EVALUATING ETHICAL TECHNOLOGY LEADERSHIP: ORGANIZATIONAL CULTURE, LEADER BEHAVIOR, AND A CYBERSPACE ETHIC OF BUSINESS

by

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Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Liberty University, School of Business

December 2020

Abstract

Evaluating ethical technology leadership at a financial services firm in North Carolina requires discovering interactions amongst organizational culture, leadership approaches, and ethical decision-making practices. This study provides insight into how the participating firm's organizational culture creates a leadership climate accommodative of an applied cyberspace business ethic. A cyberspace business ethic provides guidance to technology leaders addressing ethical challenges arising from emergent digital technologies. The identification of four key influencers that support ethical decision-making and provide protection against reputational risk exposures create an understanding of the collective nature of core values, relational, reputational, and technological influences on ethical behaviors. Self-determination theory assists understanding the motivations for ethical leader behavior in the form of competency, autonomy, and relatedness. Coupling this theoretical knowledge with identification of the four influencers of ethical decision-making provides the basis of understanding the participating firm's applied cyberspace business ethic. Given the rapid pace of emerging digital technology deployment, a dynamic condition of internal environmental complexity and external environmental uncertainty creates the need for leaders to develop a cyberspace business ethic appropriate for the business context. The participating firm's cyberspace business ethic centers on core values, transparency, and communication clarity, purposefully utilized to mitigate reputational risk. Applying a Christian worldview to study findings adds a theological construct to organizational core values and underlying virtue ethics.

Keywords: ethics, emergent technology, cyberspace, culture, values, leadership

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_____ Date:_____

Dr. Edward M. Moore, DBA Program Director

Dedication

This study is dedicated to the memory of my daughter, Erin McKamey Pickel, who taught everyone she encountered to overcome any challenge, obstacle, suffering, or anxiety with grace and joy. Her smile brightened the darkest moments and holding her hand was an encouragement to persevere through the most trying circumstance. Erin came into our lives to teach rather than to learn, and in a too-brief eighteen years she taught love is not a special need. Although researching and writing a dissertation is a daunting and stressful task made more difficult by experiencing Erin's passing during the doctoral journey, the teachings of her life supported completing this academic study. By establishing ethical leadership behavior and principled decision-making as core values, business leaders honor the memory of a little girl whose fleeting life reflected the best of humanity.

Acknowledgments

I would like to express appreciation for Liberty University's School of Business dean and administration staff for my acceptance into the Doctor of Business Administration (DBA) program, along with each professor that encouraged academic growth throughout the coursework and dissertation phases of the program. Completing this dissertation would not have been possible without the review, advice, and consent of my dissertation chair, Dr. Kimberly Johnson. Her thoughtfulness and guidance throughout the research and writing process were invaluable in producing a dissertation. Dr. Robert Dewhurst's role as a committee member and reader provided additional direction and support in producing a viable written product.

My employer of twenty years, The Biltmore Company, could not have been more supportive of participating in the DBA program, valuing enhancing my strategic thinking skills and executive leadership abilities throughout doctoral studies. Steve Watson, Biltmore's Chief Financial Officer, acted as a mentor and friend throughout the dissertation process, encouraged progress, and acted as a sounding board for mentally exploring leadership issues. Many work colleagues offered an appreciated encouragement throughout the doctoral journey.

Finally, my wife Christie and son Andrew have been supportive during the absences required by research, study, and writing throughout the program. Challenged by my daughter passing away during doctoral coursework, my family remained supportive of the time commitment needed to complete this academic study. I could not have become a candidate for the DBA degree without their support. I am incredibly appreciative for all others who are known but not acknowledged on this page for their support and assistance.

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Evaluating Ethical Technology Leadership:

Organizational Culture, Leader Behavior, and a Cyberspace Ethic of Business

Technology leaders face a myriad of ethical considerations when confronting the rapid pace of technological innovations in business environments. Emergent cyberspace innovations expand humanity's ability to enhance intelligence to increase understanding, albeit artificial intelligence cannot fully embrace the human spirit, emote empathy, nor render moral decisions without ethical guidance (Etzioni & Etzioni, 2017). Emergent financial technologies add complexity and uncertainty to technology leadership. The dynamic nature of innovation compels grounding technology leadership in a sound cyberspace business ethic in which decision-making occurs. Given emerging technologies can outpace acceptable business practices regulating their use, innovations present novel ethical concerns (Edwards-Stewart et al., 2019). Being both relational and behavioral, the social and psychological art of leadership intersects with the science of technology to create a challenge of influencing followers to achieve mutual goals within established ethical parameters.

Section 1: Foundation of the Study

Organizational culture influences how leadership behaviors transpire (Farrell, 2018) as the technology leader confronts cyberspace complexities within a unique business culture context. Through reflection and discovery, financial services technology leaders can enhance understanding of how to meet both client and employee psychological needs for autonomy, relatedness, and competence sufficient to motivate ethical leadership behaviors (Lumpkin & Achen, 2018). Promoting ethical leadership behaviors in an evolving cyberspace environment wherein intelligence and humanity potentially diverge creates a distinctive applied business problem. Resolving the research problem requires discovering a cyberspace ethic of business

utilized by leaders in a financial services firm to address uncertainties and reputational risks associated with emergent financial technologies.

Background of the Problem

The sciences and technology are not devoid of ethical considerations, as business leaders confront emergent technological choices that introduce innovative capabilities and expand insights while often creating uncertainties. Each behavioral choice made by business leaders involves reflection on what is right and wrong, including the deployment of new technologies. Normative ethics, or what may be termed morals, inform leader choices by providing guidance or prescriptions of acceptable moral behavior (Castro & Rose, 2015). Ethical and moral choices concerning the use of emerging technologies occur not only as an exercise of individual decision-making but also within a unique cultural context. In a business context, organizational culture influences technology decision-making by providing core values and guiding principles in which acceptable behaviors and choices reside.

Castro and Rose (2015) propose ethical technology utilization balances the welfare of individuals with the survival of culture. Maintaining a balance between perpetuating the organizational culture and safeguarding individual well-being comprises a critical challenge for technology leaders charged with making complex technology decisions. Cultural values governing technology decisions and leader behaviors include ethical, humane, and professional values such as accountability, integrity, equity, service, and innovation (Kernaghan, 2014). Consideration of organizational culture values when making technological choices can create a practical business problem of ethical digital dilemmas.

Hansen (2018) suggests science and technology leaders are often ill prepared to resolve ethical digital dilemmas due to difficulties linking humanities with technological concerns in

university instruction. Technology leaders frequently enter the workforce without the non-technical skills needed to resolve ethical digital dilemmas. Brusoni and Vaccaro (2017) propose technology possesses intrinsic ethical neutrality and, therefore individual and organizational values shape the application and understanding of technology. In opposition to intrinsic ethical neutrality of technology, Kondrla and Durkova (2018) suggest modern technology controls personhood resulting in loss of individual freedom, and this reality requires the technology leader to be sensitive to technological user relationships. Further, reliance on technology to self-learn ethical behavior through artificial intelligence is unlikely to render effective moral decisions without creating harm to some individuals (Etzoni & Etzoni, 2017). Current academic literature recognizes the practical business problem of technology leaders confronted with ethical digital dilemmas and organizational culture and how technology-user relationships influence a leader's ethical decision-making.

Deficiencies in current leadership literature include an incomplete understanding of how technology leaders approach cyberspace ethical challenges inherent in rapidly emergent technologies. Whereas academic literature expansively addresses the ethics of science and technology, approaching digital dilemmas from a perspective of technology leadership, organizational culture, and ethical behaviors within axiology inclusive of a biblical worldview represents a gap in current literature. Webster (2018) concludes a coherent theology of cyberspace that addresses ethical challenges including user economic and social exclusion does not currently exist. This study expands knowledge found in the existing literature by increasing understanding of how leaders of a financial service firm confront ethical challenges resultant from emerging digital technologies within a biblical worldview of organizational values and virtue.

Problem Statement

The general problem addressed is the nature of emerging technologies creates ethical leadership challenges resulting in an organization's exposure to risk. Russo (2018) found business and computer ethical challenges arise in emerging technologies in the social phenomena of dehumanization, inauthenticity, and uncertainty, creating a need to establish standards of ethical leadership behavior. Brusoni and Vaccaro (2017) stated individual values and judgments shape the application of ethically neutral emerging technologies, yet technological innovation may not support virtuous behaviors in the absence of values-based leadership. Stahl et al. (2017) found emergent technologies present the problem of future uncertainty as technology-innovations often exclude causal chains useful to predict future outcomes. Coeckelbergh et al. (2018) advanced these views by finding emerging financial technologies present evolving ethical challenges, and a financial technology ethical framework should exist to mediate digital relationships between people. Adding to these findings, Klempin and Karp (2018) suggested an inconsistent application of transformational and adaptive leadership approaches hinder managing risk during emergent technological change. Interactions amongst emergent technologies, leadership approaches, decision-making, and enacted virtues inform a technology leader's applied cyberspace business ethics and reputational risk management. The specific problem addressed is the dynamic nature of emerging digital technologies creates ethical technology leadership challenges, within the context of a financial services firm, resulting in exposure to reputational risk.

Purpose Statement

The purpose of this qualitative single case study is to understand how the leaders of a financial service firm address ethical challenges resultant from emerging digital technologies to

ensure stewardship of the firm's public reputation. Exploration of the problem occurs through an in-depth study of the organizational culture and leadership behaviors at the corporate office of a privately owned financial-services firm (FSF) located in western North Carolina. Emerging financial technologies studied will include those with uncertain futures or technological innovations with an unknown societal impact (Brey, 2012; Teran, 2018) such as digital interactions, artificial intelligence, data collection and utilization, and cybersecurity challenges. Ethical challenges involved in the use of digital technologies include informed consent of client data, privacy, confidentiality, data security, and the existence of potential conflicts of interest by the financial service provider (Reamer, 2017).

Farrell (2018) suggests organizational culture directly affects relationships through shared beliefs, values, language, and behaviors. This study seeks to understand how organizational culture influences leadership approaches and the firms applied cyberspace business ethic. A cyberspace business ethic represents the study of business ethics as it pertains to privacy, intellectual property rights, censorship, accessibility, and confidentiality of data in an online computer network environment (Hurlburt, 2018). Heidenger and Gatzert (2018) found a reputational risk to be a critical consideration in the financial services industry due to the importance of client-firm relational trust. Understanding linkages amongst culture, leadership approaches, ethical behaviors, and reputational awareness given uncertainties created by emergent technologies supports resolving the research problem.

Nature of Study

The proposed research method and design of this study is a qualitative, flexible, naturalistic single case study. This study is flexible in that data collection may yield an understanding that supports altering the original study plan. A naturalistic case study approach

frames exploring the uniqueness and particularity of the case setting to understand the distinctiveness of a context from multiple perspectives (Abma & Stake, 2014). Utilizing a naturalistic single case study approach allows developing a holistic understanding of the FSF context to identify any learning potential concerning the firm's applied cyberspace business ethic. This case study will provide localized knowledge, bound particularly to the FSF context and time of the study.

Research Philosophy

The research philosophy supporting this qualitative study includes alignment of ontology, epistemology, and axiology to achieve the study's purpose of understanding how the leaders of a financial service firm address ethical challenges resultant from emerging digital technologies. Utilizing an interpretivist, constructionist philosophical paradigm to address the research problem, an ontology of relativism frames an understanding of how individual leaders experience the reality (Ryan, 2018) of ethical leadership and decision-making when confronting uncertainties resulting from emerging technologies. An interpretivist perspective assists in exploring multiple realities that may exist in this case due to organizational culture and the nature of leader relations being social constructs that may change over time.

An epistemology of subjectivity positions the researcher to understand multiple perspectives of reality given an individual's perceptions, experiences, and feelings (Ryan, 2018). A constructivist perspective denotes experienced reality discovery that occurs when the researcher actively immerses in the studied reality (Kordes, 2016), acquiring meaning in the case by investigating relationships between human experiences and patterns of leadership behaviors. Biblical worldview axiology binds the study to seek a subjective understanding of organizational core values and virtues, leadership behaviors, and ethical decision-making. Alignment of

interpretivism, constructionism, relativism, and subjectivism within a biblical worldview to a qualitative study provides a sound philosophical paradigm to address the research problem.

Discussion of Method

Qualitative research scholars carry an obligation to make a transformational positive difference in society through engagement in ethical research, recognizing the role of human agency and critical reflection of participants in the studied phenomenon (Baskarada & Koronios, 2018). A qualitative method is optimal for this leadership study, as the researcher will collect data from non-numerical sources of information within a bounded system over a particular time to develop a thick description of experienced realities within a system (Creswell et al., 2007). The uniqueness of the researched bounded system being a single financial service firm allows in-depth, contextual understanding of interactions from an emic researcher perspective, subjectively interpreting meanings of reality (Romani et al., 2018). Yazan (2015) juxtaposed Robert Stake and Sharan Merriam's understanding of a qualitative case study method as a study of a particular, complex bounded and integrated system, wherein the production of thick, rich descriptions of a phenomenon occurs. Choosing a qualitative method for this study supports clarity of fit of the research problem and purpose to the method of exploration best suited to yield subjective interpretation of the meaning of the phenomenon of ethical challenges resulting from emerging technologies in a bounded financial service firm.

A quantitative method was not selected due to quantitative research design occurring in advance of controlled data collection, numerical data analyzed with statistics and mathematical models, and outcomes objectively testable by hypothesis and defined theory (McCusker & Gunaydin, 2014). Given this leadership study's flexible design, data collected in the form of experiences and interactions, and interpretivist findings subjectively constructed to identify

meaning from a phenomenon, applying a quantitative research method to the research problem and purpose becomes inappropriate. Quantitative methods utilize positivistic or post-positivistic approaches are unsuitable to this study problem, in that it requires interpretivism and constructionism to seek a rich understanding of the bounded system and phenomenon studied. Selection of a mixed-method to include both qualitative and quantitative approaches did not transpire due to the quantitative shortcomings described above.

Discussion of Design

An instrumental, naturalistic single case study design supports understanding relationships between ethical challenges resultant from emerging digital technologies and leadership behaviors. According to Stake's (1995) seminal work on case study research design, an instrumental case study seeks to gain understanding beyond an intrinsic interest in a particular bounded case. This single case study design allows exploring FSF leadership behaviors and decision-making when confronting technological ethical challenges to understand interactions between uncertainties and resultant leader behaviors. The case is instrumental in that it informs a problem faced by many financial services firms, yet findings may not be generalizable given the unique organizational culture and context of FSF. The design of a multiple case study creates additional cultural and contextual variables, adding complexity to research with limited value to answering the research problem in a bounded naturalistic single case study design given research findings may not be generalizable to other firms.

Stake and Yin, prominent case study methodologists' influential in sound research design, provide guidance for this study's research design. Yin (1981) stated a distinguishing characteristic of a holistic case study includes examining a contemporary phenomenon within a contextual reality to bring clarity to the relationship between a phenomenon and a context. The

contemporary phenomenon of ethical challenges resultant from emerging technologies within the bounded context of a single financial services firm provides an opportunity for a holistic case study.

Yin and Davis (2007) further propose case study researchers should confront real-world conditions with rigorous thinking transcending any specific evaluation method. This single case study utilizes a specific research design and evaluation methods to address the research problem, whereas differing research designs and methods may build upon this study's findings and add to the body of knowledge concerning the relationship between ethical leadership and emerging technologies. Future studies may address organizational and leadership complexities with differing research designs when warranted, including business ethnography that explores organizational culture and phenomenology, that explores ethical challenges. This study utilizes a holistic single case study design rather than ethnography or phenomenology to optimize thick descriptions and depth of understanding within a uniquely bounded context of FSF and its leaders within a certain time.

This case study deploys evaluation methods that support the validity of findings emerging from qualitative data analysis. Yin (2013) suggests case study design should utilize evaluation methods that strengthen validity through an exploration of rival explanations, data triangulation, and use of logic models. This study includes exploring rival explanations, data triangulation through interviews, observations, and document collection, and using a logic model that express theoretical causal relationships (Yin, 2013) between uncertainties created by emerging technologies and leadership behaviors. To strengthen the validity of this single case study design, a logic model inclusive of the role of self-determination theory in understanding leadership

behaviors and decision-making agency exists. In the context of an instrumental, naturalistic, holistic single case study design a viable research strategy of inquiry emerges.

Research Strategy of Inquiry

Utilizing a flexible research strategy allows adaptive exploration of the case context to understand reality and find meaning. Ridder (2017) proposes an extended case study considers a complex social situation through mutual, iterative interactions with participants via interview and observation to discover the social order studied. Including flexibility into the strategy of inquiry allows the researcher to modify and alter research in a manner reflective of learning gleaned throughout fieldwork and analysis. Qualitative research flexibility strengthens the researcher's ability to interact effectively with participants to understand the complex social situation particular to a financial services firm.

The scope of this single case study is the bounded system of a privately owned financial-services firm (FSF) located in western North Carolina during the period of fieldwork in the year 2020. The selection of this firm provides a strong likelihood of offering insights into the phenomenon (Ridder, 2017) of ethical leadership challenges resultant from emerging technologies. Study participants comprise two family owners acting as co-chief executive officers (CEO) and several employees in leadership positions to include the administrative leader responsible for technology implementation. The researcher utilized an emic perspective while conducting a qualitative inquiry into the FSF bounded system, exploring both the corporate social system and the technology leadership sub-system residing within the corporate social system. The researcher's emic perspective supported intensive analysis of collected data, inductive reasoning, and subjective data interpretation, reflexive of the research purpose, methods, design, and philosophical orientation (Harrison et al., 2017). Supportive of this

research strategy of inquiry is the establishment of case study propositions to direct attention to important aspects within the scope of the examined bounded system context (Yin, 2018). Propositions create guidelines for extensive academic literature review of key topics for exploration before fieldwork.

Case Study Propositions

Baxter and Jack (2008) submit specific case study propositions that place useful limitations on the research scope and increase the feasibility of study completion. Case study propositions for this applied research project emerge from academic literature, researcher professional experience, and research design, providing additional binding and framework to the study. Five case study propositions frame this research, including organizational culture as a behavioral influencer, leadership behavior and approaches, emergent digital technologies resultant in ethical challenges, technological uncertainties, risk exposures, and ethical decision-making. These propositions focus data collection and analysis, determine study direction, and form the conceptual framework of the literature review (Baxter & Jack, 2008). Propositions guide areas of research before fieldwork, yet research themes emerge during data collection and analysis that may differ from propositions.

Nature of Data Collection

Data collection occurred through various interview techniques, direct observation, document analysis, public website and social media review, and preparation of field notes. Interview techniques included face-to-face interviews, email interviews, and telephone interviews of FSF participants, with an emphasis on conducting face-to-face interviews when possible to maintain questioning flexibility, allow observation of personal interactions, and provide control of the interview environment (Heath et al., 2018) through the use of a common

conference room at the firm's corporate office building. Direct observations included witnessing firm employee interaction with colleagues and clients. Document analysis consisted of obtainment and review of published firm marketing materials, internal technology policy, and procedures governing decision-making and cybersecurity, and company history, mission, vision, and values statements. Review of any published books authored by FSF owners allowed further insight into organizational culture and leadership styles and approaches. Review of firm website and social media posts provided additional insight into how the firm presents organizational culture and capabilities to the public.

The researcher documented extensive field notes during data collection, providing context to a subjective interpretation of collected data. Field notes represent the researcher's commentary on impressions, contexts, behaviors, and non-verbal cues that may not be self-evident in interview notes (Sutton & Austin, 2015). Field notes provide insights into the thoughts and feelings of study participants. Strategies for triangulation of collected data include data source and member check triangulation. Data source triangulation occurs when utilizing multiple data collection techniques to provide a synergistic and comprehensive view of data to strengthen study credibility (Mills et al., 2017). Member checks allow participants to review collected data to assist the discovery of gaps or anomalies found in the data collected. The design of data collection techniques and instruments supports answering research questions by approaching data from multiple sources and collection methods, improving both the credibility and reliability of data.

Summary of the Nature of the Study

The design of qualitative data analysis and findings contributed to the ethics, reliability, credibility, and generalizability of the study. Ethical considerations of the study included

obtaining the informed consent of all participants and maintaining the confidentiality of all collected data per authorized agreement with FSF co-chief executive officers, including assessment of study risks and benefits. Study reliability efforts included consistency in verifying the accuracy of collected data in terms of context or constant comparison through triangulation (Leung, 2015). Constant data comparison achievement occurs through data coding in NVivo research software to develop themes for data analysis. Themes establish linkage to case study propositions, providing interpretation opportunities to answer the research problem. Morse (2015) proposes credibility, or internal validity results from prolonged engagement, persistent observation, and thick description of context, coupled with coding systems, member checking, clarifying researcher bias, and triangulation. Each of these techniques forms the basis of this study's credibility and trustworthiness. Cypress (2017) suggests trustworthiness involves the authenticity, quality, and truthfulness of qualitative study findings, and he proposes trustworthiness occurs when the researcher clearly articulates data collection decisions, demonstrates prolonged fieldwork engagement, and attains a degree of data saturation.

Each of these techniques adds to the trustworthiness of the current study although findings may not attain generalizability to other contexts. Generalizability of findings refers to the extent to which the time, place, people, and other social contexts in one study bear significant similarities and transferability to another study (Leung, 2015). This qualitative study includes subjective interpretation of collected data by the researcher, who conscientiously perceived each participant's experiences given the organizational context and the researcher's philosophical worldview (Clark & Veale, 2018). Therefore, this study's findings do not attain generalizability to other distinct settings, as the particular context of this bounded case remains unique to its environment. The nature of this qualitative single case study supports resolving the research

problem, filling an existing gap in academic literature through the exploration of how FSF leaders confront ethical challenges resulting from emerging digital technologies.

Research Questions

Two central qualitative single case study research questions provided a means to enhance understanding of the research problem. Sub-questions within each central question further explored how the research problem would be resolved. Research question one, and related sub-questions addressed the specific problem of emerging technologies creating ethical technology leadership challenges in a financial services business by exploring the role of organizational culture and values in ethical decision-making. Exploring the culture, enacted core values, and leadership approaches that form an ethical decision-making climate will enhance understanding of inter-relationships amongst culture, values, virtue, technology leadership, and ethical behaviors.

