the entire institution—not just the Information Technology (IT) departments (Catalono, 2019; Lalovic-Hand, 2017; O’Brien, 2020; Simone, 2020; Wheeler, 2020). HEI auxiliary services—areas such as the registrar, bursar, and human resources—must update their business processes and increase efficiencies through automation (Lalovic-Hand, 2017; Reitz, 2019; Sellingo, 2017; Witt & Coyne, 2019). Operationalizing and automating these business processes to transform delivery equates to digital transformation (Grajek, 2019). Students expect a seamless student-friendly experience in and out of the classroom to better prepare for futures with a higher earning potential, work-life balance, and employability (Catalono, 2019; Dlamini, 2015). Successful technology integration with the learning experience and business process lessens productivity and digital transformation challenges, ultimately reducing two of the industry’s biggest financial concerns—operational and education delivery costs (Grajek, 2018; Heur, 2018; Lalovic-Hand, 2017; Reitz, 2019; Sellingo, 2017; Wheeler, 2020).

HEI’s reliance on technology has grown over the last three decades, but the alignment between technology and strategic objectives remains significantly lower than other industries, like healthcare or logistics (Grajek, 2018; Luftman & Kempiah, 2007; Maddux & Johnson, 2010; Robertson, 2015). Furthermore, organizational visibility and strategic implementation remain misaligned (Luftman & Kempiah, 2007; Maddux & Johnson, 2010; Robertson, 2015). The disparity of alignment hinders the HEI’s ability to achieve the goals of digital transformation, outcome alignment, competitive advantage, and organizational agility (Galliers & Leidner, 2003; Reitz, 2019; Wheeler, 2020). As complexity and the demand from institutional constituents grows, the strategic alignment of technological and institutional outcomes is vital (Heur, 2018; Luftman & Kempiah,

2007; Robertson, 2015; Simone, 2020; Wheeler, 2020). This study aims to determine behaviors that impact competencies and drive attainment of HEI outcomes.

### Background of the Study

Technology introduces change to the higher education landscape (Grajeck & Brooks, 2020; Lalovic-Hand, 2017; Oblinger, 2019; Simone, 2020). Now, more than ever, the adoption of change is vital for an HEI's sustainability and competitiveness (Grawe, 2019; Oblinger, 2019; Wheeler, 2020; Witt & Coyne, 2019). Leaders must leverage partnerships, technology, collaboration, and streamlined processes to reduce financial burdens and achieve institutional outcomes (Grajeck & Brooks, 2020; Jaschik & Lenderman, 2018; Merisotis, 2015; Witt & Coyne, 2019). As such, success requires leaders to create a balance of BITA, shared partnership, and clearly defined operational goals (Dlamini, 2015; Grawe, 2019; Henderson & Ventketraman, 1999; Luftman & Kempiah, 2007; Robertson, 2014; Wheeler, 2020). However, the industry shows the least mature BITA and shared partnership than other industries studied including transportation, insurance, and health (Alghamdi & Sun, 2017; Luftman & Kempiah, 2007; Robertson, 2014).

### *Technology in Higher Education*

Technology supports nearly every facet of HEIs, including academic instruction, programmatic support, research, and administrative operations (Reinitz, 2019). The evolution of technological advancements, like digital learning, remote access, and cloud computing, often expedite multiple aspects of a HEI's transformation (Lalovic-Hand, 2017). These advancements directly impact mission-critical topics like access, operational cost, and relevance of learning (Grawe, 2019; Office of Educational

Technology [OET], 2017; Witt & Coyne, 2019). This research focuses on enterprise IT, defined as a “large, complex, and multi-faceted function” (Reinitz, 2019, p. 1). Enterprise IT is also often associated with administrative systems and services, as well as their strategy, management, budget, technology staff, and support (Reinitz, 2019). The emphasis that enterprise IT has on core organizational functions make it central success (Reinitz, 2019).

The reliance on and strategic adoption of technology provides opportunities for unprecedented advancement, at a time when external pressures require significant transformation (Grajek, 2018). Grajek (2018) states that HEI’s most significant concerns and demands now clearly align with technology’s strongest attributes around productivity and digital transformation. Generational exposure to and comfort with technology, coupled with the need to decrease operational costs, requires digital optimization (Delany, 2019; Wheeler, 2020). Optimization, defined as the process of using digital technology to improve operations, provides opportunities to automate daily tasks, routines, methods, and improve time to task completion, which reduces initial and on-going operational costs (Grajek, 2018; Petkovics, 2018; Wheeler, 2020). In short, HEIs must change and technology should be at the center of that effort (Delany, 2019).

### *Constituent Expectations*

As technology becomes more accessible with every generation, so does its importance within HEIs (Delany, 2019; Stillman & Stillman, 2019). The internet had the most significant technological impact on HEIs and exponentially increased the need for BITA (EDUCAUSE, 2015). Departmental users, like registrars or finance offices, experienced an increased dependency on the internet because their systems run on and

are stored through the internet (EDUCAUSE, 2015). Therefore, the impact of and need for adjustment extends beyond departmental process improvement to a requirement for institutional competitiveness (The Chronicle of Higher Education, 2017; Delany, 2019). HEIs must provide an on-demand customer-friendly experience with just-in-time service, auxiliary staff needs automated processes, a consistently secure environment, and reliable wireless connectivity (Deloitte University Press, 2017; Ellucian, 2018; Lalovic-Hand, 2017; Myatt, 2017; Wheeler, 2020). These priorities remain consistent across most of the industry and their success directly impacts HEI competitiveness and success (Deloitte University Press, 2017; EDUCAUSE, 2015; Lalovic-Hand, 2017). HEIs must be technologically forward-thinking to remain successful (Lalovic-Hand, 2017). Simply stated, success depends on the forward thought between technology and higher education leadership (Prince, 2016).

### *Digital Transformation in Higher Education*

“Digital transformation,” a common term used in many industries, should be practiced (Delany, 2019; Precedent, 2018; Reitz, 2019). Reintiz (2019) succinctly identifies digital transformation as the “profound transformation characterized by the strategic integration of technology and business” (Reintiz, 2019, para.1). Digital transformations commonly include the strategic alignment of technology and business outcomes, strong partnerships with technology and leadership, the transformation of business operations, a stronger dependence or awareness of data and analytics, and a culture shift (Reintiz, 2019). Real digital transformation is driven by strategy, rather than technology and rooted in goal alignment, rather than technological additions (Delany, 2019; Petkovics, 2018; Witt & Coyne, 2019). As HEIs move towards digital

transformation, IT moves away from the historical role of order taker, towards critical enabler of organization transformation (Grajek & Brooks, 2020; Heur, 2019; Henderson & Venkatraman, 1999; Wheeler, 2020).

Some experts compare the disruption of digital transformation to that of the industrial revolution or electrification (Heur, 2019; Petkovics, 2018). The change requires a complete review and optimization of processes, services, technology, resources, and organizational strategy viewed through a digitally holistic lens (Reinitz, 2019). This transformation drives organizations to see technology as a utility to align with internet-delivered services (Grajek & Brooks, 2020; Heur, 2019; Petkovics, 2018). Simply, digital transformation is paramount to business optimization (Petkovics, 2018; Witt & Coyne, 2019).

Successful digital transformation relies on the transformation of business processes to optimize efficiency and innovation using technology (Grajek & Brooks, 2020; Heur, 2019; Petkovics, 2018). Transformation depends on the review and optimization of processes with strategic outcomes in mind (Reinitz, 2019). Furthermore, HELs realize that automation and innovation improve process functionality, placement of resources and services, return on investment, and even long-term operational costs (Delay, 2019; Pektovics, 2018; Reitz, 2018; Wheeler, 2020). Most HELs agree that strategy drives digital transformation, not the technology (Delany, 2019; Petkovics, 2018; Soliman & Karia, 2017). Still, HELs remain unsure of digital transformation or its impact on the overall institutions (Pektovics, 2018; Precedent, 2018).



### *Transformation of the Technology Leader's Role*

The role of a technology leader has a brief history, whose accelerated evolution parallels the technology they support (DeSanto, 2012; Heur, 2019). Unlike more traditional higher education positions—president, advisor, registrar, or faculty—the role of technology leader has existed for less than thirty years and undergone significant transformation (Catalano, 2019; Heur, 2019; Hollman, 2014). Less than two dozen technology leader roles existed within the industry thirty years ago (Holloman, 2014). Today the position exists in more than two-thirds of HEIs (Catalano, 2019; Dlamini, 2015; Heur, 2019; Holloman, 2014). The role initially focused on specialized technological support, but the popularity of personal computing and administrative applications demanded increased knowledge and customer access (Catalano, 2019; Dlamini, 2015; Heur, 2019). Today, technology leaders still provide service to constituents and maintain sound technological infrastructure, but they must also think more strategically, provide thought leadership about industry trends and consumer needs (Catalano, 2019; Dlamini, 2015; Heur, 2019; Wheeler, 2020).

Internet access permanently changed the role of technology in higher education (Catalano, 2019; Heur, 2019; Lalovic-Hand, 2017; Simone, 2020). As technology provides a more prevalent foundation, the focus of a technology leader moves from that of an operational manager to relationship builder determining how technology can support institutional objectives in a faster and more efficient manner (Dlamini, 2015; EDUCAUSE, 2015; Heur, 2018; Lalovic-Hand, 2017; Simone, 2020). The technology leader role must transition from administrative to strategic (EDUCAUSE, 2015; Heur, 2019; Simone, 2020; Wheeler, 2020). The leader must delicately balance the roles of

institutional supporters, thought leaders, data protector, and customer advocate (EDUCAUSE, 2015; Heur, 2019; Hollman, 2017; Lalovic-Hand, 2017).

Technology leaders are business partners, strategists, and technology evangelists (Catalano, 2019; Heur, 2019; Simone, 2020). Arandjelovic et al. (2015) report that 48% of corporate organizations show greater progress towards objectives and decreased technology costs when the technology leaders participated at the strategic level. They do more than procure the institutions' software, hardware, and infrastructure. They spend nearly 27% of their time collaborating with institutional leaders and business strategists outlining and aligning direction (Catalano, 2019). To do so, technology leaders must partner to understand the institutional, interdepartmental goals, and operational functions to inform technology-related decisions (Dlamini, 2015; Luftman & Kempiah, 2007; Morse, 2017; Wheeler, 2020).

#### *Human Capital Development and BITA*

Swanson and Holt (2009) define human resource development as the “process of developing and unleashing expertise for the purpose of improving individual, team, work processes, and organizational system performance (p. 4). The role of technology leader must transform from order taker or operations manager to strategic partner and innovator to support digital transformation and alignment (EDUCAUSE, 2015; Heur, 2019; Simone, 2020; Wheeler, 2020). Prince (2016) states the transition to transformative leader require partnership. The previous section details the need for transition; however, the technology leader cannot make the change alone (Prince, 2016).

Strategic alignment requires partnering with information technology to increase competitiveness of business processes and mutual comprehension of the leadership

benefits (Swanson & Holt, 2009). As such, this research relies on theories identifying the individual, team, and processes that improve organizational performance. While Henderson and Venkatraman or Luftman are not specifically identified as human capital development theories, BITA aligns with human capital development's core definition. This research determines behaviors which drive alignment and to achieve outcomes thereby improving performance. Specifically, this research uses Henderson and Venkatraman's (1993) Strategic Alignment Model and Luftman's (2003) Strategic Alignment Maturity Model to determine behaviors that drive business and technology alignment in higher education institutions.

#### *BITA in Higher Education*

Strategic alignment between business and information technology, known as BITA, is one of the most critical modern organizational challenges for any industry (Alghamdi & Sun, 2017; Henderson & Venkatraman, 1993; Luftman & Kempiah, 2007; Myatt, 2017; Robertson, 2014; Beiryaei & Jamporazmey, 2011). The study of BITA, its benefits, and consequences began with Henderson and Venkatraman in the 1990s within the healthcare arena and remains well-researched in areas other than higher education (Alghamdi & Sun, 2017; Beiryaei & Jamporazmey, 2011; Lach-Smith, 2010; Luftman & Kempiah, 2007; Myatt, 2017; Papp, 2001; Robertson, 2014). Higher education BITA lacks adequate attention and research compared to other public and private sectors (Alghamdi & Sun, 2017; Dlamini, 2015; Luftman & Kempiah, 2007; Myatt, 2017; Robertson, 2014). The industry's BITA is more complex due to HEI's organizational and managerial structure (Alghamdi & Sun, 2017; Myatt, 2017; Robertson, 2014). Furthermore, Luftman and Kempiah (2007) found that the education sector is the least

aligned compared to other industries like transportation, insurance, and health. Robertson (2014) further supported Luftman and Kempiah (2007), determining that “higher education institutions demonstrate lower than average scores” (p. 100). As a result, information technology within the industry is misaligned and often seen as a financial expenditure, rather than a tool for innovation (Alghamdi & Sun, 2017; Luftman & Kempiah, 2007; Myatt, 2017; Robertson, 2014).

The industry’s financial and operational challenges need for increased efficiency, and expectations of student constituents underscore the BITA’s importance (Alghamdi & Sun, 2017; Grajek, 2019; Oblinger, 2019; Sellingo, 2017; Wheeler, 2020). Other industries and organizations use BITA to create or improve efficiencies, reduce costs, improve constituent relationships, and create new products or business solutions (Alghamdi & Sun, 2017; Luftman & Kempiah, 2007; Weiss & Anderson, 2004). This industry must utilize BITA to increase organizational collaboration and peer sharing, improve participation in standard academic degree programs, and decrease the redundancy of operational support (Alghamdi & Sun, 2017; Myatt, 2017). Successful BITA can adjust campus performance to support digitally transformed business operations and innovative educational services while diverting resources away from standard maintenance functions or dated business models (Alghamdi & Sun, 2017; Haggans, 2016; Myatt, 2017; Post, 2017; Wheeler, 2020; Witt & Coyne, 2019).

#### Statement of the Problem

HEIs face unprecedented challenges, including capacity alignment, financial sustainability, and even public confidence (Grajek & Brooks, 2020; Grawe, 2019; Oblinger, 2019; Simone, 2020, Wheeler, 2020, Witt & Coyne, 2019). Financial

challenges for HEIs force cost reduction strategies like, cutting programs, lay-offs, or merging institutions (Chen et al., 2019; Witt & Coyne, 2019; Sellingo, 2017). Addressing these challenges requires a trusted partnership between HELs to align processes, support, and outcomes (Catalono, 2019; Heur, 2018; Luftman 2003; Luftman & Kempiah, 2007; Luftman, Lyytinen, & Zyi; 2015; Petkovics, 2018; Reinitz, 2019; Wheeler, 2020). The industry's BITA is lower than other national industries studied (Luftman & Kempiah, 2007; Myatt, 2017). Further, only 32% of HELs believe that technology is appropriately aligned to achieve the desired institutional outcomes (Alghamdi & Sun, 2017; Bischel, 2015; Pihaki et al., 2017; Robertson, 2015). Hollman (2014) states that HEIs with technology leaders as active members of strategic conversations demonstrate a better understanding of near and long-term objectives and technology's role in the process. Organizations that align BITA strategies perform better, maximize the value of IT, pay less on IT per user, and have higher customer satisfaction (Alghamdi & Sun, 2017; Henderson & Venkatraman 1993; Reitz, 2019; Weiss & Anderson, 2004). Without alignment and value in technology investments, HEIs sustain higher operational costs, misaligned capacity, and threaten financial sustainability, potentially leading to institutions closing or merging (Delany, 2019; Jesek & Lederman, 2018; Oblinger 2019; Witt & Coyne, 2019).

#### Statement of the Purpose

The purpose of this study is to determine business and IT leaders' behaviors that demonstrate alignment competencies for higher education's BITA. This study aims to identify and categorize behaviors that demonstrate competencies known to impact BITA. The competencies, identified by Henderson and Venkatraman (1999) and later Luftman

(2003) include communication, value measurements, governance, partnership, scope and architecture, and skills. The competencies provide a foundation to categorize identified behaviors within the HEIs. Furthermore, the study determines the impact of identified behaviors related to competency alignment. As a result of this study, HELs can identify behaviors that demonstrate competencies and lead to BITA.

### Research Question and Objectives

Luftman and Kempiah (2007) conducted a study to determine the BITA level among 14 industries. The industry, with a BITA score of 1.71 out of 5, is the lowest of all 14 international industries studied (Luftman & Kempiah, 2007). This overall score demonstrates that the industry can better utilize and maximize technology value (Luftman & Kempiah, 2007). This study asks the research question, “What behaviors demonstrate BITA competencies in higher education?” The research question supports the problem and purpose statements previously identified. More specifically the study identifies behaviors demonstrating BITA competencies as communication, value measure, governance, partnership, scope and architecture, and skills (Luftman, 2003). The following research objectives support the previously stated research question:

RO 1: Describe the participating institutional leaders’ demographic characteristics in terms of gender, age, organizational tenure, work title, and years of experience.

RO 2: Describe the participating institutional demographic characteristics in terms of location, total student population, available degree programs, technology alignment, and executive cabinet membership.

RO 3: Identify behaviors exemplified in the participating institutions studied that demonstrate BITA competencies, such as communication, value measurements,

governance, partnership, scope and architecture, skills, or additional competencies.

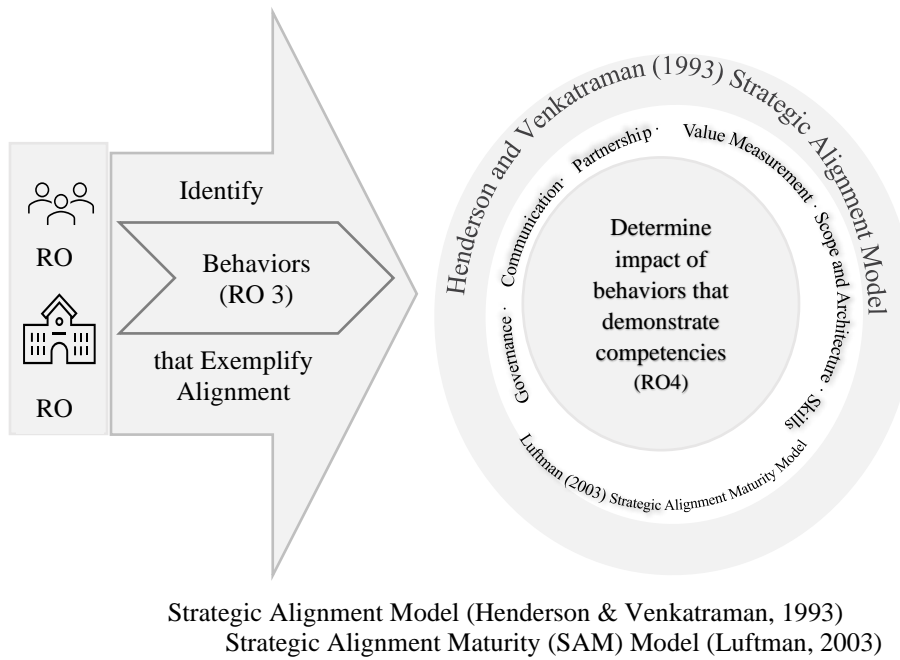
RO 4: Determine the impact of behaviors in the institutions studied that exemplify BITA competencies, such as communication, value measurements, governance, partnership, scope and architecture, skills, or additional competencies.

### Conceptual Framework

Organizations that successfully align BITA strategies perform better than those who achieve only a low or no degree of alignment (Alghamdi & Sun, 2017; Dlamini, 2015; Luftman et al., 2015; Myatt, 2017; Todd, 2011). Henderson and Venkatraman (1993) state that BITA is the business's willingness and ability to evolve process leveraging efficiency and technology as a differentiator in the market. Henderson and Venkatraman's (1993) Strategic Alignment Model shows that alignment occurs when competencies occur between the internal, external, strategic, and operational areas of focus. Henderson's and Venkatraman's (1999) model operationally serves as the foundation for multiple BITA theoretical models, including Luftman's Strategic Alignment Maturity Model (SAM) (Luftman, 2000; Luftman & Kempiah, 2007; Luftman et al., 2015; Myatt, 2017; Robertson, 2014). The competency model below (Figure 1) demonstrates that Henderson and Venkatraman's (1993) Strategic Alignment Model provides the foundation for BITA, while Luftman's (2003) Strategic Alignment Maturity Model (SAM) narrows the study's focus.

Specifically, Luftman (2003) states in the Strategic Alignment Maturity Model (SAM) that competencies demonstrated by leadership—communication, value measurements, governance, partnership, scope and architecture, or skills—are vital to

achieving BITA. These competencies must be present to demonstrate maturity towards alignment (Henderson & Venkatraman, 1993; Luftman 2003). As the competency model shows, this study aims to identify and determine the impact of behaviors that exemplify the competencies leading to Strategic Alignment Maturity (SAM) and BITA.



*Figure 1. Determine Behaviors to Achieve Technology and Institutional Alignment*

### Significance of the Study

Since the 1990s, available literature discussing HEI technology focuses on the impact and satisfaction of technologies, such as hardware, software, intranet, and classroom uses (Hollman, 2014; Prince, 2016; Sellingo, 2017). The literature beginning in the 2000s focused on processes, procedures, the ever-changing role of the technology leader, and the need for organizational alignment (Brown, 2018; Grajek, 2018; Heur, 2018; Robertson, 2014). Related literature defines role-based effectiveness, satisfaction, functions, and correlations to strategic alignment, only from the business leader or the



technology leader perspective (Dlamini, 2015; Holloman, 2014; Myatt, 2017; Robertson, 2014; Todd, 2011). The results of research from one perspective demonstrate potentially incorrect perceptions of alignment or maturity (Luftman & Kempiah, 2007; Myatt, 2017; Robertson, 2014). As such, this study collects the business and technology leaders' perspectives about alignment and prioritized behaviors. The study results will provide specific behaviors to enable and drive operational change in HEI BITA.

BITA research outcomes provide an essential foundation that leads to value in technology investments, aligned capacity, a better mutual understanding of institutional near- and long-term objectives, and ultimately decreased operational costs (Delany, 2019; Jesek & Lederman, 2018; Myatt, 2017; Robertson, 2014; Wheeler, 2020; Witt & Coyne, 2019). Specifically, the identification and prioritization of behaviors impacting competencies provide the potential for stronger HEI BITA (Myatt, 2017; Robertson, 2014). Previous BITA research calls for additional qualitative studies that align specific behaviors to competencies known to impact alignment (Luftman, 2003; Luftman & Kempiah, 2007; Luftman et al., 2015; Myatt, 2017; Robertson, 2014). As such, this research outlines common behavioral expectations for a clearer understanding of partnership and alignment. The outcomes of this study support the facilitation of stronger strategic partnerships, increased business, and technology partnership maturity, and stronger alignment.

#### Delimitations

Delimitations establish boundaries in support of the study's purpose, research question, and objectives (Merriam & Tisdell, 2016). This study determines behaviors that impact BITA competencies within HEIs. The population of this study includes technology

leaders and campus business leaders at accredited two- and four-year United States HEIs. The study participants are limited to the highest-ranking technology officer and the highest-ranking leader in business units, such as finance, human resources, student affairs, or academic departments within United States HEIs. The study intentionally excludes non-leadership positions, due to the potential lack of visibility to institutional outcomes. Furthermore, the study intentionally excludes non-United States based HEIs due to inconsistent levels of maturity, access to technology, and progression of technology alignment.

Projects that impact institutional outcomes vary in size and magnitude, therefore the study does not specifically define requirements around scope, duration, cost, or other project specific parameters. The research does not aim to identify the specifics of a project but rather focuses on the behaviors that impacted alignment outcomes. The researcher asked participants to discuss a series of experiences and behaviors that occurred during projects with various scopes and parameters. These participants limited the discussion of behaviors or experiences that occurred or did not occur during the previously identified project. However, all projects discussed were thought to impact institutional outcomes. The study collected, coded, and determined the impact of behaviors that HELs (business and technology leaders) state should occur during a strategic and cross-collaborative project.

#### Assumptions

Leedy and Ormrod (2010) describe assumptions characteristics or parameters that are so inherent the research problem cannot exist without them. These parameters must also include those assumptions closely aligned to the research paradigm structure

(Merriam & Tisdell, 2016). The current researcher assumes that BITA is essential to transform HEIs. Further, the researcher assumes study participants are honest, provided their responses through their individual construct, and participated of their free will. The researcher provided an anonymous focus group environment with questions aligned to personal perceptions of BITA behaviors. Chapter 3 details this researcher's steps to ensure anonymity and confidentiality throughout the research study.

### Key Terms

Only the most used words are provided within the key terms section.

1. *Business leader*—Higher education institutional positions, not including Chief Information Officer or Chief Technology Officer, that commonly fit leadership or executive roles overseeing departmental units within higher education institutions. Examples of the business leader positions included in this specific definition are: President, Chief Financial Officer, Chief Business Officer, Academic Provost, Academic Vice Provost, Vice President of Student Affairs, Vice President for Enrollment, or other roles that commonly participate in the executive cabinet meetings (Robertson, 2015).
2. *Business-IT Alignment (BITA)*—Applying information technology in harmony with business strategies, goals, and needs to achieve outcomes (Luftman, 2003).
3. *Digital Transformation (Dx)*—"Digital transformation (Dx) is a cultural, workforce, and technological shift. It is being driven by technology trends and changes that include advances in analytics, artificial intelligence, the cloud, mobile, consumerization, social networks, and storage capacities. Those drivers are enabling a new approach to everything from digital architectures to how

campus leaders interact with the IT organization, all with the expected outcomes of new business models, improved student outcomes, different teaching and learning methods, and new research capabilities” (Reinitz, 2019, para. 2).

4. *Enterprise Technology*—Large complex technology function that includes staff, services, support, and systems within the higher education institution. This also includes strategy management, budgets, policy, data storage and management, and cloud computing (Reinitz, 2019).
5. *Higher Education Institution (HEI)*— an accredited two or four-year institution of post-secondary learning within the United States. For this study, no distinction is made between public, private, not-for profit, or for-profit (Robertson, 2015).
6. *Higher Education Leader (HEL)*— Higher education institutional positions that commonly serve in an executive role or lead a specific department or business unit. Examples of the business leader positions included in this definition are: President, Chief Financial Officer, Chief Business Officer, Chief Information or Technical Officer, Academic Provost, Academic Vice Provost, Vice President of Student Affairs, Vice President for Enrollment, or other roles that commonly participate in the executive cabinet meetings (Robertson, 2015).
7. *Information Technology (IT)*-The person(s) or department charged with application of technology (hardware, software, or data) to address business or organizational challenges (Henderson & Venkatraman, 1999). Three foundational elements of information technology include governance, operations, and hardware or software infrastructure (Henderson & Venkatraman, 1999).

8. *Outcome(s)*—A broadly defined objective or goal, whose results generally focus on innovation, development of skills, personnel achievement, resource efficiency, financial gain, social responsibility, or responsiveness or effectiveness for an organization (Myatt, 2017).
9. *Strategic Alignment*—The outcome of optimal fit between business objectives, organizational structure, and the supporting information technology or systems (Luftman, 2003).
10. *Strategic Alignment Model* —Framework for conceptualizing and directing the strategic management of Information Technology and Business organization alignment. The model is based on four domains that outline capabilities of strategic fit and functional integration (Henderson & Venkatraman, 1999).
11. *Strategic Alignment Maturity Model (SAM)*— This approach applies Henderson and Venkatraman’s (1999) philosophy that achieving or sustaining alignment requires maximizing behaviors that enable and decreasing behaviors that inhibit outcome alignment. Specifically, the maturity model provides an assessment approach, whose results demonstrate the organization’s current level of business-IT alignment maturity in six competency areas aligned to inhibitors and enabler behaviors. (Luftman, 2003).
12. *Technology leader*- Highest ranking member of the Information Technology or Information Systems office, commonly called Chief Information Officer. The titles of these positions vary by institution and have evolved over time, but the most common include: Chief Information Officer, Vice President of Information Technology, Chief Data Officer, or Technology Administrator (Robertson, 2015).

## Organization of the Study

The remainder of the study includes the literature review, research methodology, research results and analysis, and summative conclusion. Chapter two, the literature review, provides a critical review of relevant literature, including research, articles, and other literary pertinent resources. The literature review expands on topics previously discussed like the industry's current landscape, the history of technology, the transformation of technology leader role; descriptions of higher education leaders; strategic alignment theories and alignment to human capital development. Chapter three describes the selected qualitative methodology, research questions, and objectives. Moreover, it defines characteristics of the qualitative methods, phenomenological design, and focus group data collection processes. Next, chapter four uses a collection of data tables and supporting narrative to demonstrate results followed by a summative analysis. Finally, the dissertation concludes with a review of the findings and relevance of the study in chapter five.

## Chapter Summary

This chapter introduces the need for BITA and the chapter critical role technology plays in overcoming industry challenges. The use of relevant studies demonstrates that higher education industry BITA lags other international industries. Next, the chapter introduced research objectives, the statement of the problem, purpose of the study, and the conceptual framework. The chapter ends with a discussion of the study's limitation, delimitations, assumptions, and key terms. The literature review, which provides a thorough review of related articles, dissertations, and studies, follows this chapter.

## CHAPTER II – LITERATURE REVIEW

This chapter offers a review of current literature and provides a framework to outline BITA's importance and strategic outcome alignment. Specifically, a thorough analysis of recent books, articles, dissertations, and other research provides an applicable and solid literary foundation. The literature review outlines three primary topics related to the industry. The first topic is an analysis of higher education landscape including discussion of three themes labelled as constituent expectations, economic, and technological themes. The second describes the role of HELs specifically describing non-technology leaders, Executive Cabinet members, the history of and current requirements of technology leaders. Finally, the third portion of the chapter explains need for and a summary of strategic alignment.

The chapter begins by summarizing the current landscape through a detailed review of the impact of current trends converging. The chapter follows the description of impact with further explanations of primary trends and related themes to constituent experience, economics, and technology expectations. Next, the chapter provides descriptions roles of HELs. Third, a definition and explanation of human capital development, its relationship to strategic alignment, the theories that support strategic alignment, and its impact on higher education conclude the literature review. Finally, the chapter concludes with a summary restating the three primary themes, their relationship to one another, and their relevance to this research.

### Trends in Higher Education Landscape

Higher education institutions (HEI) offer enormous benefits to individuals and society (Chen et al., 2019). The average college graduate still earns more than a million

dollars over a high-school graduate throughout their lifetime (Chen et al. 2019). Communities surrounding HEIs have increased participation in volunteerism, voting, better access to health care and education, and even earn higher wages (Marcus, 2019; Moretti, 2013). The industry, deemed a pillar of progress, provides society the opportunity for expanded life experiences, life-long learning, and a more robust economic foundation (Chen et al., 2019). However, recent unprecedented challenges threaten the livelihood of HEIs and require swift attention to organizational transformation (Chen et al., 2019; Haggans, 2016; Wheeler, 2020; Witt & Coyne, 2019).

The industry is amid a lively debate requiring HEIs to evaluate their missions, establish their priorities, and create a path that promotes sustainability in the 21<sup>st</sup> century (Bichsel, 2015; Heur, 2018; Jaschik & Lenderman, 2018). Wheeler (2020) describes the convergence of industry-related trends, both new and old, as the driving force for change. Converging trends like failing business models, capacity alignment challenges, and lack of public confidence necessitate a change to the economic operating model (Wheeler, 2020; Haggans, 2016). Similarly, trends like student expectations, technological advancements, and public accountability require a shift in delivery methods and outcomes (Grawe, 2019; Oblinger, 2019; Selligno, 2017). As a result, HEIs today must transform their operations and delivery to provide a seamless, consumer-like, technological experience that decreases operational expenses, meet expectations, and highlight institutional differentiators to remain competitive (Ellucian, 2018; Grajek, 2018; Haggans, 2016; Selligno, 2017; Wheeler, 2020). The transformation requires a strategy that aligns mission to institutional outcomes, commitment to quality of



education, and the organizational environment to support rapid and significant change (Chen et al. 2019).

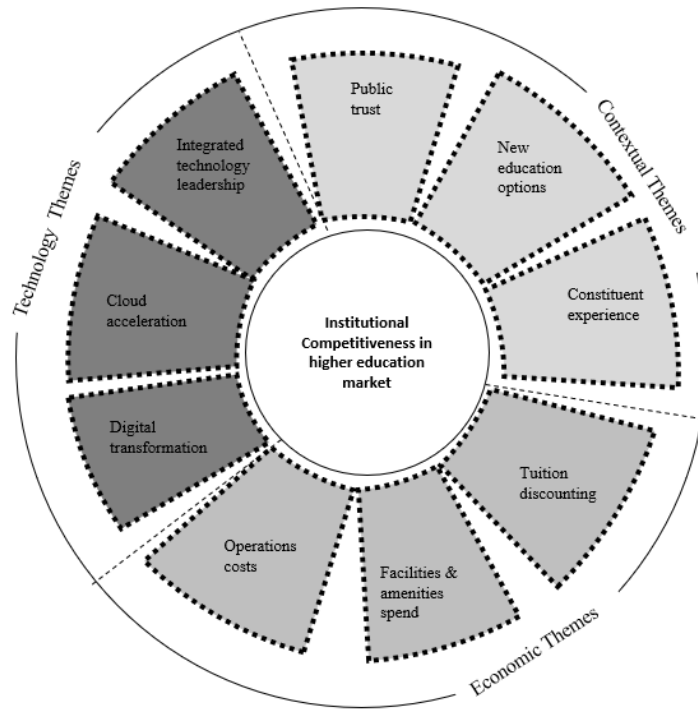
### *Themes and Trends Converging*

The 2020 decade began with the convergence of clear contextual, economic, and technological trends that impact all HEIs in terms of new opportunities and existential challenges (Wheeler, 2020). Some trends present opportunities for advancement, and others create significant problems for leadership, but all require attention and swift action (Wheeler, 2020). The trends align to three main themes or categories—outlined as constituent expectations, economic factors, and technological advancements –that impact the current landscape (Oblinger, 2019; Wheeler, 2020). Reacting to a trend singularly or with a myopic focus instead of reviewing the converging trend pattern for innovative opportunities weakens the likelihood of success (Witt & Coyne, 2019). Further, those who fail to address the converging trends will not remain competitive and will likely cease to exist (Witt & Coyne, 2019).

Leadership’s understanding of the industry, strategic alignment, and the HEI’s role in the market generate innovation and competitiveness (Wheeler, 2020). HELs must understand converging trends to make optimal academic and operating decisions that emphasize productivity, cost management, and institutional distinction from competitors (Wheeler, 2020; Witt & Coyne, 2019). Some trends easily align with an institution’s mission and increase the occasion for innovation, while others simply generate costs with limited sustained benefit (Wheeler, 2020). For some, addressing these converging trends reveal vast opportunities to facilitate the mission and strategic outcomes (Wheeler, 2020).

Others that ignore converging trends or do not take decisive action will likely close (Wheeler, 2020; Witt & Coyne, 2019).

Figure 2 demonstrates the interrelationship and alignment of themes as well as related trends in the current landscape. Each petal represents a trend that impacts the institutional competitiveness within the industry, while the dotted line represents a continuous connectedness to other identified trends and institutional competitiveness. The dotted lines visually represent that trends should not be looked or acted upon within a singular focus since the results will likely impact another (Wheeler, 2020; Witt & Coyne, 2019). Finally, a circle representing the three themes outlined in the literature review encompass each identified trend. The contextual, economic, and technology themes represent higher education's current landscape (Wheeler, 2020; Oblinger 2019).



*Figure 2. Higher Education's Current Landscape Themes and Trends*

Note: This figure represents the themes and trends converging and the relationship to competitiveness.

*Contextual Theme*

The contextual theme describes three trends and the potential impact of their convergence (Wheeler, 2020; Oblinger, 2019). The trends are public trust, alternative education options in the market, and constituent experience (Hill 2020; Oblinger, 2019. Stillman & Stillman, 2019; Wheeler, 2020). Table 1 provides a brief description and summary of the potential impacts as they interrelate with other trends.

Table 1 *Contextual Theme and Trends Descriptions*

Contextual trend(s)	Description	Impact
Public Trust Trend	High tuition rates, student debt, & alignment with employer expectations decrease the value perception of the higher education degree (Wheeler, 2020; Witt & Coyne, 2019).	Public perception of higher education’s value impact enrollment, tuition rates (discounting), learning outcomes for degrees, & alignment with corporate partners (Wheeler, 2020; Witt & Coyne, 2019).
Alternate education options for constituents	Fully online academic programs, certifications, or multiple free or low costs learning opportunities appeal to desired constituent learning outcomes. An increase in the availability of corporate certifications & education programs increases the competitiveness of alternate education options (Ellucian, 2018; Stillman & Stillman, 2019; Wheeler, 2020).	Increased constituent educational opportunities beyond traditional higher education offerings introduce new competitors to the market not previously seen as alternatives (Ellucian, 2018; Wheeler, 2020; Witt & Coyne, 2019).
Constituent experience	Constituents determine value based on their collection of experiences rather than the individual classes, services, or experiences. A consistent constituent experience demonstrates a personalized, seamless, and integrated experience supported via technology (Pine & Gilmore, 1998; Wheeler, 2020; Urbell, 2020).	A disjointed constituent experience for students, faculty, and staff creates turmoil for the constituent and devalues the impact of the transformational experience (Ellucian, 2018; Wheeler, 2020; Urbell, 2020).