RQ1: How does the organizational culture of the Financial Services Firm (FSF) create a leadership climate that accommodates the firm's applied cyberspace business ethics?

$RQ1_A$: How do owners and executives describe the role of organizational culture and core values in establishing the expectation of ethical leadership behaviors?

$RQ1_B$: How do organizational values, virtues, beliefs, and stories support leadership approaches, behaviors, and ethical decision-making?

$RQ1_C$: How do technology leaders apply the organization's cyberspace business ethics in alignment with organizational cultural expectations?

$RQ1_D$: What corporate processes or procedures exist to control applied cyberspace business ethics?

Research question two, and related sub-questions further addressed the specific problem of technology leadership confronting ethical challenges created by dynamically emerging technologies. Examining leadership approaches utilized to provide ethical technology leadership provided insight into a leader's responsibility to confront technological uncertainty and risk exposures.

RQ2: How do technology leaders address ethical challenges arising from emergent digital technologies at the Financial Services Firm (FSF)?

$RQ2_A$: How do technology leaders describe their experience of confronting uncertainties resulting from emerging technologies?

$RQ2_B$: How do technology leaders explore emergent technologies and determine when to implement new capabilities?

$RQ2_C$: How do technology leaders protect the organization from exposure to reputational risk resulting from emerging cybersecurity challenges?

The framing of each research question supported a single case study design by allowing participants to explain their experiences and ideas when addressing the problem of ethical challenges resulting from technological innovations.

Conceptual Framework

The conceptual framework of this study originates with an exploration of the participating firm's organizational culture and public reputation as a financial services provider and its role in influencing leadership behaviors. The framework assists in describing relationships that may be present based on logic, theory, and experience, allowing the researcher to assemble case study insights into conceptual baskets (Baxter & Jack, 2008). Four concepts build upon the exploration of organizational culture and reputation, integrating two theories to

address the research questions. Concepts include uncertainties and risks resulting from emerging technologies, theory conceptualization, virtue ethic paradigm, and ethical technology leadership. Integrating self-determination theory and decision theory into the conceptual framework supports examination of how leadership behaviors and decision-making occurs as leaders confront uncertainties resulting from emerging digital technologies. This framework utilizes these four concepts to explore and interpret the participating organization's cultural (values), philosophical (virtues), and cognitive (decision-making) influences (Mingers & Brocklesby, 1997) on leadership's applied cybersecurity business ethic.

Discussion of Uncertainties and Risks from Emerging Technologies

Technologies emerge when a newly developed technological application moves into the public sphere for examination and reveal a promise of newfound power (Teran, 2018). For this study, emerging technologies retain the attributes of novelty, rapid growth, coherence, prominent impact, uncertainty, and ambiguity (Rotolo et al., 2015). Emerging technologies provide both a future of promise and uncertainty, an ambiguous future navigated by those utilizing a new power. Teran (2018) proposes the impact of emerging technologies encompasses an uncertain future, as predicting how society utilizes the new technology and how it will evolve into future applications may be significantly different from that originally planned by developers. Uncertainty and ambiguity of emerging technologies represent a risk to the business leader responsible for deploying new applications.

Within the context of uncertainty and risk exposures inherent in emergent technologies, ethical challenges, and value judgments confront technology leaders responsible for navigating privacy issues, technological invisibility, and linkages between humanity and technology (Kernaghan, 2014). Whether emerging digital technologies represent artificial intelligence, cloud

computing, or data mining capabilities, business leaders encounter complex interactions between technological capabilities and basic human desires for privacy, transparency, and equity. Emerging technologies and any underlying uncertainties carry the potential for two socio-existential critiques given technology's ability to change the human condition, including inauthenticity and de-humanization (Russo, 2018). This potential for inauthenticity and de-humanization residing in emerging technologies requires business leaders to develop ethical guidelines deemed a cyberspace business ethic.

Continuous development of a cyberspace business ethic warrants sustained attention to ethical problems, dilemmas, and polarities arising from rapid technological advancement (Reamer, 2017). Therefore, the concept of uncertainties and risk of emerging technologies directly relates to this study, as rapid technological change creates unknown outcomes and the potential for de-humanization and inauthentic interactions between business leaders and their stakeholders. This foundational understanding of relationships between emerging technologies and ethical leadership behaviors supports answering the research questions regarding the participant firm's applied cyberspace business ethic, ethical leadership behaviors, and technological decision-making.

Discussion of Theory Conceptualization

Two existing theories support the exploration of how leaders confront uncertainties, risk, and ethical challenges resulting from emerging technologies: self-determination theory and decision theory. Self-determination theory (SDT) applied to leadership behaviors and decision-making assists in understanding how and why leaders self-regulate their behaviors. Ryan and Deci (2000) identify three psychological needs within SDT that facilitate personal well-being, including competence, relatedness, and autonomy. This study utilizes SDT to explore

relationships between leadership behaviors and decision-making and the leader's sense of professional competence, relatedness to others in the organization, and autonomy as an authentically ethical leader.

A concept of autonomy residing within SDT explains why a person takes a certain action. The perceived locus of causality (PLOC) determines the origin of the person's actions, be it as a pawn to circumstance or as the full owner of behavior even if influenced by external environmental circumstances (Arvanitis, 2017). Motivations for leaders to exhibit competence, relatedness, and autonomy include a desire for personal choice, leader support, and connection to a group or organization (Rayburn et al., 2018). Understanding if these features exist in the FSF organizational culture supports understanding how leaders internalize organizational mission, vision, values, and autonomy to make decisions. SDT and its underlying PLOC concept of autonomy provide a means to understand how FSF leadership behaviors and decision-making occur when ethical challenges resulting from emerging technologies arise.

A secondary theory supportive of answering the research questions resides in decision theory (DT). Recent innovations in DT expand on traditional decision-making criteria, wherein decisions often result from an individual's consideration of the probability of outcomes and associated risk (Glickman et al., 2019). Emerging technologies alter how decisions traditionally form because new frontiers reveal previously unknown capabilities, powers, and uncertainties. For example, artificial intelligence as the science of human ability imitation extends decision-making space by one dimension, and traditional decision-making via subjective probability and risk evaluation may not apply in this new dimension (Giacomoni, 2019). Whereas decision-makers rely on cognitive, psychological, emotional, and spiritual notions and biases to arrive at a decision, artificial intelligence alters decision-making equations by approaching learning as an

exercise in knowledge accumulation. Interactions between humanity and technology lead to an uncertain future of decision-making as a human decider can approach ethical challenges quite differently than an artificially intelligent application.

Traditional DT conceives how to choose one option from a feasible set of alternatives, but this rational choice model cannot assist in deciding what one should believe (Briggs, 2018). The new dimension of emerging technology suggests decision-maker beliefs reside at the core of ethical decision-making so applying a biblical worldview to modern DT extends humanity's moral judgment beyond the capability of artificially intelligent technology. Cepni (2019) suggests modern humanity surrounds itself with complex adaptive systems requiring new decision-making theory to consider culture, ethics, and complexity issues while using emerging technology to encourage greater participation and equity in reaching decisions. This idea reflects how technology utilization assists in reaching collective decisions with multiple stakeholders, yet governing decision-making collectively without a common moral imperative may yield inconsistent results. This study explores how FSF leaders utilize both traditional and innovative DT within a biblical worldview of beliefs to reach decisions when confronting ethical challenges resultant from emerging technologies.

Discussion of Virtue Ethic Paradigm

For this purpose of this study, the definition of virtue appears as "the human inclination to feel, think, and act in ways that express moral excellence and contribute to the common good" (Newstead et al., 2018, p. 454). A virtue ethic paradigm creates a means through which FSF leaders resolve ethical challenges resulting from emerging financial technologies. Pigliucci (2018) proposes three concepts comprise virtue ethical approaches, including excellence, prudence, and flourishing. Although several schools of thought concerning virtue ethics exist,

this study relies upon modern Stoicism as a means in which to apply virtue ethics to the modern phenomenon of emerging technological challenges. Marcus Tullius Cicero (106 – 43 B.C.E.) utilized a Stoic understanding of virtue ethics to propose humans can be challenged with the paradox of choosing between what is honorable versus expedient, and to that end Stoicism proposes four interconnected virtues for decision-making: practical wisdom, courage, justice, and temperance (Pigliucci, 2018). These four virtues, expanded upon by the fourth century Christian Saint Augustine upon his conversion, provide a basis upon which to explore FSF leader decision-making in a biblical worldview of virtuous leadership behavior.

Newstead et al. (2018) suggest applied business virtue ethics bind one's humanity to a workplace community, fostering common good connections amongst individuals that compose a business organization. Applying virtue ethics to decision-making in a business context allows exploration of the role of virtue on modern business leaders facing ethical challenges. Specific to the financial services industry explored in this study, Stoicism understands finance as not being inherently immoral unless financial agents succumb to a desire for wealth or greed that hinders human flourishing (Sison et al., 2019). Financial services can be essential to providing economic and societal well-being when complying with virtuous principles.

Sison et al. (2019) suggest virtuous principles of human dignity, the common good, and societal solidarity support the financial well-being of humanity. Emerging financial technologies that dehumanize clients may negatively influence human flourishing resulting in difficult choices for financial services leaders. Exploring the linkage between virtue ethics, ethical decision-making, and human flourishing adds to the conceptual framework reinforcing this study. Greene (2018) found regulations and guidelines are insufficient in ensuring financial professionals make ethical decisions, as incentive compensation programs often promote dishonest behavior.

Applying virtue ethics to overcome the dilemma of ethical behavior and incentive misalignment promotes trustworthiness in the financial services industry. Further, educating financial services leaders to develop virtuous characters enhances trustworthiness and promotes building a virtuous organizational reputation.

Discussion of Ethical Technology Leadership

The phenomenon of emerging digital technology represents an aspect of modern business reality that affects humanity, but any ethical challenges resulting from cyberspace innovations do not absolve humans of their responsibility to make ethical decisions. Russo (2018) states human beings and digital technologies differ in that humans retain the capability to maintain relationships with the world through ethical choices. Ethical choices signify relational interactions between the decision-maker and society, so technology leadership resides at the intersection of digital technologies and personhood. Born in 1935, Greek theologian Christos Yannaras defines personhood as “the capacity to form relationships” with personhood positioned as the very essence of humanity created as image-bearers of God (Cole, 2015). This conception of personhood expands beyond western culture’s acceptance of the autonomy of the individual. Yannaras proposes humanity’s central position as a relational community of those made in the image of God. Ethical decision-making considers the effect of outcomes on both the autonomous self and the relational community in which the decision-maker resides. Therefore, leadership includes accepting the fullness of personhood and the responsibility of making ethical decisions regulating the cyberspace that humanity created.

The application of emerging technologies in a financial services organization necessitates a balance of creativity and ethical behavior supported by a transformational leadership approach. Koh et al. (2018) submit transformational leaders often increase followers understanding of

mutual goals through emotional appeals, resulting in increased cognitive plasticity and creative thinking. Transformational leadership reliant upon emotional appeals recognizes the personhood of followers by supporting creativity in problem solving. A transformational leadership approach encourages challenging the status quo, incents innovativeness, and inspires expanding follower's creative perspectives (Pradham & Jena, 2019). Ethical transformational leadership that inspires creativity and innovative thinking in compliance with cultural values and virtues elevate stakeholders to not only achieve but also recognize right and wrong behaviors within their achievements. Given a recent survey reflects approximately forty percent of employees have observed behaviors that violated their employer's ethics policy (Paludi et al., 2019), introducing additional ethical challenges when implementing innovative digital technologies creates difficult questions transformational leaders must confront.

Discussion of the Relationship of Concepts

A model of conceptual framework relationships between concepts and theories appears as Figure 5 in Appendix A. Each concept and theory helps address the research questions by guiding the interpretation of data collected. Applying the concepts of uncertainties and risk exposures and theory conceptualization guides interpretation of data collected from the first research question concerning how organizational culture influences leadership behaviors to accommodate the participating firm's applied cyberspace business ethic. Cultural influences on leadership behaviors occur in the context of how FSF leaders make decisions when confronting uncertainties and risks arising from technological innovations. Understanding how leaders rationalize decision making to comply with organizational culture expectations utilizing guidance from the first two concepts and theories assists in answering the first set of research

questions. Concepts of uncertainties and theory conceptualization assist in exploring behavioral influences on ethical leadership.

Applying the concepts of an ethical paradigm and leadership that forms an applied cyberspace business ethic guides interpretation of data collected from the second research question concerning how technology leaders address ethical challenges arising from emergent digital technologies. These two concepts help inform how FSF leaders explore challenges resultant from technological innovations and how ethical decisions are made. Understanding how leaders protect FSF's reputation through leadership behaviors and decision-making supportive of organizational values and individual virtues utilizing guidance from the final two concepts assists in answering the second set of research questions. Concepts of ethical paradigm and leadership assist in exploring virtue considerations and leadership approaches and behaviors. The four inter-related concepts and theories comprising the conceptual framework guide the development of themes from collected data, interpretation of data, documentation of research findings and support research conclusions.

Summary of the Conceptual Framework

The conceptual framework assists in forming potential themes and perceptions discovered through the research design and method. Expected themes extrapolated from the research include organizational values as influential on leadership approaches and behaviors, emerging technology interaction with personhood, individual virtues applied to decision-making, and components of an applied cyberspace business ethic at FSF. The framework provides guidance or guardrails for executing research as designed to resolve the research problem. Alignment amongst research problem, purpose, questions, nature of the study, and conceptual

framework supports a viable qualitative single case study to advance understanding of leadership as an academic field of study.

Definition of Terms

The following term definitions aid understanding of this single case study's research design, findings, and conclusions.

Cyberspace business ethic. A cyberspace business ethic represents a study of business ethics as it pertains to privacy, intellectual property rights, censorship, accessibility, and confidentiality of data in an online or digital computer network environment (Hurlburt, 2018).

Emerging technologies. Emerging technologies are key technological innovations introduced into the public sphere for examination, gestation, and permeation by the masses (Teran, 2008).

Ethics. Utilizing an Aristotelian definition, ethics represent choices made by logic to be completely virtuous as judged by a practically wise person (DaVia, 2018).

Leadership. For the purposes of this study, "Leadership represents an influence relationship between leader and followers to achieve mutual goals" (Rost, 1991, p. 102).

Organizational culture. "Organizational culture represents how values and beliefs materialize organizationally and transmit through socialization experiences via stories, myths, symbols, and rituals" (Schneider & Barbera, 2014, p. 10).

Stoicism. Stoicism represents a Hellenistic school of thought aligned with Socratic moral philosophy influenced by Zeno of Citium and later Roman authors such as Seneca, Epictetus, and Marcus Aurelius. Stoicism holds there are four interconnected virtues required for human flourishing: practical wisdom, courage, justice, and temperance (Pigliucci, 2018).

Uncertainty. Uncertainty signifies an ambiguous future (Teran, 2018).

Virtue. Virtue represents a human inclination to think and act in ways that contribute to the common societal good through the expression of moral excellence (Newstead et al., 2018).

Assumptions, Limitations, and Delimitations

Disclosure of additional information includes identification of important assumptions and any limitations or delimitations of research that could affect findings and conclusions.

Assumptions

Assumptions with potential to influence this study include FSF leaders' awareness of an ethical duty to protect the firm's reputation exists and FSF leaders respond honestly and forthrightly during data collection. Further assumptions include FSF utilizes emerging technologies in the management of client business and the researcher's potential false-consensus bias that FSF leaders agree ethical leadership behavior protects against reputational risk will not affect research conclusions. Assuming the existence of FSF leaders' awareness of an ethical duty to protect the firm's reputation exposes the study to the risk of not discovering linkages amongst organizational culture, leadership behaviors, ethical judgment, and an understanding of the firm's cyberspace business ethic. Awareness of ethical duties in financial services firms materializes in the form of staff hiring and onboarding practices that promote ethical judgment, implementation of a comprehensive ethics program, regular ethics training, codes of conduct, and ethical conflict resolution procedures (Latan et al., 2019). Collecting data supportive of ethical judgment within FSF leadership substantiates any evidence of awareness of an ethical duty to protect the firm's reputation.

Assuming FSF leaders will be honest and forthright during interviews and other data collection efforts expose the study to the risk of misinterpretation of data, inaccurate findings, and erroneous conclusions. Utilizing multiple methods of data collection including data

triangulation from various collection methods protects the researcher from making erroneous subjective interpretations in the event FSF leaders are dishonest or not fully transparent. Fusch et al. (2018) propose obtaining verisimilitude, or getting closer to the truth, data triangulation requires identifying differing sources in time, space, and persons to confirm the truth. Data triangulation of themes arising from data collected from various sources assists in identifying any commonalities or discrepancies within FSF leader understanding.

Assuming FSF utilizes emerging technologies in the management of client business exposes the study to an inability to ascertain if emerging technologies create ethical leadership challenges. Identifying the types of technologies utilized by FSF to market services, communicate with clients, accumulate client data, and report financial information allows the discovery of emergent technologies and any associated ethical challenges. Given scientific knowledge may be ethically neutral but applied technology remains tethered to values (de Castro & de Rose, 2015), testing the assumption of FSF utilization of emerging technologies through the identification of core applied technologies and associated value questions protects the study from misidentifying ethical leadership challenges.

Assuming subjection of the researcher to potential false-consensus bias that FSF leaders agree that ethical leadership behavior protects against reputational risk exposes the study to reporting erroneous conclusions. Cognitive research concludes humans often over-rely on the conformity of behaviors and expect their individual beliefs to align with a broader consensus (Yousif et al., 2019). Being aware of any researcher bias to create false consensus between the researcher's personal beliefs regarding the importance of ethical leadership behaviors with beliefs of the study participants provides an opportunity for careful reflection. Testing researcher

interpretations against participant true consensus protect this study from the corrosive effects of any researcher's false-consensus bias.

Limitations

There are several limitations to this case study, including limited transferability of findings and conclusions to other contexts given the nature of this qualitative single case study's design and scope. Given this study bounds research to exploring the organizational culture and leadership behaviors at FSF during the summer of 2020, study conclusions may not be transferable to firms with differing cultures and leadership approaches. This study purposefully bounds research to a single case to develop thick, rich descriptions of the participating firm's organizational context and leadership approaches when dealing with ethical challenges resulting from emerging technologies. Studying different financial service firms with dissimilar research design and methods may yield conclusions unlike those reported in this study.

This study utilizes self-determination and decision theories coupled with virtue ethics to assist in understanding leader decision-making when confronted with uncertainties and reputational risk. Employing other theories and ethical paradigms to explain how decision-making occurs by business leaders confronting uncertainties could produce different results. Denzin (2017) proposes qualitative research should recover, enhance, and preserve the integrity and morality of the community. While addressing how ethical decision-making occurs considering virtue within a Christian worldview, this study is limited in an ability to enhance the integrity of the participating firm's leadership behaviors. This qualitative case study design addresses the research problem through the depth of understanding of the participating firm's context but does not seek to enhance or preserve the firm's existing cyberspace business ethic.

This study does not consider extraneous factors affecting FSF leader decision-making such as age, years of experience, education, gender, tenure in the organization, or religious engagement of individual study participants (Latan et al., 2019). Study limitations include not evaluating participating individuals' capacity for critical reflection when confronted by ethical challenges resulting from emerging technologies. The study focuses on how ethical decision-making occurs regardless of the degree of critical reflection within an individual's decision-making processes.

Although the impact of study limitations may reduce transferability of findings and conclusions to other business contexts, knowledge gained from this study adds to the leadership body of knowledge through exploration of the impact of emerging technologies on any connectivity of organizational culture, leadership behavior, virtue ethics, and ethical decision-making in a financial service firm context. Future studies may add knowledge in other contexts, times, or distinctive research designs and methods. The opportunity for additional qualitative research includes exploring how emerging digital technologies dehumanize users and the effect on a moral society or ethical organization.

Delimitations

Defining the research problem and purpose necessarily limits the scope of addressing how emerging digital technologies create ethical challenges for leaders in a financial services firm. The research problem statement specifically bounds the participants to a single privately owned financial services firm and its leader's experience with ethical challenges resulting from emerging technologies. A single case study design allows exploring the study context in-depth to provide rich, thick descriptions of the phenomenon of ethical challenges resulting from emerging digital technologies. Research questions further bound this study to an exploration of the

influence of organizational culture on firm leaders and their perceived duty to protect against reputational risk. Research question phrasing includes open-ended questions to allow participants freedom of expression of their understanding of how confrontation of ethical challenges occurs.

Conducting fieldwork at FSF corporate headquarters in western North Carolina to collect data occurred over two weeks during the summer of 2020. The selection of participants included every active full-time FSF employee in a leadership role, minimizing participant selection bias. The intention of defining the study's methods of data collection and analysis establishes the means of directly addressing the research problem. The researcher's philosophical perspective exists as described above in aligning ontology, epistemology, and axiology to seek understanding of the distinctive reality of FSF's applied cyberspace business ethic.

Finally, the conceptual framework of this study bounds research through clearly defined concepts and theories unique to this research design. Alternative conceptual frameworks considered but not adopted include exploring the research problem utilizing human agency theories and the dehumanizing influence of emerging technologies from a psychological or cognitive perspective. Framing this study with decision theory and virtue ethics supports the exploration of leadership behaviors and decision-making within a biblical worldview of virtue and righteousness in a modern business context.

Significance of the Study

The genesis of this study exists in the increasing pace of technological advancement creating unanticipated ethical questions technology leaders confront that result from technical innovations. The importance of this case study incorporates understanding how the outcome of ethical leadership behaviors and decision-making impacts organizational reputation in the context of a financial service firm. Increasing understanding of the interaction of organizational

culture, leadership behaviors, and reputational risk provides useful insight into how leaders recognize risk from emerging technologies and its role in an organization's applied cyberspace ethic. The rationale for this case study includes current academic literature does not clearly articulate these interactions and the influence of rapidly changing cyberspace ethical considerations on leadership behaviors. Findings and conclusions of this study illustrate opportunities for leadership enhancement and encourage further study of this research problem. This research contributes to the knowledge base of leadership as an academic field of study during periods of rapid technological advancement, as well as enhances the application of cyberspace business ethics by financial service practitioners. Although findings may not be generalizable to contexts beyond this single case study, conclusions suggest the research problem warrants exploration of relationships between leadership and ethical challenges resulting from emerging technologies.

Reduction of Gaps

This single case study adds to the understanding and practical application of ethical leadership behaviors and decision-making during periods of emerging technological change. Gaps in current literature include addressing the research problem through this study's unique research philosophy and conceptual framework. Utilizing an interpretivist, constructionist philosophical paradigm to address the research problem, an understanding of reality through the lens of relativism and subjectivity supports an interpretation of findings within a biblical worldview. This study's conceptual framework distinctively applies this research philosophy by relating ethical questions to applied virtue ethics in a financial services business context with a Christian theological understanding. This study uniquely links understanding ethical challenges resultant from emerging digital technologies to the ethical school of stoicism, expanding on this

philosophical understanding of virtue ethics by interpreting findings through a biblical worldview supportive of virtue. Through reducing this gap in existing academic literature, this case study supports exploring the value of Christian business leadership during periods of emerging technological change and innovation.

Implications for Biblical Integration

The concepts and theories included in this study's conceptual framework provide connectivity to biblical principles supportive of addressing the research problem. Uncertainties and risk exposures materialize in the form of reputational risk in financial services firms, wherein client trust buttresses the firm's brand valuation (Heidinger & Gatzert, 2018). As image-bearers of God, each financial service leader confronting uncertainties that place organizational reputation at risk reflects the trustworthiness of their creator. The psalmists proclaim this reality in writing, "The works of his hands are faithful and just; all his precepts are trustworthy; they are established forever and ever, to be performed with faithfulness and uprightness" (*English Standard Version Bible*, 2001/2001, Psalms 111:7-8). These verses present to humanity the trustworthiness of God and establish qualities supportive of Christian virtue, including image-bearers being faithful, just, trustworthy, and upright. Facing uncertainties and risks resulting from emerging digital technologies, the Bible instructs the faithful to rely on the perpetual trustworthiness of God and reflect his equity in business leadership behaviors and decision-making.

Theory conceptualization in the form of self-determination theory and decision theory provides additional connectivity to biblical principles of significance. Just as motivations for leaders to exhibit competence, relatedness, and autonomy in decision making include a desire for personal choice, leader support, and connection to a group or organization (Rayburn et al., 2018),

scriptural righteousness reflects the sanctification of the communion of saints through faith by God's grace. The book of Revelation uses apocryphal language to describe the marriage of the Lamb of God to the Bride of Christ, or Jesus to his church (*English Standard Version Bible*, 2001/2001, Revelation 19:7). This communion of Christ's saints describes the eternal group connection that Christian business leaders desire in making personal choices and decisions. In this revelation, the author John describes the clothing of the communion of the saints as, "fine linen is the righteous deeds of the saints" (*English Standard Version Bible,* 2001/2001, Revelation 11:8). Righteousness covers the saints of Christ's church, and it is in righteous behavior and decision-making that Christians live out their faith. Paul describes the faithful as being dead to sin, alive in God, presenting themselves "as slaves to righteousness leading to sanctification" (*English Standard Version Bible,* 2001/2001, Romans 6:19). Decision-making through a biblical worldview of self-determination influences the communion of faithful to exhibit righteous behaviors due to their sanctification by God.

The ethical paradigm of virtue ethics also provides an association with biblical principles. Cleveland and Dahm (2019) propose the ultimate objective of the Christian life is eternal happiness in God, and the virtues inherent within the Christian life support achieving that objective. In the Sermon on the Mount, Jesus explained this linkage between virtues and supernatural happiness. Jesus taught his followers God blesses the poor in spirit, those who mourn, the meek, those who hunger for righteousness, the merciful, those pure in heart, and the peacemakers (*English Standard Version Bible*, 2001/2001, Matthew 5:3-9). These Christian virtues result from God's blessings and support the faithful's eternal happiness. The Christian business leader therein finds virtuous, ethical, and moral behavior and decision-making a

pathway towards eternal happiness, without which participation in the communion of saints cannot occur.

The concept of leadership and applied cyberspace business ethics incorporates each Christian principle described above, enhanced by a sense of boldness in virtuous business leadership. Leadership defined as a relational and behavioral expression with followers requires courage for the leader to act boldly in confidence of the Christian principles supportive of righteous decision-making. In scripture, the Proverbs of Solomon speaks to the courage required for virtuous leadership in stating, "The wicked flee when no one pursues, but the righteous are bold as a lion" (*English Standard Version Bible*, 2001/2001, Proverbs 28:1). Righteous behavior, virtuous decision-making, and providing a trustworthy example of faithfulness necessitate the courage of bold business leadership. Integrating Christian principles when exploring how leaders confront ethical challenges resulting from emerging technologies provide a unique opportunity to add to gaps in current leadership academic literature.

Relationship to the Field of Study

The research problem directly relates to the leadership cognate, as addressing the problem requires gaining an understanding of the nature of leadership and its role in ethically navigating technological change and uncertainties in the unique context of FSF. This study utilizes the leadership model of Joseph C. Rost (1931-2008) who proposed transformational leadership resides at the trilateral intersection of influence relationships between leader and follower, real intended change to transform an organization, and accomplishment of mutual purposes for the well-being of the entire organization (Hughes, 2016). The nature of this study is interdisciplinary, involving organizational culture, leadership, ethics, technology, and business. Applied leadership is also interdisciplinary, requiring integration of knowledge across a diversity

of disciplines to enhance the understanding of complex problems, dilemmas, and polarities (Friesen, 2018). Leadership within a biblical worldview includes developing moral awareness about the leader's perspective that is inevitably bound to the emotional responses and varied commitments of followers (Rochford et al., 2017). Moral awareness rests on virtue ethics, so the technology leader facing uncertainties and ethical challenges resultant from emergent digital technologies benefit from understanding the role of transformational leadership in applying a cyberspace business ethic.

Strategic leadership involves complex decision-making and resource allocations, and ethical decision-making must repetitively strengthen the moral habits of leaders to enrich an ethical organizational culture rooted in values (Neamtu & Bejinaru, 2018). Robert K. Greenleaf (1904-1990) framed the application of moral habits in the philosophical perspective of servant leadership, a leadership style founded on serving others with the virtues of justice, courage, and honesty (Sinnicks, 2018). This study conceptualizes ethical technology leadership through a blended Rost-Greenleaf framework of transformational servant leadership, richly examining FSF's applied cyberspace business ethic to enhance understanding of ethical technology leadership. A comparison of Rost and Greenleaf leadership approaches appears in Table 1 below, informing how leaders may apply a blended leadership approach to resolving ethical challenges resulting from emerging technologies.

Table 1

Comparison of Rost and Greenleaf leadership approaches

Leadership Characteristic	Rost	Greenleaf
Leadership approach	Transformational	Servant
Key propositions	Influence relationship Real intended change Accomplish mutual purposes	Leader serving followers Individual and communal awareness Promotes teamwork and involvement
Virtues	Prudence/Practical wisdom Fortitude Temperance	Justice Courage Honesty
Leadership Attributes	Inspirational Motivational Intellectually stimulating Visionary	Empathy Awareness Stewardship Committed to the growth of others

Summary of the Significance of the Study

This study is significant to the field of leadership due to its contribution to understanding relationships amongst organizational culture, leadership behaviors, and reputational risk, providing useful insight into how FSF leaders recognize and apply the organization's cyberspace business ethic. Filling gaps in current literature occur by addressing the research problem through this study's unique research philosophy and conceptual framework. Applying self-determination theory and decision-making theory while exploring the role of virtue ethics in decision-making within a biblical worldview assists in informing FSF's applied cyberspace business ethic. This case study explores the value of Christian business leadership during periods of emerging technological change and innovations. The implications of biblical integration of the study include an examination of the moral awareness of FSF leaders confronting ethical challenges resulting from emerging digital technologies. Merging concepts of transformational and servant leadership as proposed by Rost and Greenleaf, this study offers insights into the

virtues and leadership attributes utilized by FSF leaders to address ethical technological challenges.

A Review of the Professional and Academic Literature

Professional and academic literature relevant to this study supports the exploration of the phenomenon of how leaders in a particular business context confront ethical challenges resulting from the application of emerging technologies. The specific problem addressed by this study is the dynamic nature of emerging digital technologies creates ethical technology leadership challenges, within the context of a financial services firm, resulting in exposure to reputational risk. The significance of this problem to the academic and professional field of leadership includes contributing to understanding how organizational culture and leadership decision-making processes result in an applied cyberspace business ethic. The body of evidence in existing literature suggests interactions exist amongst organizational culture, leadership behaviors, emerging technologies that create uncertainties and ethical challenges, and ethical decision-making. Existing literature explores these interactions through multi-disciplinary constructions of business leadership, business anthropology, decision theory, psychology, and philosophy, yet the rapid pace of emerging digital technologies challenges business practitioner-scholars to explore the influence of technology on ethical leadership in distinctive ways. Gaps in existing literature include examining the application of virtue ethics to uncertainties created by technological innovations, and biblical integration moral awareness of business leaders with leadership approaches and decision-making, and.

Five propositions emerging from literature review corroborate the thesis claim of particular internal and external forces influence a firm's applied cyberspace business ethic: organizational culture, leadership approaches, emerging digital technologies, technologically

induced uncertainties, and ethical decision-making. These influential force propositions form the basis of the study's discovery model. Further, an examination of existing literature synthesizes four research concepts to assist exploration of the research problem: uncertainties and risks resulting from emerging technologies, relevant theory conceptualization, a virtue ethic paradigm, and ethical technology leadership behaviors. Integrating the literature review propositions with research concepts provides a discovery model linking current knowledge of the research problem with evidence that warrants accepting the thesis claim that particular internal and external forces influence a firm's applied cyberspace business ethic. The implications of this study include the evaluation of FSF ethical technology leadership that contributes to business practitioner-scholars' thought leadership through disseminating knowledge (Bulger et al., 2018) of the practical application of cyberspace business ethics.

Influence of Organizational Culture on Leadership

Organizational culture represents an influential force on a firm's applied cyberspace business ethic, therefore initiating a review of existing literature on organizational culture benefits addressing the research problem. Academic literature exploring organizational culture originates in the writings of George Herbert Mead (1863-1931) whose posthumous publication of a treatise describing a social construction and symbolic interaction perspective of organizational culture. Mead's social construction perspective provides a means of understanding the evolution of social processes within a particular cultural context over time (Mead, 1934), and succeeding organizational studies utilized Mead's perspective in developing an organizational culture body of knowledge. Kurt Lewin (1890-1947) proposed an alternative perspective in the form of field theory, utilizing Gestalt psychological principles to propose human behavior is a function of a person and an environment. Lewin's formula of behavior

assisted exploration of the role of group dynamics in organizational behaviors (Lewin & Cartwright, 1951). Lewin's field theory provided support for quantitative research of organizational climate, whereas Mead's social construction perspective supported qualitative research of organizational culture. Defining differences and commonalities between organizational culture and climate continued throughout twentieth-century organizational studies.

Organizational Culture and Climate Differentiated

Denison (1996) contrasts the concepts of organizational culture and climate by claiming culture refers to the evolving values, beliefs, and assumptions held by organizational members and established through socialization in the workplace. Climate refers to a static workplace social environment rooted in the value system of the organization (Denison, 1996). Schneider and Barbera (2014) expand on these definitions, proposing organizational culture represents values and beliefs transmitted through workplace story, ritual, and myth experiences, whereas climate represents organizational value-meaning employees attach to policies, procedures, and practices. Schein (2017, p. 6) formalized a common definition of organizational culture as "the accumulated shared learning in the workplace that forms expectations of beliefs, values, and behavioral norms". As the body of knowledge of organizational culture has expanded since Mead's (1934) seminal treatise on social constructions, opportunities for a qualitative study of the influence of cultural values on expected employee behaviors have materialized in academic journals.

Culture and Behavioral Expectations

Mangi et al. (2015) propose the formation of organizational culture disseminates through a firm's traditions and rituals to impact employee thoughts, acts, and performances. This

impactful linkage between organizational culture and employee actions establishes the firm's expectations for normalized leader behaviors. Culture as a collection of assumptions, values, and beliefs supports the application of learned leader behaviors through experiences and training. New employees become enculturated through hiring and on-boarding processes that introduce cultural norms and establish communication expectations. Values and assumptions that materialize in organizational culture guide leader decision-making to enact change and solve problems utilizing an acceptable degree of dignity and focus (Mangi et al., 2015). Culture influences interpersonal relationships, as an organization's espoused mission, vision, and core values create a framework in which employees interact internally and externally. The social construction of leader and follower interactions includes the complexity of cultural structure.

Farrell (2018) proposes successful leaders utilize the power of organizational culture to execute strategic initiatives, yet subcultures may exist at the business unit, department, or employee classification levels that complement or detract from the firm's primary culture. Subcultures represent structural and environmental complexity leaders must navigate to achieve mutual goals. Alignment and interplay amongst subcultures contribute to behavioral consistency given cultural norms represent patterns or precedents that inform behavioral standards (Farrell, 2018). Just as cultural influences affect leader values and behaviors, a leadership team's values conversely influence organizational culture in a symbiotic relationship between the organization and individual values and trust.

An essential element of organizational culture includes the social exchange of trust between the organization and individuals (Bachmann & Inkpen, 2011; Paille et al., 2013). An organization's espoused and enacted cultural values support the dissemination of information throughout the organization by the leadership values of trust, open communication, and

collaboration (Cekules, 2015). The social exchange of trust occurring within relational interactions amongst individuals reflects the leader's efforts to engender trust with followers, and thereby increase commitment to organizational culture values. Expressions of trust represent a cultural influence on individuals and, simultaneously, an individual's influence on organizational culture. Given this symbiotic relationship between organizational culture and individual, Cekules (2015) proposes individual transformations can initiate cultural transformations. Linkages between cultural values and the trust-building efforts of leaders provide evidence of organizational culture influences on leadership approaches and behaviors.

McBath (2018) suggests Greenleaf's servant leadership approach establishes the role of leader as an organizational culture steward who promotes community growth and follower wellness through the influence of persuasion rather than coercion. Servant leadership bridges the divide between espoused organizational culture values and the practical application of enacted values by individuals with a cultural stewardship approach to leadership. McBath (2018) proposes the basis of a servant leadership approach incorporates a desire and a will to trust. Leadership approaches and behaviors that propagate trust support the dissemination of organizational culture, protecting the organization from individual indifference to the achievement of mutual goals. The influence of organizational culture on behaviors associated with a transformational leadership approach likewise protects against individual indifference to goal achievement.

Lee and Cho (2018) found transformational leadership behaviors had positive effects on both organizational culture and commitment level of employees. Leaders who identify employee needs while exhibiting authentic care for follower well-being encourage a psychological attachment from those led. Reinforcement of this commitment or psychological attachment

occurs when leaders clearly articulate an organizational vision supportive of culture (Lee & Cho, 2018), reflecting a causal relationship between transformational leadership and organizational culture. As leaders transform an organization to achieve visionary goals, leader behaviors supportive of organizational culture can create follower commitment to change. The findings of Lee and Cho's study may not be generalizable to other organizations outside the Korean metropolitan areas surveyed supporting the need for further research on relationships between leadership behaviors and organizational culture.

Maczynski and Sulkowski (2017) conducted an international study of leadership behaviors that improve the degree of employee dedication, finding inspirational, visionary, and integrity-promoting leadership behaviors positively affect the degree of follower dedication. Leader attributes supportive of behaviors that improve employee dedication include honesty, equity, trustworthiness, anticipatory, preparedness, enthusiastic, and motivating. This study finds a significantly lower correlation between participatory leadership behaviors and follower dedication (Maczynski & Sulkowski, 2017). Participatory leader behaviors that empower followers with the discretion to make decisions and implement plans do not improve follower dedication without simultaneously exhibiting inspirational and visionary leadership behaviors. Therefore, the inclusion of followers in decision making without providing an adequate cultural vision and inspiration to achieve that vision results in an erosion of follower dedication and commitment. Visionary and inspirational leadership behaviors may also influence an organizational culture supportive of innovative follower behavior.

Organizational culture should not only promote employee commitment, dedication, or satisfaction but also encourage desired behaviors. Lee et al. (2015) find a firm's culture can create depth of organizational identification or a sense of psychological oneness with other

employees that become the basis for employees exhibiting desired attitudes and behaviors. Employee socialization in alignment with cultural norms can create a sense of organizational identification, including communicating a sense of organizational prestige and differentiation from competitors (Lee et al., 2015). Creating cultural bonds that support employee identification with the positive aspects of organizational culture promotes desirable behaviors. Conversely, employees identifying with negative aspects of organizational culture may exhibit undesirable behaviors. The linkage between organizational culture and employee identification creates a context in which ethical behaviors transpire.

Studies have shown a mutual relationship exists between organizational culture and innovative employee behavior (Naranjo-Valencia et al., 2017), as an externally orientated culture with a competitive emphasis nurtures innovative behavior. Firms that culturally value industry leadership can infuse management with organizational core values of quality, innovation, diversity of thought, and customer responsiveness to encourage innovative leader and follower behaviors. This cultural innovation encouragement positions leaders to monitor external environmental changes and identify opportunities emerging from industry innovations. Organizations operating in industries with a rapid development of emerging digital technologies should ensure organizational culture supports innovative employee behaviors to maintain a competitive advantage. A review of academic and professional literature supports the existence of linkages amongst organizational culture, leader-follower social exchanges of trust, leadership approaches, associated leader behaviors, and innovative employee behaviors. This link between organizational culture and enacted behaviors include a sense of leader responsibility to promote cultural integrity through ethical leadership.

A weakness of organizational culture academic and professional literature appears in understanding how highly divergent organizational subcultures influence individual behaviors. Chatman and O'Reilly (2016) suggest subcultures within an organization can create individual collectives whose members behave differently given subcultural contexts. In the existence of collectivist organizational subcultures, individuals may exhibit strong subculture identity and commitment, yet behavioral conflicts with individuals in other subcultures within the same organization may be normative. Research exploring the influence of divergent subcultures within an organization on behaviors would add to the organizational culture body of knowledge.

Ethical Considerations

Nahar and Nigah (2018) find organizational culture influences employee engagement and acceptance of change, especially when employees perceive the culture as inclusive of ethical core values. The authors suggest an ethical organizational culture positively affects innovative behaviors, and ethical leadership cultivates trust and creates a climate accepting of innovation and change. An ethical culture positively influences leader and follower engagement with innovativeness, resulting in increased employee optimism and self-efficacy (Nahar & Nigah, 2018). Organic organizational cultures that emphasize flexibility in rapidly changing and uncertain environments foster employee creativity, risk-taking, and innovation (Pasricha et al., 2018). Pasricha et al. (2018) suggest ethical leadership within an organic organizational culture encourages creative adaptation to emergent environmental change. Given ethical organizational cultures and leadership support accommodation of innovations, examining interactions amongst cultural norms, ethics, leadership behaviors, and innovation provide insights into how a firm accepts emergent change.

Toytok and Kapusuzoglu (2016) suggest the existence of a reciprocal influence of ethical leadership behaviors on the employee perception of organizational culture. The authors propose ethical leadership positively affects organizational identification, trust, and justice that improve the perception of an ethical organizational culture. As leaders develop ethical approaches displayed to followers in ethical behaviors, a positive influence on organizational culture occurs. Ethical leadership behaviors influence how employees comprehend an ethical organizational culture, just as organizational culture influences leadership behaviors. Given ethical organizational culture represents a social construction, exploring the impact of negative ethical behaviors on employee emotional fatigue enhances the body of knowledge.

Huhtala et al. (2015) propose the perception of a leader's ethical conduct spreads amongst followers, and a leader that does not uphold ethical standards or cultural expectations can create emotional fatigue in the follower cohort. The authors find a lack of resources needed to conduct work ethically reduces employee engagement and commitment, resulting in emotional exhaustion and burnout. A leader that reliably models ethical behaviors and secures sufficient resources to fulfill work requirements ethically reduces the follower cohort's exposure to burnout or emotional fatigue. Likewise, negative ethical leadership behaviors and lack of resourcing necessary to conduct work ethically increase the follower cohort's exposure to engagement erosion and burnout. This moral hazard represents a critical aspect of ethical organizational culture and leadership in the financial services industry.

A study by Zaal et al. (2019) discovers no empirical evidence of a relationship between organizational architecture and the frequency of unethical behavior towards bank customers. This finding recognizes greater decision-making authority does not necessarily produce increased unethical behaviors towards financial services industry customers. The authors suggest

allocating resources to train employees on ethical behavior expectations and explain any sanctions that provide disincentives for unacceptable behaviors that influence employee moral judgments (Zaal et al., 2019). Ethics training and incentive plans regulate the relationship between ethical culture and unethical employee behavior involving individual or team moral judgments. A limitation of this study includes not exploring the managerial level that ethical behavior or moral judgment occurs affecting financial service industry customers. Understanding the contextual variables at each level of management and staff would add to the body of knowledge of how ethically acceptable judgments are made concerning position power and decision-making authority.

Di Stefano et al. (2019) suggest organizational culture influences both ethical behaviors and workplace deviant behaviors, such as unethical decision-making, fraud, problem creation, and harassment. The authors propose values and norms communicated through organizational culture can either control or motivate workplace deviant behavior, therefore, leaders hold the responsibility of ensuring cultural value-system familiarity throughout the enterprise. Organizational cultures promoting trust, participatory employee engagement, collaboration, and individual growth express lower levels of workplace deviant behaviors than control-oriented cultures (Di Stefano et al., 2019). This study adds to the leadership body of knowledge by establishing a correlation between organizational culture value-systems and the degree of workplace deviant behavior resulting from unethical decision-making or immoral judgments.

Themes and Perceptions

This academic and professional literature review clarifies the influence of organizational culture on leadership approaches, behaviors, decision-making, and judgments. Exploring current literature concerning two distinct leadership approaches further enhances the discovery model

utilized to address this study's research problem. The application of transformational and servant leadership approaches stimulates leader behaviors and decision-making, adding a contextual variable of how cultural value-systems permeate an organization through leadership. The seminal writings of Rost (1991) and Greenleaf (1977) add to the transformational and servant leadership body of knowledge and this literature review synthesizes how these leadership approaches contribute to ethical judgments, behaviors, and decision-making when leaders confront uncertainties and risk.