*Public Trust Trend.* Public confidence in higher education has sharply decreased since 2015 (Marken, 2019). The 2018 Trust Index reported that 74% of trustees are concerned or very concerned about the industry's stability (Association of Governing Boards of Universities and Colleges [AGB], 2018; Marken, 2019; Sellingo, 2017; Witt & Coyne, 2019). There are many notable contributors to the decline like admissions scandals, social unrest on campus or low opinions of the curriculum relevance; however, student debt, the cost of education or the value of the degree are most noteworthy (Markin, 2019; Sellingo, 2017; Wheeler, 2020; Witt & Coyne, 2019). AGB (2018) reports that highest-rated concerns relate to media coverage of student debt (72%) and the price of tuition (64%) (AGB, 2018; Marken, 2019). In response, many institutions resort to accelerated discounting to combat perceptions of high tuition and affordability concerns (Valbrun, 2019).

Witt & Coyne (2019) define accelerated discounting as the gap between publicly published tuition rates and the actual revenue received. Valbrun (2019) states that the discounting rates for all undergraduate students are an estimated 46.3%-- an all-time high. While HEIs commonly use the practice, especially private institutions, it has negative impacts on the public's trust and the institution's operating expenses (Valbrun, 2019; Wheeler, 2020; Witt & Coyne, 2019). The industry's willingness to significantly discounting fuels the public's perception that tuition rates are too high and rapidly increasing beyond affordability without specific reason (Valbrun, 2019; Wheeler; Witt & Coyne, 2019). Further, the public is often unaware of discounting's significant impact because HEIs do not often publish net financial requirements or operating impacts due to accelerated discounting like driven financial loss (Valbrun, 2019; Wheeler; Witt &

Coyne, 2019). The public's lack of awareness further perpetuates the perception that the cost versus the value is misaligned (Marken, 2019; Valbrun, 2019; Wheeler, 2020).

*New Education Options Trend.* Stillman & Stillman (2019) report that 75% of Generation Z study participants believe there are ways of getting a good education and a great job without a college degree. Further, the authors state that the value proposition associated with education has changed (Stillman & Stillman, 2019). Higher education is no longer just about self-exploration or discovery, but rather about achieving the desired outcomes (Ellucian, 2018; Oblinger, 2019; Stillman & Stillman, 2019; Sellingo, 2017). Student learning must immediately apply to educational or professional growth to attain value (Ellucian, 2018; Oblinger, 2019; Stillman & Stillman, 2019; Witt & Coyne, 2019). As such, learning opportunities with shorter time to completion, decreased costs, or direct alignment to job skills or opportunities are more valuable than ever before (Ellucian, 2018; Oblinger, 2019; Valbrun, 2019; Wheeler, 2020).

Grawe (2019) states that the decline of traditional-aged students coupled with the increased availability of low-cost and employer accepted programs further compromises an institution's competitiveness. Institutions must now compete with one another, code camps, certification programs, low or no cost online learning options, and even employer driven education programs (Ellucian, 2018; Grawe, 2019; Haggans, 2016; Lalovic-Hand, 2017; Lapovsky, 2018; Oblinger, 2019; Stillman & Stillman, 2019; Wheeler, 2020). The new entrants into the market require HEIs to rethink their delivery method, milestones to completion, and their alignment to career opportunities (Ellucian, 2018; Haggans, 2016; Lalovic-Hand, 2017; Lapovsky, 2018; Oblinger, 2019; Stillman & Stillman, 2019; Valbrun, 2019; Wheeler, 2020). To compete with alternate forms of education, HEIs

must appeal to the non-traditional-traditional student who value direct relevance of education, convenience, a modern learning environment, and affordable prices (Stillman & Stillman, 2019; Wheeler, 2020).

*Constituent Experience Trend.* Pine and Gilmore (1998) first introduce the concept of the experience economy in a *Harvard Business Review* article. In it, the authors define the experience economy as the fourth economy in the historical evolution preceded by agrarian, industrial, and service. The advanced economy no longer charges for individual goods or services, but rather for the value of the transformation of the collective experience offered to constituents (Pine & Gilmore, 1998). Specifically, constituents are drawn to and purchase from vendors that have an easy user experience, demonstrate values aligned to theirs, and provide incentives for loyalty or repeat usage (Pine & Gilmore, 1998).

Pine and Gilmore's 1998 *Harvard Business Review* article introduced the world to a new economic and operating model. (Urbell, 2020). Today, the experience economy has reached the HEIs, slowly (Urbell, 2020). While the industry might have previously been immune to the experience economy, converging trends like lack of public trust, intolerance for tuition rates, and an undetermined value for a degree cause constituent to question the value of the transformational experience (Stillman & Stillman, 2019; Urbell, 2020). HEIs must provide optimal digital user experience(s) that drive value and reward the consumer (student) for loyalty (Urbell, 2020). Constituents expect a seamless and easy to navigate experience starting with recruitment, sustained through registration, graduation, and alumni giving (Urbell, 2020).

Urbell (2020) writes that institutional service, support, and personalization are not up to the same level often receive from constituent's drug store. Higher education constituents encounter a disjointed and fragmented experience that does not seamlessly blend standard services or interactions like the classroom, student support services, and auxiliary administrative services like registrar, bursar, or human resources (Ellucian, 2018; Sellinger, 2017; Wheeler, 2020). The silo'ed, decentralized, and institutional centric experiences create turmoil for the constituent and devalues the entirety of the higher education experience for students, faculty, and staff (Hill, 2019; Stillman & Stillman, 2019; Urbell, 2020).

Stillman & Stillman (2019) states that the value proposition of going to college has changed for students. Further, faculty and staff state that consistency, ease of use, and updated experiences are factors in their hiring and employee satisfaction experiences (Ellucian, 2018). Specifically, any time spent navigating the higher education experience—as a student or employee—should be directly aligned to the constituent's desired outcome (Stillman & Stillman, 2019). To be competitive, HEIs must provide an on-demand friendly experience with just-in-time services that support automated processes founded in security, continuity, and connectedness (Hill, 2019; Lalovic-Hand, 2017). A constituent friendly-experience, reliable academic quality, and seamless technological serve as competitive differentiators (Grajeck, 2018). In short, institutional success depends on the identification of transformational value through the forward thought that occurs between technology and HELs to provide a differentiated constituent experience (Price, 2016; Stillman & Stillman, 2019; Urbell, 2020).

### *Economic Theme*

Economists and prognosticators predict significant financial distress (Deloitte University Press, 2017). Moody’s Investor Service, who rated the industry with a negative financial outlook in 2018, cite factors like costs growing faster than revenue, tuition discounting, and shifting demographics that lead to smaller traditional-aged student attendance as the primary challenges (Grawe, 2019; Wheeler, 2020; Selzer, 2019). Rising operating expenses, an institution’s dependence on tuition dollars, and the decrease in traditional-aged students summarize the foundation of the distress (Grawe, 2019). Some institutions use tuition discounting, administrative cost-cutting, and increased focus on raising money through alumni and foundation dollars to overcome financial challenges, but these methods prove unsustainable and will likely not support long term existence (Deloitte, 2017; Valbrun, 2019; Wheeler, 2020). Table 2 provides a brief description of trends and interrelated impacts associated with the economic theme.

Table 2 *Economic Theme and Trends Description*

Economic Trends(s)	Description	Impact
Tuition discounting	Decreased public trust, escalated tuition rates, and affordability drive accelerated tuition discounting. This is defined as a gap between the published tuition rates and finances collected from students (Valbrun, 2019).	Tuition discounting causes negative public trust and impact on the institution’s operating financial budget. This compromises the existence and sustainability of institutions (Deloitte, 2017; Valbrun, 2019; Wheeler, 2020; Witt & Coyne, 2019)



Table 2 (continued)

Economic Trends(s)	Description	Impact
Facilities & amenities spend	An institution's capital and on-going expense to maintain and improve the physical campus. This budget item is nearly 1/3 of the total operating expense results in underutilized and undermaintained buildings (Haggans, 2016).	Institutions spend millions to build and maintain functional and luxury amenities. Examples include athletic complexes, lazy rivers, and luxury apartment style residences (Haggans, 2016; Sellingo, 2017; Witt & Coyne, 2019)
Operating Costs	An institution's financial support budget items which includes administrative costs, technology and infrastructure maintenance, physical operations, and executive and human resources costs (ACTA, 2017). 2017 study finds that 61% of tuition dollars are allocated to operating costs (ACTA, 2017).	A 22% increase in operating allocation since 2010 demonstrates inconsistent operational efficiency and an imbalance in spend. Institutions must decrease their operational costs via efficiencies to remain operational and competitive (ACTA, 2017; Wheeler, 2020; Witt & Coyne, 2019).

*Tuition Discounting Trend.* As stated previously, admissions scandals, decreased perception of the value of higher education, and escalating student debt exemplify reasons for decreased public trust (Wheeler, 2020). Amid the mistrust, many HEIs provide tuition discounting or internally funded scholarships to keep traditional-aged student enrollments steady and to avoid impacts of the predicted 18-21-year-old population decline (Selzer, 2019; Valbrun, 2019). Tuition discounting is an unsustainable solution when full-tuition revenue still funds nearly 62% of operating spend for four-year public and private institutions (Witt & Coyne, 2019). The practice reduces internally available funding for teaching, student services, and capital expenses (Selzer, 2019;

Wheeler, 2020). Rather than discounting tuition, HEIs should study operating expenses and look for ways to lower costs (Haggans, 2016; Sellingo, 2017; Valbrun, 2019; Witt & Coyne, 2019).

*Facilities and Amenities Spending Trend.* The ever-growing competition between campuses led to a race for greater student amenities that significantly contribute to institution's mounting operational costs (Haggans, 2016; Myatt, 2017; Sellingo, 2017). Institutions spend millions to build grander student athletic complexes, lazy rivers, and residence halls (Sellingo, 2017). These investments increased institutional operating expenses nearly 20% since 2010 (Haggans, 2016; Sellingo, 2017). Consequently, institutions put themselves further in debt providing these amenities even amid the economic challenges (Chen et al., 2019). Haggans (2016) states that investing in the brick-and-mortar facilities will either contribute to an institution's value or their decline. High operating expenses and an intolerance for further tuition increases force HEIs to adopt cost efficient practices focused on strong instruction and completion rather than additional amenities (Haggans, 2016; Post, 2017; Stillman & Stillman, 2019; Sellingo, 2017).

HEIs need to optimize instructional offerings, reduce facilities operations costs, and address constituent needs via technology (Haggans, 2016; Sellingo, 2017). Employing efficiencies like optimized use of classroom space via class-time offerings or delivery methods can reduce nearly a million dollars in instructional and facilities costs (Chen et al., 2019). Reimagining the classroom modality to a blend of online, in-classroom, and hybrid can decrease operational expenses without compromising quality (Chen et al., 2019). Further, most campuses have too much capacity or not enough

students to maintain their current brick-and-mortar structure (Haggans, 2016). As students and institutions move towards digital platforms, institutions realize they have more physical space than their market or expenses can support (Haggans, 2016). HEIs must remove traditional constraints to optimize efficiency, reduce operating costs, and increase technological dependencies to survive (Witt & Coyne, 2019).

*Operating Expense Trend.* American Council of Trustees & Alumni (ACTA) (2017) define operating expenses as the day-to-day financial support of the institution which often includes administrative costs, technology and infrastructure maintenance, physical operations, and executive and human resources costs. These costs do not include student support services or auxiliary services like housing, food and beverage, or parking services (ACTA, 2017). An ACTA (2017) longitudinal study found that operational expenses consume 61% of student tuition dollars in 2017, an increase from 39% in 2005. This increase represents inefficient processes, high human resources costs—especially in executive leadership—and an imbalance in HEI academic versus operational spend (ACTA, 2017; Myatt, 2017; Sellingo, 2017, Witt & Coyne, 2019).

The 2017 Moody's financial outcome report demonstrated that institutional expenses outweigh revenue and leads to a challenging business environment (Crowe, 2018; Wheeler, 2020; Witt & Coyne, 2019). Progressive institutions look beyond traditional methods, like budget or salary cuts, to permanently cut expense (Lapovsky, 2018; Witt & Coyne, 2019). Instead, progressive HEIs look to aggressively review their financial model and control spend in areas like human resource, technology and infrastructure, capital spend on facilities and operations (ACTA; 2017; Haggans, 2016; Lapovsky, 2018; Myatt; 2017; Sellingo, 2017; Witt & Coyne, 2019). These actions can

prove beneficial; however, HEIs must also stop practices like tuition discounting and unregulated spend on brick-and-mortar to achieve financial success (ACTA; 2017; Haggans, 2016; Lapovsky, 2018; Myatt; 2017; Sellingo, 2017; Valbrun, 2017; Wheeler, 2020; Witt & Coyne, 2019).

### *Technological Theme*

Today's HEIs strive to empower learning and increase access for all (Dlamini, 2015; Grajeck & Brooks, 2020; Heur, 2018; Myatt, 2017). The advancements of information systems, learning platforms, in-classroom technologies, and cloud provide institutions the opportunity to support both learning and administration in ways never seen (Dlamini, 2015). Technology is no longer reactive but rather a strategic operation that supports the institution and is essential to innovation (Dlamini, 2015; Grajeck, 2018; Grajeck & Brooks, 2020; Heur, 2019; Wheeler, 2020). It is a tool to transform dated business models, improve efficiencies, sustain disaster, and align processes to achieve institutional outcomes (Grajek, 2018; Heur, 2019, Lalovic-Hand, 2017; Myatt, 2017; Vasquez, 2018; Wheeler, 2020). Technology is the foundation for institutional differentiation and innovation required for competitiveness and sustainability (Crowe, 2018; Grajeck, 2018; Haggans, 2016; Wheeler, 2020). The following section provides additional information included in the technology theme. One trend, cloud acceleration, is discussed throughout the previous sections. Another, the Integrative technology leader, is thoroughly discussed later in the chapter. As such, this section primarily focuses on digital transformation and disaster recovery. Like the previous themes, Table 3 provides a brief definition and description of the impacts of each trend.

Table 3 *Technological Theme and Trends Description*

Technological Trends(s)	Description	Impact
Cloud Acceleration	Evaluation and modernization of business processes and cloud-based technologies like enterprise systems across the institution	Cloud-based technologies require collaboration, modernization, and adoption to increase productivity and cost reduction (Arandjelovic, Bulin, & Khan, 2015; Vasquez, 2018).
Digital Transformation	Digital transformation, defined as a “profound transformation characterized by the strategic integration of technology and business” (Reinitz, 2019, para. 1)	Institutions must focus on digital transformation to modernize processes, cut costs, and achieve sustainability (Heur, 2018; Post, 2017; Wheeler, 2020).
Integrated Technology Leadership (detailed information in higher education leadership portion)	The integrative CIO is defined as, “the repositioning or reinforcing of the technology leadership role as an integral strategic leader who supports the institutional mission (Hancock, Lakhavani, Pillay, & Weil, 2019, para 1).	The technology leader’s new role includes requirements to understand the future landscape, analyze the potential impact, prepare the organizational leaders for impact, define the required transition, and facilitate the transitional experience (Nielsen et al., 2017).

*Cloud Acceleration Trend.* Technology—hardware, software, and people—serve as the underpinning of today’s colleges and universities not just a tool for classroom learning (Lalovic-Hand, 2017; Wheeler, 2020). Enterprise systems, like student information systems, provide an extraordinarily robust back-end function, but lack strong usability, which impacts adoption and modernization of processes (Ellucian, 2018; Lalovic-Hand, 2017; Robinson, 2014). As such, auxiliary services—areas such as the registrar, bursar, and human resources—are challenged to increase adoption, update business process, and increase efficiencies through technology (Ellucian, 2018; Heur, 2019; Lalovic-Hand, 2017). Advanced cloud-based technologies require collaboration,

evaluation, modernization, and process adoption (Ellucian, 2018; Wheeler, 2020). The realization of said efficiencies increases productivity, decrease operating costs, and increases constituent satisfaction (Arandjelovic et al., 2015; Ellucian, 2018; Grajek & Brooks, 2020; Sellingo, 2017; Urbell, 2020; Wheeler, 2020).

Since 2017, issues and concerns like information security, managing student success, data-enabled institutions, affordability, IT organizational models, and change leadership landed as a mix of the HEL's top ten issues (Grajek and Brooks, 2020). Topics like institutional and IT adaptiveness, improved student outcomes, and improved data decision making strategies serve as aspirational outcomes facilitated through stronger technology (Grajek, 2018). As such, HELs should understand the impact and benefits technologies provide for institutional efficiencies and student outcomes (Grajek, 2018). They should also demonstrate stronger commitments towards funding, alignment, and modernization (Grajek, 2018). Students expect an affordable, seamless, consumer-like, user-friendly experience that prepares them for optimal futures with higher earning potential, work life balance, and employability; therefore institutions must demonstrate significant change through technology to provide opportunities shape the HEI landscape (Dlamini, 2015 & EDUCAUSE, 2015).

*Digital Transformation Trend.* HEIs must focus on digital transformation which is defined as a “profound transformation characterized by the strategic integration of technology and business” (Reinitz, 2019, para. 1). Digital transformation is used to modernize processes, cut costs, and achieve sustainability (Heur, 2018; Post, 2017; Wheeler, 2020). Successful transformation increases satisfaction with constituent experience, lessens productivity challenges, reduces both operational and educational

delivery costs, mitigates operational risks, and promotes financial and operational sustainability (ACTA, 2017; Grajek, 2018; Grajeck & Brooks, 2020; Heur, 2018; Lalovic-Hand, 2017; Reitz, 2019; Sellingo, 2017; Vitters et al., 2018; Wheeler, 2020; Witt & Coyne, 2019). HELs must utilize technological advances like automation, cloud computing, and wireless dependability to optimize technological and human resource spend in areas like registrar, bursar, and human resources (Catalono, 2019; Grajeck, 2018; Lalovic-Hand, 2017; Morse, 2017; Myatt, 2017; O'Brien, 2020; Reitz, 2019; Simone, 2020; Wheeler, 2020). Further, HEIs must provide a unified constituent experience, through digital transformation, to differentiate and compete (Catalono, 2019; Grajeck, 2018; Grajeck & Brooks, 2020; Grawe, 2019; Lalovic-Hand, 2017; Morse, 2017; Myatt, 2017; O'Brien, 2020; Reitz, 2019; Simone, 2020; Urbell, 2020; Wheeler, 2020).

Institutions must plan for and reduce risk by reviewing converging trends and anticipating the future landscape through a technological lens (Vitters et al., 2018; Wheeler, 2020). This process is commonly referred to as risk mitigation, continuity planning, or disaster recovery (Vitters et al. 2018). Some risk mitigation commonly includes economic downturns, branding, or reputation concerns, or enrollment declines (Vitters et al., 2018). Others occur less frequently and require more preparation and discussion (Vitters et al., 2018). Operational efficiency risk mitigation requires continuous review and assessment of business processes to identify duplicative processes or inefficiencies and provide a foundation for operational continuity (Vitters et al., 2018). Specifically, institutions must look at the design, resource allocation, staffing, and

environmental dependencies to execute day-to-day operations in a multitude of circumstances (Vitters et al., 2018).

HEIs must prepare to shift their operations at a moment's notice to reduce disruption from many forms of disaster (Santilli, 2020). These disasters include events like hurricanes, epic snowstorms, human-induced events, and even the Covid-19 pandemic (Grajek & Brooks, 2020). A recent study found that only 42% of institutions have a formal disaster recovery plan that includes business continuity for policies, processes, speedy recovery of vital technology or operational systems (Grajek & Brooks, 2020). Further findings outline that only 31% of the institutional disaster recovery processes include IT as a business contributor throughout the plan (Grajek & Brooks, 2020). The lack of IT's involvement or representation becomes abundantly clear when HEIs must execute disaster recovery processes (Grajek & Brooks, 2020). For example, nearly 80% of U.S. institutions shut their doors for three or more weeks in the Spring 2020 semester, amid the Covid-19 pandemic (Santilli, 2020). Of those, only 60% of institutions resumed some form of operations to conclude the term (Santilli, 2020). As a result multiple U.S. HEIs currently report between 40 million and 1 billion dollars of lost finances associated with the U.S. Covid-19 crisis (Santilli, 2020). The disruption in processes puts additional financial constraints on already burdened institutions (Santilli, 2020). When disaster recovery and business continuity must be executed the importance of technology, BITA and digital transformation become an imperative rather than an aspiration (O'Brien, 2020).

*Integrative Technology Leader.* The 2018 Gartner CIO Survey identified three transformational forces that shaped the transition of the technology leader's role (Nielsen



et al.,2017). These forces, defined as core activities, include the need to pre-empt disruption, define the technology leader's new role, and live the technology leader's new role (Nielsen et al., 2017). The technology leader's new role includes requirements to understand the future landscape, analyze the potential impact, prepare the organizational leaders for impact, define the required transition, and facilitate the transitional experience (Nielsen et al., 2017). Similarly, Grajek (2018) states that information technology (and its leaders) must focus on remaking higher education experiences through institutional and IT adaptiveness, improved student outcomes, and improved decision making. A more thorough discussion of the role is provided later in the chapter.

The previous provided a summary of three themes and aligned trends that present opportunities for advancement, create significant problems for HELs and all require attention and swift action (Wheeler, 2020). The trends align with contextual, economic, and technological themes and require leadership to understand individual and organizational impact (Oblinger, 2019; Wheeler, 2020). Reacting to a trend with a myopic focus weakens the likelihood of success but reacting to all with a collaborative and consistent approach provides opportunities for competitiveness, cost reduction, and innovation (Grawe, 2019; Sellingo, 2017; O'Brien, 2020; Wheeler, 2020; Witt & Coyne, 2019). Further, those who fail to address the converging trends will not remain competitive and will likely cease to exist (Witt & Coyne, 2019).

### Higher Education Leadership

The previous section outlined the current landscape discussing the impacts of contextual, economic, and technological themes. The discussion provided a rich description of challenges and considerations HELs face to optimize HEIs. This section

builds on the previously discussed literature. This section describes HELs and discusses their role in a time of change and common behavioral expectations.

### *Higher Education Leaders in The Current Landscape*

HELs align to a hierarchical structure commonly comprised of two areas—academic and administration (Astin & Astin, 2000). HELs are often led by the highest-ranking member, commonly called the president or chancellor (Astin & Astin, 2000). Often, vice presidents from administration and academics, called the executive cabinet or presidential cabinet, report directly to the president (Astin & Astin, 2000). While institution reporting structures and presidential cabinet membership vary, common roles include vice president for finance and administration or CFO, General Council, vice president for student affairs or services, vice president of academic affairs or provost, vice president for development or chief development officer, and vice president for communications (Astin & Astin, 2000; Zimmerman, 2018). Kroger (2018) describes being a HELs as a challenging experience. He states being in a leadership role requires the person to answer to multiple constituencies, lead through financially and socially challenging times, and manage a complex ecosystem with much less power than a traditional CEO in corporate industry (Kroger, 2018).

McLean (2019) states that HELs must transform the industry by demonstrating the skill and will to meet future demands. HELs must create institutional strategy to determine success and demands through projected growth, performance, and competitive advantage (Alghamdi & Sun, 2017; Deloitte, 2018; McLean, 2019; Santilli, 2020). Specifically, HELs collaborate to create the long-term vision, goals, and institutional outcomes from which success is determined (Astin & Astin, 2000; Grajek & Brooks,

2020; Pelletier, 2016; Santilli, 2020; Simone, 2020). This process requires institutional understanding, knowledge of the current landscape, business alignment, and future state vision (Eckel & Trower, 2019; Santilli, 2020).

HELs are change agents responsible for intentionally driving the institution's members through a purposive and value-based process to achieve a determined desire future state (Astin & Astin, 2000; McLean, 2019). HELs remain aware of the current landscape, external pressures, and increased competitiveness (McLean, 2019; Oblinger, 2019; Witt & Coyne, 2019; Wheeler, 2020). They are under enormous pressure to improve costs and institutional outcomes (Alghamdi & Sun, 2017; Wheeler; 2020; Sellingo, 2017; Witt & Coyne, 2019). As such, they must identify institutional differentiators, abandon relatively unchanged operating models, and leverage technology as an additional change agent (Litchman, 2017; Pelletier, 2016; Witt & Coyne, 2019; Wheeler, 2020). As the industry experiences change, HELs must modernize the constituent experience through strategy—specifically strategic alignment, technology alignment, and value drivers (Deloitte, 2018; Robertson, 2015; Santilli, 2020).

### *Technology Leaders in Higher Education*

The role of technology leader, often called the CIO, in higher education is a young, comparatively with little literature that details history and progression (Brown, 2018; Heur, 2018; Dlamini, 2015). Available literature focuses on the corporate CIO, the role's function, and demographics (Dlamini, 2015; Heur, 2018). HEI and corporate CIO's demographics and role function are similar; however, the HEI CIO role's maturity, progression, and visibility better correlate to the industry's technological history (Brown, 2018; Dlamini, 2015; Heur, 2018). Recently, literature related to role's requirements and

importance has emerged (Brown, 2018; Catalono, 2019; Heur, 2018; Hancock, et al., 2019; Nielsen et al., 2018; Simone, 2020; Wheeler, 2020). This section summarizes previous expectations and leadership requirements but primarily focuses on literature that describes current expectations.

### *History of Technology Leadership*

The title technology leader first became prominent in the 1970s with the rise in technology management and coordination (Brown, 2018). The increased access and availability of technology in the 1970s and 1980s required coordinated oversight and organization; however, limited interconnectivity of technology decreased the need for organizational strategy involvement (Nielsen et al., 2018). Expectations of the technology leader's role changed dramatically with increased access to personal computers, internet, mobile devices, and the cloud (Brown, 2018; Heur, 2018; Simone, 2019; Wheeler, 2020). From its inception there is an interconnection between the technology, the people using it, and those managing it (Heur, 2018).

Technology leaders were first hired to oversee the growing and deeply technological landscapes that support infrastructures, networking, and mainframes (Heur, 2018; Dlamini, 2015). The technology was largely accounting, or application focused and meant to provide faster operations for administrative staff (Davis & McDonagh, 2015; Heur, 2018;). Understanding that the technology was largely available to those reporting to the Chief Financial Officer, technology leaders commonly reported to that leadership as well (Davis & McDonagh, 2015; Heur, 2018). They had limited impact on institutional strategy, future direction of technology, or access to multiple institutional leaders (Brown, 2018; Heur, 2018).

The mass availability of personal computers increased the impact of technology but did little to the importance of the technology leader's role within higher education (Brown, 2018; Heur, 2018; Simone, 2019). Advances in personal computing and corresponding applications allowed technology users to gather information, conduct analysis to support decision making and better support departmental functions (Davis & McDonagh, 2015, Dlamini, 2015; Heur, 2018). This led to decentralized technology leadership specific to departments and a reliance on coordination and alignment among the various technology leaders (Davis & McDonagh, 2015; Dlamini, 2015; Heur, 2018). More specifically the departmental localizations commonly created silos which led to alignment, integration, and coordination challenges (Davis & McDonagh, 2015; Dlamini, 2015; Heur, 2018). The role of the highest technology leader in larger organizations required coordination, communication, and management skills in addition to technical knowledge (Davis & McDonagh, 2015; Dlamini, 2015). This transition required technology leaders to become business partners, technology evangelists, and strategists that understood the complexities of localizations while managing holistic organizational and technological landscapes (Brown, 2018; Catalano, 2019; Dlamini, 2015; Heur, 2018).

The invent and mass availability of the intranet, web, and networks meant increased challenges to drive business value, provide customer-facing applications for internal employees, students, and alumni (Brown, 2018; Catalano, 2019; Davis & McDonagh, 2015; Dlamini 2015; Heur, 2018) Further, they had to negotiate partnerships with third party hardware and software providers (Brown, 2018; Catalano, 2019; Davis & McDonagh, 2015; Dlamini 2015; Heur, 2018). Dlamini's (2015) research shows that mass availability of the web created a significant shift in the technology leadership role.

Specifically, technology leaders ensure that technology and information systems provide world-class processes, competitive institutional advantage, and on-demand access to institutional data meant to drive decision making (Dlamini, 2015). Further, they still delivered high technological value, demonstrate strong collaborative and communication skills, and manage complex landscapes (Davis & McDonagh, 2015; Dlamini, 2015; Heur, 2018; Simone, 2019; Wheeler, 2020). The landscapes include centralized and localized infrastructures, but with less resources and broader implications (Davis & McDonagh, 2015; Dlamini, 2015; Heur, 2018; Simone, 2019; Wheeler, 2020).

Despite the changes which led to a highly visible, collaborative, and strategic role, little has changed in the last decade related to the reporting structure and perceived impact of the technology leader role (Brown, 2018). Brown's (2018) longitudinal study shows that the increased demand on technology leaders does not correlate to a change in strategic access, supervision, or perceptions of maturity by institutional leadership. Brown (2018) states that there are two primary contributing factors—lack of communication skills and leadership skills. The results of his longitudinal study demonstrate that business leaders believe these are the two most important skills for a technology leader (Brown, 2018). Research provides additional support to the growing narrative that successful technology leaders must be multidimensional and possess strong technological, communication, and management skills required to drive strategy and operations (Brown, 2018; Dlamini, 2015; Heur, 2018; Nielsen et al., 2017; O'Brien, 2020; Simone, 2020; Wheeler, 2020).

*Integrative Technology Leader.* The 2018 Gartner CIO Survey identified three transformational forces that shaped the transition of the technology leader's role (Nielsen

et al., 2017). These forces, defined as core activities, include the need to pre-empt disruption, define the technology leader's new role, and live the technology leader's new role (Nielsen et al., 2017). The technology leader's new role includes requirements to understand the future landscape, analyze the potential impact, prepare the organizational leaders for impact, define the required transition, and facilitate the transitional experience (Nielsen et al., 2017). Similarly, Grajek (2018) states that information technology (and its leaders) must focus on remaking higher education experiences through institutional and IT adaptiveness, improved student outcomes, and improved decision making.

The integrative CIO is defined as, "the repositioning or reinforcing of the technology leadership role as an integral strategic leader who supports the institutional mission (Hancock et al., 2019, para 1). To become integrative technology leaders must demonstrate value, business acumen, and skill to institutional partners (Simone, 2019). This means they must speak to business cases supporting or discouraging institutional investments, understand and speak to the business objectives of other institutional leaders, and educate others to the importance of technology operations and strategy (Brown, 2019; Catalano, 2019; Dlamini, 2015; Heur, 2018; O'Brien, 2020; Oblinger, 2019; Simone, 2019; Wheeler, 2020;). Institutions may not achieve their desired strategic objectives or outcomes without elevating to integrative technology leadership, through collaboration, communication, and partnership (Brown, 2018; Catalano, 2019; Dlamini, 2015; Heur, 2018; O'Brien, 2020; Oblinger, 2019; Simone, 2019; Wheeler, 2020). Not achieving these objectives risks decreasing institutional competitiveness and threatens sustainability (Wheeler, 2020; Witt & Coyne, 2019). As such, the integrative technology leader must communicate in-depth holistic solutions that demonstrate

strategic and operational understanding of both the institution and multiple business units using sound technological solutions (Hancock et al., 2019; Wheeler, 2020).

Current IT organizations serve two primary functions: deliver or manage operational excellence via technology infrastructure and its services and enable institutional transformation that utilizes technology to drive value (Hancock et al., 2019). Unfortunately, many HELs believe that the technology leader is only responsible for the former as technology leaders continue to take orders rather than drive change (Brown, 2018; Hancock et al., 2019). Hancock et al. (2019) state that technology itself facilitates the technology leaders' transition service support provider to delivering innovation management. Specifically, technology leaders must provide cost and operationally effective business solutions that align to institutional outcomes rather than focusing on the problems (Brown, 2018; Hancock et al., 2019; Nielsen et al., 2018). They must leverage their deep technical knowledge and vendor partnerships to facilitate institutional solutions that span multiple business units (Brown, 2018; Hancock et. al, 2019; Neilson et. al, 2018, Wheeler, 2020). Moreover, they must bring an in-depth knowledge of the institution's strategy and objectives, understand the institutional business processes, provide a foundational awareness of business process re-engineering and project management (Brown, 2018; Hancock et. al, 2019; Neilson et. al, 2018, Wheeler, 2020).

#### *Common Behavioral Characteristics for HELs*

Technology services are used more than any other business unit which provides a wide range of leadership access; however, HELs still report a lack of satisfaction and alignment (Brown, 2018; Grajeck & Brooks, 2020; Hancock et al., 2019). Therefore, HELs and technology leaders should make connections and develop strategies (Brown,



2018; Grajeck & Brooks, 2020). Researchers believe the disconnect is related to emotional intelligence, communication challenges, intrapersonal skills, and ability to drive value (Astin & Astin, 2000; Brown, 2018; Grajeck & Brooks, 2020; Hancock et al., 2019; Wheeler, 2020). The following paragraph provides common behavioral characteristics and expectations for higher education leaders, including technology leaders.

McLean (2019) states that HELs in a metrics-driven environment should possess technical knowledge and the ability to make data-driven strategic decisions. Interestingly, today's technology leaders are challenged with similar expectations (Alghamdi & Sun, 2017; Brown, 2018; Grajeck & Brooks, 2020; O'Brien, 2020; Simone, 2020). Brown's (2019) longitudinal study demonstrates that all HEL roles (including president cabinet and technology leaders' roles) should demonstrate strong leadership, communication, relationship building, higher education knowledge, and interpersonal skills. Further research states that good HEL should have leadership, communication, and relationship building skills as foundational elements (Astin & Astin, 2000; Deloitte, 2018; Santilli, 2020; Sellinger, 2017). The benefits and expectations of the commonalities will be further explained through the strategic alignment discussion.

### Strategic Alignment

Technology drives consistent evolution and the need for new skill sets within the landscape and the entire ecosystem. (Grajeck & Brooks, 2020; OET, 2017; Wheeler, 2020). Technological advancements, like internet and the cloud, have direct impact on the ecosystem because of their alignment to mission critical topics like access, cost, and relevance of learning (Brown, 2018; McLean, 2019; OET, 2017; Wheeler, 2020). At a

time when higher education is undergoing significant transition because of external pressures not seen since the middle of the 20<sup>th</sup> century, the reliance on and strategic adoption of technology provide opportunities for unprecedented advancement (Grajeck & Brooks, 2020; Grajeck, 2018; Hancock et al., 2020). Moreover, Grajeck (2018) states that the industry's biggest concerns and demands now align with technology's strongest attributes around productivity and digital transformation.

HELs have gained more exposure and experience with technology; thereby they have an increased acceptance among leadership than in years passed (Brown, 2018; Grajeck & Brooks, 2020; Grajeck, 2018). As technology leaders drive strategy, HELs are more likely to understand the role technology plays in the achievement of outcomes and operational efficiencies (Alghamdi & Sun, 2017; Arandjelovic et al., 2015; Hancock et al., 2019; Wheeler, 2020). For more than a decade the private sector and HEIs have outlined the importance of the role of technology leaders' alignment with leadership (Arandjelovic et al., 2015; Brown, 2018; Dlamini, 2015; Hancock et al., 2019). Unfortunately, most HELs believe their technology are not adequately aligned to achieve outcomes (Brown, 2018; Bichsel, 2014; Luftman & Kempiah, 2007; Wheeler, 2020; Witt & Coyne, 2019).

Research recognizes misalignment between technology leader and institutional leadership as a major barrier to organizational success (Alghamdi & Sun, 2017; Brown, 2018; Dlamini, 2015; Grajeck & Brooks, 2020; Walsh, 2014). Research also outlines various findings for the misalignment. Common reasons include lopsided relationship dynamics, lack of strategic acumen by technology leadership, even perceptions of lack of willingness to collaborate (Brown, 2018; Catalono, 2020; Walsh, 2014; Wheeler, 2020).

Regardless of the reason, misalignment or lack of strategic partnership leads to missed opportunities, increased costs, security concerns, and unattained institutional outcomes (Alghamdi & Sun, 2017; Grajeck, 2018; Luftman & Kempiah, 2007; Witt & Coyne, 2019).

### *Strategic Alignment and Human Capital Development*

Swanson and Holt (2009) define human resource development as the “process of developing and unleashing expertise for the purpose of improving individual, team, work processes, and organizational system performance (p. 4). The human resource development officer must act as a process evaluator, a change agent, and a strategic partner (Gaudet, 2016). They must facilitate two core principles—individual or organizational learning and individual or organizational performance (Swanson & Holt, 2009). To successfully execute these principles they must be strategically aligned with organizational leadership (Price, 2016).

Increased competitiveness, cost reduction, and drive-in innovation are benefits of strategic alignment often realized through adaption of business processes, increased employee productivity, and operational efficiencies (Arandjelovic et al., 2015; Wheeler, 2020). Like human resource managers, technology leaders must move from a position of reactive and supportive business partner to the integrated and transformative leader of strategy (Wheeler, 2020; Grajeck, 2018; Swanson & Holt, 2009). Swanson and Holt (2009) state that strategic alignment is nearly impossible to attain without the centrality of information technology to business processes and the sustainable competitive advantage of workforce expertise. The transition to transformative strategy leader is slow and requires strong organizational partnership (Prince, 2016).

True strategic alignment cannot be obtained without partnering information technology, competitiveness of business processes, and mutual comprehension of the leadership benefits (Swanson & Holt, 2009). As such, this research looks to theories that focus on the importance of strategic alignment, a key element of human capital development, within the more specific research area of BITA. Specifically, this research uses Henderson and Venkatraman's (1993) Strategic Alignment Model and Luftman's (2003) Strategic Alignment Maturity Model (SAM) to determine behaviors that drive BITA in HEIs. The researcher determines the behaviors that impact strategic alignment, integrate technology into institutional departments or processes, and align technological thought leadership into practice that increase distinctive competencies and competitiveness. Understanding distinctive competencies can influence strategic alignment and impact future outcomes (Alghamdi & Sun, 2017; Dlamini, 2015; Myatt, 2017; Robertson, 2014). The goal of the study is to use qualitative research findings to develop a deeper understanding of behaviors that demonstrate outcome alignment.