Transformational and Servant Leadership Approaches to Ethical Behaviors. Given emerging digital technologies are key technological innovations introduced into the public sphere for examination, gestation, and permeation by the masses (Teran, 2008), business leaders can manage their leadership approaches to lead others into a transformed business reality made available by new technologies. Consideration of the effect of two leadership approaches to confronting ethical challenges and uncertainties resulting from emerging digital technologies add richness and depth to the context of this single case study: transformational and servant leadership. Upon synthesizing a review of relevant academic literature concerning both approaches, consideration of a hybrid approach follows.

Transformational Leadership Approach. Rost (1991) examined the application of a transformational leadership approach and its influence on leader decision-making and follower commitment, positing the act of leadership is rooted in transformation. Transformational leadership includes four essential elements: active leaders and followers, the influence of others through persuasion, implementation of real change, and the achievement of mutual purposes (Rost, 1991). This author submits transformational leadership may include making moral judgments, but leaders must recognize stakeholders may consider business transformations both

moral and immoral due to differing individual moral values. Rost suggests a transformational leadership approach depends on the ethical processes of leaders, rather than whether or not a leader's actions are morally uplifting.

Hansbrough and Schyns (2018) suggest the effectiveness of a transformational leadership approach depends upon certain characteristics of followers, including follower openness to ambiguity and the degree of conscientiousness. Employees with high levels of organizational commitment and dedication to mission achievement become receptive to transformational leadership when the leader exhibits behaviors consistent with follower expectations. A leader's expectations for increasing performance during periods of innovations and uncertainties may result in follower resistance to transformational leadership. Receptivity to a transformational leadership approach depends on the leader's ability to leverage three leadership dimensions: sensitivity, charisma, and intelligence (Hansbrough & Schyns, 2018). Utilizing these three leadership dimensions positions leaders to mediate the relationship between follower conscientiousness and the appeal of transformational leadership. Once the appeal of transformational leadership strengthens amongst followers, creativity and flexibility become hallmarks of the organization.

Multiple studies indicate a transformational leadership approach can influence the creativity levels and innovativeness of leaders, individual followers, and teams to varying degrees depending on environmental factors. Koh et al. (2018) examine the effect of transformational leadership on leader creativity, finding the impact of transformational leadership on a leader depends upon their ability to encourage intellectual stimulation and social learning. A leader who role-models creativity positively influences individual follower creativity, given the individuals' emotional receptivity depends upon mood and cognitive flexibility to

develop creative capabilities (Koh et al., 2018). The influence of transformational leadership on team creativity depends upon the team's acceptance of psychological empowerment and self-efficacy, preparing the team for organizational change and innovations.

Faupel and Süß (2019) find two motivational mechanisms exist when the application of transformational leadership propels organizational change, including a positive perception of the consequences of change (i.e., positive valence) and follower engagement. Transformational leadership communicating the attractive consequences of change, or valence, results in increasing follower willingness to act in support of the change. A transformational leader who supports the mental resilience of followers during change and generates a sense of follower significance in implementing change motivates willingness to support the change. Engaging followers to champion organizational change through the application of a transformational leadership approach adds to the effectiveness of change efforts.

Iqbal et al. (2019) quantitatively examined the influence of transformational leadership on project success rates in Pakistani business, utilizing Posner and Kouzes' (1988) dimensions of transformational leadership: model the way, challenge the process, inspire a shared vision, encourage the heart, and enable others to act. The authors find the transformational leadership dimensions of challenging the process and inspiring a shared vision to have the highest degree of influence on achieving project success. Rigidity to a single set of transformational leadership behaviors limits projects success, as leadership flexibility during periods of change and uncertainties benefits positive outcomes. Other academic studies support, enhance, and occasionally contradict Iqbal et al. findings when examining how transformational leadership influences innovative behaviors, highlighting the limitations of this study.

Bednall et al. (2018) find when utilizing a transformational leadership approach, a relationship exists between knowledge sharing and desirable innovative behaviors. The authors suggest the relationship between knowledge sharing and innovative behaviors increases at higher levels of transformational leadership actions. This indicates knowledge sharing mediates a relationship between transformational leadership and innovative behavior, as the authors clarify that knowledge sharing significantly precedes innovative behavior. Deploying a transformational leadership approach without sufficient knowledge sharing may change follower perceptions of leader behaviors.

Pradhan and Jena (2019) propose an effective transformational leadership behavior motivates followers by describing common goals in ideological terms to focus on higher-order organizational needs. Utilizing this leadership behavioral tactic, followers more readily accept common goals as a sacred mission requiring creativity and innovativeness to exceed expectations. However, followers use their moral reasoning capabilities to determine leaders if are transformational, acting as autonomous moral agents who actively participate in transformational leadership (Naber & Moffett, 2017). Followers with lower moral reasoning capabilities do not fully appreciate transformational leader behaviors and potentially overlook the ethical character embedded in transforming leadership behaviors. Perceptions of transformational leadership behaviors depend upon the moral agency of followers and the motivational skills of leaders.

Zhu et al. (2015) found a strong correlation exists between the dimensions of transformational leadership, ethical leadership, and virtuous leadership, indicating these leadership approaches are psychometrically indistinguishable. The authors suggest followers do not use their moral reasoning to make fine distinctions concerning the ethical behaviors of

leaders, rather followers periodically judge whether leaders consistently exhibit good and ethical qualities. Neves and Coimbra (2019) support these findings, determining a high statistical correlation between transformational, ethical, and moral leadership with each exhibiting leadership behaviors of integrity, forgiveness, responsibility, and compassion. The authors propose a negative correlation exists between transformational leadership and despotic or laissez-faire leadership approaches. Although correlations of a transformational leadership approach and ethical behaviors indicate a potential for successfully navigating ethical challenges and uncertainties resulting from emerging technologies, no immunity exists for a transformational leader to exhibit unethical behaviors.

Lin et al. (2019) examine the negative consequences of transformational leadership behaviors on the leaders utilizing this approach, finding transformational leadership associates with increased emotional exhaustion and high turnover intent of leaders. When leaders ponder terminating their employment due to emotional exhaustion, any resulting turnover creates financial costs, workplace disruptions, and increased accident rates (Lin et al., 2019). The authors suggest emotional exhaustion increases in transformational leaders with low conscientiousness and competency. Avoiding detrimental consequences of transformational leadership requires a leader to exhibit strength in self-awareness, emotional intelligence, and commitment to goal attainment.

Given a leader's exposure to potentially positive and negative consequences of a transformational approach, understanding the context of how change-leaders react to moral or ethical dilemmas carries an importance. Effelsberg and Solga (2015) examined transformational leadership from a virtue ethics perspective and find leaders psychological connectivity to their organization influences the willingness of leaders to exhibit unethical behaviors.

Transformational leaders may confront challenging polarities by establishing a balance between loyalty to organizational interests and compliance with personal morality or ethical standards arises. The leader's strength of organizational orientation or intertwinement within the organizational culture influences their demonstration of unethical behaviors. Confronting ethical challenges resulting from emerging digital technologies requires prudent selection of a leadership approach, and servant leadership offers a differing perspective when leading organizational transformations.

Servant Leadership Approach. Greenleaf's (1977) seminal book exploring the concept of servant leadership proposes meaningful leadership first serves other's highest priority needs while showing the way to a better future. The author suggests leading with acceptance and empathy grounds the servant leader in trustfulness, encouraging followers to achieve their highest potential. This leadership role of a trusted steward or trustee allows the leader to fulfill fiduciary duties to protect the value of organizational assets and dignity of employees. Greenleaf's approach to servant leadership proposes the business functions of an organization exist to provide meaningful work to employees, just as valuable products and services exist for customer use. Servant leadership results in an improved societal good, as leaders exemplify an ethic of encouraging autonomous, self-reliant, and competent followers. Greenleaf (1977) suggests dimensions of servant leadership include a sense of beauty, openness, humor, and tolerance, a collection of characteristics leaders utilize to serve the well-being of others. It is in a mindset of serving others that a servant leadership approach supports ethical decision-making and optimizes the influence relationship between leader and follower.

Gandolfi et al. (2017) expand on Greenleaf's propositions, finding the effectiveness of transformational and servant leadership approaches depend upon interactive communication with

followers. The authors suggest a servant leader demonstrates a high degree of interactive leadership behaviors by unselfishly placing follower needs as a foremost priority. Servant leadership directly correlates to employee engagement, and the characteristics of the servant leader represent a virtuous leadership style (Gandolfi et al., 2017). Although similarities in transformational and servant leadership exist, the servant leader's primary focus significantly differs in supporting the means of follower success to achieve the ends of organizational mission accomplishment.

Gandolfi and Stone (2018) clarify assumptions of servant leadership, proposing maximizing follower potential translates to improved long-term organizational performance. The authors propose a servant leadership approach encourages and motivates both leaders and followers to adhere to moral behaviors and decision-making. Servant leaders actively demonstrate ambition and goal achievement through enthusiasm and determination by prioritizing follower needs (Gandolfi & Stone, 2018) as trusted stewards of organizational value. Heyler and Martin (2018) apply servant leadership to multiple leadership theories, including stewardship theory that states organizational stewards make decisions in the best interest of the organization rather than fulfilling self-interest. The authors propose servant leaders similarly work for the best interests of all organizational stakeholders, relegating themselves to the background when follower success materializes.

Karatepe et al. (2019) examine the impact of servant leadership on engendering follower trust in the organization, rather than examining servant leadership's impact on follower trust of the individual leader. The authors find a correlation between successful servant leadership practices and enhanced follower trust in the organization that results in reduced work tardiness and increased employee creative performance. Creative performance represents innovativeness

and positive novel behaviors displayed by followers. Follower creativity flourishes when servant leaders empower followers, develop strong relationships with followers, and demonstrate ethical decision-making due to increasing levels of follower trust in the organization.

Lapointe and Vandenberghe (2018) expand on the concept of servant leadership's influence on employee commitment to the organization, finding servant leaders who establish a satisfying work environment increases follower's obligation toward the organization. This obligation to the company materializes in a follower's perceived sacrifice commitment, or perceived cost of leaving the organization. The authors suggest the relationship between servant leadership and perceived sacrifice commitment initially appears contradictory to the tenet of servant leadership to develop follower's full potential, in that perception of a high cost of leaving an organization potentially restricts flourishing. However, satisfying aspects of organizational membership are associated with increased employee engagement and commitment, so increased sacrifice commitment does not contradict the intent of servant leadership.

Lumpkin and Achen (2018) develop a multidimensional relational model of ethical leadership, servant leadership, emotional intelligence, and self-determination. The authors find leadership synergies exist when ethical servant leaders with a high degree of emotional intelligence satisfy employees' self-determined needs for autonomy, competence, and relatedness. The findings of this study include followers thrive in organizational contexts that promote self-determination, and meeting follower psychological needs occur when ethical servant leaders nurture trust, respect, and integrity with emotional intelligence. In this context, servant leadership that meets self-determined follower needs contributes to the meaningfulness of work.

Fatima and Zafar (2018) propose ethical sensitivity enables servant-leaders to enrich the meaningfulness of work, as servant leadership creates an ethically egalitarian culture wherein leader and follower belief systems hold equal value. The authors suggest servant leadership enhances the meaningfulness of work to a greater degree than transformational leadership because a transformational leadership approach expects followers to subordinate individual needs to organizational objectives. A servant leader's ethical sensitivity provides followers insight into how ethical decision-making occurs, resulting in enhancing the meaningfulness of work (Fatima & Zafar, 2018) and leader self-reflection.

Kiker et al. (2019) assess the effect of servant leadership on job performance, job satisfaction, commitment, and trust, finding the strongest relationship amongst servant leadership, job performance, and job satisfaction occur when a servant leadership approach permeates an organization's context rather than existing in an individual leader. Widespread servant leadership throughout an organization associates group welfare to organizational objectives and enhances job performance and satisfaction. The authors also find follower gender moderates the effect of servant leadership on job performance. Men respond more favorably to servant leadership directed towards increased job performance, whereas women respond more favorably to servant leadership directed towards increased job satisfaction, commitment, and trust (Kiker et al., 2019). This study adds to the servant leadership body of knowledge by examining servant leadership as an organization-wide phenomenon and resulting outcomes by gender.

Sousa and van Dierendonck (2017) suggest interactions exist amongst servant leadership actions, humility, and hierarchical rank of the leader that influence follower engagement. The authors find servant leadership actions of empowerment, accountability, and stewardship coupled

with leadership humility influences employee engagement differently depending upon the hierarchical rank of the leader. Attributes of humility at higher levels of the hierarchy moderate employee engagement, whereas attributes of humility at lower levels of the hierarchy increase employee engagement (Sousa & van Dierendonck, 2017). Leaders at lower levels of the organizational hierarchy often utilize action-oriented or transactional leadership approaches to overcome tactical challenges, therefore, the authors propose servant leadership actions supported by moderate attributes of humility become most effective in high-level executive positions.

Liu (2019) analyzes servant leadership outcomes via a single case study, finding followers of a participating servant leader readily accepted the leader's role as servant but did not fully embrace the leader's claim of effective leadership. The author suggests followership represents a dynamic social construct wherein each follower differentiates from others in complex, nuanced ways. The findings of the study indicate unilaterally executed servant leadership that assumes followers embody a homogeneous identity results in limited follower trust or cohesion. To overcome the challenge of heterogeneous followership, servant leaders should encourage each follower to voice creative ideas as well as peer, team, or managerial failings (Arain et al., 2019). Providing openness in the workplace for voicing follower positive (promotive) and negative (prohibitive) voice increases trust and employee engagement. Followers can accede or dissent to the servant and transformational leadership approaches, suggesting the construction of a hybrid of the two approaches may be useful in addressing ethical challenges and uncertainties resulting from emerging digital technologies.

A Hybrid Leadership Approach to Ethical Decision-Making. Zbierowski (2016) compares and contrasts transformational and servant leadership approaches, finding transformational leadership positively influences relationships and communication, while servant

leadership positively influences organizational climate and meaning. Transformational leadership focuses on individual development, intellectual stimulation, and inspirational motivation, and servant leadership focuses on compassion, building community value, and ethical behavior (Zbierowski, 2016). Although the dimensions, focus, and outcomes of leadership approaches differ, transformational and servant leadership represent analogous affirmation leadership practices. Conceptual similarities exist between the two leadership approaches, yet environmental considerations influence the effectiveness of each approach.

Van Dierendonck et al. (2014) quantitatively evaluate follower outcomes resulting from transformational, servant, transactional, and laissez-faire leadership, finding transformational leadership behaviors focus on the organization and the perception of leader effectiveness, while servant leadership behaviors focus on the individual and follower psychological needs. Although these behavioral outcomes differ, the authors propose a lack of evidence exists for clearly distinguishing transformational and servant leadership on a conceptual basis. The positive leadership conceptual foundation of these two approaches indicates overlap in leadership behaviors. Van Dierendonck et al. (2014) suggest the level of uncertainty in an organization's internal and external environment influences the effectiveness of a leadership approach. In highly uncertain environments, transformational leadership exceeds servant leadership effectiveness. In environments of relative stability, servant leadership exceeds transformational leadership effectiveness.

Hoch et al. (2016) compare transformational leadership to values-based leadership approaches including authentic, ethical, and servant leadership, finding coupling a values-based leadership approach with transformational leadership improves follower outcomes. The authors suggest authentic and ethical leadership display significant redundancy with each other therefore

employing both approaches yield limited improvement of follower outcomes. Servant leadership includes a moral dimension that directly addresses a potential deficiency within transformational leadership. The findings of both van Dierendonck et al. (2014) and Hoch et al. (2016) indicate a leader developing a hybrid approach supportive of dynamic environmental contexts with fluctuating degrees of uncertainty and follower needs can generate improved follower outcomes.

Hunt (2017) approaches moral and ethical behaviors within transformational and servant leadership approaches through the lens of a humane orientation, or the extent an organizational culture rewards leaders for kindness, altruism, benevolence, and generosity. The author finds servant and transformational leadership styles include a moral component that closely associates with exhibiting a humane orientation of leadership. Providing mentorship represents a humane orientation of leadership behavior, as transformational leadership expresses mentorship as a means of improving follower performance and servant leadership expresses mentorship through acts of service to followers (Hunt 2017). The inclusion of a humane orientation to both servant and transformational leadership strengthens the ethical foundation of the organization by providing mechanisms through which leaders can express authentic concern for followers.

Vanek (2018) proposes creating a hybrid approach of applying a transformational servant leadership, suggesting this hybrid approach improves followership through personal connections, intellectual stimulation, and inspirational motivation. The author recommends a framework of transformational servant leadership, including seeking the betterment of followership, using charismatic and inspirational behaviors to influence followers, providing inspirational stimulation to colleagues and clients, and building trust through individual consideration (Vanek, 2018). Academic and professional literature provides a basis to create a hybrid transformational

servant leadership model to address ethical challenges and uncertainties arising from environmental changes such as emerging digital technologies.

Confronting Ethical Challenges Resulting from Emerging Technologies

Contemporary technology exists as a convergence of art and the science of humanities and mathematics. In its essence, technology represents an expression of human creativity and machine learning. The creation of cyberspace unleashes virtually unlimited opportunities for the advancement of knowledge and work efficiency, coupled with the risk of accelerating the decline of humanity if the use of technology occurs in immoral or unethical ways. Technology elevates humanity's capabilities, while simultaneously carrying the risk of dehumanization. As a component of modern culture, technology interacts with branches of philosophy, including logic, values, and ethics. A philosophy of technology guides ethical protection of the foundation of human advancement to safeguard value, obligation, and human good (Jonas, 2014). The technologist holds both a deontological obligation and duty to ethically design and use technology while maintaining a virtue ethic that clarifies the consequences of technological advancement. A review of academic and professional literature adds to the current understanding of how business leaders confront ethical challenges resulting from emerging technologies.

Technological Innovations and Transformations. Melo et al. (2015) explore relationships between culture, ethics, and technology, suggesting the behaviorist B.F. Skinner provides a basis for governing the use of technology by elevating the ultimate value of survival of humanity and culture. Skinner proposes a behavioral ethical technology seeks the survival of humanity and supports the welfare of individuals (Melo et al., 2015). The importance of this proposition lies in the assumption that technology can strengthen culture when technologists make ethical choices or inspire ethical questions. Ethical neutrality cannot exist in emerging

technologies, as the art and science of technological innovation promote both good and bad aspects of culture. Reaching a common understanding of a philosophy of emerging technologies allows further exploration of how technologies can transform society and organizations.

Teran (2018) suggests emerging technologies are prototypes with the ability to transform human lives as the technologies become dominant in practice. The author suggests emerging technologies can be disruptive or sustaining. Disruptive technologies replace previously dominant technologies, whereas evolutionary or revolutionary sustaining technologies do not replace previous technologies in the market. Evolutionary technologies improve previous technological applications, and revolutionary technologies represent novel applications that do not displace previous iterations (Teran, 2018). Whether disruptive or sustaining, emerging technologies carry uncertainty, as the consequences of deployment often lack clarity and constitute ambiguities. This uncertainty creates digital dilemmas confronted in the market through value and ethical judgments.

Kernaghan (2014) proposes the ethical values embedded in emerging technologies include service, openness, accountability, integrity, and privacy. The author suggests these values inform how to address uncertainties and ethical dilemmas resultant from emerging technologies in business, such as artificial intelligence (AI), cloud computing, Internet of things (IoT), social media, and robotics. Ethical dilemmas arise from the development of algorithms used in AI and IoT applications, challenging the idea that moral responsibility and ethical judgments only reside in humans (Kernaghan, 2014). As the complexity of algorithm applications and artificial learning expands, how technology determines what is right and wrong complicates human interactions with emerging technologies.

Kondrla and Durkova (2018) propose emerging technologies represent tools intended to control human beings and potentially constrain individual liberty and privacy. The authors apply ethical values to evaluate the effect of emerging technologies on human relationships, including technological influences on socialization, communication, friendship, and admiration. To confront human relational challenges caused by emerging technologies, Kondrla and Durkova (2018) suggest building self-awareness of how technology assists in caring for others and its enhancement of social good. When technological use omits ethical consideration of influences on human relationships, societal erosion can occur. This phenomenon materializes in the use of social media communications that dehumanize others or minimizes others' agency to make decisions based on individual value judgments. Emerging technologies inherently carry the risk of human degradation and create uncertainties regarding the consequences of use.

Uncertainties and Risks Resulting from Emerging Technologies. Russo (2018) proposes emerging digital technology alters reality in fundamental ways, as ethical problems of privacy and rights for consumers to be forgotten (i.e., personal data eliminated in the market) require ontological and epistemological considerations. The author suggests the difference between human beings and digital artifacts resides in human capability and responsibility to make ethical choices for societal good. Ethical judgments result from an individuals' understanding of reality and their distinctive worldview, so uncertainties resulting from emerging technology offer an opportunity to evaluate ethical choices within a specific worldview.

Parahakaran (2017) suggests ethical judgments made when deploying emerging technologies necessitates learning to enhance knowledge and wisdom by acquiring the ability to discriminate between right and wrong behavior and developing the decision-makers conscience. The author proposes the use of ethical knowledge gained when exploiting emerging technology

requires transparency concerning the user's intentions to advance societal welfare. The intentional and non-intentional goals of those using emerging technologies should be as transparent as the application of a technical object itself (Parahakaran, 2017). In the framework of making ethical judgments when deploying emerging technologies, uncertainty and risk considerations have prominence.

Reamer (2017) proposes addressing uncertainty and risk resulting from digital technologies requires initiation of standard data retention protocols, including proper encryption and storage of data, access of clients to personal records, compliance with applicable laws and industry regulations, and proper data destruction. The expanded use of digital communications provides an opportunity to address new ethical challenges with ethical decision-making protocols. Brusoni and Vaccaro (2017) suggest emerging technology ethical challenges and associated data management protocols become integral considerations in the design of emerging technologies to ensure data security, reliability, and transparency. The authors suggest the timing of ethical considerations in the innovation process influences later management of ethical challenges upon introduction to the market. If consideration of ethical challenges occurs early in the design process, later deployment of the emerging technology may include the reduction of uncertainties faced by users.