#### *Models for BITA*

Gerow et al. (2014), defined IT strategic alignment as “the fit between two or more components in terms of addressing the needs, demands, goals, objectives, and/or structures of each component such that management of the business and IT remain in harmony” (p. 16). The components are business strategy, IT strategy, business infrastructure and process and IT infrastructure and process (Henderson & Venkatraman, 1999; Luftman, 2003; Luftman & Kempiah, 2007; Myatt, 2017; Robertson, 2014). The interaction between the four components serves as BITA's foundation research (Gerow et al., 2014; Henderson & Venkatraman, 1999; Luftman, 2003; Luftman & Kempiah, 2007;

Myatt, 2017; Robertson, 2014). Further, the quest to understand the behaviors, benefits and consequences of alignment established BITA area research (Gerow et al., 2014; Henderson & Venkatraman 1999; Luftman, 2003; Myatt, 2017; Robertson, 2014).

#### *Henderson and Venkatraman's Strategic Alignment Model*

Henderson and Venkatraman's (1993) *IBM's Systems Journal* article is considered the foundation text which began BITA research (Gerow et al., 2014; Luftman, 2003; Myatt, 2017; Robertson, 2014). Since the article's publication in 1993, it remains one of the seminal texts and models to understand the gap between strategy and execution (Luftman, 2003; Myatt, 2017). Strategic Alignment Model, which is a practitioner-oriented model, guides leaders through the process of alignment with the four primary components (Gerow et al., 2014; Henderson & Venkatraman 1999; Luftman, 2003; Myatt, 2017; Robertson, 2014). The model guides practitioners through the functional integration and strategy alignment of business and IT leadership stating that when the four domains align organizational strategic alignment increases but if they do not align then efficiency decreases (Henderson & Venkatraman, 1999; Luftman, 2003; Luftman & Kempiah, 2007; Myatt, 2017; Robertson, 2014).

The interrelationship between the organizations strategic direction and infrastructural operations drives partnership and the attainment of strategic outcomes (Henderson & Venkatraman, 1999; Reksoatmodjo et al., 2012). Henderson and Venkatraman (1999) state that each organization can demonstrate singular internal alignment via the balance of scope, competencies and governance and structure process and skills. Strategic integration between organizations can occur when leadership aligns on scope, competencies, and governance (Henderson & Venkatraman, 1999; Luftman,

2003; Reksoatmodjo et al., 2012). Cross organizational functional integration occurs when the organization, IT, and process infrastructures align (Henderson & Venkatraman, 1999; Luftman, 2003; Reksoatmodjo et al., 2012). Specifically stated, true strategic alignment occurs at the cross-section between four elements—business strategy, IT strategy, organization infrastructure, and IT infrastructure (Henderson & Venkatraman, 1999; Luftman, 2003; Reksoatmodjo et al., 2012).

Henderson and Venkatraman's (1999) model served as the foundation for technology organizations and leadership as technology itself gained importance (Myatt, 2017; Robertson, 2015) The authors' focus on partnership rather than hardware and software drove organizational leaders to better understand the importance of technology as an organization rather than a simple operation (Reksoatmodjo et al., 2012). As such, it serves as the foundation for operational studies like Information Management and Information Systems (Luftman & Kempiah, 2007; Myatt, 2017; Reksoatmodjo et al., 2012). However, its simplistic depiction of organizational complexity and the environmental surrounding created challenges for adoption and further study (Luftman, 2003; Myatt, 2017; Reksoatmodjo et al., 2012; Robertson, 2014).

This researcher uses Henderson and Venkatraman's (1999) model as a guiding framework to support the use of Luftman's (2003) Strategic Alignment Maturity Model (SAM). The researcher utilizes the Henderson and Venkatraman framework as an operational model to summarize the importance and attainability of organizational strategic alignment. Understanding this researcher is not looking to evaluate the level of organizational strategic alignment but rather how it can be obtained, Henderson and Venkatraman's simplified definition and explanation serve as operational guide.

Luftman's model, explained below, lends itself to the operational model outlined above but has sustained consistent testing to determine it as a valid measure of strategic alignment maturity (Luftman, 2003, Luftman & Kempiah; 2007; Myatt, 2017; Robertson, 2014). As such, the researcher grounds this study using Henderson and Venkatraman's Strategic Alignment Model (1999) as the guiding framework and Luftman's Strategic Alignment Maturity Model (SAM) (2003) as the theoretical foundation.

#### *Luftman's Strategic Alignment Maturity Model*

Luftman's (2003) SAM is based in an extensive theory of strategy (Luftman, 2003; Luftman & Kempiah, 2007; Myatt, 2017). Strategy is considered the collection of individual internal resources leveraged for competitive advantage (Luftman, 2003; Luftman & Kempiah, 2007; Myatt, 2017; Robertson, 2014). Strategic alignment, namely BITA, measures the degree of alignment occurring rather than the binomial existence (Luftman, 2003). As such, Luftman's (2003) SAM proposed a five-tier hierarchical taxonomy that evaluates an organization's level of alignment maturity (Luftman, 2003, Luftman & Kempiah; 2007; Myatt, 2017; Robertson, 2014). To adequately measure maturity, Luftman identified six competencies or categories, whose presence correlated to the degree of strategic alignment (Luftman, 2003, Luftman & Kempiah; 2007; Myatt, 2017; Robertson, 2014). The frequency for which business and IT leaders believe these competencies occur determine the level of maturity (Luftman, 2003, Luftman & Kempiah; 2007; Myatt, 2017; Robertson, 2014).

The SAM analysis is a quantitative assessment not intended for specific maturity, but rather for operationalizing strategy (Luftman, 2003; Myatt, 2017). Consistent testing led to the operationalization of this model and determined it is valid for measuring the

degree of strategic alignment maturity (Luftman, 2003, Luftman & Kempiah; 2007; Myatt, 2017; Robertson, 2014). Specifically, the quantitative assessment asks leaders to determine the level for which they believe governance, communication, partnership, value of competency, scope and architecture, and skills occur within their business and IT leadership (Luftman, 2003, Luftman & Kempiah; 2007). The stated level provided by each leader created an average for the competency and later for overall strategic alignment (Luftman, 2003; Luftman & Kempiah, 2007). This researcher is solely focused on determining which behaviors define the competencies and does not intended to evaluate the levels of maturity or an organization’s overall strategic alignment. Specifically, the researcher asks HELs which behaviors align to the competencies and their perception of impact on alignment. For these reasons, the researcher provides the following table to outline the competencies titles and definitions used as the foundation for this study.

Table 4 *Strategic Alignment Maturity Model Competencies Definitions*

Competency	Definition
Communication	The degree to which the IT organizational unit communicates with the rest of the organization, the level of understanding between the business and IT, and the effectiveness of the exchange of ideas, knowledge, and information and the separate strategic goals. (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017).



Table 4 (continued)

Competency	Definition
Value of Competency	The value of IT projects in terms perceived or understood by the larger organization. This includes the understanding of priorities and planned projects. (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017).
Governance	The process of evaluation used in decision making to set IT priorities, resource allocation and budget alignment (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017).
Partnership	This factor gauges the mutual trust, sharing organizational rewards and risks, the ability of the IT organizational unit to establish partnerships which drives the value of future partnership (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017).
Scope	The degree to which the IT products and services are flexible and leveraged to deliver constituent solutions and the business bottom line via integration. (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017).
Skills	The evaluation of the IT staff's ability to execute effectively based on technical skill levels and understanding of the business goals, and ability to attain, retain, and train personnel. (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017).

As mentioned earlier, Luftman and Kempiah's (2007) study evaluated the level of strategic alignment across multiple international industries, including higher education. The researchers found that higher education had the lowest average of strategic alignment (Luftman & Kempiah, 2007). This finding led researchers to test and validate the SAM model for higher education (Lach-Smith, 2010; Myatt, 2017; Robertson, 2014). All researchers conducted quantitative research analysis and determined SAM was applicable to higher education industry (Lach-Smith, 2010; Myatt, 2017; Robertson, 2014). Specifically, Robertson (2014) stated that strategic alignment averages are lower than

Luftman and Kempiah (2007) industry averages, but the results demonstrated an increased awareness not previously expected.

The three previous research studies related to SAM and higher education are highly impactful for this research. Each validated the applicability of the model within the highly complex HEI organizational structure using quantitative analysis and all called for additional research (Lach-Smith, 2010; Myatt, 2017; Robertson, 2014). Robertson (2014) outlines the need for additional research that outlines strategic alignment from the perspectives of all HELs rather than just technology leadership. Myatt (2017) explains that future research on the topic should include a deeper review of the leadership perspective. Moreover, Myatt (2017) and Robertson (2014) call for a deeper qualitative analysis to explore the operations and definition of the competencies within the model. These recommendations serve as the impetus for the current research.

#### *BITA in Higher Education*

Research continues to reveal positive effects of BITA in the corporate sector as the HEIs continue to identify significant alignment challenges (Alghamdi & Sun, 2017; Arandjelovic et al., 2015; Grajek, 2017; Grajek & Brooks, 2020; Heur, 2019; Myatt, 2017; Robertson, 2014; Wheeler, 2020). The challenges previously identified in the chapter's previous sections demonstrate the importance of BITA for innovation, competitiveness, and sustainability (Wheeler, 2020; Witt & Coyne, 2019). To address financial challenges and with rising operational costs, BITA must be achieved to yield improvements to efficiency, constituent experience, and cost reductions (Alghamdi & Sun, 2017; Arandjelovic et al., 2015; Reksoatmodjo et al., 2012; Wheeler, 2020; Witt & Coyne, 2019). Other industries, such as transportation, healthcare, and logistics

accomplished the previously stated outcomes through BITA; however, HEI is still below average level of alignment (Alghamdi & Sun, 2017; Arandjelovic et al., 2015; Luftman & Kempiah, 2007; Myatt; 2017; Robertson, 2014). HEIs must integrate technology and its leaders to drive strategic alignment which allows the industry to remain competitive and achieve sustainability (Alghamdi & Sun, 2017; Grajeck & Brooks, 2020; Luftman & Kempiah, 2007; Myatt, 2017; Robertson, 2014; Wheeler, 2020; Witt & Coyne, 2019).

### Summary

This chapter provided a framework outlining the importance of strategic outcome alignment through an analysis of recent books, articles, dissertations, and other literature. The literature review outlined an analysis of the trends, the role of leadership, and summary of strategic alignment. The current landscape was described through the analysis of current themes and trends and their impact converging. Next, the chapter described the current roles and expectations of HELs, including technology leaders. Third, the researcher provides a definition, explanation, and theoretical foundation for strategic alignment. Finally, the chapter concludes with a summary of BITA in the industry which restates the three primary themes, their relationship to one another, and their relevance to this research.

## CHAPTER III – RESEARCH DESIGN AND METHODS

This chapter details the study's research design and methodology and its alignment to the stated purpose, research objectives, and qualitative research methods. First, the author details the study's characteristics, philosophical assumptions, and their relationship to qualitative research in the chapter's research design section. Second, she describes the study's design methodology, which includes addressing researcher bias, the proposed population, and descriptions of semi-structured focus group data collection and analysis processes. Third, the author details the suggested research methods to explain participant recruitment, instrumentation required for data collection and analysis, and procedures for participant protection. Finally, the chapter summary provides a brief recap of the chapter's sections.

### Statement of the Problem and Purpose

Organizations with aligned BITA strategies perform better, maximize the value of IT, pay less on IT per user, and have higher customer satisfaction rates than those who lack them (Henderson & Venkatraman 1993; Weiss & Anderson, 2004; and Reinitz 2019). Only 32% of higher education leaders believe that technology is appropriately aligned to achieve the desired outcomes (Pihakis et al., 2017; Robertson, 2015; Bischel, 2015). Without alignment and value in technology investments, HEIs sustain higher operational costs, misaligned capacity, and threatened financial sustainability that potentially led to institutions closing or merging (Delany, 2019; Jesek & Lederman, 2018; Oblinger 2019).

Therefore, the purpose of this study is to determine business and IT leaders' behaviors that demonstrate alignment competencies for higher ed's BITA. Specifically, this study aims to identify and categorize behaviors that demonstrate competencies known to impact BITA.

### Research Objectives

This study identifies behaviors HELs perceive to impact alignment competencies. Therefore, the primary research question is, "What behaviors demonstrate business-IT alignment competencies in higher education?" The below objectives support the primary research question by focusing on the identification, alignment, and impact of behaviors to BITA competencies.

RO 1: Describe the participating institutional leaders' demographic characteristics in terms of gender, age, organizational tenure, work title, and years of experience.

RO 2: Describe the participating institutional demographic characteristics in terms of location, total student population, available degree programs, technology alignment, and executive cabinet membership.

RO 3: Identify behaviors exemplified in the participating institutions studied that demonstrate BITA competencies, such as communication, value measurements, governance, partnership, scope and architecture, skills, or additional competencies.

RO 4: Determine the impact of behaviors in the institutions studied that exemplify BITA competencies, such as communication, value measurements, governance, partnership, scope and architecture, skills, or additional competencies.

## Research Design and Methods

Merriam and Grenier (2019) describe research design as a study's strategic framework and methodology and its methods as directions for execution. Carter and Little (2007) state that consistency between research purpose, design, and methods demonstrates sound qualitative study. The research design, shaped by research purpose and objectives, frames the study design methodology and methods. Qualitative research objectives support inductive reasoning and promote exploration, defining commonalities, and determining purpose (Corbin & Strauss, 2008). This study uses characteristics of qualitative research to support its purpose—define and determine the impact of behaviors that align to competencies. The included literature supports a qualitative research and phenomenological design methodology and methods. The supporting research objectives align with the study's purpose statement and qualitative characteristics in three ways—exploring identified behaviors, defining categories, and determining impact. Specifically, the included literature describes characteristics, philosophical assumptions, methodological design, biases, and analysis. The chapter also details the study's methods which include participation, instrumentation, and data collection.

### *Characteristics of Qualitative Research*

Qualitative research often uses inductive reasoning—applying a collection of details to create generalizations or predictions—rather than deductive reasoning (Creswell, 2003). Quantitative studies often start with generalizations or hypotheses to examine (Creswell, 2003). Further, the quantitative researcher seeks to measure the prevalence or strength of preidentified factors or variables, often through numbers (Merriam & Grenier, 2019). Conversely, qualitative research does not often work with

preidentified variables (Creswell, 2003). Rather, the qualitative researcher seeks to identify meaning “socially constructed by individuals interacting with their world” (Merriam & Grenier, 2019, p. 3).

Merriam and Tisdell (2016) state the purposes of qualitative research are: to achieve the participants’ understanding of the event, delineate their process of meaning-making, and identify the participants’ application of meaning. Qualitative studies often contain specific characteristics that align philosophies with the study’s purpose and objectives, design methods, and data analysis (Constable et al., 2012). Characteristics like personal contact, researcher neutrality, inductive analysis, and design flexibility align with qualitative research (Giorgi, 2012). The research methods described later in this chapter demonstrate controls for researcher biases, purposive sampling, semi-structured interview processes, and data analysis techniques. The research methodologies described align with phenomenological design and stated qualitative research characteristics.

#### *Philosophical Assumptions and Epistemology*

Carter and Little (2007) define epistemology as the “theory and justification of knowledge” that enrich a study’s research design and methodology. The epistemology lens aligns to associated philosophical assumptions that guide the researcher through both design and collection (Creswell & Plano-Clark 2011). Epistemology provides the researcher with a foundation to define how they gain knowledge at the broadest level and informs all other aspects of the study (Creswell & Plano Clark, 2011). The presence of epistemology’s three main concepts: truth, belief, and justification, correlate to a study’s strength (Carter & Little, 2007). The choice of epistemology identifies accepted concepts or practices to use in the study’s design, execution, analysis, and reporting (Salmons,

2015). The philosophical assumptions associated with the epistemological lens then guide the foundation of research methodology, the participant-research relationship, data collection, analysis processes, and presentation of findings (Salmons, 2015).

Qualitative researchers often base studies on the constructivists' epistemology (Merriam & Tisdell, 2016). Researchers selecting the constructivists' worldview take the stance that individual perspectives build into broad patterns and understandings (Creswell & Plano-Clark 2011). People interpret experiences to produce and reproduce meaning; therefore, knowledge is not only observable but also encompasses deeper meaning (Salmons, 2015). Specifically, constructivists' epistemology states that knowledge arises from an individual based on their experiences, reason, and interpretation of meaning (Merriam & Tisdell, 2016).

Researchers operating from a constructivist perspective believe research design and methodology should build a belief or theory from the bottom up (Creswell & Plano-Clark, 2011). Researchers believe that knowledge arises from individuals' views, which drives the exploration of response differences or similarities and then becomes meaning (Merriam & Grenier, 2019). Further, Salmons (2015) proposes that the creation of beliefs or knowledge exists in a community of people with defined values, culture, or similar relationships to an environment. As such, the selection of participants with related expertise and experiences can uncover a deeper understanding of frequent interactions with others and the shared environment (Salmons, 2016).

This research utilizes a constructivists' epistemology. Studies using this epistemology should align with four primary characteristics (Creswell & Plano-Clark, 2011). These characteristics state that the researcher should: collect data from multiple



participants, include opportunities to utilize participants' social or historical perceptions, include opportunities to define meaning, and generate findings that identify patterns from individual perspectives (Creswell & Plano-Clark, 2011). This study's research design and methods account for all four characteristics. The chapter outlines specific methodologies to identify population and sample selection with specific social or historical perspectives, semi-structured interviews that identify individual views and define meaning, and data analysis techniques to generate patterns.

### *Type of Design*

Phenomenology, the design foundation for this study, blends hermeneutics and ideography approaches (Creswell, 2012). Hermeneutics emphasizes the art and science of textual interpretation and requires a meaningful understanding of the text (Smith & Eatough, 2019). Moreover, ideography focuses on the individual and supports an in-depth, personalized review of participants' specific experiences (Larkin et al., 2018). In phenomenology, meaning comes from the relationship between the participant, their world view and interpretation of phenomenon related experiences, and the identified impact of responses or emotions (Larkin et al., 2018). Many phenomenological studies investigate the perceptions, perspectives, and feelings of participants who experience similar phenomena or situations of interest (Giorgi, 2012).

Phenomenology, mostly used in psychological studies, is now common in organizational and industrial psychology studies (Smith & Eatough, 2019).

Phenomenological research explores the commonalities and structures of experiences (Merriam & Grenier, 2019). Researchers using the design strive to determine how complex meanings come from simple units of a person's direct experiences

(Merriam & Grenier, 2019). Specifically, phenomenological studies often seek to further define the essence of the shaped experience, structure, or uniformity by understanding the commonality of perceptions, perspectives, and feelings (Merriam & Grenier, 2019). The design is especially useful studying highly emotional or transformational experiences, but suitable for everyday experiences (Merriam & Grenier, 2019).

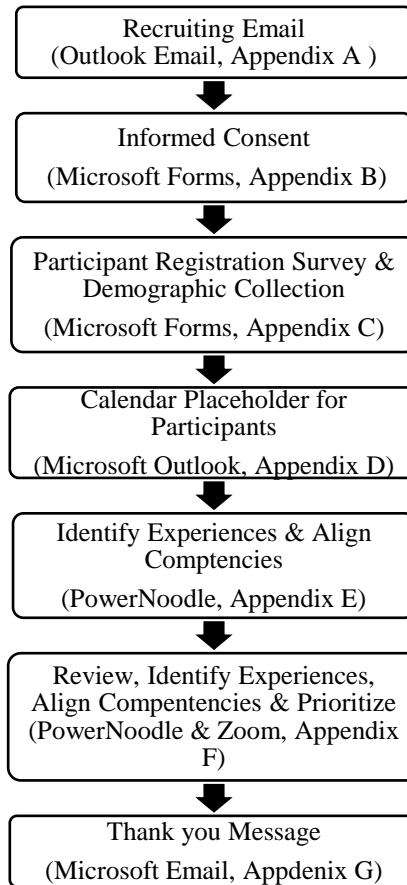
Lalovic-Hand (2017) states that driving cross-collaborative HEI strategic projects is often stressful, highly intense, and career-changing. These activities often tightly align to mission, require efficient and effective leadership, and high levels of communication across multiple audiences (Morse, 2017). Additionally, these activities are often time-consuming, costly, and highly intertwined with HEIs daily operations (Morse, 2017). Lalovic-Hand (2017) further states that some technology leaders only experience these cross-collaborative projects once in their career.

The proposed research utilized a phenomenological design. Smith & Eatough (2019) state phenomenological studies often share similar characteristics. These characteristics include collecting multiple participants' perspectives or experiences associated with a common and sometimes highly emotional phenomenon, collecting specific characteristics or perspectives of the phenomenon using personal in-depth or semi-in-depth interviews or focus groups, and defining themes or commonalities associated with the phenomenon through the data analysis of the multiple participants' perspectives (Smith & Eatough, 2019). As such, the research determines commonality or themes, such as impactful behaviors, from simple units of experiences collected from multiple participants and perspectives.

Further, the research used semi-structured focus groups to collect in-depth perspectives from multiple participants. The remaining portions of this chapter outline specific data collection, instrumentation, and data analytic methods aligned to the phenomenological design.

#### *Data Collection Process*

The semi-structured focus group method is the primary form of data collection for phenomenology research (Merriam & Grenier, 2019). Semi-structured focus groups collect simple examples of direct experiences to define a complex meaning (Merriam & Grenier, 2019). Participants explore their experiences during the event, delineate what is meaningful or impactful, and apply meaning (Larkin et al., 2018; Merriam & Tisdell, 2016). This data collection method encourages participants to elaborate on their own experiences using guided facilitation which balance the organization of a structured focus group with the flexibility of an unstructured one (Paul, 2017; Salmons, 2015). The researcher uses the philosophical assumptions associated with the constructivist's epistemological lens and qualitative research design principles to recruit, inform participants of the study's purpose, and register participant, collect demographic information, identify specific experiences or behaviors, define themes, and perform data analysis.



*Figure 3. Participant Recruitment and Data Collection Steps*

The figure represents the steps taken to recruit participants and collect data

Figure 3 provides an outline of these steps while the following sections provide specific details for the data collection process. This information further supports the use of the phenomenological design and continues to describe the study's structure.

### *Semi-Structured Focus Groups*

Phenomenology favors semi-structured interviews and open-ended questions to allow participants the space to explore experiences within the phenomenon (Creswell & Miller, 2000). As such, it requires a sensitive balance between the role of the researcher and participants (Smith & Eatough, 2019; Paul, 2017). The researcher guides participants through conversations and encourages them to explore their narrative to define meaning

(Paul, 2017). This researcher uses semi-structured focus group to identify each participants' understanding of a collaborative project. The researcher defines the complex meaning of BITA via simple examples of direct experiences. Participants explore their experiences during the cross-collaborative project, delineate which behaviors or tasks were meaningful or impactful, and identify the participants' application of meaningful through determining impact. The process keeps with the foundations of qualitative research that allows participants to explore definitions in their own experiences (Paul, 2017; Salmons, 2015). Table 5 included below, provides an overview of the questions and prompts asked in the semi-structured focus group. The paragraph following the table provides supporting details.

Table 5 *Semi-structured Interview Questions and Prompts*

Research Objective	Questions or prompts
RO3	Please identify what specific behaviors or tasks contribute to the successful completion of a cross-collaborative project.
RO 3	Please indicate the category that most closely align to each task or behavior. The categories include communication, competency or value measurements, governance, partnership, scope and architecture, skills, or other
RO 4	Please rate the behavior's level of impact for IT leaders. For Business leaders? For IT-Business alignment?

Paul (2017) states that semi-structured focus groups and prompting questions guide participants through their own experiences, encourage exploration and elaboration, and the definition of meaning on those experiences (Paul, 2017). The semi-structured focus group has one open-ended question and three prompting questions. Specifically,

the researcher asks, “What specific behavior or tasks contribute to the successful completion of a cross-collaborative strategic project?” Participants explore their experiences through open text responses that identify contributing behaviors. They then determine meaning by answering prompting questions asking them to categorize and determine impact of those behaviors. The semi-structured interview process balances the researcher’s and participants’ directions to provide structure through interview questions with the flexibility of unstructured participant responses. Additional sections within this chapter provide question and method details.

### *Electronic Delivery*

The advances of technology reduce on-going geographic limitations associated with conducting successful research by expanding data collection options disrupting the foundational elements of qualitative research (Salmons, 2015). Researchers have additional methodological considerations; therefore, the researcher must weigh the benefits and inhibitors to determine the best path (Salmons, 2015; Easton et al., 2003). Salmons (2015) warns that not all qualitative studies are appropriate for electronic facilitation. Instead, the researcher must use the design of the study to determine the applicability of alternate methodology (Salmons, 2015). This researcher first established the problem and purpose statements, followed by the research objectives, methodology and design. The researcher then used the identified analysis questions to explore the applicability of online qualitative research. Salmons (2015) outlines the E-Interview Research Framework for Understanding E-Interview Research to help the researcher determine if qualitative online interview research aligns with the previously established study design and methods. After reviewing each section of the framework with the

corresponding sections of this proposed research, the researcher believes there is positive alignment to the purpose, objectives, research design, epistemology, and data collection methods.

Easton et al. (2003) experimental investigation compared electronic and traditional focus groups, demonstrates that electronic focus groups provide benefits, like increased comments, focus on the task or topic, decreased disruption to participants, and a sustained level of participant satisfaction. PowerNoodle, a decision engagement platform, was used to collect, categorize, and determine the impact of the behaviors that drive alignment. Using PowerNoodle provides participants with the opportunity for anonymous, self-directed, and convenient participation (Mathers, 2019; Bernstein et al., 2018). Data collection does not require the use of PowerNoodle; but the format is conducive for the research study structure. The tool's functionality provides participants with the opportunity for asynchronous and synchronous participation and other features like categorizing and prioritization (Mathers, 2019). These features encourage participants to define the deeper meaning that supports their perceptions and experiences (Mathers, 2019; Merriam & Tisdell, 2016; Salmons, 2015). These additional functionalities further support the foundations of qualitative phenomenological research, by providing a participant framework to define their understanding of the event through a brainstorming process, delineate their process of meaning-making through tagging or categorizing, and apply meaning through tagging, rating, and prioritization (Mathers, 2019; Merriam & Tisdell, 2016).

The following sections describe the alignment between the focus group structure, location, pilot process, confidentiality, and the decision engagement tool.

Participants within phenomenological studies re-experience transitional or important events (Creswell, 2012). They provide meaning or re-live these events which can occur more freely if the participant is at the event's original location (Creswell, 2012). Using electronic focus groups provides participants the opportunity to remain in the events' location and give unbiased responses, interpretations, and perspectives (Bernstein et al., 2018; Salmons, 2015). Web-based electronic focus groups encourage participants to respond freely and offer differing opinions without the burden of social influence or collective intelligence identified in some in-person focus group studies (Bernstein et al., 2018). While in a location of their choosing, participants anonymously explain their experiences via typed responses and define impact through prioritization (Salmons, 2015). The research provided participants an opportunity to recall first-hand accounts of their perspectives with decreased potential researcher biases, social influences, or collective intelligence (Bernstein et al., 2018; Merriam & Tisdell, 2016; Salmons, 2015).

#### *Focus Group Location*

PowerNoodle, an electronic decision engagement tool, provided the foundation for the focus group. Participants were assigned decision spaces, or "electronic rooms" that gather feedback, provide opportunity for categorization and prioritization. Each assigned focus group had a unique link leading participant to directions, outlined questions, and any participant responses collected for that focus group. Participants accessed the PowerNoodle decision space during the assigned open period later outlined and were automatically removed once the focus group session has ended. All participant responses, categorization, and prioritization were collected and saved via the



PowerNoodle decision spaces. Once sessions were complete, each report was reviewed by the researcher and then combined with previously collected responses for analysis.

Zoom, a teleconferencing tool, supported the audio and visual connection to the electronic focus group. Each session had an assigned telephone number and web address that provides participants the opportunity use audio only (telephone) or audio and visual (internet-based using computer speakers and microphone). Participants chose any location with reliable internet stability, computer access, and audio options (phone or computer) thus decreasing the burden of location and time commitment associated with travel. While one participant experienced connectivity issues, he was able to rejoin immediately.

Zoom provides a video option, for a camera display, however, the researcher disengaged the use of participant cameras. The use of visual connection can expand the opportunities of communication via non-verbal connection—like eye-contact—often used to build rapport; however, its use is not free from challenges (Salmons, 2015). Common challenges include availability of internet bandwidth, access to or reliability of web camera, and impact on participants' choice of remote location (Salmons, 2015). As such, the researcher weighed potential benefits and drawbacks associated with web camera use in a semi-structured online interview framework. She used her camera to establish visual connection and build rapport with participants but disable participants use of theirs to decrease previously stated challenges.

### *Population and Sample*

Merriam and Tisdell (2016) define a population as a collection of individuals with similar traits or characteristics as those who are the focus of the study. Phenomenological study participants should demonstrate a willingness to provide in-depth descriptions of experiences and perspectives, exist in a similar community of people with defined values, culture, or relationship to an environment, and experience similar event or phenomenon (Salmons, 2015; Paul, 2017). The similarity of experiences, potentially stressful or highly intense, can lead to a deeper understanding of meaning (Salmons, 2015). This study's purpose is to identify and then to determine the impact of behaviors aligned to BITA. The population required higher education leaders with direct experiences collaborating between business units and IT on a project related to institutional outcomes and a willingness to provide in-depth expertise and perspectives. These leaders are the highest-ranking members of the business unit, including IT. They were not limited to specific organizational titles, but examples include: President or Chancellor, Chief Information or Technology Officer, Vice Presidents or Provosts of Academic Affairs, Student Affairs, Retention, Finance, Advancement, or Career College.

The researcher utilized a purposive sampling method, called snowball sampling, to identify study participants. Purposive sampling uses participants with knowledge or awareness who provide insights and perspectives (Merriam & Tisdell, 2016). Furthermore, snowball sampling utilizes a social or professional network of participants with commonalities and asks participants to refer or recommend additional knowledgeable potential participants (Paul, 2017). Snowball sampling begins by identifying a few ideal participants all the while asking for referrals (Merriam & Tisdell,

2016). Purposive and more Specifically, snowball sampling methods are typical in phenomenological studies because participants with experiences involving similar situations of interest are rare or limited in number (Merriam & Tisdell, 2016).

The research utilized a phenomenological design with purposive snowball sampling. Studies using this design recruit participants with willingness to provide in-depth descriptions of experiences or perspectives; exist within a similar community with shared values, culture, or relationship to an environment; and often experience similar stressful or highly intense events (Paul, 2017; Merriam & Tisdell, 2016; Salmons, 2015). Further, these studies often utilize purposive sampling and snowball sampling to identify knowledgeable and willing participants that then refer others (Paul, 2017; Merriam & Tisdell, 2016). As such, this proposed research began with an email to recruit HELs with knowledge and awareness of collaborating on cross-collaborative campus projects related with institutional outcomes. The researcher utilized members within her higher education specific network organizations to identify potential participants. Member organizations included EDUCAUSE, Executive Advisory Council, the National Association of College and University Business Officers, the Association of Community College Trustees, and the American College and University Presidents Council. Additionally, the researcher attempted to use the snowball sampling method to request referrals from participants; however, no additional participants were identified. The remaining portions of this chapter, specifically the methods section, detail the recruitment and data collection process.

### *Sample Size*

Qualitative studies do not rely on statistical significance and often utilize smaller sample sizes to provide more opportunities for in-depth groups (Creswell, 2012). The focus is on purposeful sampling to identify participants who share similar phenomena and are willing to provide knowledgeable, thoughtful, and definitive accounts of their perceptions and experiences (Paul, 2017). Phenomenological research studies should emphasize purposeful participant homogeneity based on the identified shared experience (Alase, 2017). Understanding that people who have experienced similar situations of interest is limiting, Alase (2017) suggests between two and 25 participants, Pietkiewicz & Smith (2014) suggest between six and eight, and Creswell (2012) between five and 20. Further, Creswell (2012) states the essence of conducting a quality phenomenological study relies on the participation of shared experience more so than total participants. This study had 28 participants within four semi-structured focus groups with between four and ten participants to identify themes and commonalities until saturation or redundancy occurred.

Focus group with four to ten per session provided a small semi-structured, flexible environment that offer multiple participant perspectives per session (Fusch & Ness, 2015). The group size between two and 15 participants is small enough for all members to participate openly while large enough to allow diverse perspectives (Fusch & Ness, 2015). Merriam & Tisdell (2016) suggest that participation does not rely on a specific number but more so the questions guiding the information, the quality of the information collection, data analysis, and resources available for the study. This form of

data collection provided participants with shared experiences to narrate or document impactful events and define meaning (Alase, 2017).

### *Confidentiality and Data Security*

The researcher purposefully limited the collection of personally identifiable information (PII), but it was not fully eliminated. As such, the researcher followed Information Security 27001 (ISO 27001) data security standards for optimal data protection. ISO 27001 is defined as a set of security practices and standard that help defend against external security breaches and common internal threats (Lewis, 2018). The three key aspects of data protection for ISO 27001 include confidentiality, integrity, and availability (Lewis, 2018). The researcher complied with ISO 27001 standards to decrease the likelihood of data breaches that compromise the three key aspects.

The availability aspect of data protection is defined as making information accessible and usable only by authorized users when they require it (Lewis, 2018). As such, this data was electronically collected in three applications—Microsoft 365, Zoom Webinars, and PowerNoodle decision engagement platform. Each of these applications are hosted cloud-based technologies within the researcher's electronic ecosystem. Keeping with ISO 27001 standards, access to the researcher's ecosystem requires Single Sign On permission and multi-factor authentication for additional security measures. The researcher utilized three applications to collect and store data until analysis was required. Once required, all applicable data was compiled and stored in an encrypted file with the Microsoft 365 cloud-based application housed in the researcher's electronic ecosystem.

Integrity of information is defined by its completeness, accuracy, and protection from corruption (Lewis, 2018). As such, the researcher-maintained correctness,

completeness, and accuracy by maintaining raw data files in their original locations. The researcher compiled one dataset with information from three applications to create aggregate data for analysis purposes. This dataset did not contain any personally identifiable information or institutional information. Again, this information was stored in an encrypted file in a cloud-based application within the researcher's electronic ecosystem.

Confidentiality ensures that no information is available or disclosed to unauthorized people, entities, or processes (Lewis, 2018). As such, all information is only available to the researcher in complete raw forms. Personally identifiable information (PII) is only collected via the registration survey. These responses were not linked to PowerNoodle focus group responses or Zoom webinar recordings. No persons, including the researcher, can link focus group responses with one or more persons. All information will be kept in its original form that requires single sign-on and multi-factor authentication for access thereby limiting the threat of confidentiality breach.

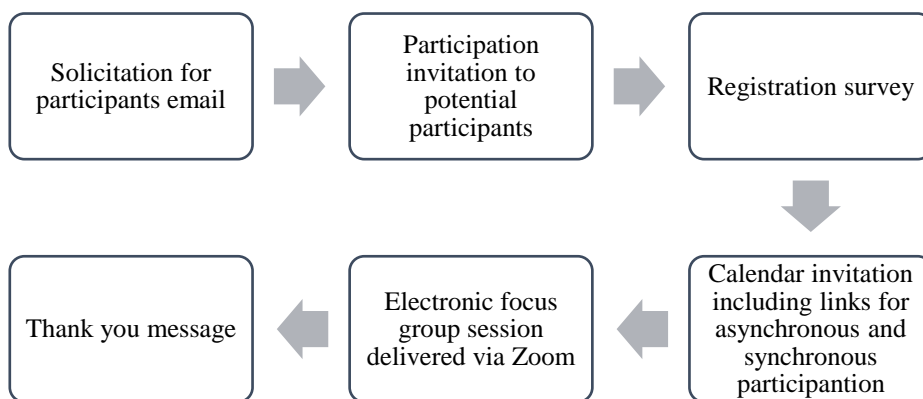
#### *Institutional Review Board*

The researcher received Institutional Review Board (IRB) approval from the University of Southern Mississippi (Protocol number IRB-20-363). The IRB application and specifications are included in Appendix E. The researcher outlines the necessity to communicate protection of participants' confidentiality, minimal potential for harm, and benefit of participation through Informed Consent Form. Obtaining IRB approval from the University of Southern Mississippi ensures that the parameters of the study protect participants and meet the relevant federal and institutional research standards and guidelines.

## Research Methods

The previous portion of this chapter identify alignment between a qualitative study with a phenomenological design and the proposed research and design methodology. Phenomenological studies often utilize purposive sampling and semi-structured focus groups to collect multiple perspectives, gather in-depth experiential information, and create themes or categories leading to theories (Smith & Eatough, 2019; Merriam & Grenier, 2019; Paul, 2017). This study also utilized those methods to identify population and collect data. As stated, this research seeks to understand BITA by leveraging HEL’s experiences to identify common behaviors within a cross-collaborative project. This portion of the chapter provides details that outline the sample recruitment, data collection process, and instrumentation utilized.

As previously outlined, this research study utilizes electronic recruitment, registration, and delivery of asynchronous and synchronous data collection processes.



*Figure 4. Recruiting, Registration, Data collection, and Communication process*

This figure outlines the communication workflow from solicitation to completion

Figure 4 provides a summary of the various steps in the recruiting, data collection, and communication processes. As noted, referred participants received solicitation emails, electronically submit Informed Consent, completed the registration survey where participants also provided demographic information and selected three preferred focus group times. Once submitted participants prior received their link to their assigned electronic focus group session that occurred asynchronously and synchronously. Each step and its specific delivery method are further defined in the corresponding sections.

#### *Participant Recruitment, Registration, and Communication*

The research study leveraged HELs who participated in a collaborative institutional business-IT unit project. These referred participants serve as current higher education leaders, but they might not have collaborated on the same campus project related to institutional outcomes. The names, positions, executive cabinet membership, and contact information were referred through the researcher's previously identified networks. Participants' names, institutional information, and demographic characteristics, collected via Registration Survey, were only associated with the self-scheduling process.