Gavankar et al. (2014) define categories of uncertainties resulting from emerging technology, including uncertainty due to external issues, uncertainty due to lack of information, uncertainty due to dynamic scenarios, and statistical uncertainty due to process variation. Identification and analysis of uncertainties throughout the life cycle of emerging technologies allow mitigating risks and minimizing unknown risk exposures. The authors find scenario planning represents the optimal way to address emerging technology uncertainties, including

assignment of the likelihood of scenario occurrence. For risks that remain unforeseen, regulating uncertainties in emerging technologies protects against risk exposures.

Roca et al. (2017) propose emerging technology uncertainty evolves through a lifecycle of art, craft, and science. The authors posit maximum technological uncertainty exists during the art of technological design, uncertainty reduces during the honing craft of emerging technology market introduction, and minimum uncertainty exists as the science of technology experiences market stabilization. Unforeseen or dynamically changing risks throughout the uncertainty lifecycle offer opportunities for regulation. Industry policymakers or regulators can assess emerging technology uncertainties by eliciting expert opinions to identify the relative magnitude of technology uncertainties if they materialize (Roca et al., 2017). Cybersecurity risk provides an example of dynamic uncertainty and risk inherent in emerging technologies that present regulators an opportunity to provide industry guidance.

As the implementation of emerging digital technologies rapidly expands, cybersecurity uncertainties, threats, and risk exposures increase as those seeking unauthorized penetration into business networks constantly seek opportunities for disruption and theft. Technology leaders facing new cybersecurity threats due to emerging technology conduct risk assessments to identify funding allocations to protect the company's data and reputation. Fielder et al. (2018) suggest the complexity of cybersecurity risk assessments increases given the number and potential severity of uncertainty exposures the organization encounters. Emerging cyber-threats warrant expanding emerging technology risk governance.

Linkov et al. (2018) propose emerging technologies require non-traditional risk considerations when assessing new cyber threats, including ethical, moral, and social impact evaluations. The authors suggest a comprehensive approach to emerging technology risk

governance that assures broad stakeholder collaboration, including input from industry, academia, government, non-government organizations, and civil society. Engagement of each stakeholder group ensures expansive evaluation of risk, benefits, and uncertainties associated with emerging technologies, resulting in increased public trust in governance protocols before the adoption of new technologies in the market. Application of this collaborative emerging technology governance approach at an organizational level suggests technology leaders should include ethical, moral, and societal well-being considerations in all risk assessments. The nature of ethical challenges differs with each emerging technology deployed, so understanding relationships between ethics and specific emerging technologies prepares leaders to manage risk.

Ethical Challenges Resulting from Emergent Technologies. Etzioni and Etzioni (2017) explore ethical challenges resulting from emerging artificial intelligence (AI), suggesting inserting ethics into AI applications occurs through programming ethical principles directly into systems or allowing machines to learn how to reach ethical decisions through observation of human behaviors. The authors propose machine observation of human behaviors determines common or normative behaviors, but common behaviors may not indicate ethical practices. Advanced algorithms position AI to make unlimited observations and form neural networks to interpret data relevant to particular situations, a machine-ability termed deep learning. By utilizing deep learning capabilities, AI aspires to replace human cognitive abilities to render decisions, or AI assists human agents in decision-making as a cognitive partner (Etzioni & Etzioni, 2017). Human agents retain ethical decision-making autonomy while supported by AI, or deployment of AI ethics bots that analyze big data to determine human ethical preferences can support smart machine ethical decision-making. In either circumstance, the authors suggest complex ethical challenges support retaining human autonomy in ethical decision-making to

protect against unethical or immoral machine-learned behavior. The use of AI and other emerging technologies in the financial services industry result in ethical risk exposures and client privacy challenges.

Taddeo and Floridi (2018) suggest AI retains the benefits of positively influencing choices and fostering social interaction and cooperation, while simultaneously threatening humanity's autonomy by influencing choices and potentially undermining decision-making control. The authors suggest organizations should directly address threats and ethical challenges resulting from emerging technologies like AI, rather than miss the transformative opportunity to improve social well-being and welfare. A unique role of modern business leaders includes confronting the nature of a post-AI society and defining the underlying human values supportive of exploiting the benefits of emerging technologies for social good.

Spiegel (2018) considers if some emerging technologies remove agency from the user and decouple risk from the consequences of risk decision-making. If emerging technologies provide users with a false sense of retaining agency when AI acts as the decision-maker, decoupling of user risks and consequences may occur. Ethical decision-making assumes a direct linkage between risks and consequences that help inform ethical decision-making. Decoupling risks and consequences represents a moral hazard, as does increase privacy risks inherent in some emerging technologies like virtual reality (VR) or AI applications. Spiegel (2018) proposes three types of privacy risk exist, including informational, physical, and associational. Informational privacy refers to the known or unknown data mining of the user's digital footprint, including personal data and preferences. Physical privacy refers to the threat of emerging technologies monitoring user behaviors or observing users through digital devices. Associational privacy refers to a lack of control of virtual environments, wherein user interactions provide a

valuable resource for others to mine data for alternative purposes. Ethical considerations include the use of captured data, potential privacy violations, and any manipulation techniques technology utilizes to influence user behavior when employing emerging technologies.

Kohl et al. (2018) introduce the concept of a distorted benefit perception of users when emerging technology introduction occurs, wherein perceived safety and privacy concerns often outweigh the benefits of technology usage. New technologies like self-driving vehicles can be associated with physical safety hazards and data privacy risks. Financial services technologies like algorithm derived robotic-investment portfolio management can be associated with financial hazards and data privacy risks. The authors find a technology provider's effective use of social media to clarify perceived risks and benefits increases the rate of public acceptance of emerging technologies. Making ethical decisions concerning how social media campaigns influence user behaviors and perceived technology benefits represents a key leadership function throughout the technology life cycle from launch to market proliferation. This interaction of cyberspace and users within the conception of real and perceived risk exposures present ethical challenges addressed in the academic literature within a Christian worldview.

Webster (2018) suggests ethical challenges resulting from emerging technologies include economic and social exclusion, issues of human autonomy, and the idea of cyberspace as an ontological spatial reality. The author proposes cyberspace ethical challenges result from the internet fitting the characteristics of what philosophy defines as the sublime object: vastness, infinity, and obscurity. The three characteristics of cyberspace as a sublime reality lend itself to applying a Christian worldview and theological language to ethical challenges resulting from emerging technologies. Webster (2018) finds human interaction with cyberspace and emerging technologies like AI meld the ethics and virtue of human personality, cognitive capabilities, and

soul with machine neural networks. In this conflation of humanity and technology resides an emerging field of applied cyber-ethics framed within a biblical worldview.

Hurlburt (2018) suggests the expansion of cyber-physical systems that materialize in the internet of things (IoT) and AI creates emerging ethical challenges, especially in cyber-social systems such as a financial services firm wherein client's wealth management occurs through digital means. Given economic projections of the IoT cybersecurity market's annual costs exceed six billion dollars by the year 2023 (Hurlburt, 2018), the resources applied to mitigate security risks and ethical challenges continue to rapidly grow. Several technology-industry professional associations publish cyber-ethics guidelines, and the author suggests ethics guiding principles should place the onus on humans to ensure privacy, liberty, transparency, and safety in cyberspace, thereby retaining autonomy and agency in humanity rather than machine networks and AI. As the field of cyber-ethics matures, organizations must recognize and address reputational risk exposures inherent in cybersecurity risk.

Reputational Risk Exposures. Mathur (2019) finds that perceived cybersecurity risk by consumers and clients creates a significant increase in an organization's reputation risk, especially in retail industries to include financial services. The author finds this relationship between perceived cybersecurity risk and reputational risk results in organizational idiosyncratic risk. Idiosyncratic risk mitigation plans include interfacing technology, finance, and marketing professionals to execute social media strategies that offset the negative economic effects of reputational risk (Mathur, 2019). Building capabilities to manage the relationship between cybersecurity risk and reputational risk represents a critical leadership skill in the financial services industry.

Heidinger and Gatzert (2018) propose reputational risk represents a top-five business risk for a financial services organization's business model sustained by client trust. The authors find during the ten-years ending in 2015, academic and professional journals addressed reputational risk three times more than the prior decade. This increasing trend of reputational risk research indicates higher stakeholder engagement in risk management, coupled with the increasing prominence of social media and other emerging technologies that influence perceived organizational reputation (Heidinger & Gatzert, 2018). The authors discover the likelihood of implementing reputational risk management programs increases with firm size and inclusion of reputational risk in the firm's annual report. This finding suggests an abundance of resources and reputational risk awareness influences the sophistication of reputational risk management programs. Resources and risk awareness contribute to a leader's ethical decision-making ability, yet the application of decision-making theories adds to the body of knowledge of how ethical judgments transition to the application of ethical decisions.

Application of Motivational and Decision-Making Theories

As a leader confronts ethical challenges resulting from emerging digital technologies, the application of motivational and decision-making theories assists in understanding leader behaviors and decision outputs. Applying self-determination theory (SDT) and decision theory (DT) to how a leader approaches ethical challenges provides insight into leader motivations to act according to organizational and personal values and the process of arriving at ethical decisions. SDT does not explain how ethical decision-making occurs rather it correlates individual well-being with degrees of autonomy, relatedness, and competence (Wellner, 2017) resulting from confronting ethical challenges. This theoretical understanding of the motivations

for providing ethical leadership relates to ethics in how decision-making aligns with organizational and individual values to support a leader's psychological well-being.

Self-Determination Theory (SDT). Ryan and Deci (2000) submit SDT represents an approach to human motivation and behavioral self-regulation that fosters individual well-being through needs of relatedness, competence, and autonomy. The authors propose SDT explains how motivated behaviors become self-determined and how a social environment influences individual behaviors. Motivations can materialize as extrinsic or intrinsic experiences. Ryan and Deci (2000) characterize extrinsic motivations as behaviors that support an individual achieving an outcome, whereas intrinsic motivations represent behaviors initiated for self-satisfaction. According to SDT, business leaders who fully integrate extrinsic motivations and external regulations with self and individual values, experience greater autonomy and a sense of relatedness to an organization. The integration of motivations with self-regulation of behaviors presents business leaders opportunities to flourish and enhance personal wisdom.

Bauer et al. (2017) deem the definition of a good life, personal well-being, and wisdom as eudaimonia, a term used by Aristotle to describe a life of fulfillment. SDT slightly diverges from this Aristotelian understanding of eudaimonic living by segregating well-being from wisdom, proposing a wise individual may not necessarily achieve psychological well-being. The authors suggest an individual who values reflective growth through thinking coherently and complexly to gain life perspective may desire reflective wisdom, yet not attain reflective wisdom. SDT suggests reflective growth allows an individual confronted with a difficulty or ethical challenge to consider alternative actions, challenge assumptions, and interpret contexts from multiple perspectives (Bauer et al., 2017). An ethical challenge can create a sense of psychological disequilibrium, resulting in an individual's need for competence and autonomy to become unmet.

A perceived state of psychological disequilibrium and eroding well-being encourages individuals to utilize reflective growth skills to identify ways to overcome the challenge and reestablish psychological well-being. To reacquire psychological equilibrium when confronted by an ethical challenge, an individual's behaviors, actions, and decisions strive to fulfill values. Reflective wisdom may assist in reclaiming well-being through value fulfillment, but SDT does not suggest well-being requires personal wisdom.

Hodis (2018) expands on the concepts of SDT by defining autonomy as an individual's need to behave voluntarily and freely, competence as a need to feel effective, and relatedness as a need to feel connectivity to a group or organization of value. The author builds on the seminal SDT research of Ryan and Deci (2000) by proposing motivations can be autonomous or controlled. Autonomous motivation engages individuals to utilize personal volition with behaviors emerging as an expression of self, whereas controlled motivation compels individual behaviors through pressures (Hodis, 2008). SDT assists in explaining how motivations and resultant behaviors fit within an individual's self-conceptualization. In the context of the research problem of ethical challenges resulting from emerging digital technologies, SDT enhances understanding of how organizational culture, values, leadership approaches, and decision-making processes influence a leader's motivations to make ethical decisions to support individual well-being. SDT clarifies and articulates how autonomy relates to morality and ethics.

Arvanitis (2017) suggests SDT illuminates the personal freedom or constraints an individual experiences when interacting with their environment and the degree to which moral norms in the environment integrate into an individual's psychological processes. The author proposes the integration of moral norms, such as justice and solidarity, into an individual's decision-making processes and behaviors protect the need for competence, relatedness, and

autonomy. Justice and solidarity promote empathy for others and connectivity between individuals and organizations, as these moral norms integrate into a business leader's conceptualization of self. SDT predicts the moral norms of justice and solidarity relate to the process of moral development (Arvanitis, 2017), and the integration of these principles into self helps fulfill an individual's psychological needs. Other social or organizational norms only integrate into self through external pressure or coercion, thereby not fulfilling an individual's need for autonomy, competence, or relatedness. Organizational culture and leaders that respect the right of other's self-determination support the integration of values, moral norms, and ethics into decision-making and behaviors.

Arruda (2016) suggests respecting the right of others' self-determination includes the motivational act of recognition. The author proposes recognition subsists as a component of one's moral life, as a condition for membership in a moral community, and as an attitude that influences actions. The motivating effect of recognition resides in an act towards others rather than thought about others. Arruda (2016) posits recognition exists as an act of respect for others, granting others the autonomy of moral authority in recognition that others are worthy of moral consideration. In this framework, recognition becomes a moral obligation or duty to respect others in a community or organization. Acts of mutual and intentional recognition motivate others to fulfill the SDT needs of relatedness and autonomy, thereby contributing to individual well-being. The satisfaction of the need for well-being affects individuals' various life domains, including the domains of work and home.

Hewett et al. (2017) propose individuals do not entirely segregate feelings of competence, relatedness, and autonomy between work and home environments, rather SDT needs to interact between work and home contexts. The authors find when satisfaction of an individuals' need for

competence remains unmet through work, identifying opportunities to satisfy the need for competence through stimulating activities at home becomes important to well-being. This cross-domain interaction between satisfying competency-needs in either work or home environments exists to a lesser extent with needs for autonomy and relatedness. Autonomy and relatedness satisfaction may occur through work or home environments, but when these needs remain unmet at work the likelihood of achieving satisfaction at home appears low (Hewett et al., 2017). The relevance of this study to resolving the research problem resides in how individuals accept the use of emerging technologies in both work and home environments that affect their need for competence, autonomy, and relatedness in decision-making.

Lu et al. (2019) examined emotional and psychological needs influential to technology acceptance and use, fusing the three SDT needs with five constructs of the technology acceptance model (TAM): usefulness, ease of use, user attitude, the behavioral intention of use, and actual system use. Understanding how psychological needs influence the acceptance of technology provides insight into interactions amongst the use of technology, needs satisfaction, and psychological states when individuals confront emerging technologies. The authors found acceptance of emerging technologies positively related to the perceived usefulness of the technology coupled with sufficient user knowledge concerning the new technology's perceived ease of use. When this condition exists, acceptance of emerging technologies increases, satisfying the user's need for competence, autonomy, and relatedness supportive of individual well-being.

Lee et al. (2015) examined the motivations for acceptance of information and communication technology (ICT), considering the ICT variables of user's performance expectancy and perceived enjoyment based on SDT psychological need satisfaction. The authors

found a positive relationship exists between a user's perceived enjoyment of emerging technologies and their psychological need for autonomy and relatedness. Perceived enjoyment of technological use exists as an intrinsic motivator of technological acceptance, and this intrinsic motivation to use technology enhances an individual's perception of the usefulness of new technologies (Lee et al., 2015). The authors proposed a practical application of study findings includes how leaders employ intrinsic motivations to encourage the use of emerging technologies while satisfying users' needs for competence, autonomy, and relatedness. From the perspective a financial services firm, encouraging the use of emerging technologies holds the potential to build client loyalty.

Tseng et al. (2018) contribute to understanding relationships amongst the perceived value of emerging digital technologies, user satisfaction of needs, and customer loyalty, finding a technology user's functional, self-expressive, and social values positively correlate to their psychological need for competence, autonomy, and relatedness, respectively. The authors suggest deploying emerging technologies that add value to a user's ability to function more effectively, express ideas freely, and socially interact with others supports building customer loyalty. A practical application of findings includes a firm engaging with third-party technology developers to provide customers a sense of participating in a broad network of users, as well as allocating resources to advertise the superior functionality of deployed technologies. By providing unique technical functionality coupled with providing users autonomy to communicate in social networks concerning technological use, a firm may build customer loyalty through the fulfillment of client psychological needs.

Social media use takes on a prevalent role in the retail financial services industry, as clients expect to maintain a sense of digital community with other customers. Karahanna et al.

(2018) expand the SDT psychological needs of competence, relatedness, and autonomy by evaluating social media users' need for maintaining a sense of place and self-identity. The authors find of these five psychological needs, motivators of social media use include autonomy, relatedness, and expressing self-identity. Social media users with a strong need for autonomy find satisfaction in freely determining how to browse, whereas individuals with a high need to express self-identity within a relational community find content sharing and voicing ideas satisfies their psychological needs (Karahanna et al., 2018). As financial service firms develop marketing strategies inclusive of social media communications, understanding user motivation to acquire psychological well-being becomes foundational to marketing strategy success.

Marketing strategies aimed at attracting and retaining customers supported by emerging technologies recognize financial services clients internalize the organization's values when the firm communicates client support, freedom of client choice, acknowledgment of individual financial intent, and connection to other clients (Rayburn et al., 2018). As traditional financial interactions continue to evolve through digital technologies, friction exists between the firm providing an appropriate balance of digital client communications and face-to-face conversations. Rahi and Ghani (2019) find when a system, information, and service quality satisfy client psychological needs, both extrinsic and intrinsic motivation to remain a customer increases. The authors suggest effective strategies focus on information and service quality to enhance intrinsic client motivation to accept and use the firm's digital technologies. Tactics to improve the user's enjoyment of digital interactions include the firm developing an aesthetically pleasing website promoting ease of use, creating reward systems for use, and offering a novelty of technology unique to the firm. With clients' need fulfillment and well-being positioned as a

goal of marketing strategy, financial service leaders can likewise design human resources strategies to enhance employee psychological fulfillment and well-being.

Parmar et al. (2019) propose supporting employee psychological well-being includes expanding a shareholder-focused corporate objective to include a stakeholder-focused corporate objective. The authors find stakeholder objectives that recognize multiple key stakeholders exist necessitating the development of purpose-driven and people-oriented strategies that foster employee self-determination. Corporate objectives focused on multiple stakeholder well-being results in a 17% to 33% increase in self-determination at work whereas corporate objectives focused on shareholder profit resulted in significant decreases of competence, autonomy, and relatedness at work (Parmar et al., 2019). This study's relevance to addressing the research question resides in the gap in literature exploring the impact of ethical challenges resulting from emerging digital technologies on decision-maker psychological well-being and motivation to make decisions that align with organizational and personal values. Self-determination theory provides a basis upon which to further understanding of the role of decision theory on leader ethical behaviors.

Decision Theory. Decision theory (DT) describes how individuals integrate alternatives, risks, and probabilities to form a preference amongst options with different risk exposures and given uncertainties (Glickman et al., 2019), and DT assists leaders navigating knowledge ignorance and uncertainties inherent in the rapid innovation of emergent technologies. Calabretta et al. (2017) propose strategic decision-making can occur within a model of rationality or intuition. The authors suggest rationality refers to the systemic, analytical, rules-based process of identifying a set of alternatives, assessing costs and benefits, and making a rational choice. The process of rationality can be time-consuming, requires significant effort, and potentially

represents an incompatible method of decision-making in a complex, uncertain, rapidly changing environment. An intuitive decision-making process assists addressing uncertainties and stimulates creative cognitions to make decisions utilizing faster intuitive judgments (Calabretta et al., 2017). Whether DT processes are rational or intuitive during periods of rapidly emerging technologies, innovative problems and changing environments require leaders to utilize innovative decision-making processes.

Giancomoni (2019) introduces Archimedes' thought experiment as a creative cognition acting as a counter-balance to DT in how to confront the unknown or significant uncertainties inherent in complex problems. Archimedes' decision method and "eureka" moment, described in a letter written to Eratosthenes in the second century before the Christian era, compared an unknown context with a known reference universe to reach inferential conclusions. In this way, Archimedes expanded the general theory of decision-making by reframing known universes to comprehend unknown universes. Giancomoni (2019) suggests reframing a reference universe disallows redistributing known probabilities to a new context because the reframed universe adds a new dimension of the unknown. Rapid technological change creates friction between modern uncertainties and ancient decision-making processes, requiring behavioral and cognitive adaptations to confront ethical challenges resulting from emerging technologies.

Lysek (2018) examines the idea of seeking congruence or harmony in decision-making, wherein individuals confront contradictory choices and ambiguities residing in dilemmas or polarities. In the case of option congruence, outcomes from choosing an alternative may not be dominant or better than other feasible choices, or the decision may be one of balancing the selection of options to optimize benefits and minimize risk exposures. The author proposes obtaining congruence in decision-making requires an iterative process, including cognitive

struggle, congruence identification, decision, and justification. The process of seeking congruence can occur as rational or emotional, with the former involving learning and self-reassurance and the latter involving emotionally captivating behaviors and self-justification (Lysek, 2018). Congruence in decision-making can be elusive in complex, dynamic environments.

Cepni (2019) adroitly summarizes a condition of modern society as, "We are surrounded by complex adaptive systems" (p. 170). The author proposes new decision-making processes should consider culture, complexity, and ethics to locate equitable solutions to complex problems with many interrelated and interconnected components rapidly adapting to circumstances. Exploration of how complex adaptive systems create unexpected future eventualities provides insight into how a modern application of DT assists in identifying a preference amongst risky choices.