Recruiting participants can be both time-consuming and difficult (Ritter, 2013). Ritter states (2013) that proper planning limits the risk of unintentional and potential hidden variability. The following tables outline the recruiting activities with timing that reduced the potential risks. Table 6 provides detailed information aligning the research timeline with the recruiting process, researcher activity, and the on-going focus group data collection process.



Table 6 *Invitation and Solicitation Schedule*

Timeline	Recruiting Process	Timeline	Researcher Activity	Focus Groups Occurring
Two Weeks after IRB approval	Solicitation of Participants	Once after IRB approval	Email to colleagues and friends within higher education technology networks asking for participant recommendations. 72 total recommendations provided within two weeks.	No
Three Weeks after IRB approval	Initial Invitation	Two weeks prior to the first focus group session.	72 email invitations sent to HELs based on professional network. Include link to registration survey with dates and time.	Yes, if applicable based on participant registration
	Reminder Invitation	One Week prior to the first focus group session	51 email invitations to all referrals who have not registered or declined participation.	Yes
Two weeks prior to first focus group session and throughout	Calendar Invitation	3 times a week, starting two weeks prior to focus group session	Send calendar invitation to all registered participants with corresponding date and time.	Yes
	Electronic Focus Group Referrals	During each focus group	Ask participants to provide the contact information for a person they believe to be a good candidate for this study.	Yes

While there is no standardized recruiting or sampling plan specific to online or electronic focus groups, Salmons (2015) suggests utilizing electronic recruiting techniques to establish consistency. Additionally, offering variation in times and showing potential dates in two-week intervals establish a range of availability without appearing to be overbearing to potential participants (Salmons, 2015). As participants completed the Registration survey (Appendix C) they selected three focus group sessions that met their schedule and provided the identified demographic information which included gender, age, organizational tenure, work title, years of experience, institutional name and location, technology alignment perception, and executive cabinet membership. The researcher completed a daily review of the preferred selections and consolidated focus groups to host between two to fifteen participants. This consolidation resulted in the researcher conducting four focus with at least four participants groups over a two-week period.

As outlined in Table 6, the participants received the first invitations which include a personal message, a description study with focus group information, a note describing who recommended them, and a link to registration survey (Appendix C). The sample email invitations are included in Appendix A. Participants accessed the study's information and registration through an embedded link in the email. This link directs participants to the Informed Consent (Appendix B), which describes the study's purpose, intended outcomes, confidentiality expectations, and potential risks to participants. Participants answer the question "Do you consent to participant in this research?" with a "Yes" or "No". All participants who followed the link accepted participation therefore no thank you message was required. Those who answer "Yes" completed the registration

survey (Appendix C) and identified their top three preferred focus group dates. Participants who accept and select the preferred sessions were enrolled based on the availability and number of participants aligned with their time and date preferences. Participants received a confirmation email that includes an electronic calendar invitation, the meeting location, and a link to the electronic focus group session (Appendix D). Participants were thanked during their electronic focus group session and told they will receive a copy of the study once complete.

*Data Collection*

Each session aimed to identify individual participant’s understanding of a collaborative project using concrete examples of behaviors that align to competencies. These behaviors, also categorized, built a well-defined meaning for the complex BITA challenge. The below table (Table 7) outlines the alignment between RO 3, RO 4, and the semi-structured focus group questions and objectives. RO 1 and RO 2 are not aligned to the semi-structured focus group method and are met via the previously mentioned registration survey (Appendix C).

*Table 7 Research Objectives Aligned to Semi-Structured Focus Group Questions*

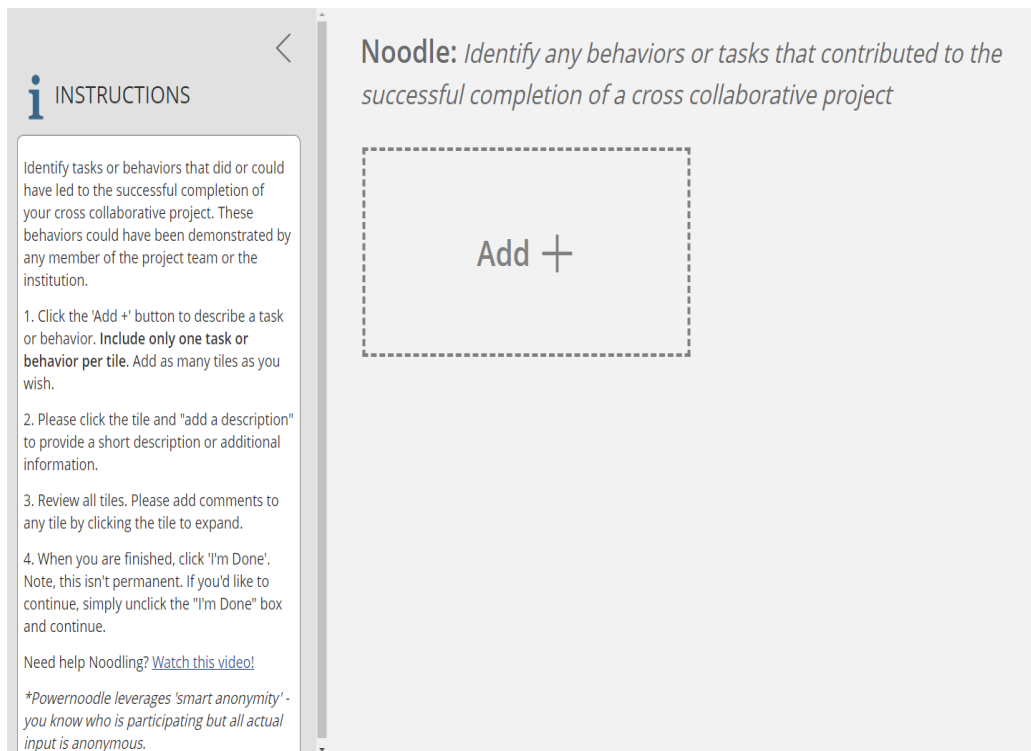
Research Objective	Questions	Semi-Structured Focus Group Outcome	Synchronous or Asynchronous Collection
RO 1	Informed Consent, Appendix B Question include gender, age, organizational tenure, work title, years of experience, institutional name and location, technology alignment perception, and executive cabinet membership (Appendix C).	Not Applicable Not Applicable	Asynchronous Asynchronous

Table 7 (continued)

Research Objective	Questions	Semi-Structured Focus Group Outcome	Synchronous or Asynchronous Collection
RO 2	Questions collected via registration survey aligned to institutional data.	Not Applicable	Asynchronous
RO 3	Please identify any specific behaviors or tasks that contribute to the successful completion of a cross-collaborative project.	Understanding of specific behaviors that define IT-business alignment	Asynchronous
RO 3 & 4			
RO 3 (cont'd)	Please review the currently included behaviors and identify additional specific behaviors or tasks that contribute to the successful completion of a cross-collaborative project.	Understanding of specific behaviors that define IT-business alignment	Synchronous
RO 4	Please indicate the category or categories that most closely align to each task or behavior. The categories include communication, competency or value measurements, governance, partnership, scope and architecture, skills, or other	Delineate which behaviors or tasks within those experiences were meaningful or made an impact	Synchronous
RO 4	Please rate the behavior's level of impact for IT leaders. For Business leaders? For IT-Business alignment?	Determine the level of impact associated with meaningful experiences	Synchronous

Paul (2017) states that participants must first explore their experiences associated with the phenomenon or event. As such, the researcher asked participants to mentally revisit the cross-collaborative project. The researcher did not document the specifics of the cross-collaborative project because they are external to stated research objectives. Rather, the researcher immediately asked participants to identify behaviors they recall as

successful contributions to the completion of the project. The documentation of specific behaviors represents the participants' exploration of the events. Figure 5 provides a visual demonstration of the focus group question, the instructions, and location for participant responses.

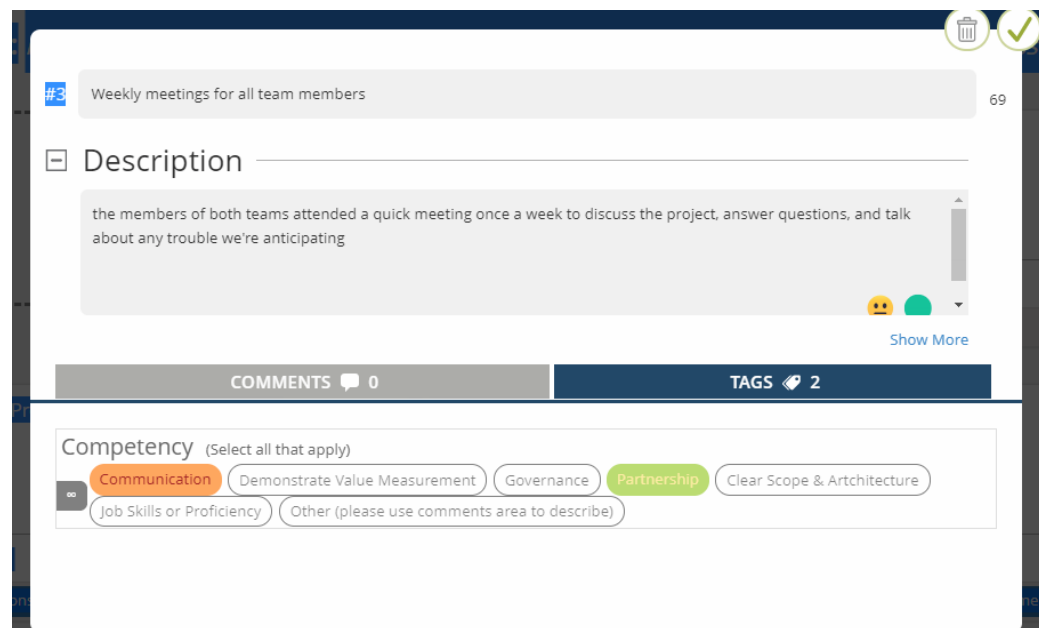


*Figure 5. Focus Group Question and Instructions*

This figure provides an image of the PowerNoodle environment used for electronic focus group(s)

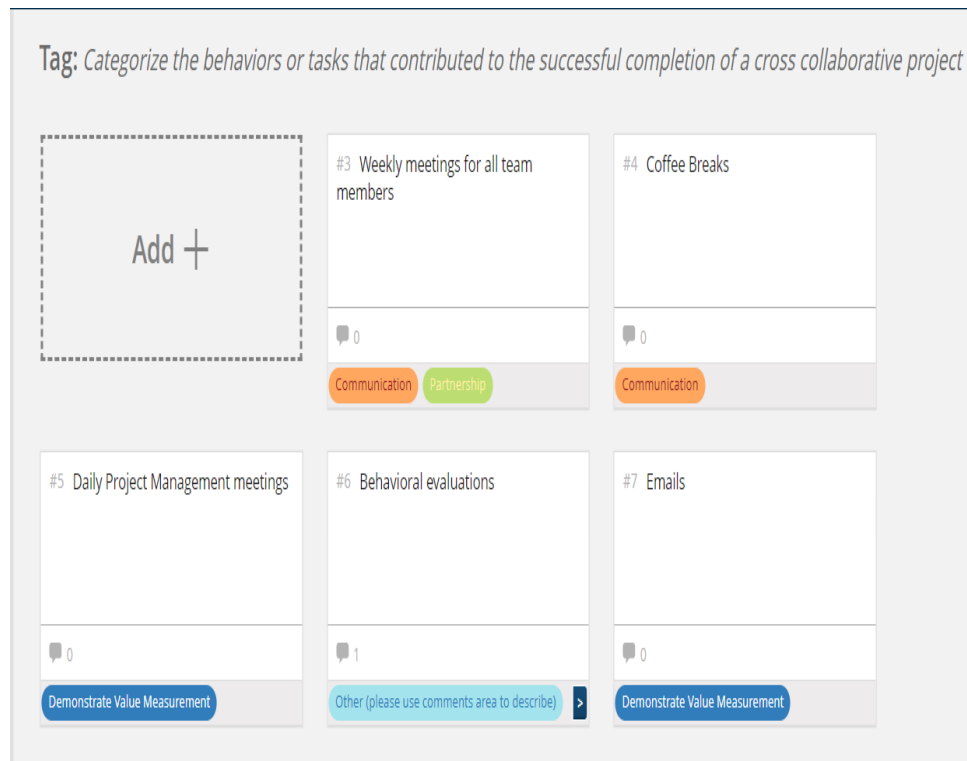
Understanding that phenomenology seeks to understand commonality of experiences or perceptions of experiences, semi-structured focus group frame should help delineate meaning or impact to determine commonality (Merriam & Grenier, 2019; Paul, 2017). The researcher asked participants to create commonality by categorizing each behavior with a SAM competency: communication, value measurements, governance, partnership, scope and architecture, skills, or additional competencies. The presence of these competencies within a cross-collaborative IT-business project demonstrates a level

of alignment maturity (Luftman & Kempiah, 2007). Specifically, the researcher asked each participant to assign one competency to the identified behavior created at the start of the semi-structured focus group. Participants chose to assign “other” to specific behaviors that do not clearly align. Participants then named or further define what “other” means for each behavior. The alignment of these behaviors to competencies helped the researcher and participants determine which behaviors were impactful and how. The below figure provides a visual example of a potential specific behavior and its selected competencies.



*Figure 6. Visual Illustration of Behavior and Competencies*

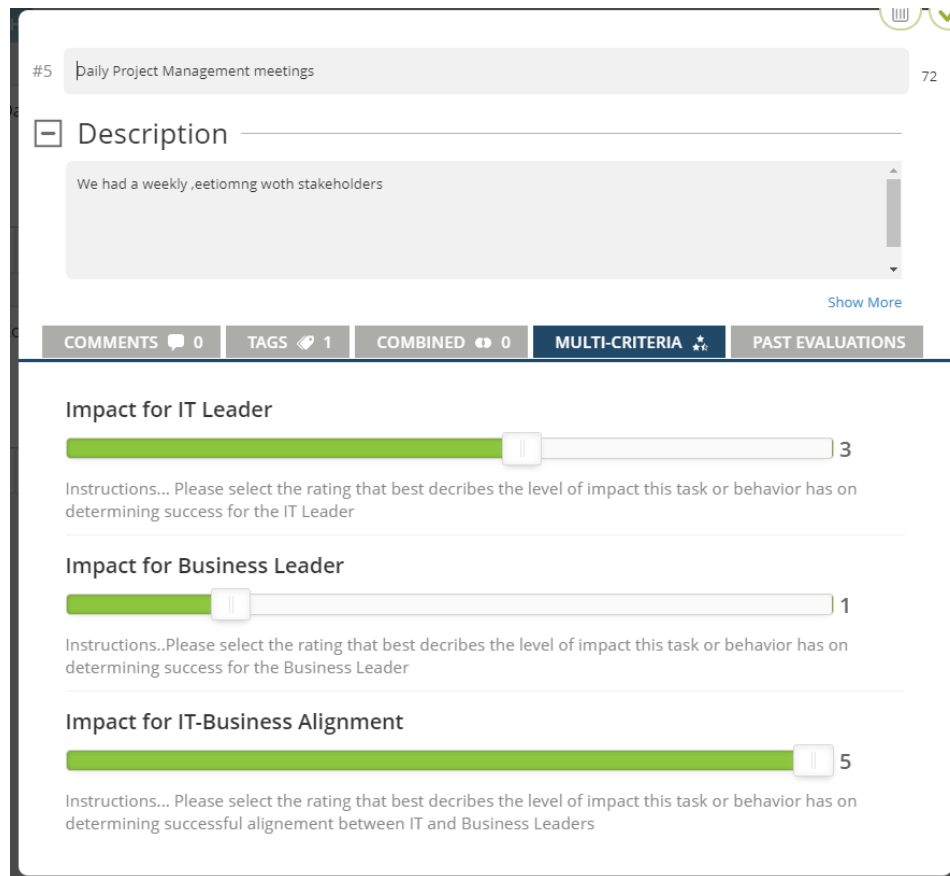
Visual example of a potential specific behavior and its selected competencies.



*Figure 7. All Identified Behaviors with Aligned Competencies*

This figure displays a collection of participants identified behaviors and aligned competencies within a focus group.

Determining the level of impact associated with experiences is an important step to defining commonality in phenomenological studies (Merriam & Grenier, 2019; Paul, 2017). As such, the researcher asked participants during the semi-structured focus group to determine the level of impact of each behavior or task on three audiences. First, participants reviewed all behaviors and their competency alignment. Next, they rated the behavior's level of impact for IT leaders, for business leaders, and for IT-business alignment. Assigning a level of impact to each audience helped participants determine meaning and further define commonality.



*Figure 8. Rating to Determine Impact for a Behavior*

This figure displays how participants rated each behavior identified

*Focus Group Delivery, Questions, and Prompting Questions*

The research utilized a semi-structured focus group interview protocol that blends asynchronous and synchronous data collection. Participants asynchronously registered for participation while providing contact and demographic information to meet the RO 1 requirements. Once registered, participants began asynchronously providing feedback to RO 3 before attending their assigned synchronous focus group session. Synchronous focus group sessions utilized specific features, like categorizing, rating, and open text comments to anonymously identify participant experiences, describe the impact, and their



perceptions. The below table aligns the research objectives with the collection method, questions asked, and the synchronicity of the data collection process.

Table 8 *Research Objectives and Data Collection Details*

Research Objective	Data Collection Method	Questions
RO 1	Asynchronous Registration Survey	<p>Informed Consent (Appendix C)</p> <p>What is your role within the institution?</p> <p>Do you serve as a member of the Executive Cabinet?</p> <p>In your opinion, how aligned are IT and your institutional strategy?</p> <p>How long have you served at this institution?</p> <p>How long have you served in this or a similar role at any higher education institution?</p> <p>What is your age? Please answer in number of years</p> <p>What is your gender?</p>
RO 2	Asynchronous data collected by researcher from National Center for Education Statistics (NCES)	
RO 3	Asynchronous focus group open text responses	<p>What specific behaviors or tasks contribute to the successful completion of a cross-collaborative project?</p>
RO 3 & 4	Synchronous focus group	
RO 3	Open text responses continued	<p>What specific behaviors or tasks contribute to the successful completion of a cross-collaborative project?</p>

Table 8 (continued)

Research Objective	Data Collection Method	Questions
RO 4	Categorize or Tagging	<p>What categories or competencies do these behaviors or tasks most closely align?</p> <p>Additional prompt: The categories include communication, competency or value measurements, governance, partnership, scope and architecture, skills, or other</p>
RO 4	Prioritizing	<p>What level of impact of these behaviors or categories on audiences and completion?</p> <p>Please prioritize the behavior's level of impact for IT leaders. For Business leaders? For IT-Business alignment?</p>

Participants began by reading the letter of informed consent and agreeing or declining participation. Those participating voluntarily provided name gender, age, organizational tenure, work title, years of experience, institutional name and location, technology alignment perception, and executive cabinet membership via a pre-generated Microsoft Forms survey. Additionally, participants registered for one of the pre-identified focus group sessions. The collected information cannot be linked or associated with specific focus group responses or individual participation.

The researcher sent each participant instructions. The instructions included a schedule and a link to the informed consent. Next, the researcher aligned participant information with their institutional name, location, total student population and available degree programs using the National Center for Educational Statistics (NCES) database. The researcher manually added Executive Cabinet Membership and technological alignment rating responses to the institutional information.

Upon confirmation, as defined by receiving the calendar invitation, participants accessed the electronic focus group session and provided answers to the primary focus group question— “What specific behaviors or tasks contribute to the successful completion of a cross-collaborative project?” Bernstein et al. (2018) describe intermittent breaks, time allotted for individual brainstorming, and the decrease of social influence as ideal behaviors that influence strong participation and productivity. As such, participants had immediate access allowing for brainstorming to occur at their optimal time. Since not all brainstorming was complete prior to the session, participants were allotted ample time (10 minutes) at the start of the synchronous session. During this time, participants continued to brainstorm before answering the prompting question—“ What categories or competencies do these behaviors or tasks most closely align?” by categorizing these behaviors. Participants were asked to provide one category or tag to each of their identified behaviors or tasks. The tags -- communication, competency or value measurements, governance, partnership, scope and architecture, skills, or other— represent Strategic Alignment Model (SAM) competencies. Participants tagging or categorizing “other” provided an open text description for clarification. The tagging or categorizing process lasted approximately 15 minutes or until all participants were finished. Finally, participants answered the third prompting question-- What level of impact of these behaviors or categories on audiences and completion?” as they rated the impact of each behavior and category in three topic areas. First, the impact of the topic or behavior on IT Leaders. Second, the impact of the topic of behavior on business leaders. Third, the impact of the topic or behavior on overall BITA. This portion of the electronic focus group session required the most deliberation and therefore comprised

approximately 30 minutes or until all participants are complete. Finally, participants were encouraged to provide any additional comments, questions, or feedback related to the focus group questions or topics. This information was collected verbally and recorded via the online zoom session. In closing, the researcher thanked all participants and ask for names of additional recommended research participants. No recommendations were provided. The researcher will confirm that all participants will receive a copy of the research as a benefit of participation.

### Chapter Summary

Chapter three details the key research design and methodologies required for the completion of this research study. The chapter starts by restating the study's problem, purpose, and research objectives. The chapter then identifies key characteristics, assumptions, and methodologies in qualitative research. Next, the chapter aligns the previously stated problem, purpose, and research objective with the identified qualitative and phenomenological research characteristics and design methodologies. Finally, the chapter provides details regarding the population, sample, and data collection processes prior to addressing confidentiality and protection of human rights.

## CHAPTER IV – RESULTS AND FINDINGS

This chapter identifies the researcher's data analysis plan and supporting process required to address the study's purpose and four research objectives. The author begins the chapter by identify, aligning, and describing her data analysis process. Next, the author outlines the research methods to address trustworthiness. The author then details the research findings in three sections. One section, titled demographics, provides outcome findings related to RO 1 and RO 2. The next section, titled behaviors and competencies explore outcomes related to RO 3 The section, titled impact, explores outcomes related to RO 4. Finally, the chapter concludes with a short summary.

### Data Analysis

Qualitative research with phenomenological design using the lens of constructivist epistemology often employs inductive reasoning to conduct interpretive phenomenological analysis process known as IPA (Pietkiewicz & Smith, 2014; Creswell, 2003). Inductive reasoning is the process of moving from specific findings based on observations or statements to broader patterns, generalizations, or themes related to research objectives (Salmons, 2015; Creswell, 2003). Phenomenological data analysis is rarely fully prescriptive and supports flexible guidelines adaptable to meet a study's purpose and research objectives (Pietkiewicz & Smith, 2014). IPA begins with principles underscoring the importance of the researchers' full immersion in the data, an on-going iterative analysis of data, and reviewing the data from multiple perspectives to identify themes or categories (Pietkiewicz & Smith, 2014).

The researcher used NVivo coding methodology within the IPA framework to code, identify emergent themes, cluster themes, and identify new themes throughout the

data. Saldana (2016) states that NVivo is particularly useful in studies of specific subcultures that intend to prioritize or honor participants' voices. Also, it is well suited to practitioner research since goal is to use actual terms, words, or concepts of the participants themselves (Saldana, 2016). The researcher completed three steps after each focus group. First, the researcher used NVivo to review and recode focus group's participant-identified behaviors and aligned competencies. Second, the researcher added each focus group's findings, including recordings, to previously collected and coded data. Third, the researcher re-reviewed and re-coded the compiled findings.

The researcher followed Pietkiewiez & Smith's (2014) outlined IPA process until data saturation occurred. Fush and Ness (2015) state that data saturation occurs when there is enough information to replicate the study, new information is attained, and future coding is no longer possible. The authors further describe the importance of reflexivity, peer review and triangulation related to data saturation (Fush & Ness, 2015). These activities, which also support trustworthiness, are thoroughly discussed later in the chapter.

The researcher iteratively reviewed each focus group's data alone before compiling and re-reviewing results to identify themes. The researcher identified new themes in the first three focus group, but not the fourth. The data collected in the fourth focus group supported the previously identified findings. Fush and Ness (2015) suggest fulfilling one parameter for data saturation often leads to fulfilling the others. For example, this researcher used peer review analysis to confirm no new themes emerged between the third and fourth focus group. Research suggests the absence of new themes

emerging determines that future coding is not possible and correlates to enough information to replicate the process for future studies (Fush & Ness, 2015).

The researcher used NVivo coding within the IPA framework to execute RO 3 and RO 4 data analysis processes. Specifically, the researcher identified behaviors to provide detailed descriptions of SAM competencies, revealed additional dimensions of SAM competencies, and identified new behavioral themes related to BITA. Further, the researcher determined the impact of the originally stated SAM competencies, the SAM competency dimensions, and new themes to support RO 4. Table 9 provides a summary of the alignment between Pietkiewicz & Smith’s IPA process, the researcher’s process, and researcher descriptions of each step. The paragraphs following the table provide detailed descriptions of the researcher’s steps and alignment to IPA process.

Table 9 *IPA Phases Aligned to Researcher’s Process*

Pietkiewicz & Smith (2014) IPA Process	Researcher’s process	Process description
Read multiple times	Review researcher notes and data collected multiple times.	Review focus group recording(s) (audio & visual), journal notes, & collected data.
Create notes and observations	Create notes and observations	Review recordings, researcher’s journal notes, and focus group data collected to create notes.
Identify emergent themes	Identify competency dimensions or new themes within focus group results	Review each focus group’s participant-identified behaviors, aligned competencies and impact ratings. Then recode focus group data to identify competency dimensions or new themes.

Table 9 (continued)

Pietkiewicz & Smith (2014) IPA Process	Researcher's process	Process description
Cluster themes	Identify clusters of competency dimensions or new themes	Compare each focus group's data to previously collected data to create competency dimensions or new cluster themes.
Identify themes or patterns across cases	Describe competency dimension or new themes.	Compare findings from all focus groups to identified competency dimensions or new themes.

*Create Notes and Observations*

Pietkiewicz & Smith (2014) state that full immersion in the collected data often occurs through reliving the data collection process and is required for qualitative analysis. Immersion is achieved by making notes based on multiple readings of transcripts, listening to audio recordings of focus groups, and reviewing audio and video since reliving the actual data collection process is impossible (Salmons, 2015; Pietkiewicz & Smith, 2014). Further, Merriam & Grenier (2019) describe immersion as taking notes and reviewing documentation at each stage before immediately reviewing those notes to identify themes or confirm findings. The researcher created notes at four opportunities per focus group since the data collection process included an asynchronous and a synchronous step. These four opportunities included (a) review of the asynchronous data collected prior to the live session, (b) journaling the live synchronous session, (c) a review of the session's audio and visual recording with researcher's journaled notes and (d) review of generated focus group results. The aim of creating notes is to identify the



emergence of themes (Pietkiewicz & Smith, 2014). The on-going synthesis of notes serve as the foundation for themes or categories (Pietkiewicz & Smith, 2014).

The researcher first created notes about the submitted written responses prior to each synchronous group session. These notes included the number of participants, number of responses, anticipated themes or categories, additional clarification requirements about written responses, and an overall summary of content. Creating notes prior to the synchronous allowed the researcher to identify potential assumptions related to written responses and anticipate the application of probing or clarifying questions during the synchronous session. Second, during each synchronous session, the researcher journaled notes describing participant cues, quantity of responses, richness of written responses, and clarifying comments or questions made by participants. In the absence of visual cues, such as body language, examples of participant cues included quickness of written responses, richness of text, addition of comments to created behaviors, and where applicable, voice or tone (Salmons, 2015). Third, the researcher reviewed written transcripts while watching the recordings of synchronous focus group sessions and reviewing and expanding upon her journaled notes. This process encouraged the researcher to reflect on the experience and provide additional context to the data collected. Fourth, the researcher aligned her notes and the participants' finding(s) to identify behaviors aligned to SAM competencies, detail SAM competency dimensions or new themes.

Saldana (2016) suggests using NVivo to create dimensions or new themes through action-oriented verbs, impacting nouns, or evocative phrases. These dimensions further explain the resolution to the researcher's basic problem or research question

(Saldana, 2016). A dimension or continuum further explains findings and provide additional richness while new themes suggest categories not previously documented (Saldana, 2016). The completion of the fourth step resulted in rich focus group data that includes identified behaviors, competencies, impact ratings, and the creation of three SAM competency dimensions and six new themes.

The researcher applied participants' identified behaviors and SAM competency alignments to create additional detailed definitions related to this study. This application created three SAM competency dimensions. The researcher defines a SAM competency dimension as a continuation of previously identified SAM competency relevant to HEI BITA. The SAM competency dimensions support altered definitions to three SAM competencies using participants' identified behaviors and SAM alignment to provide additional richness

#### *Cluster Themes*

Clustering themes involves looking for connections or relationships between competency dimensions or new themes using conceptual similarities and descriptive labeling (Pietkiewiez & Smith, 2014). The researcher used NVivo coding to first review individual focus group finds and later to review the compilation of findings, iteratively. This process was completed four times since there were four focus groups. The coding and analysis process identified participant behaviors aligned to SAM competencies, participant behaviors supporting further details later identified as SAM competencies, and the creation of new themes.

As suggested by Pietkiewiez & Smith (2014), some competency dimensions or new themes that exist at the focus group level might not fit with the larger emerging

structure. Those remaining encompass subordinate behaviors and competencies identified through participant data. Further discussion of the findings occurs later in this chapter. Specifically, Table 13, located in the behaviors and competencies section, identifies the outcomes. Tables 16 and 17, located in the impact section of the chapter, reveal the impact of the SAM competency dimensions and new themes. Those competency dimensions or new themes with weak evidential base beyond the singular focus group analysis were dropped during this stage of the data analysis process.

#### *Identify Themes or Patterns Across Cases*

The identification of themes “outlines the important experiential items found during the data analysis process” (Pietkiewicz & Smith, 2014, p. 13). Themes demonstrate the persistence of specific data throughout the analytic process while preserving the participants’ original voice or sentiment (Pietkiewicz & Smith, 2014). Researchers may use several forms of explanation for themes, including but not limited to, descriptive statistics (like frequency or averages) and participant quotes (Salmons, 2015; Pietkiewicz & Smith, 2014). The use of descriptive statistics, like frequency, can provide additional depth to IPA by demonstrating a richer analysis of the findings (Smith & Osborn, 2003). As an example, frequency demonstration of emergent or cluster themes across provides the reader an understanding of prevalence and potential importance (Smith & Osborn, 2003). Regardless, the presentation of themes often precedes the researcher’s interpretation, explanation, and alignment to existing literature (Pietkiewicz & Smith, 2014; Smith & Osborn, 2003).

Findings presented in the behaviors and competencies section later in this chapter align to above-described theme presentation. The researcher supports the findings

combining descriptive statistics, like frequency and average ratings with detailed descriptions and participant quotes. Subsequent tables in the chapter (Tables 13, 14, 15, 16, and 17) support the findings through descriptive statistics. The tables are followed by a short narrative describing the table's contents. Finally, the researcher provides participant quotes and interpretation for each table that supports newly identified SAM competency dimension and themes.

### Trustworthiness

Unlike quantitative research, which tests a hypothesis, qualitative research explores the “how,” “what,” and “why” to support its development (Merriam & Tisdell, 2016). While qualitative researchers follow the data to determine patterns or create ideas, they must eliminate biases before collection begins (Chenail, 2011). Creswell (2003) defines research or experimenter bias as the process where the researcher influences results to identify specific outcomes. Researcher bias, intentional or unintentional, threatens the validity of the study and its findings because it can support selective observation, influence journaling, or even impact data analysis (Chenail, 2011). Creswell (2012) outlines the importance of addressing and accounting for biases to improve the validity of qualitative research studies. A robust qualitative research study should employ at least two methods to control for researcher bias (Chenail, 2011). Creswell and Miller (2000) state that the research study framework should provide the rationale or a lens to determine which control methods most align. This study utilized reflexivity, negative case analysis, peer review or debriefing, and triangulation. The following paragraphs provide a short summary of the researcher's processes.

Merriam and Grenier (2019) state that researchers conducting phenomenological studies must be aware of their prejudices, viewpoints, or assumptions before conducting interviews. The researcher employed reflexivity, defined as the act of the researcher's critical self-reflection or examination (Chenail, 2011). Reflexivity helps the researcher address or determine potential predispositions or biases that might impact data collection or analysis (Chenail, 2011). The researcher made notes about predispositions or biases in journal notes previously discussed. This method provided the researcher with a continuous process to identify and address biases that might affect the angle of the study or collection processes (Chenail, 2011).

The researcher also employed negative case analysis or disconfirming the evidence to support the credibility of data patterns or categories further (Chenail, 2011). This required the investigator first to categorize the data to find trends before re-evaluating the data to find evidence that dispels or disconfirms patterns (Chenail, 2011). The researcher created notes and reviewed data four times for each focus group. The researcher employed negative case analysis twice for each focus group session. The asynchronous data collection review and the review of generated focus group results provided the researcher two opportunities to identify anticipated competencies or themes prior to attempting to dispelling them via re-evaluation. This continuous process provided opportunities for refining the data analysis process and accounting for both outliers and data themes (Chenail, 2011).

The researcher also used triangulation to further support trustworthiness. Merriam and Tisdell (2016) describe triangulation as the process of comparing findings from multiple data source to gain additional perspectives, test validity, and develop a

comprehensive understanding of the data. As mentioned earlier in the chapter, the researcher conducted data analysis and identified themes after each synchronous focus group session. Once complete, the researcher compared the identified behaviors and emerging themes to previously conducted focus group sessions. As suggested by Creswell (2013), triangulation provided the researcher the opportunity to validate data through the identification and comparison from multiple data sources.

Finally, the researcher employed the peer review and debriefing methods for study validation. As such, the researcher exposed this study and data to an objective and disinterested peer for review and discussion (Chenail, 2011). Chenail (2011) defines an objective and impartial peer as any person who understands the core aspects of research foundations without a vested interest or bias for outcomes. The researcher chose a colleague with an Ed.D. who currently serves on three dissertation committees and works as a dissertation coach at a four-year public institution to review the study's purpose, objectives, methods, raw data, notes, themes, and findings. This method provided an opportunity for the researcher to confirm identified research assumptions, review data collection methods and analysis process, and confirm the emergence of patterns or themes.

#### Participant and Participant Institutional Demographics

The researcher uses descriptive statistics to meet the RO 1 and RO 2 requirements. In the following pages, the researcher redefines the research objectives, utilizes frequency tables to summarize the participant and participating institution populations, and provides narrative to further support each table. Saldana (2016) describes the use of descriptive statistics, like frequency, as an effective reporting method

for participant analysis. Descriptive statistics often provide a summative analysis of study participant information (Saldana, 2016). Specifically, frequency charts are often used to illustrate demographic characteristics captured in research studies (Saldana, 2016).

#### *Institutional Leader Demographics*

*RO 1: Describe the participating institutional leaders' demographic characteristics in terms of gender, age, organizational tenure, work title, and years of experience*

The researcher met the goal of the first research objective by collecting demographic information for all participants. Participants answered questions related to their current role and rank within their institution, their years of experience in this role, organizational tenure, age, and gender. The researcher collected all demographic information via the registration survey prior to the focus group assignments or data collection periods. Table 10 support the completion of RO 1 and provides a detailed description of participant demographic attributes, number of participants, and the correlated percentage.

Table 10 *Participant Demographic Information*

Attributes	Number of participants	Percentage of total participants	Cumulative percentage
<b>Role</b>			
Highest ranking institutional officer	3	10.7%	
Highest ranking department or college officer	11	39.3%	
Highest ranking technology officer	14	50.0%	
<b>Years of experience</b>			
1-5 years	7	25.0%	25.0%
6-10 years	8	28.6%	53.6%
11-15 years	3	10.7%	64.3%
16 or more years	9	32.1%	96.4%
No Answer	1	3.6%	100.0%
<b>Organizational tenure</b>			
Less than 1 year	1	3.6%	3.6%
1-5 years	10	35.7%	39.3%
6-10 years	4	14.3%	53.6%
11-15 years	5	17.9%	71.5%
16 or more years	8	28.5%	100.0%
<b>Age</b>			
35-45	6	21.4%	21.4%
46-55	7	25.0%	46.4%
56-65	14	50.0%	96.4%
66 and above	1	3.6%	100.0%
<b>Gender</b>			
Female	9	32.1%	
Male	19	67.9%	

Twenty-eight participants completed the registration survey and attended the assigned focus group session. Fifty percent (n = 14) participants serve as the highest-ranking technology officer; 39% (n = 11) serve as the highest-ranking member of a college or department within their institution and 10% (n = 3) serve as the highest-ranking institutional officers. Highest ranking technology officers included titles such as Chief Information Officer, Chief Technology Officer or Vice President of Technology.



Highest ranking department or college officer included titles such as Associate Vice Presidents, Executive Officers, or Vice Provosts. Finally, the highest-ranking institutional officers included the role of President or Chancellor.

Participants next reported years of experience and organizational tenure. Years of experience describes the number of years the participant served in their current role or one with similar responsibilities. Organizational tenure describes the number of years the participant served at their current institution, regardless of role. Only 27 participants reported their total years of experience in their current or a similar role while one participant declined to respond. Thirty-two percent (32.1%) of participants reported 16 or more years, 28.5% reported six to ten years, 25% reported one to five years, 10.7% reported 11-15 years in a role like their current position. All 28 participants reported their organizational tenure. Thirty-five (35.7%) served this institution between one and five years, 28.6% more than 16, 17.9% served between 11-15 years, 14.3% between six and ten years while 3.6% served less than one year.