Briggs (2018) expands upon the dominance principle utilized by epistemic decision theorists, whereby the dominant option yields a better outcome than an alternative option in some states and yields at least as good an outcome in every state. (i.e., Outcomes from choosing $\text{Option}_A \geq \text{Option}_B$ in every state represents dominance.) The author proposes an option can be better than an alternative option without dominating it, and identifying a better option provides a sufficiently rational basis for decision-making. Briggs' (2018) two-step method of determining the better, non-dominant option before making a rational decision by selecting the better option, positions decision-makers to factor uncertainty into option selection from a feasible set of alternatives. Additional complexity and ethical consideration enter the DT process when shared decision-making responsibility exists.

Financial and wealth management decisions often include the shared decision-making complexity of a financial advisor and their client, wherein the reasonableness of the advisor's judgment on risky options influences their client's choices. Brown and Salmon (2019) propose establishing accountability for the advisor making sound judgments in the context of uncertainty and risk includes scrutiny of advisor judgments by peers and enforcing industry standards for ethical behaviors. Evaluating outcomes from shared decision-making may occur on the consequentialist ethical basis of outcomes being desirable or on the deontological ethical basis of decisions and behaviors being right or good. On either an ethical basis, shared decision-making requires recognition of humanity when confronting uncertainties and risk resultant from emerging technologies.

Yamamoto and Ananou (2015) propose the dimensions of humanity influenced by emerging technologies include cognition, social interaction, emotion, and ethics. The authors suggest digital technologies and technologically facilitated conversations condition individuals for instant gratification, reduction of face-to-face interactions, and increased multi-tasking that requires rapid adaptation to socio-cultural innovations. Social implications of digital technologies include dependency on electronic devices for communication and applying different social standards to digital communication than face-to-face communication. Emotional impacts of technology include a distorted sense of reality between physical space and cyberspace, resulting in ethical implications resultant from a loss of human empathy. Moral development and behaviors inform how to make moral decisions while recognizing human needs in the digital age.

Garrigan et al. (2018) found moral decision-making and development includes cognitive, affective, and social dimensions. The authors suggest cognitive moral dimensions include perspective, abstract thought, logical reasoning, and self-control. Affective moral dimensions

include empathy, emotion regulation, temperament, and intuition. Social moral dimensions include peer interaction, cultural inclusion, socialization, and integrity. Each of these dimensions affects how an individual behaves and makes decisions when confronting a moral dilemma. While one's capacity for moral reasoning develops with age and experience, situational contexts, biases, and mood influence moral decision-making.

Noval and Stahl (2017) propose emotions carry greater intensity and shorter durations than mood, which represents a more general positive or negative affective state of lesser intensity than emotion. The authors found a decision-makers' preexisting mood influences judgmental evaluations, such as an investor in a good mood may allow positive feelings to influence rational investment decision-making. Especially in the context of uncertainty and ambiguity, mood bias can influence ethical decisions, a finding supporting the reality that unethical decisions more often result from flawed decision-making processes than devious intent (Noval & Stahl, 2017). Given interactions between human cognition, socialization, emotion, and ethical decision-making, the development of moral standards acceptable within diverse cultures adds to the DT body of knowledge.

Ast (2019) explores the concept of multi-cultural moral standards that guide business ethical decision-making with universal ethical principles deemed essential for humanity. The author proposes the deliberative capacity of decision-makers should include socioeconomic, cultural, and institutional capacities that draw on intellectual and material resources, common human values, and commitments to human liberties. Multi-cultural complexity adds to the reality of corrosion of human moral norms due to globalization and technological advancements (Ast, 2019). This study finds the degree of business leader's deliberative capacity and agreement to global moral standards and norms correlate to ethical outcomes. Given emerging digital

technologies can foster the corrosion of moral norms, an integrative approach to ethical decision-making during periods of global uncertainty and ambiguity warrants additional research.

Schwartz (2016) produces an integrated ethical decision-making model, utilizing both rational and intuitional decision theories, finding an individual's moral composition includes integrity capacity and moral character disposition. These two aspects of moral composition inform a leader's moral awareness, which is when a realization occurs that a situation requires a decision that may involve conflicting moral standards. Conversely, a lack of moral awareness or moral disengagement creates avoidance of moral or ethical decision-making in deference to other values. The author's integrated ethical decision-making model consists of a process of moral judgment based on reason or intuition, moral reflection, moral rationalization, and a moral intent that results in an ethical decision or behavior (Schwartz, 2016). An integrated ethical decision-making model supports examining recent academic literature on virtue ethics within a Christian worldview to articulate how technology leaders effectively confront ethical challenges resulting from emerging technologies.

Virtue Ethics and Ethical Behaviors

Evaluating the influence of organizational culture, leadership approaches, ethical challenges resulting from emergent technologies, and decision-making motivations, applying a philosophical understanding of virtue ethics to technology leadership decision-making assists in addressing the research problem. Newstead et al. (2018) examined the definition of virtue in the context of positive organizational inquiry (POI), representing the exploration of positive organizational psychology, attributes, and behaviors. The authors proposed virtuousness represents intent to generate feelings, thoughts, and actions contributing to the common good or the expression of moral excellence through wisdom and courage. Virtuous behaviors develop in

both individuals and organizations, as virtues materialize within the context of a particular culture and time (Newstead et al., 2018). Caza et al. (2004) introduced the concept of organizational virtuousness as being associated with positive outcomes when organizations confront ambiguities in turbulent times. The authors proposed organizational virtuousness enhances performance due to the amplifying and buffering effect of virtue. Organizations amplify and buffer virtuousness through the virtuous actions of stakeholders and by offering protection from organizational psychological distress and dysfunction through exhibiting virtues such as courage, integrity, and compassion (Caza et al., 2004). Through POI framed in virtues and virtuous organizational and individual behaviors, increasing knowledge of how leaders confront uncertainties and risks associated with emerging technologies occurs.

Virtue Ethics and Virtuous Organizational Behavior. Papouli (2019) presents the tenets of virtue defined in the writings of Aristotle as good habits of psyche, soul, and mind that develop ethical behaviors. The author proposed Aristotle's concept of eudaimonia, or human flourishing and well-being, represents the ultimate purpose of human life. Aristotle's four virtues required to achieve eudaimonia include courage, temperance, justice, and practical wisdom (Papouli, 2019), and these virtues retain relevance in the complex, dynamic contexts of modern business environments. Yet, acceptance of an Aristotelian understanding of virtue ethics obliges critique, given virtue ethics can be applied differently within particular cultural contexts and through the lens of accepted social norms. The foundation of Aristotle's virtue ethics criticism resides on how ancient ethical inquiry maintains practical applications in modern society.

DaVia (2018) presents a critique of Aristotle's primary goal of ethical inquiry as developing essential definitions of virtuousness. The author intimates that critics of Aristotelian virtue ethics, such as the modern philosopher Hans-Georg Gadamer (1900-2002), oppose

reducing ethics to a set of universal principles or defined moral judgments. Gadamer approaches virtue ethics from a phenomenological approach, maintaining ethical judgments and behaviors represent a human phenomenon to describe rather than explain. According to Gadamer, preserving Aristotle's universal definitions of virtuous behaviors and ethical judgments collapses due to the changing use of metaphor in language that alters an understanding of virtue and ethics (DaVia, 2018). These modern philosophers propose the value of describing virtue ethics in practice rather than embracing universal definitions of virtuous behaviors. This critique introduces the idea that the role an individual assumes at work may influence the practical application of virtue ethics.

Swanton (2016) argues the role an individual assumes in an organization influences the practical application of basic virtues such as courage, generosity, and loyalty. A chief technology officer with basic virtues of generosity to coworkers and loyalty to company shareholders must likewise hold role-differentiated virtues of respect for authority, regulations, and formal procedures, or this technology leadership role would be inappropriate for the individual to occupy. Each organizational role may require role-specific wisdom and differentiated virtues that supplement basic virtues. Swanton (2016) suggests the condition of role-specific and basic virtues can create virtue dilemmas. An individual may face complying with a duty within their organizational role (a deontological ethical perspective) versus taking actions that result in the optimal state of affairs for the organization (a consequentialist ethical perspective). Interactions between duty, consequences, and self-awareness influence virtuous behaviors and judgments.

Clark (2016) finds the existence of self-indulgence in eudaimonistic theories that promote an individual agent's well-being, proposing a virtuous agent chooses virtue for its own sake

resulting in a suspension of self-awareness. The author suggests a virtuous individual partakes in behaviors and judgments with the singular motivation of taking virtuous actions without interference from the individual's self. Self-effacement becomes a natural response to the practical application of virtue ethics and a component of the Aristotelian notion of practical wisdom. Salloum (2017) finds a virtue-based theory of knowledge suggests motivations for knowledge development include the intellectual virtues of perseverance, humility, and equity. Practical wisdom exists to mediate between knowledge and virtues to promote human flourishing. Coupling practical wisdom with self-effacement positions an individual agent to pursue the practical application of virtuousness in the economic endeavors of business.

Burbridge (2016) suggests economic activity associates with virtue ethics through the concept of mutual benefits derived in economic transactions maximize individual utility. The author claims economic activity exists for societal and individual benefit through voluntary transactions. Economic activity supports virtuous competition, trustworthiness, enterprise, and stoicism regarding the risk-reward considerations of agents participating in economic transactions, linking virtue with a community's social capital (Burbridge, 2016). This study supports the argument that virtue ethics contributes to the virtuous economic activity of a financial services firm, indicating the firm's leaders and their clients cooperate in seeking human flourishing through economic transactions.

Sison eta al. (2019) expanded on Burbridge's (2016) findings by maintaining Aristotle's conception of human flourishing depends upon the availability of material and non-material resources, or external bodily goods and internal spiritual virtues, respectively. The authors proposed material goods reside within the discipline of economics, and non-material goods reside in the discipline of ethics. A virtuous pursuit of material goods occurs as a means to

acquire non-material or spiritual resources that lead to human flourishing. Within virtuous economic thought, financial wealth acquisition provides material resources available to improve a state of well-being. This study suggests the Aristotelian virtues of moderation, equity, and prudence provides a foundation for the exercise of virtuous finance, as these virtues establish boundaries or limits to wealth accumulation. Exclusion of virtue considerations from wealth accumulation has historically contributed to financial crises and inappropriate exposure to risk.

Greene (2018) proposed an ethical framework to promote organizational virtue should include the organization contributing to community good, developing employee character, engaging employees with firm core values, and encouraging participatory decision-making. The author finds trustworthiness to be a critical value in financial services organizations because factors influencing financial professional actions include incentive compensation plans that may reward dishonest behaviors. Although financial service firms must comply with governmental regulations and industry guidelines, regulatory structures do not ensure ethical or virtuous behavior from those responsible for the wealth accumulation of clients. This reality suggests certain inherent problems with applying virtue ethics to business contexts intended to mitigate exposure to the risk of unethical behaviors.

Boongaling (2016) suggests three problems with contemporary virtue ethics: the inability to provide standard principles that guide moral choices when faced with ethical polarities or dilemmas, the possibility that two virtuous individuals may hold conflicting opinions concerning the resolution of ethical challenges, and understanding polarities may require degrees of the practical application of virtue. Given the difficulty of maintaining consensus amongst individuals on what constitutes virtuous behaviors and ethical decision-making during periods of ambiguity and uncertainty, Tachibana (2019) explores the role of admiration of virtuous behavior on an

individual's immolation or imitation of admired behaviors exhibited by an excellent person. The author supports Aristotle's concept that virtuous people may be praiseworthy and admirable, but admiration results from appreciating a behavior deemed virtuous. The admiration of a virtuous behavior does not cause an individual to imitate virtuousness. The introduction of stoicism in the third century before Christ added to the body of knowledge on the admiration and imitation of virtuous and ethical behaviors.

Pigliucci (2018) suggests differences exist between Aristotelian philosophy of virtue and the stoic philosophy of virtue. The Peripatetic school of thought supported by Aristotle suggests the insufficiency of virtuous behavior in achieving well-being or eudaimonia, whereas stoicism proclaims the sufficiency of virtue in achieving human flourishing (Pigliucci, 2018). Initial stoic writings appear in Athens, Greece by the school's founder, Zeno of Citium, and later writings by Marcus Tullius Cicero in the first century before Christ and the Roman emperor Marcus Aurelius in the second century A.D. add to a stoic understanding of virtue and well-being. The author proposes stoicism emphasizes the virtuousness of personhood and individual autonomy in pursuing the four Aristotelian virtues. An early stoic understanding of the role of virtue in human flourishing informs Christianity's approach to virtue and righteousness that permeates the modern western culture.

Virtue and a Christian Understanding of Righteousness. Christian teaching elevates the stoic conceptualization of virtue by introducing the power of God's grace in the realization of virtue in the life of a Christian. Faith in Christ prepares believers for the reception of grace, providing a means for which virtues infuse in a Christian's life through the love and mercy of God. Cleveland and Dahm (2019) claim Christian infused virtues include faith and God's gifts of knowledge, wisdom, and instruction (*English Standard Version Bible*, 2001/2001, Proverbs 1:7).

The authors suggest these infused gifts of sanctifying grace that transforms the faithful to remain in alignment with God's will exist as a function of the divine rule of God over all creation, including humans made in the image of God. Once within a state of sanctifying grace, an acquisition of diverse virtues can occur through the human agency of the faithful, such as temperance, prudence, courage, and integrity. The attainability of infused and acquired virtues through God's grace supports an understanding of ethics as theology.

McDowell (2017) reviews ethics as theology based on the Christian fundamental belief of "God with us". Theological virtue ethics rest upon the scriptural teaching, "So now faith, hope, and love abide, these three" (*English Standard Version Bible*, 2001/2001, 1 Corinthians 13:13), and the author suggest a certain chronology of these three forms of God residing with us. A Christian life initiates with faith upon baptism, proceeds in love in relationship to the Christian community, and elevates hope in abundant and eternal life. A Christian ethic relies on faith, love, and hope to live out the Lord's Prayer (*English Standard Version Bible*, 2001/2001, Luke 11:2-4), as in love the Christian declares God's holiness, in faith forgiveness is sought, and in hope expectations of the coming kingdom of God arise in prayer. The author frames ethics as theology in God's interaction with human agency, ethical reflexivity, and scriptural understanding. Through faith, hope, and love, the emergence of righteousness as an outcome of virtuousness and ethics occurs.

Matijevic (2018) finds Paul's epistle to the Romans establishes the reality of God's righteousness that manifests in the crucifixion and resurrection of Christ. Paul compares the sinful nature and disobedience of Adam with the justifying nature and obedience of Jesus who reestablishes a right relationship between God and those created in his image. The author proposes Paul's argument for God's righteousness rests on this dichotomy of sin and grace, life

and death in writing, “For in it the righteousness of God is revealed from faith for faith, as it is written, ‘The righteous shall live by faith’” (*English Standard Version Bible*, 2001/2001, Romans 1:17). Paul suggests access to God’s righteousness resides in grace through faith in Christ. Matijevic (2018) proposes the Pauline teaching that God’s righteousness and Christ’s sacrifice form the grounding of Christian ethics, and the consequences of faith include fruits of the spirit exceeding mere virtues. In Paul’s letter to the Galatians, reinforcement of the relationship between grace, virtue, and fruitful Christian living occurs, as “But the fruit of the spirit is love, joy, peace, patience, kindness, goodness, faithfulness, gentleness, self-control; against such things there is no law” (*English Standard Version Bible*, 2001/2001, Galatians 5:22). Christian ethics significantly differentiates from a stoic understanding of virtuousness and psychological well-being, yet both theology and philosophy underscore how human agency informs confronting ethical challenges emerging from uncertainty and ambiguity.

Nelson and Slife (2017) compare Aristotelian and stoic philosophy to early Christian thinkers, finding classical philosophy’s proposal that pursuit of virtue led to a good life and Christian teaching of virtue as a result of God’s sanctifying and transformational grace. The authors suggest Christianity offers more than the pursuit of individual flourishing, as the faithful renounce individual flourishing to live within divine flourishing. God’s intention includes earthly well-being, but his purposes for his image-bearers include acts of love and worship that result in optimizing spiritual potential and righteousness. Within a Christian theological understanding of ethics and a philosophical understanding of virtue, exploration of ethical technology leadership during times of rapidly emerging innovation and uncertainty adds to the body of knowledge.

Ethical and Transformational Technology Leadership. Joseph (2016) integrates theoretical ethics with practical leadership and decision-making, suggesting the application of

virtue ethics adds responsibility and conscientiousness to business decision-making. The author proposes virtue ethics, coupled with caring and justice ethics, inform practical business decision-making. Whereas virtue ethics involves the evaluation of moral character and moral actions, care and justice ethics add consistency to decisions made and actions taken. The application of ethical theories to technology leadership and decision-making becomes essential in the modern American culture that oftentimes elevates the values of individualism and personal autonomy above any impact of technology on culture. Cole (2015) proposes western culture celebrates the technology that enhances personal freedom and individualism, even if the technology carries the potential for negative cultural influence. The author suggests the digital revolution promotes an autonomous, self-fulfilled individualism, therefore, the application of ethical judgments to technology leadership protects against cultural decline.

Russo (2018) builds on concepts of individualism and technology by suggesting integration of ethical analysis in technological innovation highlights differences between humans and digital artifacts. The author proposes humans uniquely hold a capability of forming a relationship to communities through ethical choices, whereas digital artifacts and AI may form neural networks but cannot create ethical community relationships. Emerging digital technologies transform the environment where deployed and create new ontological spaces (Russo, 2018), and this reality requires ethical leadership behaviors as digital technology innovations expand at an increasingly rapid pace.

Paludi et al. (2019) find supporting evidence that ethical behaviors must accompany technological innovation implementation to avoid unethical applications resulting in societal harm. This finding recognizes emerging digital technologies enable users to leverage new technological applications for ethical or unethical purposes, at times simultaneously. Given

ethical leadership positively and directly influences organizational culture and corporate social responsibility (Paricha et al., 2018), the application of ethical standards to a transformational leadership approach when implementing emerging technologies delivers organizational benefit.

Koh et al. (2018) claim a transformational leadership approach may not enhance the innovativeness or creativity of followers unless the leader models creativity. The authors propose transformational leadership can provide emotional incentives to achieve mutual goals, and emotion can influence cognitive flexibility. Cognitive flexibility provides a basis for increased creativity and innovative thinking if followers deem goals meaningful. Pradhan and Jena (2019) find transformational leadership inspires followers by articulating a vision that encourages finding meaning in work. The authors found fulfilling an employees' intrinsic need to find meaning in work and maintain job satisfaction contributes to stimulating innovativeness and creativity. These findings support the role of transformational technology leadership developing a cyberspace business ethic to regulate decision-making and behaviors when confronting uncertainties and risks inherent in emerging digital technologies.

Summary of Literature Review

Reinecke et al. (2016) identify the need for additional qualitative research of business ethics phenomenon, inclusive of generating a moral interest in the resolution of ethical challenges faced by modern business leaders. The academic and professional literature reviewed above support this insight and suggest a gap in the current literature exists in addressing the research problem within a framework of providing transformational servant leadership based on virtue ethics and Christian theological understanding. This literature review synthesizes five concepts that contribute to adequately addressing the research problem through an exploration of leader behaviors: influence of organizational culture on leadership, transformational servant

leadership approaches, the impact of emerging digital technologies on uncertainties and risks, application of motivation and decision theories, and virtue ethics and decision-making.

The literature review supports findings that organizational culture influences leadership approaches, behaviors, and ethical decision-making in the practical application of organizational values. The literature review finds a transformational servant leadership approach improves followership through personal connections, intellectual stimulation, and inspirational motivation when aligned to organizational culture. Further, current academic literature reflects emerging digital technologies create ethical challenges, uncertainties, ambiguities, and risks. Leaders confront emerging ethical challenges, problems, dilemmas, and polarities through the application of decision and psychological motivation theories. Decision-making occurs in the context of organizational and individual virtue ethics that become transformational when applied within a Christian understanding of righteousness.

This study relates to prior research documented in the literature review by evaluating the practical application of cyber-ethics by leaders in the participating financial service firm facing emerging technological challenges utilizing a particular ontological and epistemological perspective. Although prominent technology industry associations publish codes of ethics and ethics policies governing members, the assessment of practical ethical behaviors of business technology leaders must persist to meet evolving, dynamic challenges resulting from emergent technologies. Through a contemplative assessment of leadership behaviors, virtues, and ethical decision-making, business practitioner-scholars might embrace the wisdom of Johann Wolfgang von Goethe who penned, “Be the man that is noble, both helpful and good. Unweariedly forming the right and the useful” (Goethe, 2010, para. 9).

Transition and Summary of Section 1

The specific research problem of this qualitative single case study to be addressed is how the dynamic nature of emerging digital technologies creates ethical technology leadership challenges, within the context of a financial services firm, resulting in exposure to reputational risk. Research questions explore how FSF leaders experience the phenomenon of uncertainty and risk resulting from emerging technologies and how leaders approach ethical decision-making within the parameters of a unique organizational culture. The study seeks to aid understanding of FSF leader decision-making processes that facilitate personal well-being, including competence, relatedness, and autonomy (Ryan & Deci, 2000). Utilizing self-determination theory and decision theory to understand decision-maker reliance on cognitive, psychological, emotional, and spiritual notions and biases support understanding how leaders arrive at ethical decisions.

Coupling decision-making theories with virtue ethics allow exploration of three virtue concepts influencing leader happiness: excellence, prudence, and flourishing. Filling a gap in existing leadership literature, this study expands on a virtue ethic influence on decision-making through the application of a biblical worldview, advancing the philosophical concept of virtuous well-being to the theological concept of righteousness. Given strategic leadership necessarily involves complex decision-making, ethical decisions should strengthen the moral habits of leaders to enrich an ethical organizational culture (Neamtu & Bejinaru, 2018). This study further seeks to understand if a transformational servant leadership approach strengthens moral habits when FSF leaders confront the challenges of cyberspace business ethics.

The conclusions drawn from the existing body of evidence provide the basis upon which execution of this single case study research occurs. The research project design and methods disclose data collection, triangulation, and organization techniques, along with data analysis

coding schemes and theme development to establish finding reliability and validity. Fieldwork conducted at the participant's North Carolina corporate headquarters in the summer of 2020 bounds this single case study to a particular context and time. Findings and conclusions drawn from data analysis provide support for the application to professional practice, recommendations for action, and further study.