Further, participants reported their age and gender. While participants reported their numerical age in the registration survey, the researcher reported the frequency of participants in age ranges. The most frequent age range, 50.0%, was between 56-65 years. Participants between the ages of 46-54 made up 25.0% and those between 30-45 21.4% compiled most of the other participants with one participant, 3.6% reporting an age older than 66. Finally, approximately two thirds (67.9%) of participants identified as male and nearly one-third (32.1%) as female.

*Institutional Demographics*

*RO 2: Describe the participating institutional demographic characteristics in terms of location, total student population, available degree programs, technology alignment, and executive cabinet membership*

The researcher relied on data submitted to the National Center for Education Statistics via the Integrated Postsecondary Education Data System (IPEDS) to partially fulfill the RO 2 requirements. The researcher also relied on information collected from participants’ registration survey to fulfill the remaining requirements related to Executive Cabinet membership and technology alignment. Table 11 provides summary findings.

Table 11 *Participating Institution’s Demographic Characteristics*

Attributes	Number of participants	Total student population	Academic programs	Executive Cabinet membership	Average technology alignment rating
<b>Two-year institutions</b>					
Louisiana	1	< 15,000	34	Yes	3
Michigan	2	< 15,000	151	Yes & No	3
Michigan	4	< 15,000	75	No	4
Mississippi	2	< 15,000	88	Yes	4
Mississippi	2	< 15,000	49	No	3.5
Mississippi	1	< 15,000	97	Yes	4
Pennsylvania	1	< 15,000	62	Yes	5
<b>Four-year institutions</b>					
Florida	1	> 45,000	220	Yes	5
Maryland	1	< 15,000	91	Yes	4
Maine	1	< 15,000	42	Yes	5
Michigan	1	15,001-30,000	139	No	3
Mississippi	1	< 15,000	36	Yes	4
Mississippi	1	15,001-30,000	160	Yes	3
New Hampshire	1	< 15,000	51	Yes	5

Table 11 (continued)

Attributes	Number of participants	Total student population	Academic programs	Executive Cabinet membership	Average technology alignment rating
Ohio	1	< 15,000	95	Yes	5
Oklahoma	1	< 15,000	101	Yes	4
Virginia	1	30,001-45,000	92	Yes	3
Virginia	1	< 15,000	90	NA	3
State systems					
California	1	> 45,000	108	Yes	3
Louisiana	2	> 45,000	195	NA	3.5

The distribution of participating institutions provided a geographically diverse representation. Twenty-eight participants represented 18 and two state-wide systems in this study. Mississippi (n = 5), and Michigan (n = 3) had the highest number of participating institutions Virginia (n = 2) and Louisiana (n = 2) also had multiple institutions participate. Other states represented include California, Florida, Maine, Maryland, New Hampshire, Ohio, Oklahoma, and Pennsylvania.

Kim (2016) reports that approximately 4.2% of an institutional budget is spent on technology; however, institutional type does make an impact. Specifically, larger institutions with larger academic programs and student populations spend proportionally higher dollar amounts, but lower percentages on technology (Kim, 2016). Further, Kim (2016) states that nearly 80% of that technology spend supports ongoing operations with no institutional type spending more than eight percent on transformative projects. This researcher did not ask participants to disclose operating budget or institutional spend on IT but rather collected number of academic programs and total student populations to demonstrate potential budget.

The total student population and number of academic degree programs provided range of distribution. Seventy percent (n = 14) of participating institutions serve less than 15,000 students annually. Fifteen percent, including the two state systems, (n = 3) serve more than 45,000 students annually. The remaining 8% had student populations between 15,001 and 45,000 students. While the number of academic programs offered averaged 98 for the entire institutional population the range varied greatly from 34 academic programs offered to 220. Therefore, it is reasonable to assume to total IT spend and institutional budgets also vary greatly.

The researcher used the registration survey to collect participant information related to their membership on the Executive Cabinet and their perception of technology alignment at their institution. Brooks (2020) states that members of the Executive Cabinet spend time engaged in strategic activities, including planning change. As stated earlier, this study included 28 participants from 18 institutions and two state-wide systems. Of those participants, 79% are members of the Executive Cabinet while the remaining 21% were not or an Executive Cabinet does not exist on their campus. One Michigan institution, with two participants in the study, had only one member on the Executive Cabinet. All institutional leaders and highest-ranking members of departmental or college leaders were members, meaning the 21% not participating on the Executive Cabinet were technology leaders. When reviewing the Executive Cabinet membership at the institutional level, one participant of an institution or a state-system with more than 45,000 students and one participant and an institution between 15,001 and 45,000 were not members of the Executive Cabinet.

The researcher asked participants to rate the level of technology alignment on a one to five Likert scale (one equals not aligned at all and five equals completely aligned) during the registration process. The rating scale and definitions (Appendix C) are part of the registration survey. Overall, participating institutions rated the technology alignment at 3.8 defined in the survey as moderately aligned. As identified in the survey, moderately aligned is defined as “an awareness of institutional goals or projects and somewhat consistent cross-collaboration participation”. Participants from large and state-systems reported similarly at 3.83. Participants from institutions between 15,001 and 45,000 students reported alignment at 3.0 which is still moderately aligned. Participants from institutions with 15,000 or less students reported 4.0 or strong alignment. Strong alignment is defined as cross-collaborative goals or projects are well defined and participation is strong.

The researcher also reviewed technology alignment based on institutional role. Specifically, institutional leaders, like presidents, rated technology alignment the highest at 4.3 or strongly aligned. Technology leaders were slightly more conservative and rated technology alignment at 3.8 or moderately aligned. Finally, the departmental or college leaders had the lowest rating for technology alignment at 3.4 which is still moderately aligned.

Brooks (2020) also asserts that technology leadership membership on the Executive Cabinet increases the level of operational and strategic influence of technology at that institution. The researcher also looked at technology alignment based on Executive Cabinet membership participation. Participating institutions without technology leadership participation reported moderate alignment at 3.4 while those with technology

leadership participation reported strong alignment at 4.1. This data supports Brooks' (2020) assertion that membership on the Executive Cabinet does have an impact.

The previous tables and supporting narrative demonstrate the researcher's completion of RO 1 and RO 2. The researcher used data from the registration survey to define participant demographic information, including role at the institution, time in role, organizational tenure, age, and gender. The tables and supporting narrative demonstrate the researcher collected information from a diverse population. The researcher combined IPEDS ([nces.gov](http://nces.gov)) data and two questions from the registration survey to complete RO 2 requirements. First, the researcher identified institutional location, total student population, and number of academic programs through IPEDS. Second, the researcher added participant registration survey responses to questions related to Executive Cabinet membership and technology alignment. The previous sections identify the institutional demographic information and ratings while the narrative describes their relevance.

### Behaviors and Competencies

The researcher successfully completed RO 3 using the previously outlined IPA methodology. The data analysis section of this chapter provides a detailed description of each step aligned to IPA. In summary, the researcher reviewed participant-identified behaviors and competencies iteratively. Then the researcher identified three SAM competency dimensions and six new themes which provide additional detail supporting RO 3 outcome requirements. Specifically, the three SAM competency dimension(s) provide a continuation of previously identified and aligned SAM competencies. However, the SAM competency dimensions incorporate detailed definitions and descriptions rooted in the identified behaviors collected. The researcher's goal was to

identify connections or groupings between identified behaviors, categorized SAM competencies, and new themes. The outcome is the identification of six new themes or SAM competency dimensions that provide rich operational definitions aligned with SAM competencies and participant-identified behaviors.

The outcomes and findings for RO 3 combine descriptive statistics and participant quotes. Smith and Osborn (2003) that statistics such as frequency, averages, and ratings provide a wholistic study perspective sometimes lost in IPA. These descriptive statistics do not alone provide analysis outcomes; rather to remain true to IPA they should be presented with the participants' voice (Smith & Osborne, 2003). Saldana (2016) states the use of descriptive statistics, like frequency, can imply meaning in qualitative studies. The consistent presence, or frequency, of a phrase or statement can demonstrate a level of importance (Saldana, 2016). Further, participant averages or ratings provide a numeric display of importance using the participant voice (Smith & Osborne, 2003). Therefore, the following sections combine descriptive statistics and participant quotes to provide a richer and meaningful perspective.

#### *Behaviors Exemplified by Participating Institutions*

*RO 3: Identify behaviors exemplified in the participating institutions studied that demonstrate business-IT alignment competencies, such as communication, value measurements, governance, partnership, scope and architecture, skills, or additional competencies.*

The researcher met the goal of RO 3 through participant identification and categorization of behaviors that occurred in a successful cross-collaborative project. Participants first provided open text responses to the primary focus group question, they

then aligned their identified behavior(s) with a SAM competency or labelled the behavior alignment to the “other” competency. Finally, each focus group participant rated the level of impact the behavior and aligned competency had for BITA, IT leaders, and business leaders. The researcher collected synchronous and asynchronous data via the electronic focus group and iteratively analyzed the data to identify emerging and cluster themes. Figure 9 provides the frequency distribution of participant-identified behaviors aligned to SAM competencies. A descriptive narrative identifying stated behaviors follows.

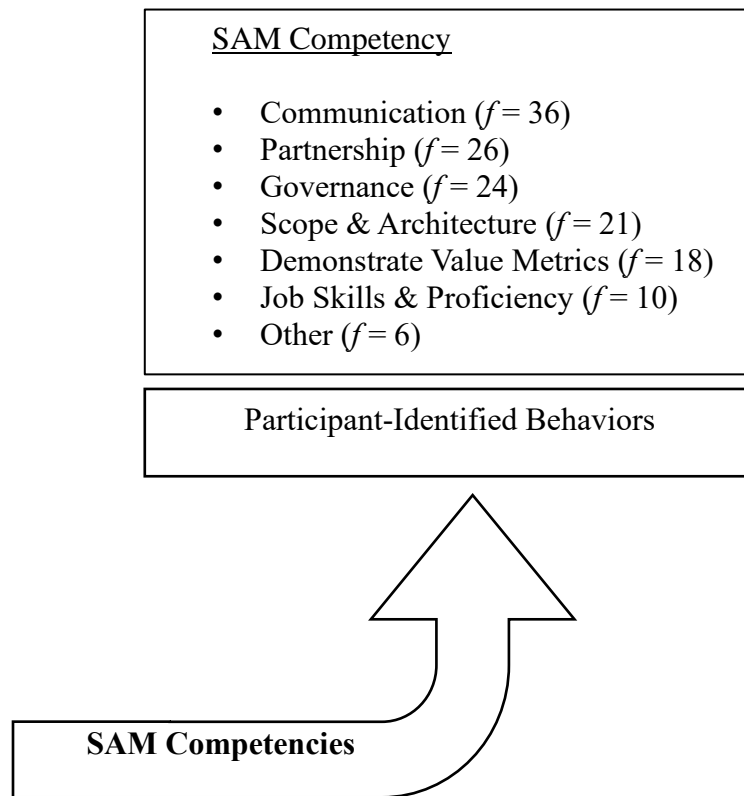
#### *Participant Identified Behaviors Aligned to SAM Competencies*

The Strategic Alignment Maturity Model competencies are six categories who’s presence correlates to the degree of strategic alignment (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017; Robertson, 2014). Each competency is defined and used by SAM researchers to quantitatively define the level of alignment at an organization (Luftman, 2003). The researcher read each competency definition during the synchronous focus group session and included the written definition in the instructions. Participants categorized their own identified behaviors using the definitions as a guide.

Smith and Osborn (2003) state that frequency of data in IPA can provide a richer understanding of importance. As such, Figure 9 demonstrates the importance of the SAM competencies demonstrated through frequency. Participants most frequently aligned behaviors to communication ( $f = 36$ ), partnership ( $f = 26$ ), governance ( $f = 24$ ), scope and architecture ( $f = 21$ ) and demonstrate value measurement ( $f = 18$ ). Participants least identified behaviors aligning to other or additional competency ( $f = 6$ ), and job skills and proficiency ( $f = 10$ ). In total, participants within four focus groups identified 135 behaviors that aligned to the six SAM competencies and six behaviors not clearly



aligned. Participants suggested the competency categories “inclusive leadership”, “leadership”, and “project management tools” within the “other or additional competency” category. Appendix F details each participant-identified behavior aligned to SAM or other competencies. The narrative in the following pages combines Luftman’s (2003) competency definition with participant stated behaviors.



*Figure 9. SAM Competencies Aligned to Participant Identified Behaviors*

Communication is defined as the degree to which the IT organizational unit communicates with the rest of the organization, the level of understanding between the business and IT, and the effectiveness of the exchange of ideas, knowledge, and information and the separate strategic goals (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017). Some identified participant behaviors were specific to technology leaders.

These behaviors include “using ‘non-IT’ terminology to ensure understanding and alignment”, “use plain English - not tech jargon”, and “active listening (listen to understand client/customer needs)”. Others included cross-collaborative tasks presumably for all members. Some of these responses include “establish an effective project communication plan and communicate, communicate, communicate”, “holding open forums for faculty/staff to ask or comment as well as go through pains/gains activities”, “create a public-facing website for the project, including FAQs, communication channels for questions, etc.”, and “regularly scheduled meetings to create deadlines and for updates.” Further still, some included behaviors often aligned to change management principles. These identified behaviors include “determine the need for a formal change management process and if needed build that in”, “create Buy In with why this is important to the whole college”, “create clear vision and change” and “stay focused on the message and purpose”.

Partnership was the second most frequently identified competency aligned to participant behaviors. Partnership is defined as the factor gauges the mutual trust, sharing organizational rewards and risks, the ability of the IT organizational unit to establish partnerships which drives the value of future partnership (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017). Participants identified behaviors aligned to emotional intelligence or relationships. Some examples of these responses include “The team members trust each other”, “Strong relationship building abilities”, “empathy”, “humility...especially to acknowledge what we do and do not know”, or “being willing to be vulnerable”. Participants also identified behaviors demonstrating reward and recognition like “bringing snacks/coffee to those involved to help with encouragement

and motivation”, getting multi-perspectives on the project - what is success for the functional unit, end-user, and IT” or “identify core project team members and ensure representation of diversity of thought and experiences”. Other partnership behaviors identified also aligned to activities associated with driving value and future partnership like, “being willing to candidly explore and share across the 3 lenses of Strategy, Culture, and Politics” and “identifying the ‘right’ players that need to be part of discussion/action at each phase of the journey”.

Governance is defined as the process of evaluation used in decision making to set IT priorities, resource allocation and budget alignment (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017). Participants aligned 24 behaviors to this competency. Their responses included behaviors that identified how to establish governance, who should participate, and methods used to execute efficient governance. Example participant-identified behaviors to establish governance include “established tiered governance model with executive sponsors, steering group, project leaders”, “develop a shared sense of purpose”, “create a project charter and repeatedly re-visit it”, and “establish a project charter”. Examples of participant behaviors demonstrating who should participate include “broad participation across the campus from varied constituencies that will or could be impacted”, “executive level ‘sponsor’ of project/initiative”, “clear and consistent executive sponsorship,” and “executive sponsor engagement”. Examples of behaviors demonstrating how to execute governance include “keep good records of meetings, decisions, rationales, expenses, results”, “develop a shared sense of purpose”, “accountability for each process and department”, and “create an effective project and task management system everyone will use”.

Scope and architecture are defined as the degree to which technology products and services are flexible and leveraged to deliver constituent solutions and the business bottom line via integration (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017). Participants identified 21 behaviors across four focus groups aligned to scope and architecture. Some identified behaviors aligned to clear definition and execution of a project. Examples of these behaviors include, “clearly defining and communicating what is in and out of scope”, “clear description of responsibilities”, “create deadlines and phases of the project”, “define problem and opportunity” or “develop realistic budgets and timelines and stick to them”. Other identified behaviors described identifying and addressing challenges. These behaviors include “anticipate barriers of implementing or upgrading system to meet needs prior to decision to move forward”, “establish priorities up front”, “manage expectations” or “don’t get held up on perfection”.

Demonstrate value measures or value of competency is defined as the value of IT projects in terms perceived or understood by the larger organization. This includes the understanding of priorities and planned projects (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017). Participants identified 18 behaviors aligned to this competency. These behaviors included how to define value measures and how to execute against defined value measures. Participant-identified behaviors demonstrating how to define measures include “clear picture of what "success" looks like”, “Define clear goals”, “Plan to present a case study about the project so artifacts, successes and lessons learned are captured” or “ensure working towards a common goal (mission)”. Participants also identified behaviors demonstrating how to execute against defined value measures like “identify critical new data created by this project as well as metadata to be captured in

data lakes”, “establish metrics for success -- expectations for how the service will be better, faster, more efficient” or “ask for feedback from users after going live, most projects benefit greatly with a few small tweaks”.

Job skills and proficiency is defined as the evaluation of the IT staff’s ability to execute effectively based on technical skill levels and understanding of the business goals, and ability to attain, retain, and train personnel (Luftman, 2003, Luftman & Kempiah, 2007; Myatt, 2017). This competency low participant-identified behaviors aligned. Twenty-eight participants identified 10 aligned behaviors. These behaviors mostly aligned to retention and training. Examples of the identified behaviors include “building relationships and having strong self-management skill set to lead team through the project”, “have competent technical persons to quickly address issues once implementation occurs”, “understanding of tools and resources being used to collaborate, or “adopt and orient project team members on Agile methodology and design thinking”.

Participants also identified behaviors needed for the successful completion of a cross-collaborative project that did not clearly align to one of the SAM competencies. As such, participants selected the “other” category during the synchronous focus group sessions and used the comments section to label the suggested competency. Only six identified behaviors did not align. Three of the six behaviors aligned to leadership and include the following “research what institution is a thought leader to understand what they did and assess against our needs”, “understand and address the need for change management. “CM is a critical success factor” and “Gain senior executives' support and make that support visible throughout the project”. Two of the six aligned to inclusive leadership and are described through the following behaviors, “addressing Diversity

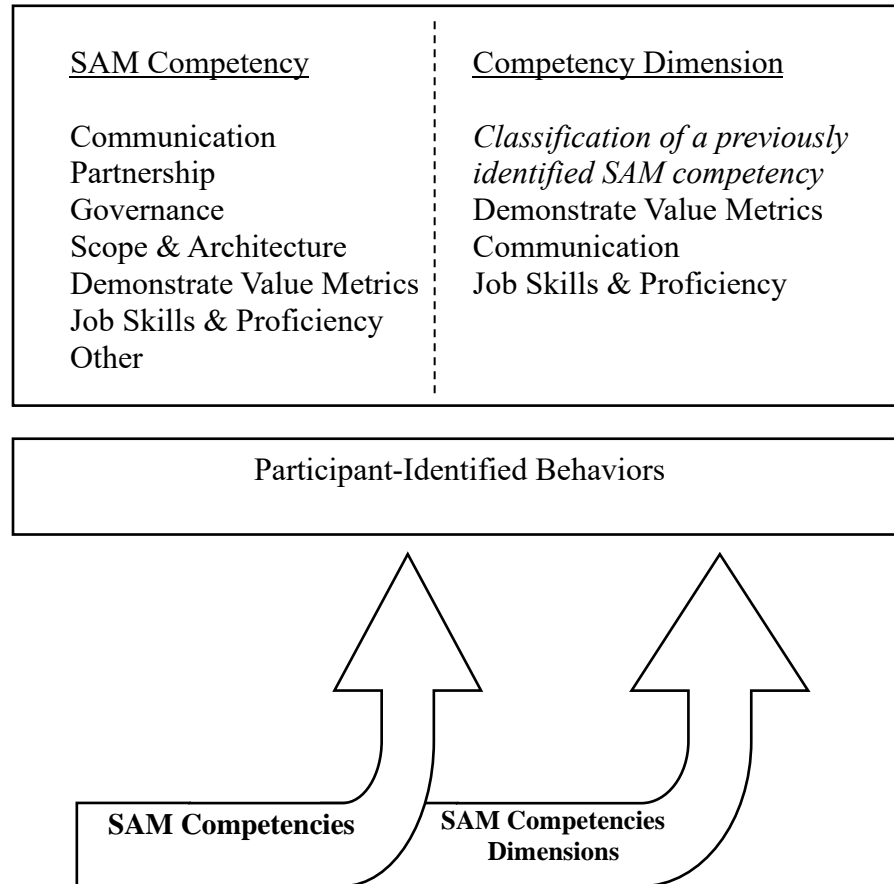
Equity & Inclusion (DEI) issues so that implicit bias and other challenges do not get in the way” and “creating an environment where questions can be asked, and ideas can be offered”. The sixth behavior simply stated as “(use) Project management software” aligns to Project Management Software.

The previous paragraphs use participant-identified behaviors to describe SAM competencies demonstrated in HEIs cross-collaborative project. The use of participant-identified behaviors and quotes support the definitions of SAM competencies created by Luftman (2003) and revised by Luftman and Kempiah (2007). The combination of the competency definition, the frequency of responses, and the participant-identified behaviors provide rich descriptions of SAM competencies demonstrated in HEIs. The researcher suggests additional research should be conducted to further align SAM competencies to HEIs.

#### *SAM Competency Dimensions and New Themes*

The researcher used NVivo coding aligned to IPA to identify emerging and cluster themes. This coding, as previously described, was conducted for each set of focus group results and for the compiled results. Specifically, the findings from this coding identified the need for SAM competency dimensions and the emergence of new themes. A theme or category is defined as a cluster or category belonging together because of an identified order (Pietkiewicz & Smith, 2014; Saldana, 2016). Saldana (2016) defines a dimension as a continuation or classification of a theme or category. The researcher defines SAM competency dimension as a continuation or classification of a previously identified SAM competency. Figure 10 illustrates the transition of SAM competencies

previously identified to the SAM competency dimensions. Further explanation of the process and definitions are provided in the following paragraphs.



*Figure 10. SAM Competencies and Competencies Dimensions*

This figure illustrates the transition of three Luftman SAM competencies to SAM competency dimensions

*SAM Competency Dimensions Defined.* Recoding participant-identified behaviors into emerging and cluster themes identified no further need for three of Luftman’s SAM competencies. Specifically, Luftman competencies governance, scope and architecture, and partnership were removed when no participant-identified behaviors aligned after the researcher’s data analysis process. The remaining SAM competencies, now referred to as SAM competency dimensions, include demonstration of value measurement ( $f = 12$ ),

communication ( $f = 8$ ), and job skills ( $f = 5$ ). Notably, the researcher identified revised definitions and a smaller level of frequency of participants identified behaviors for each SAM competency dimension. The following paragraph explains the original SAM definitions, revised definition, and supporting narrative for the three SAM competency dimensions.

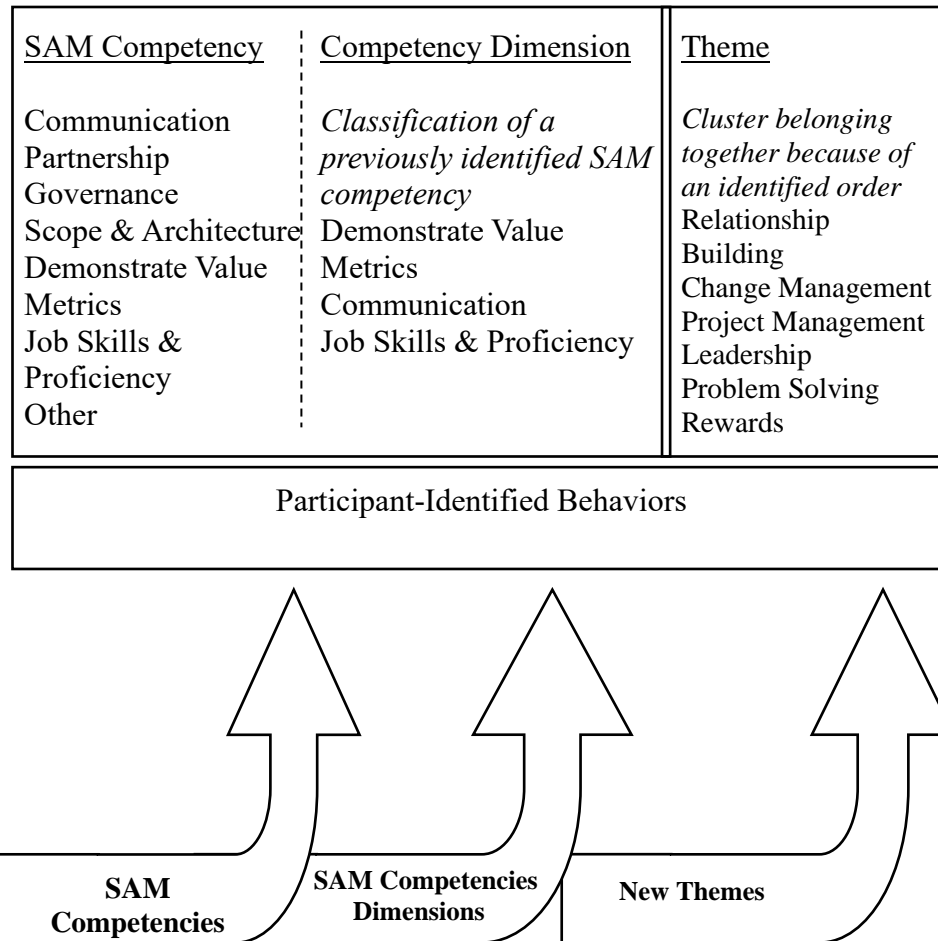
Communication is defined as the degree to which the IT organizational unit communicates with the rest of the organization, the level of understanding between the business and IT, and the effectiveness of the exchange of ideas, knowledge, and information and the separate strategic goals (Luftman, 2003; Luftman & Kempiah, 2007; Myatt, 2017). Using the participant-identified behaviors as the foundation, the SAM competency dimension definition for communication is limited to the effectiveness and method of exchange of ideas, knowledge, and information. After analysis only eight participant-identified behaviors remain which include “clear communication”, “regular meetings”, “strong communication skills”, “create a communication plan”, and “timely communication”. Like communication, job skills and proficiency, did not include additional participant-identified behaviors from other SAM competencies and the frequency of identified participant behaviors decreased from 10 to five. The definition of job skills and proficiency no longer includes an evaluation of the IT staff’s ability to execute effectively based on technical skill levels and understanding of the business goals but focuses on the ability to attain, retain, and train personnel (Luftman, 2003; Luftman & Kempiah, 2007; Myatt, 2017).

The third remaining SAM competency, now called SAM competency dimension is demonstrate value metrics. Different to communication or job skills and proficiency,



the definition of demonstrate value measurement now encompasses identified participant behaviors from communication, governance, and scope and architecture. Like the previously defined SAM competency dimensions the definition of demonstrate value metrics is also limited in scope. This competency dimension definition is limited to the understanding of priorities and planned projects (Luftman, 2003; Luftman & Kempiah, 2007; Myatt, 2017). Identified participant behaviors in this SAM competency dimension include “clearly defined goals”, “create a well-designed evaluation plan”, “status reporting (clear, concise, and consistent)”, and “defined metrics and outcomes with milestones towards completion”.

*New Themes.* Six new themes emerged from participant-identified behaviors related to successful completion of a cross-collaborative project. Literature demonstrates these themes relate to strategic alignment; however, are not identified in Luftman’s (2003) SAM research. Figure 11 builds on the previous illustration to show the alignment between participant identified behaviors, SAM competencies originally identified, SAM competency dimensions discussed in the previous section, and the new themes discussed in this section. The new themes, unlike SAM competency dimensions, are not a continuation or classification of a Luftman definition. Rather the six new themes were identified during the NVivo coding process. Each has an accompanying definition and corresponding behaviors identified during the coding process.



*Figure 11. SAM Competencies, SAM Competencies Dimensions and Themes*

This figure illustrates the relationship between participant identified behaviors and SAM competencies, SAM competency dimensions and new themes

The paragraphs following the below table provide a definition of each new theme, a summary of supporting SAM competencies aligned to participant behaviors, and examples of participant identified behaviors. The participant identified behaviors selected provide examples and supporting narrative for the new theme’s definition. Table 12 provides a foundation for the following paragraphs by identifying each new theme and corresponding definition. Appendix G provides a comprehensive list of aligned behaviors, SAM competencies aligned to SAM competency dimensions and new themes.

Table 12 *Summary of New Themes Identified*

New theme	Definition
Relationship building	The art of assembling connections, bindings, or a state of affairs between two or more entities into a structure
Change management	Set of processes and techniques to manage the people change needed to achieve a required business outcome (Conner, 1993)
Project Management	“The application of knowledge, skills, tools, and techniques to project activities to meet project requirements” (PMI, 2021, para 5).
Leadership	Uniting people behind a common purpose, inspiring them, helping them succeed, and then being ultimately accountable (Morgan, 2020).
Problem Solving	The act of defining, determining the cause, identifying, prioritizing, seeking and implementing solutions for a problem (ASQ, 2021). Problem solving also includes specific techniques and processes known to be highly effective (ASQ, 2021).
Rewards	Merriam-Webster define reward as something given in return for good or evil done (“reward, n.d.). It is something offered or given for service attainment (“reward”, n.d.).

### *Theme 1: Relationship Building*

Merriam-Webster dictionary defines relationship as a state of being interrelated, the connection, bindings, or state of affairs between two or more entities (“relationship”, n.d.). They also define building as the art of business of assembling materials into a structure (“building”, n.d.). Therefore, relationship building is the art of assembling connections, bindings, or a state of affairs between two or more entities into a structure. This theme contains SAM competencies including communication, demonstrate value

measurement, governance, job skills and proficiency, “other” Specifically, identified as inclusive leadership, and partnership. While this is a broad range of SAM competencies, the participant-identified behaviors support emotional intelligence, demonstrating soft skills, maintaining communications, and understanding business or institutional needs. Example participant-identified behaviors include “proactive collaboration (reach out and connect to explore and understand)”, “active listening (listening to understand client/customer needs)”, “take time to get to know team members as people”, “the team members trust each other” and “IT having a broad perspective/understanding of the institution goals/mission”.

### *Theme 2: Change Management*

Change management is a set of processes and techniques to manage the people change needed to achieve a required business outcome (Conner, 1993). While there are multiple definitions and theories associated with change management, the researcher intentionally chose this definition as it most aligns with the participant-identified behaviors. The change management theme contains the most diverse collection of SAM competencies. It contains identified behaviors from all SAM competencies except job skills and proficiency. Interestingly, this theme also contains the most direct mentions from participant-identified behaviors. While not all are listed, some direct mentions include “determine the need for a formal Change management process and if needed build that in”, “understand and address the need for change management. CM is a critical success factor”, and “implement formal change management processes. Add a change manager if possible”. Additional participant-identified behaviors allude to change management principles. Some of these include “establish clear vision and charge”,

“create Buy-In with why this is important to the whole college”, “ensure we are working towards a common goal (mission)”, “developing a shared sense of purpose”, “identify the proper stakeholders”, “anticipate barriers of implementing and meet the needs prior to moving forward” and “manage expectations”.

### *Theme 3: Project Management*

The Project Management Institute (PMI) defines project management as “the application of knowledge, skills, tools, and techniques to project activities to meet project requirements” (PMI, 2021, para 5). Traditionally, project management activities fall into five action groups that include initiating, planning, executing, monitoring, and controlling, and closing (PMI, 2021). The project management theme emerged from participant-identified behaviors aligned to the following SAM competencies:

communication, demonstrate value measurement, governance, “other” Specifically, project management software, and scope and architecture. Specific behaviors identified that support this theme include “identify project lead, coordinator, and manager”, “establish iterations and release plans”, “agree on timelines and duties. Rushing a project may cause animosity or stress—less chance of success”, “articulation of a project methodology. Waterfall vs Agile”, and “create an effective project management system everyone will use”.

### *Theme 4: Leadership*

Leadership is uniting people behind a common purpose, inspiring them, helping them succeed, and then being ultimately accountable (Morgan, 2020). Morgan (2020) created his definition of leadership by compiling definitions from 14 CEOs in fortune 500 companies. He goes on to state there are not many strong definitions of the principles and

philosophy of leadership (Morgan, 2020). This researcher chose this definition because it encompasses various aspects of participant-identified behaviors and aligned SAM competencies. Participant-identified behaviors often identified the need for on-going participation, unified messaging with clear mission, and executive buy-in. Specific behaviors include “Project leaders and sponsors serve as role models for the team members, committed to the common good” and “gain senior executives' support and make that support visible throughout the project”. The SAM competencies aligned to this theme include communication, governance, job skills and proficiency, “other” Specifically, leadership and inclusive leadership, and partnership.

#### *Theme 5: Problem Solving*

The American Society for Quality (ASQ) defines problem solving as the act of defining, determining the cause, identifying, prioritizing, seeking and implementing solutions for a problem (ASQ, 2021). More specifically, problem solving also includes specific techniques and processes to be highly effective (ASQ, 2021). The newly identified theme, problem solving, encompasses the definition and the techniques. Participant-identified behaviors include “adopting a problem-solving stance (vs blaming)”, define the problem and opportunity”, “working to identify the actual problem we’re trying to solve”, and “being willing to candidly explore and share across the 3 lenses of Strategy, Culture, and Politics”. The SAM competencies aligned to problem solving theme include communication, governance, partnership, and scope and architecture.

### *Theme 6: Rewards and Recognition*

Rewards and recognition are a new theme identified. Different to the other new themes, this one did not become a cluster theme because of frequency, but rather because of direct mentions. Merriam-Webster define reward as something given in return for good or evil done (“reward, n.d.). It is something offered or given for service attainment (“reward”, n.d.). Specifically, participant-identified behaviors include “integrate kudos into meeting agendas and communications; encourage team members to express thanks”, “include team incentives, recognition, rewards in project plans and budgets”, “metrics and milestones (accountability and recognize successes along the way)”, and “Bringing snacks/coffee to those involved to help with encouragement and motivation”. The SAM competencies aligned to the identified participant behaviors include communication, demonstrate value measurement, and partnership.

The researcher identifies the summative results of the recoding process in Table 13. Specifically, Table 13 outlines the three SAM competency dimensions and six new themes aligned to the original 141 participant-identified behaviors aligned with SAM competency. Each description of the SAM competency dimension or new theme displays two supporting items. First, the frequency of participant-identified behaviors. Second, the collection of SAM competencies originally aligned to participant-identified behaviors. Additional narrative is included after the table to support the researcher’s findings. Some participant-identified behaviors are provided in the supporting narrative but not all. A comprehensive review of SAM competency dimensions and new themes aligned to original participant information exists in Appendix G.

Table 13 *Identified SAM Competency Dimensions and New Themes Aligned to Frequency of Participant Identified Behaviors and SAM Competency*

Competency dimension or new theme	Original SAM Competencies included	Frequency of identified behaviors
Change Management	Communication, Demonstrate Value Measurement, Governance, Partnership, Scope & Architecture, & Other (Change management identified by participant)	29
Communication	Communication	8
Demonstrate Value Measurement	Communication, Demonstrate Value Measurement, Governance	12
Job Skills & Proficiency	Job Skills & Proficiency	5
Leadership	Communication, Governance, Job Skills & Proficiency, Partnership & Other (Executive buy-in, Inclusive Leadership, and Leadership identified by participants)	14
Problem Solving	Communication, Governance, Partnership, and Scope & Architecture	9
Project Management	Communication, Demonstrate Value Measurement, Governance, Scope & Architecture, and Other (Project Management identified by participant)	25
Relationship Building	Communication, Governance, Job Skills & Proficiency, Partnership, and Scope & Architecture	33
Rewards & Recognition	Communication, Demonstrate Value Measurement, & Partnership	6
<b>Total</b>		<b>141</b>



Pietkiewicz & Smith (2014) state themes outline important experiential items through data analysis. Their persistence through the analytical process allows the participant voice to remain while also demonstrating consistency of ideas across multiple data sources (Smith & Osborn, 2003). Conversely, not all themes that emerge at the focus group level will remain throughout the analysis process (Pietkiewicz & Smith, 2014). Those SAM competencies, competency dimensions or new themes with weak evidential base were dropped and no further reporting is included.

The previous section outlines the results of the researcher's data analysis process by providing further explanation and definitions of outcomes. The paragraphs in this section identify the definition of SAM competency dimensions and themes prior to explanation. Each SAM competency dimension includes a revised definition of Luftman and Kempiah's SAM definition, identification of aligned SAM competencies, and supporting participant narrative. Finally, this section concludes with the identification and definition of six new themes. Like the SAM competency definitions, the new themes are defined, include participant-identified behaviors, and identify align SAM competencies.

### Impact

The researcher met RO 4 by first reporting participant identification, categorization, and impact ratings of identified behaviors in a successful cross-collaborative project. The researcher then aligned the SAM competency dimensions and new themes findings identified in the previous section. Once identified, the researcher re-analyzed the participant-identified impact ratings according to SAM competency dimensions and new themes. The following tables identify the average rating for each SAM competency, SAM competencies dimensions, and new themes. Additionally, the

below tables provide a summation of impact SAM competency, SAM competencies dimensions, and new themes by overall business-IT impact, impact for a business leader, and impact for an IT leader. As with the previous sections in this chapter, a short narrative supports each table. Unlike the previous section, participant quotes are not included as part of the narrative. Rather, each participant-identified behavioral rating is included in Appendix H. This section focuses on descriptive statistics, namely averages, to demonstrate participant feedback.

#### *Impact of Behaviors in Participating Institutions*

*RO 4: Determine the impact of behaviors in the institutions studied that exemplify business-IT alignment competencies, such as communication, value measurements, governance, partnership, scope and architecture, skills, or additional competencies.*

The following tables provide the average rating for impact for each of the six SAM competencies as originally reported by participant rating. All participants within each focus group rated the level of impact every participant-identified behavior would have for business-IT alignment, for business leadership, and for IT leadership. The ratings ranged from 1 “no impact at all” to 5 “significant impact” on a Likert scale. Detailed definitions were verbally provided to participants prior to rating but were also clearly visible in the participant instructions. Participants could also refrain from providing a rating on any identified behavior or subscale by simply pushing the “Not Applicable” button. No participants declined rating any identified behaviors or subscales.