Section 2: The Project

Introduction

This explanatory embedded single case study examines a contemporary set of events bounded within the leadership cohort of the participating financial services firm (FSF), explaining how firm leaders confront ethical challenges resulting from emerging technologies. The single case study design contains two embedded units of analysis within FSF, including (1) firm owners and key decision-makers, and (2) technology management staff. Each embedded unit of analysis provides context and explanatory insight into the research problem. This single case study design promotes gaining in-depth knowledge of FSF's unique context (Dupouy & Gagnon, 2016) inclusive of organizational culture, leadership approaches, and application of ethical decision-making.

The role of the qualitative researcher includes maintaining an unbiased constructivist position of experiencing, understanding, and interpreting data gathered in FSF's unique context (Bloomberg & Volpe, 2019). Research participants include FSF owners and active management staff who volunteer for study participation. The study assures ethical protection of participant confidentiality by assigning non-descriptive reference numbers to each individual. A qualitative single case study research method and design support the preparation of thick descriptions of the participant's context and associated data collection and analysis. The purposive sampling method

of the participant population includes FSF leadership including management of every functional area within the firm. Given the relatively small firm size, the population sample of leaders allows deep inquiry into each individual's ethical leadership. Given the qualitative nature of this study, the researcher's role includes acting as an instrument of the study in participant interviews, observations, and document collection. Analysis of collected data occurs through a coding process that develops critical themes supportive of findings, utilizing NVivo research software for the analytic organization. Establishing internal and external study validity occurs through the use of multiple sources of evidence that support inferences and rival explanations, along with documenting the theoretical framework used to make analytical generalizations (Yin, 2018). Instituting study reliability occurs through documentation of data collection procedures and analysis protocols. These elements of an explanatory embedded single case study support achieving the research purpose.

Purpose Statement

The purpose of this qualitative single case study is to understand how leaders of a financial service firm address ethical challenges resultant from emerging digital technologies to ensure stewardship of the firm's public reputation. The problem is explored through an in-depth study of the organizational culture and leadership behaviors at the corporate office of a privately owned financial-services firm (FSF) located in western North Carolina. Emerging financial technologies studied will include those with uncertain futures or technological innovations with an unknown societal impact (Brey, 2012; Teran, 2018) such as digital interactions, artificial intelligence, data collection and utilization, and cybersecurity challenges. Ethical challenges involved in the use of digital technologies include informed consent of client data, privacy,

confidentiality, data security, and the existence of potential conflicts of interest by the financial service provider (Reamer, 2017).

Farrell (2018) suggests organizational culture directly affects relationships through shared beliefs, values, language, and behaviors. This study seeks to understand how organizational culture influences leadership approaches and the firms applied cyberspace business ethics. A cyberspace business ethic represents the study of business ethics as it pertains to privacy, intellectual property rights, censorship, accessibility, and confidentiality of data in an online computer network environment (Hurlburt, 2018). Heidenger and Gatzert (2018) found a reputational risk to be a critical consideration in the financial services industry due to the importance of client-firm relational trust. Understanding linkages amongst culture, leadership approaches, ethical behaviors, and reputational awareness given uncertainties created by emergent technologies supports resolving the research problem.

Role of the Researcher

The role of the researcher in this qualitative single case study includes acting as a primary data collection instrument through participant interviews with open-ended questions, observation of leadership behaviors, and review of key documents relating to organizational culture and the firm's industry positioning. The researcher identified research participants to include FSF owners, key decision-makers, and technology management staff. Conducting participant interviews, collecting documentation, analyzing collected data, and determining themes supportive of forming findings and conclusions form the researcher's role. The researcher uses both deductive and inductive reasoning to form patterns and themes from collected data within an emergent design, wherein design flexibility allows study alteration as the researcher engages with participants. The researcher gathers multiple perspectives of all participants to understand

FSF's unique organizational context and the complex interactions between leadership behaviors and ethical decision-making. The researcher utilizes both an authoritative and interpretive voice when narrating the FSF organizational context and participant diverse insights. The researcher's authoritative voice appears in data analysis informed by the academic review of decision and self-determination theories used to draw connections and develop themes amongst qualitative data points (O'Sullivan, 2015). The researcher's interpretive voice emerges when findings from the data surface through a theoretical lens that may introduce researcher bias when understanding the meaning of participant experiences. The researcher explores alternative or rival explanations of data themes to avoid any inherent interpretive biases in the research narrative.

Due to the researcher positioning with an emic perspective that incorporates participant views and experiences, reflexivity requires the researcher reflect upon his social location, privilege, and power to reveal any biases and assumptions influential to interpretations (Mao et al., 2016). Researcher self-awareness includes maintaining clarity of any motivations, thoughts, or beliefs that support understanding others' actions and attitudes (Nilson, 2017). Self-awareness and epistemological reflexivity involve reflecting on how the researcher receives and applies knowledge given their experience, education, and worldview. A qualitative researcher's degree of self-awareness represents a component of emotional intelligence supportive of building trustful relationships with study participants (Nilson, 2017). Maintaining reflexivity concerning the author's voice and perspective as the narrator of this single case study adds to the quality of this qualitative research.

The researcher initiated contact with each participant via an introductory email explaining the nature of the study and the participant's role, including participating in researcher interviews and observations of all participants. Initial contacts and interviews represent how the

researcher establishes a transparent working relationship with each participant. Given the nature of the research problem and questions, establishing a trustful working relationship with FSF's technology leader represents a critical aspect of research. Phone conversations with the technology leader occurred to establish an open line of communication before interviews

Researcher reflexivity allows disclosure of assumptions, perceptions, and uncertainties (Cunningham & Carmichael, 2018), as knowledge accumulates through the process of data collection, analysis, and interpretation. The researcher of this single case study represents a corporate finance professional with thirty years of experience in large and mid-market privately owned companies. The researcher currently holds an executive position at a multi-generational family-owned company in North Carolina, responsible for corporate treasury and technology functions. The researcher holds a master's and bachelor's degrees in business administration with concentrations in economics and finance respectively, and this research partially fulfills the academic requirements for a doctorate in business administration in the leadership cognate. Importantly, the researcher applies a biblical worldview to a personal understanding of virtue ethics and ethical servant leadership behaviors. This researcher's narrative reflects a commitment to integrity, coherence, and authenticity by giving voice to participants with dissimilar experiences and perspectives. Challenging potential researcher biases and assumptions occurs through reflective introspection during data analysis, interpretation, and explanation processes. The researcher's experience in family business finance and technology provides a sound foundation for understanding and describing FSF's particular organizational context and ethical risk exposures due to emerging technologies.

Participants

Procedures for gaining access to participants include the researcher making initial contact with FSF co-Chief Executive Officers (CEO), representing second-generation family owners of the firm. Explanatory conversations ensued wherein the researcher described the intent and conceptual framework of this academic study, allowing the CEOs to ask probing questions into the nature and scope of research. Both CEOs conditionally agreed to the researcher offering the opportunity for all firm leaders to participate in this research, recognizing the advantages of increasing academic and practical knowledge by exploring the research problem. Upon Institutional Review Board (IRB) approval of this study, obtaining formal documentation of voluntary participation per ethical and academic guidelines to ensure appropriate participant consent and confidentiality occurred. All FSF participating leaders and management staff are adults, and each participant received and approved a consent to participate document.

Information gleaned from participants includes contextual, demographic, and perceptual data (Bloomberg & Volpe, 2019) useful for investigating the research problem. Contextual information includes the organizational culture and leadership environment in which participants relate. Contextual insights frame how culture and environment influence leadership behaviors and decision-making when participants confront uncertainties and polarities. Collecting contextual information occurs through documentation of FSF mission, vision, and values, coupled with participant interviews and observations. Participant demographic information includes age, gender, occupation, professional experience, firm tenure, and background. Demographic information provides insights into individual participant perceptions, beliefs, and assumptions influential to leadership and decision-making. Perceptual information informs how participants approach ethical challenges resulting from emerging digital technologies.

Understanding participant worldviews and perceived truth assists in analyzing the realization of ethical decisions. Given this research directly involves ethics and ethical decision-making, establishing due care in data collection and analysis protects participant confidentiality.

Wallace and Sheldon (2015) suggest low-risk management research retains inherent ethical risk for participants regardless of research methodology, including justice risk arising from close personal contact with participants, integrity risk resulting from imposition on participants, and respect risk if the researcher inadequately articulates research risks and benefits to participants. This research protects participants from justice, integrity, and respect risks via documentation during the IRB review process and researcher reflexivity designed to acknowledge and articulate potential participant risk exposure. Given this study's design entails two embedded units of analysis including key decision-makers and technology management staff, research risks and benefits may accrue differently for each embedded unit being studied (Ekmekci, 2019). Identification and disclosure of research risks and benefits for each embedded units of analysis provide protect any participant vulnerability.

Racine and Bracken-Roche (2018) claim participant vulnerability materializes as both relational and dynamic. Participant relational vulnerability discovery occurs through analysis of the participant's context, including any organizational culture influences experienced or perceived by participants. Participant dynamic vulnerability recognizes the fluid nature of organizational context that adapts to changing external environmental changes. This study sought to acknowledge and articulate potential participant vulnerabilities throughout research design, IRB approval, data collection, analysis, and finding documentation as a function of research flexibility.

Research Method and Design

An applied qualitative research method introduces possibilities to not only increase understanding of a particular bounded system in a given time, but also potentially change the bounded system through the collection, analysis, and interpretation of non-numerical data by the scholar-practitioner conducting the study. Qualitative research methods seek to make sense and find meaning out of human endeavors through processes of creativity, conceptualization, and originality to find significance emerging from the meticulous documentation of context details (Saldana, 2018). The appropriateness of qualitative methods to advance the understanding of human behaviors lends itself to the study of business leadership and the influence of organizational culture on leader behaviors and ethical decision-making.

Discussion of Method

Reinecke et al. (2016) suggest qualitative methods enhance business ethics studies due to difficulties inherent in quantitatively testing an ethical leadership hypothesis against a theory. Business leadership behaviors and ethical decision-making processes provide an opportunity to examine questions of how and why human behavior occurs when sufficient quantitative data may not exist to support the analysis of a hypothesis through the lens of existing theory. Optimally addressing this study's research problem occurred with an application of qualitative research methods that allowed conceptualization, originality, and creativity to advance the body of knowledge concerning an emerging cyberspace business ethic in a particular financial services business context. Given leadership involves relational and behavioral aspects of human endeavor (Rost, 1991) qualitative methods provide an optimal basis from which to glean new leadership learnings in a business environment of uncertainty that exists during rapid technological change.

As stated in section one above, a qualitative method was optimal for this leadership study, as the researcher collected data from non-numerical sources of information within a bounded system and over a particular time to develop a thick description of experienced realities within a system (Creswell et al., 2007). Qualitative methods require the business researcher to develop a tolerance for ambiguity, uncertainty, and complexity in managerial practice (Cassell, 2018) when documenting and assessing multiple, potentially contradictory, stakeholder perspectives, assumptions, and viewpoints concerning the organizational context. This study pursued multiple stakeholder perspectives and realities to support understanding leadership behaviors and decision-making given any ethical challenges resulting from emerging technologies. Qualitative methods employed in this study added to credibility, dependability, and an ability to confirm findings through intentional alignment of the research problem, purpose, questions, method, design, and researcher worldview. Key elements for a qualitative research method include rigor, analysis, and reflexivity (Clark & Sousa, 2015), each critical to generating insightful study findings and conclusions. Qualitative research blends design flexibility with method rigor, and practical qualitative research design often seeks to elaborate stakeholder benefits from research findings (Lub, 2015).

Discussion of Design

Yin (1981) proposed a distinctive characteristic of a holistic case study includes examining a contemporary phenomenon within a contextual reality to bring clarity to the relationship between a phenomenon and a context. The contemporary phenomenon of ethical challenges resultant from technological innovations within the bounded context of a privately owned financial-services firm provides an opportunity for a holistic case study. The alignment of research design with the research method improves study quality, and an instrumental,

naturalistic single case study design appropriately aligns with the qualitative research method utilized in this study. The instrumental nature of this single case study design resided in the researcher selecting the particular FSF organizational and leadership context to explore the business concern (Creswell & Poth, 2018) of ethical challenges resulting from emerging technologies. The naturalistic nature of this single case study design resided in the researcher gathering multiple stakeholder perspectives of reality particular to the FSF case to gain in-depth understanding (Ruissen et. al, 2016). This research seeks to discover previously unknown particularities that emerge from the case study by documenting participant narratives that explored the confrontation of ethical challenges resulting from technological innovations. This case revealed the particular cultural and leadership complexities influential to ethical decision-making within the unique FSF organizational context.

The appropriateness of applying an instrumental, naturalistic single case study design to the research problem and purpose rests on the ability of this case to offer practical insights into the phenomenon of an emerging cyberspace business ethic in reaction to technological innovations. Ridder (2017) suggests Yin's case study research design includes using existing theory, propositions, and framework to guide the search for relevant qualitative data. This single case study applied Yin's guidance by identifying self-determination theory and decision theory as the starting point of research, supported by five clarifying propositions. Propositions that frame this research included organizational culture as a behavioral influencer, leadership behavior and approaches, emergent digital technologies resultant in ethical challenges, technological uncertainties, and ethical decision-making. The applicable theories, propositions, and framework included in this single case study design fill a gap in existing theory through an exploration of the modern dynamic of an emerging cyberspace business ethic.

Summary of Research Method and Design

This single case study identifies an anomaly, or incompleteness, in the two existing theories cited above (Ridder, 2017), wherein a cyberspace business ethic materializes as a modern phenomenon within the participating social context. This research method and design fill gaps in existing theory that insufficiently explains how uncertainties resulting from technological innovations affect an applied cyberspace business ethic. Applying a hybrid of Yin and Stake's research design, this single case study utilizes existing theory, proposition, and framework to guide the collection of qualitative data that provides holistic comprehension of the leadership reality of ethical decision-making during a time of technological complexity. This research extends existing theory through methods of case description, interviews, participant observations, and relevant documentation. Alignment of research method and design with the purpose of research justifies the application of a qualitative single case study to address the research problem.

Population and Sampling

Given the participating financial services firm represents a small family business providing wealth management and insurance services to clients in the western North Carolina market since 1950, the study population includes every FSF employee and family owner active in the business. Eligibility of employees in the population includes all employees over the age of eighteen, excluding any interns with temporary employment and narrowly defined scope of work. Selecting an appropriate sample size drawn from this population for a qualitative constructivist single case study required data saturation in the form of depth of understanding rather than breadth, and a single research participant could be justified as meaningful with this research design in generating a depth of useful insight (Boddy, 2016).

For this study, full-time FSF employees over the age of eighteen with senior leadership, technology management, or client services responsibilities represented the selected sample with an upper limit of twelve individuals. Segregation of the selected sample into two embedded units of analysis included key decision-makers and technical management staff. The definition of embedded units of analysis appears in Table 2 below. This population and the selected sample provided sufficient opportunity for data saturation and depth of understanding when seeking meaning to address the research problem.

Table 2

Selected sample embedded units of analysis

Unit of Analysis	Embedded Unit Description
Key decision-makers	Family owners and Co-Chief Executive Officers, senior management, functional area leaders, and other critical decision-makers
Technology management staff	Director of Operations and client service representatives directly utilizing emerging technologies

Discussion of Population

The target population for this qualitative single case study included all employees and active family owners of the participating privately owned FSF over the age of eighteen. FSF owners and employees represented the key internal stakeholders directly familiar with organizational culture, leadership approaches, leader behaviors, and decision-making processes. This population represented a narrow scope of potential study participants with insight into the specific phenomenon of ethical challenges resulting from the application of emerging technologies. The specificity of the research problem warranted gathering density of qualitative data, application of self-determination and decision theories to leader behaviors, thick descriptions gleaned from a particular context, and participant dialogue depth. Justification

existed for sampling a maximum of twelve individual participants to solicit diverse insights (Malterud et al., 2016). Although sample size drawn from a population represents a critical decision supportive of qualitative single case study research quality, setting a fixed sample size before undertaking the study (a priori) may not yield optimal data saturation (Sim et al., 2018). This study established a maximum sample size of twelve individuals a priori, yet retained flexibility in population sampling by not establishing a fixed sample size of precisely twelve participants. The researcher maintained the confidentiality of individual participants within the sample, protecting identities by assigning non-identifying alphanumeric codes to each participant.

Discussion of Sampling

The sampling frame utilized in this study represents all FSF employees categorized into the embedded units of analysis listed in Table 2. FSF provides the researcher an employee listing of sixteen individuals on the firm's public website within these two internal classifications from the total employee population, representing a sampling frame that specifies employees qualifying for inclusion in the study sample. Sampling techniques included probability sampling and non-probability sampling. This study utilized non-probability sampling techniques appropriate to a qualitative, naturalistic case study research design (Taherdoost, 2016) in the form of purposeful or judgmental sampling. Non-probability purposeful sampling supports the exploratory nature of this single case study, although judgmental, subjective sampling can introduce researcher bias (Etikan, 2016). This study minimized researcher bias in purposeful sampling by utilizing a logically conceived stratified purposeful sampling strategy.

Utilizing a stratified purposeful sampling strategy to select sample participants from the sampling frame, the sample contains no more than twelve participants from the two embedded

units of analysis described above. A stratified purposeful sampling strategy illustrates the embedded subgroups to facilitate comparisons of collected data and participant perceptions of reality (Creswell & Poth, 2018). A stratified sampling technique creates participant subgroups of greater homogeneity than the total population (Etikan & Bala, 2017). This study's stratified purposeful sampling technique included informants of varying gender, age, and years of tenure at FSF to optimize capturing various perspectives. Critical to this study, the sample included the firm's senior leader responsible for the technology function, categorized in the sampling frame as an administrative associate. Eligibility criteria for study participants included full-time FSF employees willing to volunteer for researcher interviews and observations with direct knowledge of firm organizational culture, leadership behaviors, and use of emerging technologies to service clients. Sample criteria provided the researcher with the ability to collect sufficient data for insightful coding, triangulation, and saturation useful for reaching study conclusions and findings.

Kindsiko and Poltimae (2019) propose qualitative studies should avoid mimicking quantitative study use of large, heterogeneous sample sizes, rather select a smaller sample size to optimize the advantage of interview-based qualitative studies to build depth of knowledge of the research phenomenon. Blaikie (2018) expands on the idea of justifying a smaller sample size in qualitative research by suggesting the study's logic of inquiry informs an appropriate sample size. Research logics of inquiry include deductive, inductive, abductive, and retroductive (i.e., combining deductive and inductive reasoning) reasoning (Blaikie, 2018). This researcher utilized inductive and abductive logic of inquiry in an iterative process to explain how and why social actors' understanding of reality diverges, which justified a smaller sample size to promote depth of knowledge of each participants' perceived reality. Applying inductive reasoning in this study

emerged in data collection, interpretation, and translation of qualitative data into codes or labels of information. Rijnsoever (2017) suggests a total population contains every code potentially observable, and research saturation occurs when each code in the population appears at least once in the sample. This study's sampling techniques allowed for observation of each significant information code available in the population, thereby promoting data saturation.

Summary of Population and Sampling

This qualitative, naturalistic single case study utilized a population of employees at a family-owned, multi-generational financial services firm in North Carolina. The population represents a social construct existing within a particular organizational cultural context and provides a unique opportunity to glean insights about an emerging cyberspace business ethic within the firm. Applying non-probabilistic, stratified purposeful sampling techniques, this study selected a sample of no more than twelve voluntary participants. Although the selected sample reflects diverse characteristics of gender, age, job duty, authority, and firm tenure, two embedded units of analysis enhanced sample homogeneity useful in determining potential causes of participant understanding of the FSF context. The relevance of sampling informants of varying characteristics appears in an individual's unique understanding of their reality within the FSF context. Data collected from the sample through interviews and observations and supported by documents and FSF digital communications using the firm's website and social media channels supported the sample in achieving adequate data saturation and triangulation. Using both inductive and abductive reasoning in data analysis, the researcher yielded insights from the sample reported as study findings and conclusions.

Data Collection

The researcher of this qualitative, naturalistic single case study adopted the role of primary research instrument for data collection, analysis, and interpretation. The researcher engaged in reflective and interpretive thinking to ensure the disclosure of personal assumptions and biases during the data collection process (Clark & Veale, 2018). Utilizing a paradigm of moderate participation during data collection, the researcher conducted face-to-face interviews with participants and observations of participants within FSF's corporate office environment (Korstjens & Moser, 2018a). Data collection techniques included interviews, observations, and document collection. An interview guide with specific questions provided a framework for semi-structured participant interviews, organized by conceptual theme and sub-theme useful to exploring each participant's understanding of the case study context. The organization of collected data utilized NVivo qualitative research software to collect interview notes, transcripts, and documents. Collected data organization includes coding and categorizing participant realities into emerging themes and sub-themes (Heath et al., 2018), allowing the researcher to use inductive and abductive reasoning to identify data patterns and interpret findings.

Instruments

Bloomberg and Volpe (2019) propose a researcher represents the primary instrument of qualitative research in assuming the role of inquirer, writer, analyst, and interpreter. The authority of the qualitative case study researcher to impose an interpretation on data exposes the study to researcher biases. To promote transparency and research integrity, the researcher conducting this study employed a reflexive approach to discover biases, assumptions, conflicts of interest, ability to describe social context particularities, misinterpretation risk exposures, and epistemological foundations that potentially affect data interpretations. Other instruments of this

qualitative research included interviews, participant observations, context observations, and document review. The primary instrumental means used to conduct this study includes individual interviews of each participant within two embedded units of analysis.

Holter et al. (2019) suggest qualitative interviews encompass a powerful method of obtaining new knowledge when conducted as an open interaction between researcher and participant exploring a phenomenon of mutual interest. The structure of this study's fieldwork relies foremost on participant face-to-face interviews to provide data breadth through the discovery of insight variation and data depth through documenting nuanced perceptual details of FSF's contextual reality. Data breadth and depth provide the researcher with the ability to form thick descriptions of rich data collected in the interview process. To foster a common understanding of the interview topic, the researcher uses vignettes or short stories that guide participants to targeted aspects of the informants experienced reality (Holter et al., 2019). This study's qualitative semi-structured interview guide (see Appendix B) included both interview questions designed to answer research questions and descriptions of vignettes to guide the conversation to ensure interviews focus on addressing the research problem statement.