Table 14 *Average SAM Competency Impact Rating*

Competency	Average competency rating
Communication	3.32
Demonstrate Value Measurement	3.47
Governance	3.34
Job Skills & Proficiency	3.04
Other	2.99
Partnership	2.92
Scope & Architecture	2.94

Table 14 identifies communication, demonstrate value measurement, and governance as the most impactful SAM competencies. All three averages align to the rating “moderately impactful”. Like ratings associated with technology alignment “moderately impactful” is defined as impactful within reason. The identified task, behavior, or competency will not significantly determine success or failure. Demonstrate value measurement has the highest overall average rating at 3.4, followed by communication at 3.3, then governance at 3.3. Further, the SAM competency, job skills and proficiency also align to the “moderately impactful” rating with a 3.0 average. “Other”, scope and architecture, and partnership have an overall average rating aligned to slightly impactful. This is defined as likely to have little impact. The identified task, behavior, or competency slightly determines success or failure. The overall averages provide a comprehensive ranking of SAM competencies.

Table 15 *Competencies and Impact for BITA, IT Leader and Business Leader*

Competency	Average Score for Impact on		
	BITA	IT Leader	Business Leader
Communication	3.28	3.32	3.36
Demonstrate Value Measurement	3.48	3.37	3.55
Governance	3.38	3.50	3.15
Job Skills & Proficiency	2.96	3.18	2.98
Other	2.91	3.14	2.91
Partnership	2.88	3.06	2.82
Scope & Architecture	2.82	3.20	2.81

Table 15 also provides average ratings aligned to SAM competencies. This chart identifies the average rating per competency per sub-rating. As seen above the highest ratings across all three subgroups are still communication, demonstrate value measurement, and governance. As with the overall rating, each competency and subgroup ratings still align to “moderately impactful”. However, each competency average rating varies slightly when aligned to subgroup rating. For example, communication impact is highest for business leader impact but lowest for business-IT alignment. This is the opposite for governance which has the highest average for overall impact and lowest for business leaders. These average ratings provide a foundation for understanding the impact of participant-identified behaviors and aligned competencies.

Table 16 *Average Impact Rating for SAM Competency Dimensions and New Themes*

Theme	Average theme rating
Change Management	3.54
Communication	2.86
Demonstrate Value Measurement	3.44
Job Skills & Proficiency	2.64
Leadership	3.10
Problem Solving	2.96
Project Management	3.08
Relationship Building	3.16
Rewards & Recognition	2.69

After identifying SAM competency dimensions and new themes, the researcher re-analyzed the impact rating scores. As seen in Table 16, overall average scores had a wider range than those previously identified. Further, the highest overall averages aligned to new themes change management (average rating of 3.54) and relationship building (average rating of 3.16). The new SAM competency dimension, demonstrate value measurement, had an overall rating between the new themes with an overall average score of 3.44. Each of these scores are also considered moderately impactful. The remaining overall average ratings also included as moderately impactful include leadership (3.10) and project management (3.08). New themes and SAM competency dimensions rated as slightly impactful include problem solving (overall average rating of 2.96), communication (overall average rating of 2.86), job skills and proficiency (overall average rating of 2.64) and rewards and recognition (overall average rating 2.69). The overall average ratings provide a description of impact and rank. This grouping aligns to SAM competency dimensions and new themes.

Table 17 *New Themes and Impact for BITA, IT Leaders, and Business Leaders*

Theme	Average score for Impact on		
	BITA	IT Leader	Business Leader
Change Management	3.57	3.49	3.55
Demonstrate Value Measurement	3.47	3.50	3.35
Relationship Building	3.13	3.27	3.07
Project Management	3.08	3.29	2.89
Leadership	3.02	3.09	3.20
Communication	2.68	3.13	2.78
Problem Solving	2.67	3.10	3.03
Rewards & Recognition	2.60	2.60	2.87
Job Skills & Proficiency	2.56	2.99	2.35

Table 17 provides average ratings aligned to SAM competency dimensions and new themes. As seen above the highest ratings across all three subgroups are change management and demonstrate value measurement. Unlike, previous findings related to impact, the third high rating is split by sub-ratings. Specifically, stated relationship building is rated high for BITA (overall average rating of 3.13) and impact on IT leader (overall average rating of 3.27), however, not for impact for business leader (overall average rating of 3.07). Rather, leadership is rated higher for impact for business leader than relationship building. Leadership is earlier defined as helping people succeed and being accountable to a unified or common purpose (Morgan, 2020). It stands to reason that identified participant behaviors and focus group participants believe this new theme has a greater impact for business leaders while impact for IT leaders' ratings align to relationship building. These average ratings provide a foundation for understanding the impact of participant-identified behaviors and aligned competencies.

## Summary

This chapter begins with a detailed description of the researcher's data analysis process and its alignment to IPA. In the description, the researcher identified the steps of IPA and the use of NVivo coding to further support the identification of emerging and clustering themes. Next, the researcher explains the employment of reflexivity, negative confirmation, triangulation, and peer description to achieve trustworthiness. The researcher then outlined the study's research findings in two separate sections. The researcher used only descriptive statistics, namely frequency, to demonstrate RO 1 and RO 2 demographic data. Therefore, findings were summarized in a section named demographics. The next section, named behaviors, competencies, and impact described the study's RO 3 and RO 4 outcomes. There, the researcher combined descriptive statistics with participant narrative to provide holistic explanations and definitions. Specifically, the researcher identified the alignment between participant identified behaviors, SAM competency, and impact. The researcher also defined six new themes and three SAM competency dimensions relevant to the study. Finally, the researcher ended the chapter by providing descriptive analysis of overall impact and impacts of sub-scores related to overall impact for BITA, for business leaders, and for IT leaders.

## CHAPTER V – CONCLUSION

This chapter discusses the findings, conclusions, and recommendations related to the study's four research objectives and purpose. The chapter begins with a summary of the study which restates its purpose, research objectives, design strategy and research method. The summary of findings discusses the empirical outcomes and associated conclusions and recommendations. Chapter V concludes with recommendations for future research, discussion, and a chapter summary.

### Summary of the Study

This study identifies behaviors HELs perceive to impact BITA competencies. Therefore, the primary research question is, “What behaviors demonstrate business-IT alignment (BITA) competencies in higher education?” The research objectives support the primary research question by focusing on the identification, alignment, and determining the impact of behaviors to BITA competencies. Qualitative research objectives support inductive reasoning and promote exploration, defining commonalities, and determining purpose (Corbin & Strauss, 2008). Characteristics of qualitative research, Specifically, phenomenological, support this study's purpose—identify and determine impactful behaviors. The research objectives, exploring identified behaviors, determining competencies and impact also align with qualitative characteristics.

The researcher used a purposive sampling method, called snowball sampling, to identify study participants. Purposive sampling uses participants with knowledge or awareness who provide insights, perspectives, or refers future participants relevant to the study (Merriam & Tisdell, 2016; Paul, 2017). The researcher sent a recruitment email outlining the study's purpose, format, and anticipated time commitment to potential



participants. Twenty-eight participants responded and attended one of four focus groups. The study combined electronic registration survey completion with asynchronous and synchronous focus group participation to collect data prior to analysis.

### Summary of the Results

Fifty percent of participants were the highest-ranking technology officer, 39.3% were the highest-ranking member of a college or department, and 10.7% were the highest-ranking institutional officer. Institutional population included 18 institutions and two state-wide systems in 12 states across the U.S. Seventy percent (70%) of the institutions had less than 15,000 students, 15%, including the two state-wide systems with more than 45,000 students. The remaining 10% report between 15,001 and 45,000 students. The institutional demographics also demonstrate a difference in institutional technology alignment related to Executive Cabinet membership.

Participants from four focus groups identified and aligned 141 behaviors to SAM competencies required for successful completion of a cross-collaborative project. The researcher identified emerging and cluster themes after the initial analysis. This analysis resulted in six new themes and three SAM competencies as illustrated below in Figure 12. Three SAM competencies (governance, scope and architecture, and partnership) were not identified as emerging themes while three (demonstrate value measurement, communication, and job skills & proficiency) remained, albeit with a revised scope. Additional analysis showed change management, relationship building, and project management with the highest frequency of participant-identified behaviors.

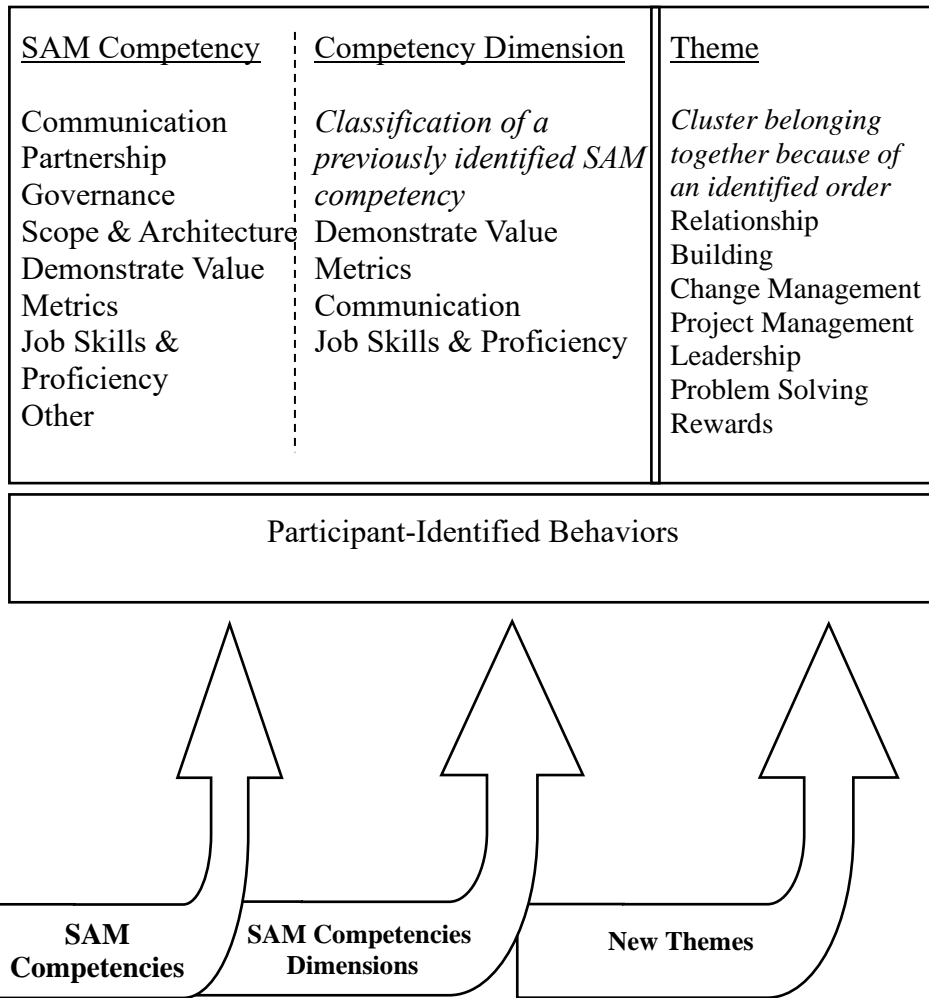


Figure 12. SAM Competencies, SAM Competencies Dimensions and Themes

### Findings, Conclusions, and Recommendations

The following section discusses three empirical findings, conclusions, and recommendations. Findings identify practical applications related to the study's literature and results. Specifically, findings link concepts identified in the study's literature review and theoretical foundation. Conclusions provide interpretations and further exploration of the findings. Recommendations provide the researcher the opportunity to prescribe solutions, next steps, or future actions.

Collectively, the findings, conclusions, and recommendations serve a roadmap for future exploration or actions related to BITA in higher education.

*Finding 1: Technology Leadership Represented on Executive Cabinet Can Impact Institutional Technology Alignment Ratings.*

Participant identified behaviors led to new themes related to relationship building, change management, and leadership demonstrate the need for stronger collaboration between HELs. These participants identified behaviors also demonstrated the need for inclusivity and participation of technology leaders on the Executive Cabinet. Specifically, quotes like “IT needs a seat at the decision-making table,” “IT and administration champions” (for successful project completion), and “ensure continual engagement of senior leadership” demonstrate that partnership and “proactive collaboration (connect to explore and understand)” are behaviors that impact outcome alignment. Further, the difference in participant’s rating overall technology alignment based on Executive Cabinet membership supports the participant identified behaviors. Study participants who had technology leadership on their Executive Cabinet stated strong alignment demonstrated “through well-defined cross-collaborative goals and strong cross-collaborative participation”. Study participants without technology leader presence on Executive Cabinet stated moderate alignment demonstrated by “awareness of cross-collaborative goals with limited and inconsistent participation”. As such, representation and active participation by technology leaders can impact overall institutional technological alignment ratings.

Conclusion for Finding 1: Including technology leadership as a member of the Executive Cabinet can increase institutional technology alignment. The literature

supports the conclusion. Specifically, Brooks (2020) asserts that technology leadership membership on the Executive Cabinet increases the level of HEI's operational and strategic influence of technology (Brooks, 2020). Recent industry changes demonstrate the need for technological influence on operations and strategy; therefore, technology leadership participation in Executive Cabinet can increase institutional and technological alignment (Brooks, 2020).

Active cross-collaborative participation is also required (Brooks, 2020). The technology leader's importance increased as changes to the higher education industry occur (Brooks, 2020). Their influence and knowledge are required to support multiple departmental and institutional needs (Brooks, 2020). Specifically, in the current landscape, technology leaders spend more time balancing the operational and strategic activities for the institution and at the departmental or college level (Brooks, 2020). They spend more time collaborating with business leaders, planning, and innovating, and less time on IT related operations (Brooks, 2020).

Executive Cabinet membership is important, but active participation and collaboration with its members is also required (Brooks, 2020). HELs must employ balance between managing or reporting operations and seeking opportunities to collaborate and influence institutional innovation. O'Brien (2019) describes the balance between "plumber" and "strategist" as tricky but required to continue demonstrating the value and benefit of technological innovation. The technology leader's continued balance of these roles combined with Executive Cabinet membership and on-going collaboration with its members will increase the influence of technology and drive innovation within the higher education industry.

Recommendation: HEI's Executive Cabinet membership should include active cross-collaborative participation from technology leaders. HEIs BITA can be improved by actively involving technology leadership in Executive Cabinet conversations and planning. This recommendation goes beyond asking for technology leaders to be named as Executive Cabinet members, but also challenges HELs to collaborate and actively discuss the alignment between institutional cross-collaborative projects, institutional goals, and operations. Active collaboration and partnership among HELs will likely require support for team building and strategic alignment foundational elements like relationship building, communication, and leadership. As such, HEI Executive Cabinet members should prioritize strategic planning and relationship building to identify, discuss, and operationalize institutional goal attainment through the lens of technology and digital transformation. Finally, additional research determining successful partnership behaviors and impact should be conducted. As stated previously, there are limited studies exploring the impact of BITA in HEIs. Recommendations for research are included later in this chapter.

*Finding 2: Understanding and Executing Change Management Is Critical for Alignment and Successful Completion of a Cross-Collaborative Project.*

The new theme identified in this study labeled as change management contains participant-identified behaviors aligning to five of the six Luftman (2003) SAM competencies excluding only job skills and proficiency. Further still, participant-identified behaviors connected to change management principles also appear throughout the new SAM competency dimensions and other themes identified. Change management theme contains the most direct mentions from focus group participant-identified

behaviors. Some quotes include “determine the need for a formal change management process and if needed build that in”, “understand and address the need for change management. “CM is a critical success factor”, and “implement formal change management processes. Add a change manager if possible”. Additionally, participant identified behaviors that allude to Kotter’s (2014) change management principles. Some references include “establish clear vision and charge”, “create buy-in with why this is important to the whole college”, “ensure we are working towards a common goal (mission)”, “developing a shared sense of purpose”, “identify the proper stakeholders”, “anticipate barriers of implementing and meet the needs prior to moving forward” and “manage expectations”.

Conclusion: Findings related to change management demonstrate the importance of HEIs use in successful cross-collaborative projects. While Connors (1993) definition of change management most closely align with the participant stated behaviors, literature exists defining and supporting the execution of its principles. Perkins (2018) states that change management within higher education has multiple definitions and is viewed differently based on the lens of the audience. He further states that regardless the approach—project management, executive leadership, organizational audience, or a project participant—each approach and definition address the human side of change within an organizational context (Perkins, 2018). Specifically, leaders should identify the change, help others tolerate change while building resilience, and demonstrate change successful strategies (Connors, 1993). The change management new theme and emerging SAM competency dimensions identified in this study further support this perspective. Each identified new theme or emerging SAM competency dimension aligns principles

often associated with change management like leadership, project management, relationship building, problem solving, and rewards or recognition.

Recommendation: HELs should utilize principles of change management to improve BITA or digital transformation. The industry continues to undergo significant organizational change which requires people, process, and technology alignment. As leaders drive change, they a strong foundational understanding of change leadership and management is essential for success. Leaders embarking upon a cross-collaborative project, like BITA, should build and execute their plan through a lens of change management. Specifically, they align operational planning with change leadership and change management principles as outlined in participant-identified behaviors.

*Finding 3: Newly Identified Themes Relationship-Building and Leadership Represent the Need for Strategically Aligned Leadership.*

Relationship building and leadership are two themes that emerged through this research. The researcher defines relationship building as the art of assembling connections, bindings, or a state of affairs between two or more entities into a structure. Morgan (2020) defines leadership as the art of uniting people behind a common purpose, inspiring them, helping them succeed, and being ultimately accountable. The emergence of the themes through participant-identified behaviors signifies their importance to technology and business leaders' outcome alignment.

The new themes demonstrate participant-identified behaviors aligned to all six of Luftman's (2003) SAM competencies collectively. The relationship building theme includes participant-identified behaviors describing emotional intelligence, demonstrating soft skills, maintaining communications, and understanding business or institutional

needs. While the leadership theme includes behaviors identified as providing on-going participation, unified messaging with clear mission, and executive buy-in. Specific participant-identified behaviors for each include “proactive collaboration (reach out and connect to explore and understand)”, “active listening (listening to understand client/customer needs)”, “take time to get to know team members as people”, “the team members trust each other” and “IT having a broad perspective/understanding of the institution goals/mission”, “project leaders and sponsors serve as role models for the team members, committed to the common good” and “gain senior executives' support and make that support visible throughout the project”.

Conclusion: HEIs who achieve BITA will be those who integrate technology through strategy, leadership alignment, and collaboration. Grajek (2020) defines the integrative CIO as a technology leader capable of repositioning or reinforcing technology as a strategic influence supporting the institutional mission. Brooks (2020) further defines this role as a catalyst for technology’s campus influence. Additionally, he warns that a truly integrative CIO requires partnership from campus leadership (Brooks, 2020). HELs must include technology leadership in the strategic and operational conversations (Brooks, 2020). Specifically, the technology and business leaders should collaboratively discuss innovation, implications of technology or operational changes to business units or colleges, and the execution of campus or departmental projects (Brooks, 2020).

Recommendation: HELs revisit institutional goals, build operating plans, and strengthen collaboration. Recent literature clearly defines the need and sets the foundation for strong relationship building and collaboration amongst HELs. As previously outlined, adding the technology leader to the Executive Cabinet is a



significant step towards stronger alignment; however, that is not enough. Now, HELs must execute on these recommendations through training, collaboration, strong communication, and strategic planning. First, technology leaders must learn to demonstrate strong emotional intelligence, communication skills, and awareness of business and institutional outcomes. While this might be innate to some, training on these skills is recommended. Second, business leaders rely on their technology counterpart as a business partner, innovator, and operation leader. Including technology leaders as a business partner requires strong skills related to communication and relationship building. Thus, it is likely training or team building is required to improve skills. Third, HELs must actively participate with one another to revisit, align, and execute against institutional goals. Achieving alignment likely requires clearly defined strategic goals supported through operational plans demonstrating aspects of value measurement and change management. To accomplish this, HELs must collaboratively revisit their institutional goals to define operational plans (including technology) and value measurements. All HELs must actively execute against these institutional goals while building collaboration and partnership.

#### Recommendations for Future Research

The current study identified behaviors that impacted successful completion of a cross-collaborative projects in higher education. In this investigation, the researcher identified three findings. Two were related to executive leadership participation and HEL collaboration. The third finding identified that change management, relationship building, and leadership play a pivotal role in a successful outcome. Future research recommendations include further investigation into executive leadership and technology

alignment, change management, and human capital development. The relationship between HELs and technology alignment (BITA) is a primary focus area. Further investigations of new themes and SAM dimensions for HEI BITA is another primary area of focus. Additional investigation into change management and human capital development and their relationship to HEI BITA is an unexplored area; therefore additional research is recommended.

The current study identifies that technology leader presence on the Executive Cabinet positively impacts the participant rating of technology alignment. Literature demonstrates that nearly half of technology leaders sit on the Executive Cabinet, yet alignment ratings remain low. Future studies should further explore this area. Specifically, one study should investigate HEL relationships, collaboration, and technology alignment. A second study could include a detailed analysis of Executive Cabinet participation—beyond membership—and technology alignment (BITA) ratings.

New emerging themes, change management, relationship building, and leadership, further identified the need for stronger partnership among HELs. While the new SAM competency dimensions and new themes are impactful to the study, they do not demonstrate new industry recommendations. This researcher suggests two potential studies. One study is a quantitative analysis that further expands the researcher's finding. Specifically, a study that examines the alignment of new SAM competency dimensions and themes to higher education BITA. The second study, a qualitative study like this study, with a purpose to identify and determine impactful behaviors among HELs that drive relationship building, leadership, and collaboration among Executive Cabinet members.

The current study also determined that behaviors related to change management are impactful to the successful completion of cross-collaborative projects. As mentioned in Chapter 4 and in the previous section, change management has many definitions and encompasses multiple behaviors related to project completion. This research did not distinguish between change management, change leadership, or project management principles often associated under the same umbrella. As such, the researcher suggests an additional study to further investigate this topic.

The final recommendation for future research does not correlate with a research finding, however, is a common theme throughout the literature. This recommendation closely aligns to practices within the field of human capital development and could also demonstrate technological importance within the industry. Specifically, the researcher recommends conducting a return-on-investment analysis (ROI) for a cross-collaborative higher education project. Conducting and identifying the results of a ROI analysis on a cross-collaborative project could demonstrate benefits beyond economic savings or process improvements.

#### Implications of Limitations

Limitations are influences, potential shortcomings, or conditions that might place restrictions on the researcher's methodology or conclusions (Meriam & Tisdell, 2016). Limitations associated were identified and addressed thereby minimizing potential impact to the study's conclusion (Meriam & Grenier, 2019). This study contained limitations commonly associated with qualitative phenomenological studies and unique limitations associated with the researcher's employment. The specific limitations and methods for mitigating risk follow.

Flexible methods, extensive data analysis processes, and limited repeatability are common qualitative study limitations (Creswell & Miller, 2000; Meriam & Grenier, 2019). This study utilized an electronic semi-structured interview template coupled with prompting questions to increase repeatability and limit flexibility to the methodology. Participants entered their open text responses to focus group questions and prompts. Utilizing a designated electronic location and format coupled with semi-structured focus group script maximized repeatability and optimized the data analysis process.

Additionally, data gathering, and analysis can take a great deal of time and leave room for researcher interpretation in qualitative research (Meriam & Grenier, 2019). As such, the researcher asked participants to complete the two additional steps. Participants aligned their own behaviors with SAM competencies. Next all participants determined the level of impact of all identified and categorized behaviors. Each activity occurred during the electronic focus group session and addressed the data gathering and analysis limitations. Participants categorized and rated their open text responses thereby decreasing the dependency on the researcher's interpretation of results and extensive data analysis process.

The primary participants were the highest-ranking technology leaders and business leaders on campus that recently collaborated on a project with technology involvement. The researcher's employment with the country's leading higher education Enterprise Resource Planning (ERP) technology provider served as a potential limitation. While it is possible participants had biases towards the company or its products that did not deter participation nor did it affect their honesty. The researcher disclosed her employment to participants through the informed consent. Further, the researcher also

added a layer of anonymity and confidentiality for participants responses via the electronic focus group providing additional separation from participant responses.

Participants were informed of the researcher's employment however none mentioned the company or its products verbally or in the electronic focus group.

### Conclusions

Higher education industry continues to undergo significant change related to public perceptions and the impact on enrollment or funding, economic impacts like negative credit ratings exacerbated due to high operating costs and decreased enrollment, and a rapidly changing technological landscape (Ellucian, 2018; Grajek, 2018; Haggans, 2016; Sellingo, 2017; Wheeler, 2020). These changes put significant pressures on the HEIs to evolve, innovate and digitally transform (Wheeler, 2020). Strong alignment is required to drive the significant change, referred to as digital transformation. As such, BITA remains critical to institutional and industry success. Unfortunately, Luftman and Kempiah (2007) demonstrate the industry does not have strong BITA, comparatively. This research, using the Strategic Alignment Model (SAM) as a foundation, identified specific behaviors occurring in a cross-collaborative project that demonstrate outcome alignment. Therefore, the findings can influence increased BITA at the institutional and industry level. The identification and alignment of impactful behaviors provide a template or project plan for future projects and institutional alignment. Specifically, the research found that many identified behaviors related to the new themes rather than operational or project-oriented tasks supporting Luftman's SAM competencies.

This research demonstrates that HEIs must work to improve BITA through new themes and SAM competency dimensions. These include change management,

relationship building, leadership, project management, problem solving, training related to job skills, and demonstrating value measures. HELs must build and demonstrate strong relationships, collaboration, change leadership, and communication skills while also understanding institutional outcomes. Each of these newly identified themes and SAM competency dimensions align to human capital development practices. As such, this researcher concludes that HELs could benefit by employing human capital development practices. HELs' collective execution of skills often aligned to human capital development can increase HEI BITA and drive successful transformation.

Human Capital Development is defined as the “process of developing and unleashing expertise for the purpose of improving individual team, work processes, and organizational system performance” (Swanson & Holt, 2009 p. 4). A human capital development practitioner must act as a change agent and strategic partner (Gaudet, 2016). As such, they must understand and align the organizational goals to work processes, team performance, and individual performance (Price, 2016). More so, they must align strategy with execution organizationally and individually.

Like a human capital development practitioner, HELs must work to align HEIs' institutional outcomes with efficient processes, collaboration, and training to achieve transformation. The technology leader must earn a seat at the decision-making table or on the Executive Cabinet through active participation, collaboration, and leadership. Brooks (2020) states that the technology leader's knowledge and influence on operations and strategy can increase institutional and technological alignment (Brooks, 2020). To do so, technology leaders must transition to a position of business partner and transformative leader by spending more time collaborating with business leaders, planning, and

innovating, and less time on IT related operations (Brooks, 2020; Grajeck, 2018). Also like an HCD practitioner, technology leaders cannot drive the transition alone.

Understanding human capital development practices can benefit organizational performance by improving HEL strategic partnerships and the institution's work processes. HELs should strive for digital transformation using BITA and technology as a foundation to prioritize strategic planning and relationship building to identify, discuss, and operationalize institutional goal attainment. All HELs must understand the institutional and departmental goals, the related work processes, and the transformative actions required to achieve stated goals. As leaders collaborate to focus on achieving clearly stated goals, relationship building, change management and work processes they can positively impact institutional and industry performance.

Digital transformation, needed to address and overcome current industry challenges, requires strong BITA. HEIs who achieve BITA will be those who address the industry's current challenges by integrating technology through strategy, leadership alignment, and collaboration. The study also outlines contextual, economic, and technological themes that present opportunities for advancement or threats to existence. Wheeler (2020) warns that looking myopically at the themes threatens the institutions likelihood of success. Therefore, like human capital development practices suggest, HELs should view these themes holistically and as opportunities to address individual team, work process, and institutional performance (Swanson & Holt, 2009). HELs must leverage relationships, change management, communication, demonstrating value metrics, and job skills to drive partnerships, technology, collaboration and ultimately

BITA. Doing so presents the opportunity for HEIs to increase BITA, overcome institutional challenges, and thrive in the current ever-changing industry.

### Summary

Chapter five provides a summary of the research by restating the purpose, the objectives, identifying results, discussing the findings, and providing conclusions. The chapter begins restating the study's purpose to identify behaviors HELs perceive to impact BITA competencies. The research objectives—exploring identified behaviors, determining competencies and impact—and a short description of the qualitative research design characteristics follow. The researcher then summarizes the qualitative phenomenological research design and the semi-structured focus group methods used in data collection. The results that identify alignment to SAM competencies, three SAM competency dimensions, and six new themes follows the description of research design and methods. A discussion of three findings, recommendations, and conclusions precedes recommendations of future research opportunities related to investigating higher education leadership behaviors among Executive Cabinet members, future investigations of this study's findings, and ROI analysis. The chapter ends with a short discussion of limitations before the conclusions which align the study's purpose and findings to human capital development practices and principles. The conclusions illustrate similarities between HCD and study findings. Specific conclusions discuss commonalities between HCD practitioners and technology leader paths to Executive Cabinet membership, the correlation between the study's findings and HCD principles, using HCD principles to achieve BITA and digital transformation in the higher education landscape.



## APPENDIX A –Recruiting emails

### INTRODUCTION & SOLICITATION COMMUNICATION

To: [Referred Name]—Institutional Leader

From: Katie Lynch-Holmes, USM email address

Subject: Invitation to participate in IT Business Alignment in Higher  
Education Study

Dear [Insert Referred Name],

Your name was provided to me by [insert referrer's name here] as a strong candidate and potential participant in my doctoral research. [Referrer's name] and I believe you would be a strong participant because of your institutional leadership and recent participation in a cross-collaborative project involving technology.

This research focuses on the behaviors that drive IT and Business Alignment within the higher education industry. As such, I am asking institutional leaders who've participated in cross-collaborative projects involving technology to identify and prioritize which behaviors or tasks were impactful for the project. For the purpose of this research, I define:

**Institutional leaders** as the highest-ranking member in leadership or executive roles overseeing departmental units. Examples of leader positions included, but are not limited to:

President, Academic Provost, Academic Vice Provost, Chief Business Officer, Chief Financial Officer, Chief Information Officer, Vice President for Enrollment, Vice President of Student Affairs, or other roles that commonly participate in the executive cabinet meetings

**Cross-Collaborative project** related to institutional outcomes as a project of institutional importance involving two or more departments (including IT). Please note: The importance of the project is at your discretion. The research will not collect descriptions of your project.

Your participation is voluntary, and all responses will remain confidential.

The study involves two phases which are below listed.

Phase One:

**Completion of a registration survey.** This survey should take approximately 10 minutes. It includes consent to participate, institutional and personal demographic information, and preferred date and time for electronic focus group session. All collected information will remain confidential and not linked to your Phase 2 responses.

The link to the survey is included here:

[https://forms.office.com/Pages/ResponsePage.aspx?id=vqQ9fyInLkO\\_p2QIDR6x3InrsTGEOeVFv4E6Day39R9URFNUVDg4WkpLTzY5OTQyM1JTMzdYMkdFTi4u](https://forms.office.com/Pages/ResponsePage.aspx?id=vqQ9fyInLkO_p2QIDR6x3InrsTGEOeVFv4E6Day39R9URFNUVDg4WkpLTzY5OTQyM1JTMzdYMkdFTi4u)

Phase Two:

**Participation in electronic focus group session via Zoom webinar.** Your participation should take approximately 1 hour, and all information will remain confidential. While you can participate from a location of your choosing, a stable internet connection is required. Your participation in this session will take place with one or more higher education leaders who have also recently conducted cross-collaborative projects. You will be asked to answer three questions in the electronic focus group session. Your responses will lead to the identification, categorization, and prioritization of tasks or behaviors that impact alignment.

Thank you for your time and consideration. If you have any questions regarding the study, please contact the researcher, Katie Lynch-Holmes via email or phone 901-651-0815.

If you choose to participate, please follow this link

[https://forms.office.com/Pages/ResponsePage.aspx?id=vqQ9fyInLkO\\_p2QIDR6x3InrsTGEOeVFv4E6Day39R9URFNUVDg4WkpLTzY5OTQyM1JTMzdYMkdFTi4u](https://forms.office.com/Pages/ResponsePage.aspx?id=vqQ9fyInLkO_p2QIDR6x3InrsTGEOeVFv4E6Day39R9URFNUVDg4WkpLTzY5OTQyM1JTMzdYMkdFTi4u)

and complete the registration survey by Wednesday, Oct. 7<sup>th</sup>

Sincerely,

Katie Lynch-Holmes

PhD Candidate

The University of Southern Mississippi

#### REMINDER INTRODUCTION & SOLICITATION COMMUNICATION

To: [Referred Name]—Institutional Leader

From: Katie Lynch-Holmes, USM email address

Subject: Invitation to participate in IT Business Alignment in Higher Education Study

Dear [Insert Referred Name],

In my original email on (insert date), I mentioned (Referrer's name) recommended you as a strong candidate and potential participant in my doctoral research. Your perspectives on behaviors that drive IT and Business alignment within higher education would be beneficial to this research study. And your leadership and recent participant in a cross-collaborative project involving technology make your insights even more valuable.

This research focuses on the behaviors that drive IT and Business Alignment within the higher education industry. As such, I am asking institutional leaders who've participated in cross-collaborative projects involving technology to identify and prioritize which behaviors or tasks were impactful for the project.

Your participation is voluntary, and all responses will remain confidential. If you choose not to participate, please follow the link to the Registration Survey and decline participation. Once submitted, I will refrain from any further email invitations.

The study involves two phases which are below listed.

Phase One:

**Completion of a registration survey.** This survey should take approximately 10 minutes. It includes consent to participate, institutional and personal demographic information, and preferred date and time for electronic focus group session. All collected information will remain confidential and not linked to your Phase 2 responses.

The link to the survey is included here:

[https://forms.office.com/Pages/ResponsePage.aspx?id=vqQ9fyInLkO\\_p2QIDR6x3InrsTGEOeVFv4E6Day39R9URFNUVDg4WkpLTzY5OTQyM1JTMzdYMkdFTi4u](https://forms.office.com/Pages/ResponsePage.aspx?id=vqQ9fyInLkO_p2QIDR6x3InrsTGEOeVFv4E6Day39R9URFNUVDg4WkpLTzY5OTQyM1JTMzdYMkdFTi4u)

Phase Two:

**Participation in electronic focus group session via Zoom webinar.** Your participation should take approximately 1 hour, and all information will remain confidential. While you can participate from a location of your choosing, a stable internet connection is required. Your participation in this session will take place with one or more higher education leaders who have also recently conducted cross-collaborative projects. You will be asked to answer three questions in the electronic focus group session. Your

responses will lead to the identification, categorization, and prioritization of tasks or behaviors that impact alignment.

Thank you for your time and consideration. If you have any questions regarding the study, please contact the researcher, Katie Lynch-Holmes via email or phone 901-651-0815.

If you choose to participate, please follow this link

[https://forms.office.com/Pages/ResponsePage.aspx?id=vqQ9fyInLkO\\_p2QIDR6x3InrsTGEOeVFv4E6Day39R9URFNUVDg4WkpLTzY5OTQyM1JTMzdYMkdFTi4u](https://forms.office.com/Pages/ResponsePage.aspx?id=vqQ9fyInLkO_p2QIDR6x3InrsTGEOeVFv4E6Day39R9URFNUVDg4WkpLTzY5OTQyM1JTMzdYMkdFTi4u) ) and

complete the registration survey by Oct. 7<sup>th</sup>

Sincerely,

Katie Lynch-Holmes

PhD Candidate

The University of Southern Mississippi

## APPENDIX B –Informed Consent

1

### Informed Consent

This study involves research. Participation in this study is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

The purpose of this study is to determine IT and business leaders' behaviors that demonstrate alignment competencies for higher education.

This study asks participants to identify and categorize behaviors that demonstrate IT-business alignment in cross-collaborative projects.

There are no known physical, psychological, social, or financial research-related risks, inconveniences, or side effects associated with participation in the study.

Determining and prioritizing behaviors that impact business-IT alignment can drive stronger technology alignment in higher education institutions, thereby increasing organizational efficiencies.

Individuals participating in the study will receive a summary of the study's final results.

Data will be kept confidential, and all records will be retained in a password-protected folder and software system accessible only by the researcher using multi-factor authentication.

Participants are asked to provide their personal and institutional demographic information prior to registering for an electronic focus group. Once registered, participants can provide their opinion and feedback related to successful behaviors that drive alignment, utilizing PowerNoodle, an electronic decision engagement solution.

The total time required to participate in the registration process and the electronic focus group is estimated at 1 hour and 10 minutes.

The registration process and demographic information collection is an estimated 10-minute process. Separately, participants will attend a 1-hour synchronous electronic focus group session from any location with dependable internet of their choosing.

The synchronous focus group sessions will be conducted using Zoom web solution and recorded for data collection purposes only. All recordings of the sessions will be retained in a password-protected file using multi-factor authentication. Additionally, these recordings will delete after 30 days.

The researcher works with Ellucian Technology. Participation in this study is unrelated to Ellucian or her role within the company.

This project IRB-20-363 - Higher Education Leaders' Behaviors that Drive Technology Outcome Alignment has been reviewed and approved by the Institutional Review Board of The University of Southern Mississippi (USM), which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5998. Any questions about the research should be directed to Katie Lynch-Holmes at 662-341-1122 or [Katherine.LynchHolmes@USM.edu](mailto:Katherine.LynchHolmes@USM.edu)

Do you consent to participate in this research? \*

Yes


No

Next

## APPENDIX C –Participant Registration Survey

### PAGE ONE

2

Please provide your first and last name. \* 

Enter your answer

3

Please provide your preferred email address, if it is other than the one used for your initial email invitation.

Enter your answer

Next

Focus Group Schedule

Please use the schedule to identify your first, second, and third preferences for focus group participation. The researcher will work to accommodate all first preferences but reserves the right to utilize your second or third selection for focus group planning capacity planning reasons.

Focus Group	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 1		AM		PM			PM
Week 2	PM		AM		AM	AM	

4

Please indicate your preferred time to participate in this focus group

- Week 1: Tuesday Morning
- Week 1: Thursday afternoon
- Week 1: Sunday afternoon
- Week 2: Monday afternoon
- Week 2: Wednesday morning
- Week 2: Friday morning
- Week 2: Saturday morning

5

Please indicate your second preference to participate in this focus group

- Week 1: Tuesday Morning
- Week 1: Thursday afternoon
- Week 1: Sunday afternoon
- Week 2: Monday afternoon
- Week 2: Wednesday morning
- Week 2: Friday morning
- Week 2: Saturday morning

6

Please indicate your third preference to participate in this focus group

- Week 1: Tuesday Morning
- Week 1: Thursday afternoon
- Week 1: Sunday afternoon
- Week 2: Monday afternoon
- Week 2: Wednesday morning
- Week 2: Friday morning
- Week 2: Saturday morning



## PAGE THREE

7

What is your role within this institution?

- Highest ranking technology officer (CIO, CTO, VP of Technology, etc.)
- Highest ranking department or college officer (VP of Academic Affairs, VP of Student Affairs, VP of Finance, etc.)
- Highest ranking institutional officer (President, Chancellor, etc.)
- I choose not to answer this question

8

Do you serve as a member of the Executive Cabinet?

- Yes
- No
- This does not exist at my institution
- I choose not to answer this question

9

In your opinion, how aligned are IT and your institutional strategy?

Please note, departmental or cross-collaborative strategic projects demonstrate institutional strategy. IT represents the people within the IT office as well as the technology operations. IT does not represent hardware, software, networking or infrastructure.

One star--Not Aligned (There is no cross-collaboration. The leaders lack close relationships)  
Two stars--Slightly Aligned (There is a general awareness of goals or projects however cross-collaborative participation is rare)  
Three stars--Moderately Aligned (There is awareness of goals or projects and somewhat consistent cross-collaborative participation)  
Four stars--Strong Alignment (Cross-collaborative goals or projects are well-defined and participation is strong)  
Five stars--Excellent Alignment (IT and Business leaders consistently participate in planning and execution of cross-collaborative projects or goals)



PAGE FOUR

10

How long have you served at this institution?

- Less than one year
- 1-5 years
- 6-10 years
- 11-15 years
- 16 or more years

11

How long have you served in this or a similar role at any higher education institution? Please answer in a number of years

- Less than one year
- 1-5 years
- 6-10 years
- 11-15 years
- 16 or more years

12

What is your age? Please answer in a number of years?

Enter your answer

13

What is your gender?

Enter your answer

Thank you for your time and participation in part one of this study.

Thank you for participating in part one. If you've agreed to the Informed Consent and provided your preferred times, the researcher will send you an electronic meeting invitation to your preferred email address. The calendar invitation will include a Zoom link for the electronic focus group session and instructions to access and utilize the Pownoodle tool. Please note all responses within Pownoodle are anonymous.

Please accept the calendar invitation to formalize your participation. If your preferred date or time is longer available, but you wish to participate, please reply to the researcher to reschedule.

Back

Submit

## APPENDIX D –Calendar Invitation

### CONFIRMATION CALENDAR INVITATION & MESSAGE

To: Participant [Referred Name]  
From: Katie Lynch-Holmes, USM email address  
Title: IT-Business Alignment Electronic Focus Group Session—Katie Lynch-Holmes  
Date: [Selected date]  
Time: [Selected time]  
Location: Zoom Location URL  
Response: Accept, Tentative, Decline  
To: [Referred Name]—Institutional Leader  
From: Katie Lynch-Holmes, USM email address  
Subject: Invitation to participate in IT Business Alignment in Higher Education Study

Dear [Insert Name],

Thank you for completing the Registration Survey and your willingness to participate in the 1-hour electronic focus group session. This email invitation serves as confirmation that you've selected [Insert Date & Time] as your preferred session. Please note, the invitation includes the date, time, and zoom meeting URL required for participation. Please click the "Join Zoom Meeting" located below at the requested time to join the electronic focus group.

Additionally, you can now access the decision engagement space in PowerNoodle which we will use as the foundation for the electronic focus group session. PowerNoodle provides a dedicated decision space that allows diversity of thought without the distractions of social influence, geographical limitations, or group think bias. Our electronic focus group session (include link here) asks three questions:

1. *Please identify any specific behaviors or tasks that contribute to the successful completion of a cross-collaborative project.*
2. *Please indicate the category or categories that most closely represent the identified task or behavior.*
3. *Please prioritize each behavior or tasks level of impact for IT leaders? For Business Leaders? For IT-Business alignment?*

To access your PowerNoodle session, please click the following link (insert link) to enter the decision space.

For more detailed instructions and information regarding the PowerNoodle Session, please review the following video.

## APPENDIX E –IRB Approval letter

Office of  
Research Integrity



118 COLLEGE DRIVE #5125 • HATTIESBURG, MS | 601.266.6576 | USM.EDU/ORI

### NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident template on Cayuse IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.
- Face-to-Face data collection may not commence without prior approval from the Vice President for Research's office.

PROTOCOL NUMBER: IRB-20-363

PROJECT TITLE: Higher Education Leaders' Behaviors that Drive Technology Outcome Alignment

SCHOOL/PROGRAM: Human Capital Development

RESEARCHER(S): Katherine Lynch-Holmes, Dale Lunsford

IRB COMMITTEE ACTION: Approved

CATEGORY: Expedited

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

PERIOD OF APPROVAL: August 25, 2020

A handwritten signature in cursive script that reads "Donald Sacco".

**Donald Sacco, Ph.D.**  
Institutional Review Board Chairperson

APPENDIX F –Participant Identified Behaviors and Competencies

Table A1. Participant Identified Behaviors Demonstrating Communication SAM

Competency

---

Behaviors or tasks identified as communication competency

---

Strong communication skills

Clear communication

Timely communication

Ensure the continual engagement of senior leadership-all the way to the board level if possible.

Regular meetings with all involved parties.

Regular Meetings for updates and decisions

Frequent project updates to exec leadership and the board.

Stay Focused (on the message & purpose)

Convince all parties involved that the project will be a benefit. If agreed, all will put in more effort

Establish an effective project communication plan and communicate, communicate, communicate.

Active Listening (listen to understand client/customer needs)

Using "non-IT" terminology to ensure understanding and alignment

clear vision and charge

Identify a project lead/coordinator/manager.

collaborative communication. Respect and trust among members of team

Create Buy In with why this is important to the whole college

Create a Communication Plan

Part of the comm plan included various methods and often repeating the information various times.

Holding open forums for faculty/staff to ask or comment as well as go through pains/gains activities

Making sure the right persons are at the table throughout each stage of the journey

Establish project charter

Establish dedicated project workspace

Include on-boarding and team building in project plans and timeline

Table A1. (continued)

---

Behaviors or tasks identified as communication competency

---

Create virtual team collaboration space and provide training on how to use effectively  
Integrate kudos into meeting agendas and communications; encourage team members to express thanks  
Hear and heed the voice of the customer  
Validate anecdotal/ "third hand" customer feedback  
Create a public-facing website for the project, including FAQs, communication channels for questions, etc.  
Include external stakeholders outside of your business/organization familiar with your initiative  
Use plain English - not tech jargon  
Be Genuine  
Take time to get to know team members as people  
Assigned co-leads (two or more) for support of each other and continuity if someone leaves  
Held regularly scheduled meetings to create deadlines and for updates  
Determine the need for a formal Change management process and if needed build that in.

---

Table A2. Participant Identified Behaviors Demonstrating SAM Competency

Demonstrate Value Metrics

---

Behaviors or tasks identified as demonstrate value measurement competency

---

Implement formal change management processes. Add a change manager if possible.  
Define clear goals  
Clear picture of what "success" looks like  
Outline Why this project? Why now? What benefits, and for whom?  
Identify critical new data created by this project as well as metadata to be captured in data lakes  
Provide training and determine the best approach for acceptance by the users. "Buy in" is crucial.

Table A2. (continued)

---

Behaviors or tasks identified as demonstrate value measurement competency

---

Ask for feedback from users after going live, most projects benefit greatly with a few small tweaks.  
Ensure working toward a common goal (mission)

Metrics and milestones (accountability and recognize successes along the way)  
Status reporting (clear, concise, consistent)

Establish iterations and release plans

Include team incentives, recognition, rewards in project plans and budgets  
Brand and align the project with a strategic goal or initiative

Establish metrics for success -- expectations for how the service will be better, faster, more efficient  
Reference and incorporate industry research, trends data, and benchmarks in project business case  
Plan to present a case study about the project so artifacts, successes and lessons learned are captured.  
Project a vision of what could be and how it aligns with the success of the institution  
Build a narrative to create positive perceptions of usefulness.  
Create a well-designed evaluation process

---

Table A3. Participant Identified Behaviors Demonstrating Governance SAM

Competency

---

Behaviors or tasks identified as governance competency

---

Executive sponsorship engagement

Broad participation across the campus from varied constituencies that will or could be impacted  
Working to identify the actual problem(s) we're trying to solve.  
Working to develop a shared sense of purpose

Developing a shared sense of purpose

Being willing to at least identify sacred cows...even if they cannot be addressed/resolved  
Create a project charter and repeatedly re-visit it.



Table A3. (continued)

---

Behaviors or tasks identified as governance competency
The ability to create actionable steps
cross-functional teams to have collaborative input
Create an effective project and task management system everyone will use.
Agree on timelines and duties. Rushing a project may cause animosity or stress - less chance of success.
Test. Test and Test. Then test again with a small pilot group. First impressions matter.
Defined metrics and outcomes. Milestones towards completion
Executive level "sponsor" of project/initiative
IT needs to be at the decision-making table
Accountability for each process and department
Clearly define roles and responsibilities
Arrive at a common understanding of the goals and objectives (including timeline)
Clear and consistent executive sponsorship.
Establish a project charter
Articulation of project methodology: Waterfall vs. Agile
Once project begins, the main role of the executive is to remove barriers
Established tiered governance model with executive sponsors, steering group, project leaders
Keep good records of meetings, decisions, rationales, expenses, results

---

Table A4. Participant Identified Behaviors Demonstrating Job Skills and Proficiency

SAM Competency

Behaviors or tasks identified as job skills & proficiency competency
Ensuring the various people/departments involved have the resource available to do their parts in time.
IT having a broad perspective/understanding of the institution goals/mission
Keeping the human component & business problem top of mind
Understanding of tools and resources being used to collaborate
Comfort in voicing experience balanced with listening to outnumbered individuals
Have competent technical persons to quickly address issues once implementation occurs.
Adopt and orient project team members on Agile methodology
Adopt and orient project team members to design thinking
Project leaders and sponsors serve as role models for the team members, committed to the common good.
Building relationships and having strong self-management skill set to lead team through the project

Table A5. Participant Identified Behaviors Demonstrating “Other” Competency

Behaviors or tasks identified as “other”	
Other Title	Other description
Inclusive Leadership	Addressing Diversity Equity & Inclusion (DEI) issues so that implicit bias and other challenges do not get in the way.
Project Management Software	Project management software
Inclusive Leadership	Creating an environment where questions can be asked, and ideas can be offered.
Leadership	Research what institution is a thought leader to understand what they did and assess against our needs

Table A5. (continued)

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Behaviors or tasks identified as “other”	
Leadership	Understand and address the need for change management. CM is a critical success factor.
Leadership	Gain senior executives' support and make that support visible throughout the project.

---

Table A6. Participant Identified Behaviors Demonstrating Scope & Architecture SAM  
Competency

---

Behaviors or tasks identified as scope & architecture competency

---

Develop realistic budgets and timelines and stick to them.  
Manage expectations  
Define problem and opportunity  
Create deadlines and phases of the project  
The use of a project manager or collaboration tool to track tasks.

Clear and agreed upon timeline  
Formalized project process  
Develop realistic budgets and timelines and stick to them.  
Avoid customization and scope creep.  
Clear description of responsibilities  
Clearly defining and communicating what is in and out of scope  
Answer these questions: 1. What is supposed to happen? 2. What is supposed to NOT happen?  
Establish priorities up front  
Clear project goals up-front that can be repeatedly communicated to the campus.  
Brainstorming session to define outcomes  
Keep in mind that there is never unanimous agreement in higher ed.  
Anticipate barriers of implementing or upgrading system to meet needs prior to decision to move forward  
Making sure the timeline is realistic and understood by all parties.  
Define problem/opportunity  
Manage expectations  
Don't get held up on perfection

---

Table A7. Participant Identified Behaviors Demonstrating Partnership SAM Competency

---

Behaviors or tasks identified as partnership competency
Strong relationships with the team lead.
The team members trust each other.
Strong relationship building abilities
Trust
Adopting a problem-solving stance (vs. blaming)
Positive engagement - an attitude of "how do we solve the problem" not, "we can't do that..."
Empathy
Humility...especially to acknowledge what we do and do not know
Being willing to candidly explore and share across the 3 lenses of Strategy, Culture and Politics
Being willing to check your ego
Prioritizing the needs of the institution
Especially for long projects, team-building exercises and fun activities help
Being willing to directly address issues
Being willing to be vulnerable
IT champion and administrative champion
Building trust by first demonstrating trust of the participants involved
Bringing snacks/coffee to those involved to help with encouragement and motivation
Getting multi-perspectives on the project - what is success for the functional unit, end-user, and IT.
Identifying the "right" players that need to be part of discussion/action at each phase of the journey.
Proactive Collaboration (reach out and connect to explore and understand)
Identify the proper stake holders
Inclusion of individuals w/ various backgrounds & areas of expertise
Identify core project team members and ensure representation of diversity of thought and experiences
Include others in planning to build ownership
Building trust while establishing clear outcomes so the team knows the "why" behind the project.
Train IT in functional area they are working in to gain context

---

APPENDIX G –SAM Competency Dimensions and New Themes Aligned With  
Participant Identified Behaviors and SAM Competencies

Table A1. New Themes and SAM Competency Dimensions aligned to SAM Competency and Participant Identified Behaviors

---

Attributes:

New theme: Change Management

SAM Competency: Communication

Clear vision and charge

Convince all parties involved that the project will be a benefit. If agreed, all will put in more effort

Create Buy In with why this is important to the whole college

Determine the need for a formal Change management process and if needed build that in.

Establish an effective project communication plan and communicate, communicate, communicate.

Establish project charter

Holding open forums for faculty/staff to ask or comment as well as go through pains/gains activities

Making sure the right persons are at the table throughout each stage of the journey.

Part of the comm plan included various methods and often repeating the information various times.

SAM Competency: Demonstrate Value Measurement

Brand and align the project with a strategic goal or initiative

Ensure working toward a common goal (mission)

Implement formal change management processes. Add a change manager if possible.

Plan to present a case study about the project so artifacts, successes and lessons learned are captured.

Project a vision of what could be and how it aligns with the success of the institution

Provide training and determine the best approach for acceptance by the users. "Buy in" is crucial.

Why this project? Why now? What benefits, and for whom?

SAM Competency: Governance

Arrive at a common understanding of the goals and objectives (including timeline)

Broad participation across the campus from varied constituencies that will or could be impacted

Developing a shared sense of purpose

Table A1. (continued)

- Establish a project charter
- Established tiered governance model with executive sponsors, steering group, project leaders
- Working to develop a shared sense of purpose
- SAM Competency: Other
  - Understand and address the need for change management. CM is a critical success factor.
- SAM Competency: Partnership
  - Getting multi-perspectives on the project - what is success for the functional unit, end-user, and IT.
  - Identify the proper stake holders
  - Identifying the "right" players that need to be part of discussion/action at each phase of the journey.
  - Include others in planning to build ownership
- SAM Competency: Scope & Architecture
  - Anticipate barriers of implementing or upgrading system to meet needs prior to decision to move forward
  - Manage expectations
- SAM Competency Dimension: Communication
  - SAM Competency: Communication
    - Clear communication
    - Create a Communication Plan
    - Create a public-facing website for the project, including FAQs, communication channels for questions.
    - Regular Meetings
    - Regular meetings with all involved parties.
    - Strong communication skills
    - Timely communication
- SAM Competency Dimension: Demonstrate Value Measurement
  - SAM Competency: Communication
    - Frequent project updates to exec leadership and the board.
  - SAM Competency: Demonstrate Value Measurement
    - Ask for feedback from users after going live, most projects benefit greatly with a few small tweaks.
    - Clear goals
    - Clear picture of what "success" looks like
    - Create a well designed evaluation process
    - Establish metrics for success -- expectations for how the service will be better, faster, more efficient
    - Identify critical new data created by this project as well as metadata to be captured in data lakes

Table A1. (continued)

	Reference and incorporate industry research, trends data, and benchmarks in project business case
	Status reporting (clear, concise, consistent)
SAM Competency: Governance	Create a project charter and repeatedly re-visit it. defined metrics and outcomes. Milestones towards completion
SAM Competency: Scope & Architecture	Clear project goals up-front that can be repeatedly communicated to the campus.
SAM Competency Dimension	Job Skills or Proficiency
SAM Competency: Job Skills or Proficiency	Adopt and orient project team members on Agile methodology Adopt and orient project team members to design thinking Ensuring the various people/departments involved have the resource available to do their parts in time. Have competent technical persons to quickly address issues once implementation occurs. Understanding of tools and resources being used to collaborate
New theme: Leadership	
SAM Competency: Communication	Ensure the continual engagement of senior leadership-all the way to the board level if possible. Include external stakeholders outside of your business/organization familiar with your initiative
SAM Competency: Governance	Clear and consistent executive sponsorship. Executive level "sponsor" of project/initiative Executive sponsorship engagement Once project begins, the main role of the executive is to remove barriers
SAM Competency: Job Skills or Proficiency	Comfort in voicing experience balanced with listening to outnumbered individuals Project leaders and sponsors serve as role models for the team members, committed to the common good.
SAM Competency: Other	Addressing Diversity Equity & Inclusion (DEI) issues so that implicit bias and other challenges do not get in the way Gain senior executives' support and make that support visible throughout the project. Research what institution is a thought leader to understand what they did and assess against our needs.



Table A1. (continued)

	SAM Competency: Partnership
	Identify core project team members and ensure representation of diversity of thought and experiences
	IT champion and administrative champion
New theme: Problem Solving	
	SAM Competency: Communication
	Validate anecdotal/ "third hand" customer feedback
	SAM Competency: Governance
	Working to identify the actual problem(s) we're trying to solve.
	SAM Competency: Partnership
	Adopting a problem solving stance (vs. blaming)
	Being willing to candidly explore and share across the 3 lenses of Strategy, Culture and Politics
	Prioritizing the needs of the institution
	SAM Competency: Scope & Architecture
	Brainstorming session
	Define problem/opportunity
	Don't get held up on perfection
	Establish priorities up front
New theme: Project Management	
	SAM Competency: Communication
	Create virtual team collaboration space and provide training on how to use effectively
	Establish dedicated project work space
	held regularly scheduled meetings to create deadlines and for updates
	Identify a project lead/coordinator/manager.
	Stay Focused
	SAM Competency: Demonstrate Value Measurement
	Establish iterations and release plans
	SAM Competency: Governance
	Accountability for each process and department
	Agree on timelines and duties. Rushing a project may cause animosity or stress - less chance of success.
	Articulation of project methodology: Waterfall vs. Agile
	Clearly define roles and responsibilities
	Create an effective project and task management system everyone will use.
	keep good records of meetings, decisions, rationales, expenses, results
	Test Test and Test. Then test again with a small pilot group. First impressions matter.
	The ability to create actionable steps

Table A1. (continued)

SAM Competency: Other

Project management software

SAM Competency: Scope & Architecture

Answer these questions: 1. What is supposed to happen? 2. What is supposed to NOT happen?

Avoid customization and scope creep.

Brainstorming session

Clear and agreed upon time line

Clear description of responsibilities

Clearly defining and communicating what is in and out of scope

Create deadlines and phases of the project

Develop realistic budgets and time lines and stick to them.

Formalized project process

Making sure the timeline is realistic and understood by all parties.

The use of a project manager or collaboration tool to track tasks.

New theme: Relationship Building

SAM Competency: Communication

Active Listening (listen to understand client/customer needs)

assigned co-leads (two or more) for support of each other and continuity if someone leaves

Be Genuine

collaborative communication. Respect and trust among members of team

Hear and heed the voice of the customer

Include on-boarding and team-building in project plans and timeline

Take time to get to know team members as people

use plain English - not tech jargon

Using "non-IT" terminology to ensure understanding and alignment

SAM Competency: Demonstrate Value Measurement

Build a narrative to create positive perceptions of usefulness.

SAM Competency: Governance

Being willing to at least identify sacred cows...even if they cannot be addressed/resolved

cross-functional teams to have collaborative input

IT at the decision making table

SAM Competency: Job Skills or Proficiency

building relationships and having strong self-management skill set to lead team through the project

IT having a broad perspective/understanding of the institution goals/mission

Keeping the human component top of mind

Table A1. (continued)

SAM Competency: Other

Creating an environment where questions can be asked and ideas can be offered.

SAM Competency: Partnership

Being willing to be vulnerable

Being willing to check your ego

Being willing to directly address issues

Building trust by first demonstrating trust of the participants involved building trust while establishing clear outcomes so the team knows the "why" behind the project.

Empathy

Especially for long projects, team-building exercises and fun activities help.

Humility...especially to acknowledge what we do and do not know

Inclusion of individuals w/ various backgrounds & areas of expertise

Positive engagement - an attitude of "how do we solve the problem" not, "we can't do that..."

Proactive Collaboration (reach out and connect to explore and understand)

Strong relationship building abilities

Strong relationships with the team leads

The team members trust each other.

Train IT in functional area they are working in to gain context

Trust

New theme: Rewards & Recognition

SAM Competency: Communication

Integrate kudos into meeting agendas and communications; encourage team members to express thanks

SAM Competency: Demonstrate Value Measurement

Include team incentives, recognition, rewards in project plans and budgets

Metrics and milestones (accountability and recognize successes along the way)

SAM Competency: Partnership

Bringing snacks/coffee to those involved to help with encouragement and motivation

---

APPENDIX H –Participant Identified Impact Ratings by SAM Competency and Behaviors

Table A1. Participant Identified Impact Ratings by SAM Competency and Behaviors

Participant-identified competency and behavior	Average competency rating	Impact Rating
Communication	3.32	
Active Listening (listen to understand client/customer needs)		4.83
Impact for Business Leader		4.83
Impact for IT Leader		4.83
Impact for IT-Business Alignment		4.83
Assigned co-leads (two or more) for support of each other and continuity if someone leaves		2.52
Impact for Business Leader		2.71
Impact for IT Leader		2.57
Impact for IT-Business Alignment		2.29
Be Genuine		3.62
Impact for Business Leader		3.86
Impact for IT Leader		3.57
Impact for IT-Business Alignment		3.43
Clear communication		3.04
Impact for Business Leader		2.88
Impact for IT Leader		3.38
Impact for IT-Business Alignment		2.88
Clear vision and charge		4.89
Impact for Business Leader		4.83
Impact for IT Leader		4.83
Impact for IT-Business Alignment		5.00
Collaborative communication. Respect and trust among members of team		4.61
Impact for Business Leader		4.50
Impact for IT Leader		4.67
Impact for IT-Business Alignment		4.67
Convince all parties involved that the project will be a benefit. If agreed, all will put in more effort		4.22
Impact for Business Leader		4.17
Impact for IT Leader		4.17

Table A1. (continued)

Impact for IT-Business Alignment	4.33
Create a Communication Plan	3.50
Impact for Business Leader	3.50
Impact for IT Leader	3.50
Impact for IT-Business Alignment	3.50
Create a public-facing website for the project, including FAQs, communication channels for questions, etc.	2.19
Impact for Business Leader	2.43
Impact for IT Leader	2.14
Impact for IT-Business Alignment	2.00
Create Buy In with why this is important to the whole college	4.11
Impact for Business Leader	4.33
Impact for IT Leader	3.50
Impact for IT-Business Alignment	4.50
Create virtual team collaboration space and provide training on how to use effectively	3.14
Impact for Business Leader	3.14
Impact for IT Leader	3.00
Impact for IT-Business Alignment	3.29
Determine the need for a formal Change management process and if needed build that in.	2.62
Impact for Business Leader	2.86
Impact for IT Leader	2.57
Impact for IT-Business Alignment	2.43
Ensure the continual engagement of senior leadership-all the way to the board level if possible.	3.21
Impact for Business Leader	3.13
Impact for IT Leader	3.50
Impact for IT-Business Alignment	3.00
Establish an effective project communication plan and communicate, communicate, communicate.	4.22
Impact for Business Leader	4.00
Impact for IT Leader	4.17
Impact for IT-Business Alignment	4.50
Establish dedicated project work space	2.43
Impact for Business Leader	2.43
Impact for IT Leader	2.43
Impact for IT-Business Alignment	2.43
Establish project charter	3.19
Impact for Business Leader	3.29
Impact for IT Leader	3.00

Table A1. (continued)

Impact for IT-Business Alignment	3.29
Frequent project updates to exec leadership and the board.	3.21
Impact for Business Leader	2.88
Impact for IT Leader	3.38
Impact for IT-Business Alignment	3.38
Hear and heed the voice of the customer	4.29
Impact for Business Leader	4.57
Impact for IT Leader	4.14
Impact for IT-Business Alignment	4.14
Held regularly scheduled meetings to create deadlines and for updates	3.10
Impact for Business Leader	3.14
Impact for IT Leader	2.86
Impact for IT-Business Alignment	3.29
Holding open forums for faculty/staff to ask or comment as well as go through pains/gains activities	3.00
Impact for Business Leader	3.00
Impact for IT Leader	3.00
Impact for IT-Business Alignment	3.00
Identify a project lead/coordinator/manager.	3.94
Impact for Business Leader	3.83
Impact for IT Leader	3.83
Impact for IT-Business Alignment	4.17
Include external stakeholders outside of your business/organization familiar with your initiative	2.76
Impact for Business Leader	3.00
Impact for IT Leader	2.57
Impact for IT-Business Alignment	2.71
Include on-boarding and team-building in project plans and timeline	2.86
Impact for Business Leader	2.86
Impact for IT Leader	2.86
Impact for IT-Business Alignment	2.86
Integrate kudos into meeting agendas and communications; encourage team members to express thanks	2.67
Impact for Business Leader	3.14
Impact for IT Leader	2.43
Impact for IT-Business Alignment	2.43
Making sure the right persons are at the table throughout each stage of the journey.	3.00
Impact for Business Leader	3.00

Table A1. (continued)

Impact for IT Leader	3.00
Impact for IT-Business Alignment	3.00
Part of the comm plan included various methods and often repeating the information various times.	2.67
Impact for Business Leader	3.00
Impact for IT Leader	3.00
Impact for IT-Business Alignment	2.00
Regular Meetings	2.54
Impact for Business Leader	2.50
Impact for IT Leader	2.88
Impact for IT-Business Alignment	2.25
Regular meetings with all involved parties.	2.38
Impact for Business Leader	2.13
Impact for IT Leader	2.88
Impact for IT-Business Alignment	2.13
Stay Focused	3.25
Impact for Business Leader	3.13
Impact for IT Leader	3.50
Impact for IT-Business Alignment	3.13
Strong communication skills	3.21
Impact for Business Leader	3.00
Impact for IT Leader	3.63
Impact for IT-Business Alignment	3.00
Take time to get to know team members as people	3.52
Impact for Business Leader	3.86
Impact for IT Leader	3.71
Impact for IT-Business Alignment	3.00
Timely communication	3.17
Impact for Business Leader	3.00
Impact for IT Leader	3.50
Impact for IT-Business Alignment	3.00
Use plain English - not tech jargon	3.81
Impact for Business Leader	3.57
Impact for IT Leader	4.00
Impact for IT-Business Alignment	3.86
Using "non-IT" terminology to ensure understanding and alignment	3.50
Impact for Business Leader	3.83
Impact for IT Leader	2.50
Impact for IT-Business Alignment	4.17

Table A1. (continued)

Validate anecdotal/ "third hand" customer feedback	2.90
Impact for Business Leader	3.14
Impact for IT Leader	2.71
Impact for IT-Business Alignment	2.86
Demonstrate Value Measurement	3.47
Ask for feedback from users after going live, most projects benefit greatly with a few small tweaks.	4.06
Impact for Business Leader	4.17
Impact for IT Leader	3.67
Impact for IT-Business Alignment	4.33
Brand and align the project with a strategic goal or initiative	3.57
Impact for Business Leader	3.86
Impact for IT Leader	3.29
Impact for IT-Business Alignment	3.57
Build a narrative to create positive perceptions of usefulness.	3.38
Impact for Business Leader	4.00
Impact for IT Leader	2.71
Impact for IT-Business Alignment	3.43
Clear goals	3.04
Impact for Business Leader	2.88
Impact for IT Leader	3.38
Impact for IT-Business Alignment	2.88
Clear picture of what "success" looks like	2.96
Impact for Business Leader	2.50
Impact for IT Leader	3.38
Impact for IT-Business Alignment	3.00
Create a well designed evaluation process	3.67
Impact for Business Leader	3.71
Impact for IT Leader	3.57
Impact for IT-Business Alignment	3.71
Ensure working toward a common goal (mission)	5.44
Impact for Business Leader	5.33
Impact for IT Leader	5.33
Impact for IT-Business Alignment	5.67
Establish iterations and release plans	2.67
Impact for Business Leader	3.00
Impact for IT Leader	2.00
Impact for IT-Business Alignment	3.00
Establish metrics for success -- expectations for how the service will be better, faster, more efficient	4.24



Table A1. (continued)

Impact for Business Leader	4.29
Impact for IT Leader	4.29
Impact for IT-Business Alignment	4.14
Identify critical new data created by this project as well as metadata to be captured in data lakes	2.00
Impact for Business Leader	2.00
Impact for IT Leader	2.17
Impact for IT-Business Alignment	1.83
Implement formal change management processes. Add a change manager if possible.	2.46
Impact for Business Leader	2.00
Impact for IT Leader	2.88
Impact for IT-Business Alignment	2.50
Include team incentives, recognition, rewards in project plans and budgets	2.29
Impact for Business Leader	2.71
Impact for IT Leader	2.14
Impact for IT-Business Alignment	2.00
Metrics and milestones (accountability& recognize successes along the way)	4.39
Impact for Business Leader	4.50
Impact for IT Leader	4.33
Impact for IT-Business Alignment	4.33
Plan to present a case study about the project so artifacts, successes and lessons learned are captured.	2.33
Impact for Business Leader	2.71
Impact for IT Leader	2.29
Impact for IT-Business Alignment	2.00
Project a vision of what could be and how it aligns with the success of the institution	4.19
Impact for Business Leader	4.57
Impact for IT Leader	3.86
Impact for IT-Business Alignment	4.14
Provide training and determine the best approach for acceptance by the users. "Buy in" is crucial.	4.67
Impact for Business Leader	4.83
Impact for IT Leader	4.33
Impact for IT-Business Alignment	4.83
Reference and incorporate industry research, trends data, and benchmarks in project business case	3.33
Impact for Business Leader	3.29

Table A1. (continued)

Impact for IT Leader	3.29
Impact for IT-Business Alignment	3.43
Status reporting (clear, concise, consistent)	4.00
Impact for Business Leader	4.33
Impact for IT Leader	3.50
Impact for IT-Business Alignment	4.17
Why this project? Why now? What benefits, and for whom?	3.17
Impact for Business Leader	2.75
Impact for IT Leader	3.63
Impact for IT-Business Alignment	3.13
Governance	3.34
Accountability for each process and department	4.39
Impact for Business Leader	4.33
Impact for IT Leader	4.33
Impact for IT-Business Alignment	4.50
Agree on timelines and duties. Rushing a project may cause animosity or stress - less chance of success.	4.39
Impact for Business Leader	4.00
Impact for IT Leader	4.50
Impact for IT-Business Alignment	4.67
Arrive at a common understanding of the goals and objectives (including timeline)	3.50
Impact for Business Leader	3.50
Impact for IT Leader	3.50
Impact for IT-Business Alignment	3.50
Articulation of project methodology: Waterfall vs. Agile	3.00
Impact for Business Leader	3.00
Impact for IT Leader	3.00
Impact for IT-Business Alignment	3.00
Being willing to at least identify sacred cows...even if they cannot be addressed/resolved	2.25
Impact for Business Leader	2.00
Impact for IT Leader	2.38
Impact for IT-Business Alignment	2.38
Broad participation across the campus from varied constituencies that will or could be impacted	2.71
Impact for Business Leader	2.50
Impact for IT Leader	2.88
Impact for IT-Business Alignment	2.75
Clear and consistent executive sponsorship.	3.25
Impact for Business Leader	3.25

Table A1. (continued)

Impact for IT Leader	3.25
Impact for IT-Business Alignment	3.25
Clearly define roles and responsibilities	3.67
Impact for Business Leader	3.75
Impact for IT Leader	3.75
Impact for IT-Business Alignment	3.50
Create a project charter and repeatedly re-visit it.	2.58
Impact for Business Leader	2.25
Impact for IT Leader	2.88
Impact for IT-Business Alignment	2.63
Create an effective project and task management system everyone will use.	3.61
Impact for Business Leader	3.33
Impact for IT Leader	3.67
Impact for IT-Business Alignment	3.83
Cross-functional teams to have collaborative input	2.88
Impact for Business Leader	2.50
Impact for IT Leader	3.13
Impact for IT-Business Alignment	3.00
Defined metrics and outcomes. Milestones towards completion	4.56
Impact for Business Leader	4.50
Impact for IT Leader	4.50
Impact for IT-Business Alignment	4.67
Developing a shared sense of purpose	2.92
Impact for Business Leader	2.63
Impact for IT Leader	3.25
Impact for IT-Business Alignment	2.88
Establish a project charter	3.25
Impact for Business Leader	3.25
Impact for IT Leader	3.25
Impact for IT-Business Alignment	3.25
Established tiered governance model with executive sponsors, steering group, project leaders	3.29
Impact for Business Leader	3.29
Impact for IT Leader	3.00
Impact for IT-Business Alignment	3.57
Executive level "sponsor" of project/initiative	4.11
Impact for Business Leader	4.00
Impact for IT Leader	4.00
Impact for IT-Business Alignment	4.33

Table A1. (continued)

Executive sponsorship engagement	2.71
Impact for Business Leader	2.63
Impact for IT Leader	3.00
Impact for IT-Business Alignment	2.50
IT at the decision making table	4.22
Impact for Business Leader	3.50
Impact for IT Leader	4.50
Impact for IT-Business Alignment	4.67
Keep good records of meetings, decisions, rationales, expenses, results	2.90
Impact for Business Leader	2.71
Impact for IT Leader	2.86
Impact for IT-Business Alignment	3.14
Once project begins, the main role of the executive is to remove barriers	2.67
Impact for Business Leader	3.00
Impact for IT Leader	3.00
Impact for IT-Business Alignment	2.00
Test Test and Test. Then test again with a small pilot group. First impressions matter.	4.22
Impact for Business Leader	3.67
Impact for IT Leader	4.83
Impact for IT-Business Alignment	4.17
The ability to create actionable steps	2.46
Impact for Business Leader	2.00
Impact for IT Leader	3.13
Impact for IT-Business Alignment	2.25
Working to develop a shared sense of purpose	3.33
Impact for Business Leader	3.00
Impact for IT Leader	3.63
Impact for IT-Business Alignment	3.38
Working to identify the actual problem(s) we're trying to solve.	3.33
Impact for Business Leader	3.00
Impact for IT Leader	3.75
Impact for IT-Business Alignment	3.25
Job Skills or Proficiency	3.04
Adopt and orient project team members on Agile methodology	2.33
Impact for Business Leader	2.00
Impact for IT Leader	3.00
Impact for IT-Business Alignment	2.00

Table A1. (continued)

Adopt and orient project team members to design thinking	2.43
Impact for Business Leader	2.14
Impact for IT Leader	2.57
Impact for IT-Business Alignment	2.57
Building relationships and having strong self-management skill set to lead team through the project	3.67
Impact for Business Leader	3.86
Impact for IT Leader	3.86
Impact for IT-Business Alignment	3.29
Comfort in voicing experience balanced with listening to outnumbered individuals	2.58
Impact for Business Leader	3.25
Impact for IT Leader	2.25
Impact for IT-Business Alignment	2.25
Ensuring the various people/departments involved have the resource available to do their parts in time.	2.58
Impact for Business Leader	2.38
Impact for IT Leader	2.88
Impact for IT-Business Alignment	2.50
Have competent technical persons to quickly address issues once implementation occurs.	2.75
Impact for Business Leader	3.00
Impact for IT Leader	3.00
Impact for IT-Business Alignment	2.25
IT having a broad perspective/understanding of the institution goals/mission	3.78
Impact for Business Leader	3.17
Impact for IT Leader	4.17
Impact for IT-Business Alignment	4.00
Keeping the human component top of mind	3.78
Impact for Business Leader	4.17
Impact for IT Leader	3.33
Impact for IT-Business Alignment	3.83
Project leaders and sponsors serve as role models for the team members, committed to the common good.	3.43
Impact for Business Leader	3.57
Impact for IT Leader	3.29
Impact for IT-Business Alignment	3.43
Understanding of tools and resources being used to collaborate	3.08
Impact for Business Leader	2.25
Impact for IT Leader	3.50

Table A1. (continued)

Impact for IT-Business Alignment		3.50
Other	2.99	
Gain senior executives' support and make that support visible throughout the project.		4.94
Impact for Business Leader		4.83
Impact for IT Leader		4.67
Impact for IT-Business Alignment		5.33
Research what institution is a thought leader to understand what they did and assess against our needs.		2.22
Impact for Business Leader		2.33
Impact for IT Leader		2.33
Impact for IT-Business Alignment		2.00
Understand and address the need for change management. CM is a critical success factor.		3.50
Impact for Business Leader		3.67
Impact for IT Leader		3.33
Impact for IT-Business Alignment		3.50
Addressing Diversity Equity & Inclusion (DEI) issues so that implicit bias and other challenges do not get in the way		2.63
Impact for Business Leader		2.38
Impact for IT Leader		3.00
Impact for IT-Business Alignment		2.50
Creating an environment where questions can be asked and ideas can be offered.		3.00
Impact for Business Leader		2.75
Impact for IT Leader		3.38
Impact for IT-Business Alignment		2.88
Project management software		1.63
Impact for Business Leader		1.50
Impact for IT Leader		2.13
Impact for IT-Business Alignment		1.25
Partnership	2.92	
Adopting a problem-solving stance (vs. blaming)		2.83
Impact for Business Leader		2.75
Impact for IT Leader		3.13
Impact for IT-Business Alignment		2.63
Being willing to be vulnerable		2.00
Impact for Business Leader		1.75
Impact for IT Leader		2.38
Impact for IT-Business Alignment		1.88

Table A1. (continued)

Being willing to candidly explore and share across the 3 lenses of Strategy, Culture and Politics	2.29
Impact for Business Leader	2.25
Impact for IT Leader	2.63
Impact for IT-Business Alignment	2.00
Being willing to check your ego	2.50
Impact for Business Leader	2.25
Impact for IT Leader	2.88
Impact for IT-Business Alignment	2.38
Being willing to directly address issues	2.75
Impact for Business Leader	2.50
Impact for IT Leader	3.00
Impact for IT-Business Alignment	2.75
Bringing snacks/coffee to those involved to help with encouragement and motivation	1.42
Impact for Business Leader	1.13
Impact for IT Leader	1.50
Impact for IT-Business Alignment	1.63
Building trust by first demonstrating trust of the participants involved	2.17
Impact for Business Leader	2.00
Impact for IT Leader	2.50
Impact for IT-Business Alignment	2.00
Building trust while establishing clear outcomes so the team knows the "why" behind the project.	4.05
Impact for Business Leader	4.14
Impact for IT Leader	4.00
Impact for IT-Business Alignment	4.00
Empathy	1.71
Impact for Business Leader	1.63
Impact for IT Leader	1.88
Impact for IT-Business Alignment	1.63
Especially for long projects, team-building exercises and fun activities help.	2.33
Impact for Business Leader	1.88
Impact for IT Leader	2.50
Impact for IT-Business Alignment	2.63
Getting multi-perspectives on the project - what is success for the functional unit, end-user, and IT.	4.17
Impact for Business Leader	4.17

Impact for IT Leader	4.17
Impact for IT-Business Alignment	4.17
Humility...especially to acknowledge what we do and do not know	2.04
Impact for Business Leader	1.88
Impact for IT Leader	2.50
Impact for IT-Business Alignment	1.75
Identify core project team members and ensure representation of diversity of thought and experiences	3.43
Impact for Business Leader	4.00
Impact for IT Leader	2.71
Impact for IT-Business Alignment	3.57
Identify the proper stake holders	4.22
Impact for Business Leader	4.17
Impact for IT Leader	4.33
Impact for IT-Business Alignment	4.17
Identifying the "right" players that need to be part of discussion/action at each phase of the journey.	4.22
Impact for Business Leader	4.33
Impact for IT Leader	4.17
Impact for IT-Business Alignment	4.17
Include others in planning to build ownership	3.29
Impact for Business Leader	3.29
Impact for IT Leader	2.86
Impact for IT-Business Alignment	3.71
Inclusion of individuals w/ various backgrounds & areas of expertise	3.50
Impact for Business Leader	3.50
Impact for IT Leader	3.50
Impact for IT-Business Alignment	3.50
IT champion and administrative champion	2.42
Impact for Business Leader	2.25
Impact for IT Leader	2.63
Impact for IT-Business Alignment	2.38
Positive engagement - an attitude of "how do we solve the problem" not, "we can't do that..."	2.71
Impact for Business Leader	2.63
Impact for IT Leader	3.13
Impact for IT-Business Alignment	2.38
Prioritizing the needs of the institution	2.83
Impact for Business Leader	2.75
Impact for IT Leader	2.88
Impact for IT-Business Alignment	2.88



Table A1. (continued)

Proactive Collaboration (reach out and connect to explore and understand)	3.83
Impact for Business Leader	3.67
Impact for IT Leader	3.83
Impact for IT-Business Alignment	4.00
Strong relationship building abilities	2.54
Impact for Business Leader	2.13
Impact for IT Leader	3.00
Impact for IT-Business Alignment	2.50
Strong relationships with the team leads	2.38
Impact for Business Leader	2.25
Impact for IT Leader	2.63
Impact for IT-Business Alignment	2.25
The team members trust each other.	3.33
Impact for Business Leader	3.00
Impact for IT Leader	3.75
Impact for IT-Business Alignment	3.25
Train IT in functional area they are working in to gain context	3.43
Impact for Business Leader	3.57
Impact for IT Leader	3.29
Impact for IT-Business Alignment	3.43
Trust	3.50
Impact for Business Leader	3.38
Impact for IT Leader	3.75
Impact for IT-Business Alignment	3.38
Scope & Architecture	2.94
Answer these questions: 1. What is supposed to happen? 2. What is supposed to NOT happen?	3.00
Impact for Business Leader	2.63
Impact for IT Leader	3.25
Impact for IT-Business Alignment	3.13
Anticipate barriers of implementing or upgrading system to meet needs prior to decision to move forward	2.75
Impact for Business Leader	2.75
Impact for IT Leader	2.75
Impact for IT-Business Alignment	2.75
Avoid customization and scope creep.	3.08
Impact for Business Leader	2.63
Impact for IT Leader	3.75
Impact for IT-Business Alignment	2.88

Table A1. (continued)

Brainstorming session	1.83
Impact for Business Leader	1.75
Impact for IT Leader	2.13
Impact for IT-Business Alignment	1.63
Clear and agreed upon time line	2.79
Impact for Business Leader	2.63
Impact for IT Leader	3.13
Impact for IT-Business Alignment	2.63
Clear description of responsibilities	2.54
Impact for Business Leader	2.25
Impact for IT Leader	2.88
Impact for IT-Business Alignment	2.50
Clear project goals up-front that can be repeatedly communicated to the campus.	3.63
Impact for Business Leader	3.38
Impact for IT Leader	4.00
Impact for IT-Business Alignment	3.50
Clearly defining and communicating what is in and out of scope	2.96
Impact for Business Leader	2.75
Impact for IT Leader	3.38
Impact for IT-Business Alignment	2.75
Create deadlines and phases of the project	4.44
Impact for Business Leader	4.67
Impact for IT Leader	4.50
Impact for IT-Business Alignment	4.17
Define problem/opportunity	4.24
Impact for Business Leader	4.29
Impact for IT Leader	4.14
Impact for IT-Business Alignment	4.29
Develop realistic budgets and timelines and stick to them.	3.33
Impact for Business Leader	3.13
Impact for IT Leader	3.63
Impact for IT-Business Alignment	3.25
Don't get held up on perfection	3.14
Impact for Business Leader	3.43
Impact for IT Leader	3.29
Impact for IT-Business Alignment	2.71
Establish priorities up front	2.83
Impact for Business Leader	2.63

Table A1. (continued)

Impact for IT Leader	3.25
Impact for IT-Business Alignment	2.63
Formalized project process	1.38
Impact for Business Leader	1.13
Impact for IT Leader	1.75
Impact for IT-Business Alignment	1.25
Keep in mind that there is never unanimous agreement in higher ed. :-)	2.08
Impact for Business Leader	1.88
Impact for IT Leader	2.25
Impact for IT-Business Alignment	2.13
Making sure the timeline is realistic and understood by all parties.	2.83
Impact for Business Leader	2.50
Impact for IT Leader	3.50
Impact for IT-Business Alignment	2.50
Manage expectations	3.71
Impact for Business Leader	4.00
Impact for IT Leader	3.29
Impact for IT-Business Alignment	3.86
The use of a project manager or collaboration tool to track tasks.	2.38
Impact for Business Leader	2.13
Impact for IT Leader	2.75
Impact for IT-Business Alignment	2.25

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## REFERENCES

- Afandi, W. (2017). The impact of strategic IT-business alignment: Evidence from Saudi private small and midsize enterprises. *International Journal of Business and Social Science*, 6(10), 48-63.
- Alase, A. (2017). The Interpretative Phenomenological Analysis (IPA): A Guide to a Good Qualitative Research Approach. *International Journal of Education and Literacy Studies*, 5(2), 9–19. <https://doi.org/gdxrnx>
- 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://doi.org/f2gp>
- American Council of Trustees and Alumni. (2017, April 4). *Bold leadership, real reform 2.0: Improving efficiency, cutting costs, and expanding college opportunity* [Annual reporting on institutional cost efficiency]. <https://www.goacta.org/resource/bold-leadership-real-reform-2-0>
- Anderson, J. Q., Boyles, J. L., & Rainie, L. (2012). *The future impact of the internet on higher education: Experts expect more-efficient collaborative environments and new grading schemes; they worry about massive online courses, the shift away from on-campus life* [Pew Research Report]. <http://www.pewinternet.org/topics/Future-of-the-internet.aspx>
- Arandjelovic, P., Bulin, L., & Khan, N. (2015, February 1). Why CIOs should be business strategy partners. *Digital McKinsey*. <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/why-cios-should-be-business-strategy-partners>

- Asken, M. & Fritz, S. (Oct. 15, 2019) EDUCAUSE Annual Conference. *Partnering Effectively with IT: A Provost's Prospective*. Association of Governing Boards of Universities and Colleges. (2017). *The AGB 2017 trustee index*.  
<https://www.agb.org/reports/2017/the-agb-2017-trustee-index>.
- Association of Governing Boards of Universities and Colleges. (2018). *The AGB 2017 Trustee Index* [Annual survey report assessing trustee projections].  
<https://agb.org/reports-2/the-agb-2017-trustee-index/>
- Astin, A. W., & Astin, H. S. (2000). Leadership reconsidered: Engaging higher education in social change. *Higher Education*. Paper 133.  
<http://digitalcommons.unomaha.edu/slcehighered/133>
- Bates, A. W. (2000). *Managing technological change: Strategies for college and university leaders*. San Francisco, CA: Josey-Bass.
- Beiryaei, H. S. & Jamporzmay M. (2011). IT-Business alignment challenge: Enterprise architecture as an enabler for strategic alignment. *Journal of Production and Operations Management*, 1(1), 87-102.  
<https://doaj.org/article/f70d6a7d67a94d2292f1640b87d18225>
- Bernstein, E., Shore, J., & Lazer, D. (2018, August 13). How intermittent breaks in interaction improve collective intelligence. *Proceedings of the National Academy of Sciences*, 115(35), 8734-8739. <https://doi.org/10.1073/pnas.1802407115>
- Bichsel, J. (2015). *IT service delivery in higher education: Current methods and future direction*. <https://doi.org/f2gx>

- Brooks, D. (2020, Oct 9). EDUCAUSE quick poll results: Senior IT leadership. *EDUCAUSE*. <https://er.educause.edu/blogs/2020/10/educause-quickpoll-results-senior-it-leadership>
- Brown, W. A. (2018). The Chief Information Officer in Higher Education, 2018 report [Annual report]. *EDUCAUSE*. <https://library.educause.edu/resources/2018/12/the-chief-information-officer-in-higher-education-2018-report>
- Building. (n.d.) In *Merriam-Webster.com dictionary*. Building. Retrieved December 15, 2020, from <https://www.merriam-webster.com/dictionary/building>
- Busteed, B. (2017, June 1). Do you regret your college choices? [Survey report findings] *Gallup*. <https://news.gallup.com/opinion/gallup/211070/regret-college-choices.aspx>
- Carter, S. M., & Little, M. (2007). Justifying Knowledge, Justifying Method, Taking Action: Epistemologies, Methodologies, and Methods in Qualitative Research. *Qualitative Health Research*, 17(10), 1316–1328. <https://doi.org/10.1177/1049732307306927>
- Catalano, D. (2019, April 29). 3 Major changes to the role of the higher ed CIO [Blog post]. <https://er.educause.edu/blogs/sponsored/2019/4/3-major-changes-to-the-role-of-the-higher-ed-cio>
- Chen, L., Brasca, C., Hojnacki, M., & Krishnan, C. (2019, May 22). Transformation 101: How universities can overcome financial headwinds to focus on their mission. <https://www.mckinsey.com/business-functions/transformation/our->

[insights/transformation-101-how-universities-can-overcome-financial-headwinds-to-focus-on-their-mission](#)

- Chenali, R.J. (2011). Interviewing the investigator: Strategies for addressing instrumentation and researcher bias concerns in qualitative research. *The Qualitative Report*, 16(1), 255-262. <https://nsuworks.nova.edu/tqr/vol16/iss1/16>
- Conner, D. (1993). *Managing at the speed of change: How resilient managers succeed and prosper where others fail*. New York: Villard Books.
- Constable, R., Cowell, M., Crawford, S. Z., Golden, D., Hartvigsen, J., Morgan, K., Mudgett, A., Parrish, K., Thomas, L., Thompson, E., Turner, R., & Palmquist, M (2012). *Ethnography, Observational Research, and Narrative Inquiry*. Writing@CSU. Colorado State University. <https://writing.colostate.edu/guides/guide.cfm?guideid=63> .
- Cooperrider, D. L., & Sorenson, P. (2005). *Appreciative inquiry: Foundations in positive organization development*. Chicago, IL: Stipes Publishing.
- Corbin, J., & Strauss, A. (2008). Strategies for qualitative data analysis. *Basics of Qualitative Research. Techniques and procedures for developing grounded theory*, 3. <https://dx.doi.org/10.4135/9781452230153>
- Creswell, J.W. (2012). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (4<sup>th</sup> Ed). Boston, MA: Pearson.
- Creswell, J. & Miller, D. (2000) Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124-130. [http://dx.doi.org/10.1207/s15430421tip3903\\_2](http://dx.doi.org/10.1207/s15430421tip3903_2)

- Crowe, C. (2018, December 4). Moody's gives higher education a negative outlook, again. *The Chronicle of Higher Education*.  
<https://www.chronicle.com/article/moodys-gives-higher-ed-a-negative-outlook-again>
- Davis, B., & McDonagh, J. (2015). The evolving role of the Chief Information Officer. In Wadhwa, M. & Harper, A. (Ed.), *Technology, Innovation, and Enterprise Transformation*, 207-232. IGI Global. <https://doi.org/f2g3>
- Delany, M. (2019, February 19). Digital transformation: The quest to rethink campus operations. *EdTech: Focus on Higher Education*.  
<https://edtechmagazine.com/higher/article/2019/02/digital-transformation-quest-rethink-campus-operations>
- Deloitte University Press. (2017). *Navigating legacy: Charting the course to business value* [2016–2017 global CIO survey results].  
[https://www2.deloitte.com/content/dam/Deloitte/pe/Documents/about-deloitte/DUP\\_2016-2017-CIO-survey.pdf](https://www2.deloitte.com/content/dam/Deloitte/pe/Documents/about-deloitte/DUP_2016-2017-CIO-survey.pdf)
- DePietro, A. (2020, Jun. 2). Impact of Coronavirus (Covid-19) on college tuition and finances. *Forbes*.  
<https://www.forbes.com/sites/andrewdepietro/2020/06/02/impact-covid-19-tuition-finance/?sh=1faac2944b88>
- DeSanto, J. P. (2012). *The evolution of the higher education polymath: How the role of the chief information officer is impacted by information technology industry forces* [Doctoral dissertation, University of Pennsylvania]. The Leadership Board



for CIO Archive. [https://lbcio.org/wp-content/uploads/2012/10/Dissertation-Final\\_May-2012.pdf](https://lbcio.org/wp-content/uploads/2012/10/Dissertation-Final_May-2012.pdf)

Desrochers, D. & Hurlburt, S. (2016). Trends in college spending 2003-2013: Where does the money come from? Where does it go? [Report] *Delta Cost Project at American Institutes for Research (AIR)*. <https://www.air.org/resource/trends-college-spending-2003-2013-where-does-money-come-where-does-it-go-what-does-it-buy>

Dlamini, R. S. (2015). The role of the strategic and adaptive Chief Information Officer in higher education. *Education Information Technology*, 20, 113-140.  
<https://doi.org/10.1007/s10639-013-9269-5>

Easton, G., Easton, A., & Belch, M. (2003). An experimental investigation of electronic focus groups. *Information & Management*, 40(8), 717–727.  
[https://doi.org/10.1016/S0378-7206\(02\)00098-8](https://doi.org/10.1016/S0378-7206(02)00098-8)

Eckel, P., & Trower, C. (2019, February 14). Stop planning! *Inside Higher Ed*.  
<https://www.insidehighered.com/views/2019/02/14/colleges-need-rethink-strategic-planning-opinion>

EDUCAUSE (2015, April 27). *Technology in higher education: Defining the strategic leader* [White paper summary of survey and focus group findings from strategic leadership research conducted in conjunction with JISC].  
<https://er.educause.edu/articles/2015/4/technology-in-higher-education-defining-the-strategic-leader>

- Ellucian (2018). Students looking for personalized digital experience: Does higher education deliver?[White paper and survey results from national student survey]  
<https://www.ellucian.com/assets/emea-ap/white-paper/whitepaper-emea-students-are-looking-personalized-digital-experiences.pdf>
- Freedman, R. (2017). *The economics of American higher education* [Master's Thesis, The City University of New York]. The CUNY Academic Works.  
[https://academicworks.cuny.edu/gc\\_etds/2081](https://academicworks.cuny.edu/gc_etds/2081)
- Fusch, P. & Ness, L. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, 20(9), 1408-1416.  
<http://www.nova.edu/ssss/QR/QR20/9/fusch1.pdf>
- Galliers, R., & Leidner, D. (2003). *Strategic information management: Challenges and strategies in managing information systems* (3rd ed.). Butterworth & Heinemann.  
[https://www.casrilanka.com/casl/images/stories/PDBF/strategic\\_information\\_management.pdf](https://www.casrilanka.com/casl/images/stories/PDBF/strategic_information_management.pdf)
- Gerow, J., Thatcher, J., & Grover, V. (2014). Six types of IT-business strategic alignment: An investigation of the constructs and their measurement. *European Journal of Information Systems*, 24(5), 465-491.  
<http://dx.doi.org/doi:10.1057/ejis.2014.6>
- Giorgi, A. (2012). The descriptive phenomenological psychological method. *Journal of Phenomenological psychology*, 43(1), 3-12.  
<https://doi.org/10.1163/156916212X632934>

- Goldin, C. & Katz, L.F. (1999). The shaping of higher education: The formative years in United States 1890-1940. *The Journal of Economic Perspectives*, 13(1), 37-62.  
<https://doi.org/10.3386/w6537>
- Grajek, S. (2018, January 29). Top 10 IT Issues, 2018: The remaking of higher education. *EDUCAUSE review*. <https://er.EDUCAUSE.edu/articles/2018/1/top-10-it-issues-2018-the-remaking-of-higher-education>
- Grajek, S. & Brooks, C. (2020, March 13). Are IT business continuity plans ready for Covid-19? *EDUCAUSE Review*. <https://er.educause.edu/blogs/2020/3/are-it-business-continuity-plans-ready-for-covid-19#:~:text=Although%20some%20institutions%20are%20well,the%20business%20continuity%20and%20disaster>
- Grawe, N. (2018, July 29). Demographic changes pose challenges for higher education [Magazine]. *Econofact*. <https://econofact.org/demographic-changes-pose-challenges-for-higher-education>.
- Grawe, N. (2019, Nov.1). The enrollment crash goes deeper than demographics: Colleges can't stop what's coming, but they can be better prepared. *The Chronicle Review*. <https://www.chronicle.com/article/the-enrollment-crash-goes-deeper-than-demographics>
- Haggans, M. (2016). The future of the American campus. *On The Horizon*, 23(1), 25-32.  
<https://doi.org/10.1108/oth-11-2014-0038>
- Hancock, M., Lakhavani, F., Pillay, S., & Weil, D. (2020). The integrative CIO: Repositioning & reinforcing the role of IT leadership as an integral strategic partner of institutional leadership in supporting institutional missions. In S. Grajek

(Ed.), *Top 10 IT Issues 2020*. <https://er.educause.edu/articles/2020/1/top-10-it-issues-2020-the-drive-to-digital-transformation-begins>

Henderson, J., & Venkatraman, N. (1999). Strategic alignment: Leveraging information technology for transforming organizations. *IBM Systems Journal*, 38(2.3), 472-484. <https://doi.org/10.1147/sj.1999.5387096>

Hill, S. (2019, February 21). Why you should understand the experience economy. *Ucapture*. <https://www.capturehighered.com/university-advancement/understanding-experience-economy/>

Holloman, A. K. (2014). *Structures and relationship between the business executive and information technology at the university: A mixed method study* [Doctoral dissertation, University of Nebraska-Lincoln].

DigitalCommons@UniversityofNebraska-Lincoln.

<https://digitalcommons.unl.edu/cehsdiss/205/>

Huer, J. B. (2018). *Higher education technology leadership: A delphi study* (Publication No. 2149672642) [Doctoral dissertation from Lamar University, Beaumont]. ProQuest Dissertations & Theses Global.

Jaschik, S., & Lenderman, D. (Eds.). (2018). *2018 survey of college and university presidents: A study by Inside Higher Ed and Gallup* [White paper and annual report]. <https://www.insidehighered.com/booklet/2018-survey-college-and-university-presidents>

Johnson, R. B. (2014, November 17). Creative destruction of higher education institutions. *Journal of Research Initiatives*, 1(2), 1-8.

<http://digitalcommons.uncfsu.edu/jri/vol1/iss2/12>

- Kim, J. (2016, August 8). How much does higher ed spend on IT? *Inside Higher Ed*.  
<https://www.insidehighered.com/blogs/technology-and-learning/how-much-does-higher-ed-spend-it>
- Lach-Smith, B. (2010). Application of strategic institutional-information technology alignment model in four-year institutions of higher education (Publication No. 3422226) [Doctoral dissertation, Indiana State University]. Proquest Dissertation and Thesis Global.
- Lalovic-Hand, M. (2017). IT must be at the decision-making table in higher education. *CIO Review*. <https://k12.cioreview.com/cioviewpoint/it-must-be-at-the-decisionmaking-table-in-higher-education-nid-23399-cid-143.htm>
- Lapovsky, L. (2018, February 6). The changing business model for colleges and universities. *Forbes*. <https://www.forbes.com/sites/lucielapovsky/2018/02/06/the-changing-business-model-for-colleges-and-universities/?sh=28dc28a15ed5>
- Larkin, M., Shaw, R. & Flowers, P. (2018). Multi-perspectival designs and processes in interpretative phenomenological analysis research. *Journal of Qualitative Research in Psychology*, 16(2), 182-198,  
<https://doi.org/10.1080/14780887.2018.1540655>
- Leedy, P. D., & Ormrod, J. E. (2010). *Practical Research: Planning and Design* (9 ed.). New York: Merrill.
- Lewis, B. (2018, March 1). ISO/IEC 27000—Key International Standards for Information Security Revised. <https://www.iso.org/news/ref2266.html>

- Litchman, G. (2017, September 18). Six big, hairy, inevitable changes on school's horizons [Blog post]. <https://www.nextgenlearning.org/articles/six-big-hairy-inevitable-changes-on-schools-horizons>
- Luftman, Jerry. (2003). Assessing It/Business Alignment. *IS Management*, 20, 9-15. <https://doi.org/dkjpc8>
- Luftman, J., Lyytinen, K., & Zvi, T. (2015). Enhancing the measurement of information technology (IT) business alignment and its influence on company performance. *Journal of Information Technology*, 32. <http://dx.doi.org/10.1057/jit.2015.23>
- Luftman, J., & Kempaiah, R. M. (2007). An update on business-IT alignment: A line has been drawn. *MIS Q. Executive*, 6(3). <https://aisel.aisnet.org/misqe/vol6/iss3/5>
- Maddux, C., & Johnson, D. (2010, December 15). Global Trends and Issues in Information Technology in Education. *Computers in The Schools*, 145-154. <https://doi.org/10.1080/07380569.2010.523888>
- Marcus, J. (2019, Aug. 14). New college communities custom-built for retirees. *AARP*. <https://www.aarp.org/retirement/planning-for-retirement/info-2019/colleges-with-retirement-communities.html>
- Marken, S. (2019, April 12). A crisis in confidence in higher ed. *Gallup*. <https://news.gallup.com/opinion/gallup/248492/crisis-confidence-higher.aspx>
- Mathers, B. (2019, June). *Design thinking and strategy*. Presentation presented at Ellucian Global Enablement workshop, virtual delivery.
- McLean, M. (2019). *Essential leadership competencies for college presidents in a metrics-driven community college system* [Doctoral dissertation, University of Southern Mississippi]. Aquila: A Showcase of Scholarship Research and

Creativity at the University of Southern Mississippi.

<https://aquila.usm.edu/dissertations/1653>

Merisotis, J. (2015). *America needs talent: Attracting, educating & deploying the 21st-century workforce* (1st ed.). RosettaBooks.

Merriam, S., & Grenier, R. (2019). *Qualitative research in practice: Examples for discussion and analysis* (2<sup>nd</sup> ed.). Josey-Bass Publications.

Merriam, S. & Tisdell, E. (2016). *Qualitative research: A guide to design and implementation* (4<sup>th</sup> ed.). San Francisco, CA: Josey-Bass Publications.

Mims, S. (2016, September 2). *Starving the beast* [Video file]. Retrieved from [https://www.amazon.com/dp/B01N6XEK1Q?ref\\_=imdbref\\_tt\\_wbr\\_aiv&tag=imdbtag\\_tt\\_wbr\\_aiv-20](https://www.amazon.com/dp/B01N6XEK1Q?ref_=imdbref_tt_wbr_aiv&tag=imdbtag_tt_wbr_aiv-20)

Mitchell, M., Leachman, M., & Masteron, K. (2017). *A lost decade in higher education funding state cuts have driven up tuition and reduced quality*. Center for Budget and Planning Priorities. <https://www.cbpp.org/research/state-budget-and-tax/a-lost-decade-in-higher-education-funding>

Morgan, J. (2020, August 13). *14 Top CEOs share their definition of 'Leadership', What's Yours?* The Future of Work. <https://medium.com/jacob-morgan/14-top-ceos-share-their-definition-of-leadership-whats-yours-2b89a58576a6>

Morse, W. (2017 February 1). *Coming in from the cold: The critical role IT must play at smaller institutions. The evolution: Destiny solutions.* [https://evollution.com/managing-institution/higher\\_ed\\_business/coming-in-from-the-cold-the-critical-role-it-must-play-at-smaller-institutions/](https://evollution.com/managing-institution/higher_ed_business/coming-in-from-the-cold-the-critical-role-it-must-play-at-smaller-institutions/)

Moretti, E. (2012). *The new geography of jobs*. Houghton Mifflin Harcourt.

- Myatt, T. (2017). *Information technology skills maturity: Examining the moderating effect on IT effectiveness relationships in Independent higher education* (Publication No. 10804205) [Doctoral dissertation, Anderson University]. ProQuest Dissertation and Thesis Global.
- National Center for Educational Statistics. (2018). *Integrated Postsecondary Education Data System (IPEDS)*. National Center for Education Statistics Dataset. <https://nces.ed.gov/ipeds/use-the-data>
- Nielsen, T., Howard, C., Rowsell-Jones, A., & Lowendahl, J. (2017). *The 2018 CIO agenda: Mastering the new job of the CIO*. <https://www.gartner.com/en/documents/3803526/the-2018-cio-agenda-mastering-the-new-job-of-the-cio>
- Oblinger, D. (2019, January). *Education for the next generation*. Paper presented at the Ellucian Global Kick Off, Baltimore, MD, United States.
- O'Brien, J. (2020, May 5). More than a lifetime. *InsideHigherEd*. <https://www.insidehighered.com/views/2020/05/05/covid-19-has-demonstrated-how-technology-higher-ed-major-strategic-asset-opinion>
- O'Brien, J. (2020, Oct 29). Strategic IT: What got us here won't get us there. *EDUCAUSE Review*. <https://er.educause.edu/articles/2018/10/strategic-it-what-got-us-here-wont-get-us-there>
- Office of Educational Technology. (2017). *Reimagining the role of technology in higher education* [Supplement to National Education Technology Plan]. <https://tech.ed.gov/files/2017/01/Higher-Ed-NETP.pdf>



- Papp, R. (2001). *Strategic Information Technology: Opportunities for Competitive Advantage*. IGI Global. <https://doi.org/10.4018/978-1-87828-987-2>
- Paul, K. (2017). Introducing Interpretive Approach of Phenomenological Research Methodology in Environmental Philosophy: A Mode of Engaged Philosophy in the Anthropocene. *International Journal of Qualitative Methods*.  
<https://doi.org/10.1177/1609406917724916>
- Pelletier, C. (2016). Connecting student engagement to student satisfaction. *Journal of Assessment and Institutional Effectiveness*, 6(2), 123-141.  
<http://dx.doi.org/doi:10.5325/jasseinsteffe.6.2.0123>
- Petkovic, I. (2018). Digital transformation in higher education. *Journal of Applied Technical and Educational Sciences*, 8(4), 77-89.  
<https://doi.org/10.24368/jates.v8i4.55>
- Pietkiewicz, I., & Smith, J. (2014) A practical guide to using interpretative phenomenological analysis in qualitative research analysis. *Psychological Journal*, 18(2), 361-369. <https://doi.org/gfzcng>
- Perkins, B. (2018, April 12). What is change management? A guide to organizational transformation. *CIO*. <https://www.cio.com/article/2439314/change-management-change-management-definition-and-solutions.html>
- Pihakis, J., Sigurdson, E., Meneer, E., & Whittum, K. (2017, August 21). *Route to the top: Chief information officer in higher education*. Russel Reynolds Associates.  
<https://www.russellreynolds.com/insights/thought-leadership/route-to-the-top-chief-information-officers-in-higher-education>

- Post, L. (2017, August 29). The cloud goes to college to control higher-education costs [Magazine]. *Forbes*. <https://www.forbes.com/sites/oracle/2017/08/29/the-cloud-goes-to-college-to-control-higher-education-costs/?sh=7409049b5530>
- Project Management Institute (PMI) (2021). *What is project management?* Project Management Institute. <https://www.pmi.org/about/learn-about-pmi/what-is-project-management>
- Prince, M. E. (2016). *A strategic assessment of the Higher Education industry: Applying Porter's five forces for industry analysis* [Paper presentation]. Southeastern Decision Sciences Institute Annual Conference, Blacksburg, VA, United States.
- Reinitz, B. (2019, January 30). 2019 Exploring the Role of Enterprise IT in Digital Transformation [Blog post]. <https://er.EDUCAUSE.edu/blogs/2019/1/2019-exploring-the-role-of-enterprise-it-in-digital-transformation>
- Relationship. (n.d.) In *Merriam-Webster.com dictionary*. Relationship. Retrieved 15 December 2020, <https://www.merriam-webster.com/dictionary/relationship>
- Renaud, A. (2016). Is SAM still alive? A bibliometric and interpretive mapping of the strategic alignment research field. *The Journal of Strategic Information Systems*, 25(2), 75-103. <https://doi.org/10.1016/j.jsis.2016.01.002>
- Reksoatmodjo, W., Hartono, J., Djunaedi, A., & Utomo, H. (2012). An exploratory study on alignment between IT and business strategies. *Gadjah Mada International Journal of Business*, 14(2), 139-162. <http://dx.doi.org/10.22146/gamaijb.5441>
- Reward. (n.d.). In *Merriam-Webster.com dictionary*. Retrieved on 15 December 2020, <https://www.merriam-webster.com/dictionary/reward>

- Ribeiro, R (2020, April 20). Business continuity: How solid is higher education's plan B? *EdTech*. <https://edtechmagazine.com/higher/article/2020/04/business-continuity-how-solid-higher-eds-plan-b>
- Robertson, T. R. (2015). *The relationship between information technology maturity and business alignment in higher education: A quantitative investigation* (Publication No. 3714442). [Doctoral dissertation, Capella University]. ProQuest Dissertation and Theses Global.
- Reksoatmodjo, W., Hartono, J., Djunaedi, A., & Utomo, H. (2012). Exploratory Study on Alignment Between IT and Business Strategies. *Gadjah Mada International Journal of Business*. 14(2). 139-162.  
<https://doi.org/10.22146/gamaijb.5441>
- Saldana, J. (2015). *The coding manual for qualitative researcher* (3<sup>rd</sup> ed.). Sage Publications.
- Salmons, J. (2015). *Qualitative online interviews* (2<sup>nd</sup> ed.). Sage Publications.
- Santilli, N. (2020). *Integrated planning in a VUCA environment: Advice you need in the age of COVID-19* [White Paper Report]. The Society for College and University Planning. <https://www.scup.org/wp-content/uploads/2020/04/SCUP-Report-Integrated-Planning-in-VUCA.pdf>
- Sellingo, J. (2016). *2026 the decade ahead: The seismic shifts transforming the future of higher education* [Annual report ebook available for purchase]. Chronicle of Higher Education.
- Sellingo, J. (2017, May 26). Forget the marketing gimmicks: It's time for colleges to cut costs. [Newspaper article]. *Washington Post*.

<https://www.washingtonpost.com/news/grade-point/wp/2017/05/26/forget-the-marketing-gimmicks-its-time-for-colleges-to-cut-costs/>

Simone, J. (2020). How the CIO role is expanding on campus.

<https://edtechmagazine.com/higher/article/2020/01/how-cio-role-expanding-campus>

Smith, A. (2015). *The relationship between the strategic thinking capability and IT alignment maturity of Chief Information Officers (CIO) and senior IT leadership in higher education: An exploratory study* (Publication No. 3733874) [Doctoral dissertation, George Fox University]. ProQuest Dissertation and Theses Global.

Smith, A. & Eatough, V. (2019) Looking forward: Conceptual and methodological developments in Interpretative Phenomenological Analysis: Introduction to the special issue, *Qualitative Research in Psychology*, 16(2), 163-165.

<https://doi:10.1080/14780887.2018.1540620>

Smith, J. A., & Osborn, M. (2003). *Interpretative phenomenological analysis*. In J. A. Smith (Ed.), *Qualitative psychology: A practical guide to research methods* (p. 51–80). Sage Publications, Inc.

Soliman, M., & Karia, N. (2017). Antecedents for the success of the adoption of organizational ERP among higher education institutions and competitive advantage in Egypt. *Engineering, Technology, & Applied Science Research*, 7, 1719-1724. <https://doi.org/10.5281/zenodo.809523>

Strout, T. D., DiFazio, R. L., & Vessey, J. A. (2017). Technology-enhanced focus groups as a component of instrument development. *Nurse researcher*, 25(1), 16–23.

<https://doi.org/10.7748/nr.2017.e1458>

- Sutin, S. E. (2018, January). Reforming higher education from within: Lessons learned from other mature sectors of the economy. *International Journal of Educational Development*, 58, 18-25. <https://doi.org/10.1016/j.ijedudev.2016.11.003>
- Todd, N. (2011). *Leadership in higher education: The CIO role and the leadership team* (Publication No. 3490568) [Doctoral dissertation]. ProQuest Dissertation and Theses Global.
- Urbell, R. (2020, Jan 13). Why the convenience university will rule higher ed. *Edsurge*. <https://www.edsurge.com/news/2020-01-13-why-the-convenience-university-will-rule-higher-ed>
- Valbrun, M. (2019, May 10). Discount rates hit record highs. *Inside Higher Ed*. <https://www.insidehighered.com/news/2019/05/10/nacubo-report-shows-tuition-discounting-trend-continuing-unabated>
- Vitters, C., Ford, M., & Braunsdorf, J. (2018). Significant risks facing higher education: Taking an enterprise approach to risk management. [Deloitte Development white paper]. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/public-sector/us-top-risks-higher-education.pdf>
- Weiss, J. W., & Anderson, D. (2004). CIOs and IT professionals as change agents, risk and stakeholder managers: A field study. *Engineering Management Journal*, 16(2), 13-18. <http://dx.doi.org/10.1080/10429247.2004.11415244>
- Wheeler, B. (2020). The CIO agenda for a decade of converging curves (plus cliffs and clouds). *EDUCAUSEREVIEW*, 2020(1), p. 24-34. <https://er.educause.edu/articles/2020/2/the-cio-agenda-for-a-decade-of-converging-curves-plus-cliffs-and-clouds>

Witt, R., & Coyne, K. P. (2019, September 22). A merger won't save your college. *The Chronicle of Higher Education*. <https://www.chronicle.com/article/a-merger-wont-save-your-college/#:~:text=Many%20in%20higher%20education%20have,phenomenon%20to%20solve%20the%20crisis>

Zimmerman, B. (2018). Higher education in peril? Predictions and reality. Association for American Colleges and Universities: *Liberal Education*, 104(4).  
<https://www.aacu.org/liberaleducation/2018/fall/zimmerman#:~:text=Predictions%20and%20Reality,-By%3A%20Bethany%20Zimmerman&text=A%20Moody's%20Investor%20Service%20report,institutional%20closures%20would%20outpace%20mergers.&text=Each%20year%20brings%20more%20financial,institutions%20experienced%20deficits%20in%202017>