The qualitative semi-structured interview guide shepherds participant interviews through complex issues and diverse perceptions concerning how FSF leaders confront ethical challenges resulting from emerging technologies. A semi-structured interview method supports rigorous data collection, as exploring the firm's cyberspace business ethic permits participants to express diverse opinions concerning organizational culture, values, virtues, and decision-making criteria (Kallio et al., 2016). The purpose of the interview guide includes bridging existing academic and professional knowledge found in the literature review above to FSF's business context through the collection of participant interview data in a coherent format. Organization of the interview

guide utilizes the five propositions emerging from the literature review to explore the firm's applied cyberspace business ethic: organizational culture, leadership approaches, emerging digital technologies, technologically induced uncertainties, and ethical decision-making. A semi-structured interview guide design allows the researcher to follow-up with unforeseen questions that probe into participant answers and provide additional clarity of understanding.

The interview guide includes open-ended questions that allow alternative answers that assist the researcher to identify multiple perceptions of reality. Zahl (2019) suggests qualitative interview effectiveness rests on applying epistemic values in questioning, including descriptive adequacy, reactivity transparency, and relevance. This study's interview guide included questions that provided the researcher with an opportunity to describe the participant's reality in words they would use through reliance on accurate field notes and recorded interview transcriptions. Reactive transparency in this study refers to the researcher disclosing if the participant appeared to change behaviors due to the presence of the interviewer or made statements they believe the interviewer wished to hear. The study guide provided relevance to answering each research question and addressing the problem statement by categorizing interview questions within the five propositions supportive of this study's design.

Data Collection Technique

Data collection techniques for this qualitative case study centered on participant semi-structured interviews utilizing open-ended questions to explore perceived realities. Audio recordings of interviews and researcher field notes documented interviews lasting between 60 and 90 minutes to promote rich data collection. Applying qualitative interview techniques presented by Korstjens and Moser (2018b), seeking depth of query responses includes the researcher's use of follow-up questions, prompts, or short periods of silence encouraging the

participant to expand on initial thoughts. All interviews took place in a conference room in the FSF corporate office to ensure participant comfort and privacy. Vasquez-Tokos (2017) suggests the rapport between an interviewer with a sincere interest in responses and an interviewee increases when their social identity overlaps. The interviewer for this case study shares similar age, gender, educational background, and cultural experience with the majority of participants interviewed, enhancing an opportunity to create sufficient rapport to facilitate data collection. The researcher proposed participant interview schedules to FSF senior leadership who ensured conference room availability and voluntary participant attendance.

Supplementing face-to-face interviews, data collection occurred through direct participant observations during site visits at FSF's corporate office building. The researcher's attendance of meetings with FSF employees to document leadership behaviors, communication styles, and cultural context added to data collected. The researcher also documented field notes and interview interpretive commentary in a research journal, reviewed upon departure from the FSF corporate office. The research journal documented interview pauses, gaps, or contradictions appearing in participant responses, body language or non-verbal signals of import, and comparisons amongst interviews (Annink, 2017). Insights gained from research journal notes inform data analysis.

Collection of existing records including documentation of organizational culture, corporate mission, core values, relevant cybersecurity policies, company historical documents, and a sample of books and industry articles authored by owners assists in the triangulation of collected data. Stake (1995) proposes intentionally collected documents represent substitutes for activities and realities the researcher could not directly observe during fieldwork. Identifying the firm's historical context and gaining insights from the prior generation of owners through

existing records and documents assisted in understanding the current organizational reality. FSF's Co-CEOs provided access to existing records and documents upon the researcher's request. Once collected, data organization techniques provided a system and process to initiate data analysis.

Data Organization Techniques

Utilization of NVivo 12 Pro software stored and organized the qualitative data collected in this study and provided a repository for interview written notes, interview audio transcripts, research journal notes, participant observation insights, and collected documents. NVivo enabled the researcher to categorize and classify collected data, employing predetermined codes while simultaneously identifying data patterns to discover unanticipated codes embedded in data. NVivo data management tools allow data querying and visualization including word cloud creation to identify word patterns. These tools assisted in documenting emerging understandings of the complex reality of FSF's ethical decision-making processes. Vaughn and Turner (2016) recommend assembling the collected data of every interviewee by an interview question, creating a systematic structure of data organization to compare and contrast responses.

Retention of electronic data storage occurs in NVivo software for three years after the publication of this dissertation. Maintaining NVivo software on the researcher's employer-provided laptop ensures multi-layered network security and cybersecurity protection for all collected data, including network and NVivo password protection available only to the researcher. Storage of hard copies of journal notes and existing documents occurs for three years after the publication of this dissertation in the researcher's office in a locked file cabinet. Research participants reserve the right to access relevant stored documentation during this three-

year period, after which secure shredding of all hard documents and electronic files will ensue. This systematic data organization process supports quality data analysis.

Summary of Data Collection

The researcher exists as a critical instrument of this qualitative, naturalistic single case study in conducting participant interviews, performing direct observation of participants, maintaining research journals, and collecting existing documents to verify and triangulate collected data. A qualitative semi-structured interview guide provided each participant an opportunity to respond openly to open-ended questions while allowing the interviewer to follow-up with detailed probing questions to explore perceived realities. Data organization occurred in NVivo qualitative research software and an appropriate record retention plan regulated the storage, security, and retrieval of collected data.

Data Analysis

Qualitative data analysis techniques utilized in this study included both inductive and abductive reasoning by the researcher to make sense of data and understand the particular FSF context. The researcher's inductive reasoning approach included using a coding scheme to identify significant patterns and themes found within the collected data. The researcher's abductive reasoning approach sought to make sense out of leadership uncertainties resultant from new technologies and enhance understanding of how a cyberspace business ethic emerges from uncertainties. Creswell (2014) proposes qualitative researchers utilize the term construct rather than a variable to articulate abstract ideas identified through social inquiry. This qualitative study utilizes constructs bridged by self-determination and decision theories to seek an understanding of relationships between emerging technologies and ethical decision-making by FSF leaders. The

constructs listed in Table 3 reflect the relevant abstract ideas addressed by the study participant's experience of reality, supported by nominal variables.

Table 3

Data analysis constructs

Constructs	Nominal variables
Emerging technologies	Types of innovative technologies in operations
Uncertainties and risk exposures	Categories of risks and potential liabilities
Organizational cultural influences	Forms of significant cultural influencers
Leadership approaches	Styles of utilized leadership approaches
Decision-making criteria	Key criteria commonly used in decision-making

Ziskin (209) proposes validity claims refer to mutual claims of truth arising from participant communications, and common validity claims constitute the potential meaning of a shared reality. Statements made by participants during interviews, researcher observations during site visits, and collected document communications support the existence of multiple meanings buttressed by validity claims. Each construct and nominal variable relates to the problem statement and research questions through validity claims describing a commonly shared meaning. The researcher documented all validity claims within each construct and developed a coding methodology to assist in exploring themes and patterns found in the collected data.

Coding Process

Cypress (2019) proposes the use of qualitative data analysis software provides research tools to include transcription analysis, coding interpretation, and content analysis. For this research project, Nvivo qualitative data analysis software supported the coding process. The

coding process included initial coding of collected raw data, the discovery of open and axial codes emerging from data, code saturation achievement, codebook development, and interpretation of themes emerging from code patterns (Roberts et al., 2019). The coding of data collected and stored in Nvivo qualitative research software represents an inductive process comprised of open and axial coding.

Data sources for initial coding include research from the literature review and collected qualitative data. Open coding seeks to identify conceptual patterns in data, whereas axial coding forms connections amongst data patterns (Richards & Hemphill, 2018). The researcher categorized codes into patterns to document similarity, difference, frequency, sequence, and causation of each code pattern (Clark & Veale, 2018). This coding process supports research rigor and the ability of other researchers to replicate the process of thematic analysis. Code and pattern color assignments in Nvivo software create visual identification of common concepts. Coded data patterns support the development of themes and sub-themes appearing in collected data, and the researcher assembles themes in a codebook to support the credibility and trustworthiness of the data analysis process.

Direct quotes from interview participants provide a rationale for each theme (Belotto, 2018), as the researcher evaluates how themes address each research question. Conducting participant interviews within a 60 to 90 minute timeframe produced a greater number of codes than identified from direct observations and document collection. To enhance thematic analysis credibility and promote participant engagement, providing an opportunity for FSF co-CEOs to review themes adds member checking of the codebook as a theme reappraisal opportunity (O'Neil, 2019). Utilizing this iterative approach to theme development and reappraisal allowed the researcher to use reflexivity to identify any influence on thematic analysis. Documenting

thematic conclusions supported by illustrative participant quotes completes the data analysis process.

Summary of Data Analysis

The data analysis processes designed for this study support using semi-structured interview data to develop a rationale for common themes emerging from data. Insights gleaned from an iterative process of defining broad constructs, nominal variables, coding rationale, and thematic analysis synthesize key findings from the literature review with data analysis conclusions. This data analysis process balances inductive and abductive coding approaches in applying Nvivo qualitative software functionality to develop a thematic analysis that exhibits qualitative research rigor and reliability (Vila-Henninger, 2019). Promoting researcher reflexivity throughout the data analysis process allows the unexpected potential meaning of shared realities to emerge from the collected data.

Reliability and Validity

Lowe et al. (2018) propose qualitative analysis organizes collected data into categories, sub-categories, and themes that support the study's assertions, and thematic saturation occurs when further analysis reveals no additional meaningful themes. This study achieves thematic saturation due to the sufficiency of data collected from interviews, observations, and documents revealing the meaningful themes supportive of the study's assertions and conclusions. Saturation documentation resided in the codebook stored in NVivo qualitative research software that compiles codes, code descriptions, and brief data references supporting each code used to support data categories and meaningful themes. Organization of meaningful themes identified during data analysis occurs at macro-, meso-, and micro-thematic levels (Sladana, 2016) to develop transparency of thematic saturation at differing strata of meaning. These three thematic

strata provide organizational, intergroup, and individual meaning, respectively, that support the study's assertions and conclusions.

Data triangulation strategies further support the trustworthiness of this study's themes and assertions, as multiple data collection methods provide an opportunity to reveal various participant perspectives and meanings. By comparing and contrasting data collected from multiple sources, triangulation assists in clarifying ambiguity and discovering various realities while enabling data saturation (Fusch et al., 2018). Triangulation strategies utilized in this study included the researcher deeply engaging in the participating firm's work environment, collecting data from multiple sources to confirm or disconfirm data patterns. The researcher also promoted triangulation by utilizing reflexivity to identify any initial assumptions or biases inherent in qualitative data analysis, coupled with member checking of theme development by participants (Bloomberg & Volpe, 2019). Data triangulation and thematic saturation aided in achieving the reliability and validity of this study.

Reliability

The reliability, or qualitative dependability, of this study, refers to the stability of collected data over time, given the context of the participating firm. A clear audit trail supports study reliability, including complete notes on research decision-making, researcher reflective thoughts, sampling decisions, the emergence of themes, and determination of findings (Korstjens & Moser, 2018b). This study's audit trail includes interview transcripts, participant observation notes, document collection logs, research journals, analytic memos, codebooks, theme development reasoning, and interpretive processes utilized by the researcher. Preserving the audit trail enhances the trustworthiness of this study's research methods and designs so future researchers find this study worthy of consideration (Connelly, 2016). Triangulating data,

sequencing data analysis, and coding data in an iterative process support the reliability of assertions and theme development. The interview guide in Appendix B further supports study reliability, as during semi-structured interviews the researcher consistently asks questions designed to address the research questions. Allowing participants to form their narrative when answering open-ended interview questions to describe their experienced realities adds to the reliability of this study.

Researcher reflexivity augments research reliability, or dependability, and enhances the quality of this qualitative single case study. Reflexivity during data analysis included the researcher reflecting on the underlying ontology supportive of study assertions and findings. Moon et al. (2016) suggest qualitative study reliability requires transparency of the researchers' philosophical perspective to enable readers to understand the framework utilized to understand reality. As stated above, this study utilizes an interpretivist, constructionist philosophical paradigm to explore the multiple realities that exist in this case due to organizational culture and the nature of leader relations being social constructions. An epistemology of subjectivity positions the researcher to understand multiple perspectives of reality, and the application of biblical worldview axiology to seek subjective understanding occurs in this study. Study validity complements reliability and adds to the inherent quality of this qualitative study.

Validity

The validity, or qualitative credibility, of this study, refers to the context- relevant findings that retain applicability to broader contexts while preserving rich descriptions of the participating firm's unique context (Bloomberg & Volpe, 2019). Achieving qualitative face validity occurs when logical connections exist between research objectives and interview questions designed to achieve those objectives. Findings and conclusions emerging from

research methods provide face validity when findings are relevant and feasibly applied to broader contexts (Roemer et al., 2019). This study achieves face validity through researcher reflexivity, a semi-structured interview guide design that directly addresses the research questions, extensive fieldwork supportive of thick contextual descriptions, data triangulation, researcher analytic memos, seeking insights disproving assumptions, and member checking of coding to accept or challenge emergent themes and concepts. Content validity complements this study's face validity to assure readers deem this single case study credible.

Brod et al. (2009) propose qualitative research content validity contains systematic, documentable, and accurate data collection and analysis. A rigorous qualitative study achieving content validity includes direct interactions with participants through interviews, observations, and document collection. The semi-structured interview guide provides opportunities for cognitive debriefing interview techniques to confirm the relevance and clarity of the interview content. Brod et al. (2009) suggest cognitive debriefing includes asking the participant how they arrived at the answer to an interview question, as well as probing how the participant interpreted the question and ease of comprehending the question. The detail of data gathered from the semi-structured interview guide and cognitive debriefing questions adds depth and richness to the descriptions of experienced realities. Attaining data depth and richness through saturation supports thick descriptions of the participant context that communicates a holistic understanding of the FSF context. Thick contextual descriptions provide content validity and trustworthiness through the study's findings and interpretive conclusions that readers judge relevant to broader contexts. This study achieves both face and content validity through research rigor, participant interview techniques, and documented thick descriptions of context supportive of findings.

Summary of Reliability and Validity

Utilizing thematic saturation and data triangulation strategies, this qualitative single case study establishes trustworthiness inclusive of reliability and validity. Establishing reliability and dependability of the study occurs in providing a documented audit trail of data collection and triangulated sequenced data analysis. Researcher reflexivity supports study reliability, including transparency concerning the researcher's philosophical perspective through which analysis transpires. The face and content validity of the study confirms its relevance to broader contexts while retaining rich descriptions of the unique FSF context. The study's validity and credibility support the trustworthiness of findings and interpretive conclusions.

Transition and Summary of Section 2

The method and design of this qualitative single case study of how FSF leaders confront ethical challenges resulting from emerging technologies rely on the researcher as the primary data collection instrument and data analyst. Through the gathering of multiple perspectives of reality from participants, the researcher utilized an interpretive voice from an emic perspective that included self-awareness and reflexivity. The researcher interacted with study participants to glean contextual information including organizational culture and leadership behaviors when making ethical decisions. Participant delineation occurs through two embedded units of analyses, including key decision-makers and technical management staff. Through participant semi-structured interviews, observations, and document collection, the researcher collects and analyzes data while establishing due care that protects participant confidentiality.

Qualitative research methods optimize this study's potential to produce applied business knowledge, as the researcher collects non-numerical data within a single bounded system to develop thick descriptions of the FSF context (Creswell et al., 2007). Through the alignment of the research problem, purpose, questions, and method, this study retained a degree of design

flexibility while promoting research rigor, understanding of complex stakeholder perspectives, credibility, and dependability of research findings. Research design as an exploratory single case study brings clarity to the relationship between the phenomenon of ethical challenges resulting from emerging technologies and the particular FSF context (Yin, 1981). This study design included both naturalistic and instrumental natures, positioning the researcher to gather multiple, and at times contradictory, stakeholder perspectives of reality. The instrumental and naturalistic nature of a single case study design allows the researcher to identify practical insights into the phenomenon of emerging cyberspace business ethics.

Utilizing non-probability purposeful sampling techniques to select no more than twelve participants from a study population inclusive of all FSF employees and active family owners over the age of eighteen, this study minimized researcher bias by utilizing a logically designed stratified sampling strategy. This sampling strategy reinforced collecting sufficient data for astute coding, triangulation, and data saturation analysis supportive of research findings and conclusions. This study's fieldwork relied heavily on participant face-to-face semi-structured interviews to provide data breadth and depth, allowing the researcher to form thick descriptions of the rich data collected. Direct participant observations, relevant document collection, and researcher field notes and journals supplement interview data collection.

Data organization and retention occurs in NVivo qualitative research software for three years after the study's completion, and the researcher utilized defined security protocols to secure electronic and hard copy data and protect participant confidentiality. Qualitative data analysis includes defining nominal research variables to include types of innovative technologies, categories of risks, cultural influencers, leadership approaches, and decision-making criteria. The researcher utilized both open coding to identify conceptual data patterns and

axial coding to seek connectivity amongst patterns (Richards & Hemphill, 2018). Utilizing an iterative approach to develop themes, the researcher supported thematic conclusions with illustrative participant quotes. This process of data collection, organization, and analysis supported the reliability and validity of study findings.

The purposeful alignment of this study's research method, design, data collection techniques, and analytic strategies supports the application of findings to professional practice and substantiates recommendations for action. Through investigation of ethical challenges arising from rapidly changing emergent technologies, this study provides useful insights into how organizational culture and leadership behaviors influence and affect a firm's cyberspace business ethic in the FSF context. Recommendations add to the usefulness of this dissertation in advancing the body of knowledge concerning applied ethical practices in business. Given this research reflected the particular context of a single case study, findings warrant further study of how business leaders address an applied cyberspace business ethic.

Section 3: Application to Professional Practice and Implications for Change

This qualitative, naturalistic single case study of a privately owned financial services firm (FSF) in western North Carolina answers the primary research questions within the firm's particular context evaluated during the Covid-19 health pandemic in July 2020. The primary research questions explored in this study include: (1) How does the organizational culture of FSF create a leadership climate that accommodates the firm's applied cyberspace business ethic, and (2) How do technology leaders address ethical challenges arising from emergent digital technologies at FSF? The researcher conducted semi-structured interviews with the majority of firm employees at FSF's corporate office building, including the Co-CEO's, key executive leaders, and client service representatives. The researcher supplemented participant interviews

with written observations of employee interactions, coupled with document collection related to research questions to insure data saturation and triangulation in order to promote validity and reliability of findings. Findings include development of an Influence Model to assist evaluating the firm's applied cyberspace business ethic.

Overview of the Study

The previous decade's exponential increase in emerging technologies in the financial services industry caused the CEO of Goldman Sachs, Lloyd Blankfein, to declare in 2017, "We are a technology firm. We are a platform" (Gupta & Simonds, 2017, p.1). This case study addresses how a North Carolina based financial services firm with a significantly smaller employee base than Goldman Sachs addresses similar exposure to rapidly emerging technologies and the accompanying uncertainty, increased complexity, and ethical challenges often associated with technological innovations. By evaluating the effect of FSF's organizational culture, leadership approach, and ethical decision-making processes on protecting the firm from reputational risk resulting from uncertainties created by emerging technology deployments, this research adds to the leadership and applied cyberspace business ethics body of knowledge. As financial service digital technologies continue to evolve, increased understanding of interrelationships amongst key influencers of ethical decision-making adds to executive leadership effectiveness in sustaining a firm's reputational and economic value. Although specific findings within the unique context of this single case study may not be transferrable to other contexts, creating an understanding that a convergence of organizational culture, leadership approach, and cyberspace business ethics impacts reputational risk and business sustainability provides a framework in which additional research within other contexts and research methods can occur.

Anticipated Themes/Perceptions

Themes and perceptions anticipated to emerge from this study included:

1. The use of emerging technologies in operations effect decision-making in ways unique to type of technology deployed.
2. Uncertainties and risk exposures increase upon initial deployment of new technologies.
3. Cultural influences and leader behaviors affect ethical decision-making.

These three anticipated themes and perceptions formed an initial perception of potential research question answers, yet findings from this study added significant context and depth of understanding previously unanticipated.

Findings from this study include the identification of four key influencers of FSF's applied cyberspace business ethic: core value influence, relational influence, reputational influence, and technological influence. Strategic alignment of these four influences creates a foundational understanding of how FSF leaders address increased uncertainty, complexity, and ethical challenges arising from emergent technologies to protect against reputational risk. By applying a transformational servant leadership approach coupled with influential cultural and intellectual motivation to make ethical decisions, FSF leaders create a climate supportive of sustainable economic growth. By spending adequate time at FSF's corporate office building and interacting directly with FSF employees of various duties and perspectives of reality, the researcher retains an ability to provide thick description of the participating firm's context.

Presentation of the Findings

Entering the lobby of FSF's corporate office building, a receptionist awaited wearing a face covering as a reminder the Covid-19 pandemic was at a peak. The office suite created an

atmosphere of stability and prestige in the firm's management of wealth, as all common areas were neatly organized and well appointed. Walking through a break room, the receptionist proceeded to the firm's library, sparsely furnished with a single table and four wooden chairs, along with two additional leather wingback chairs in the far corners of the room. Each interview conducted in the library resulted in the researcher sitting at the library table, as each participant positioned across the room in a leather chair approximately eight feet away to create appropriate spacing in adherence to workplace pandemic health and sanitation protocols. In-person interviews occurred in the library, and a Zoom virtual meeting transpired for participants unable to meet in person. Each interview averaged approximately one hour in duration. Employee interaction observations and other data collection also occurred in the library and adjoining break room.

Data Collected. FSF public marketing material lists the firm's financial service offerings as wealth management, insurance, trust, estate, and retirement planning, including financial advisory services for multi-generational families and businesses. Although advising on complex financial issues involving large asset holdings, the firm employs 15 financial professionals including two Co-CEOs who are family owners of this private firm. Interviewing nine employee participants provides insight into the perceived reality of 60% of the FSF employee base, resulting in sufficient data saturation to support finding reliability. Segregating the nine employees into two embedded units of analysis of key decision-makers and technology management staff or client administrators utilizing technology (see Table 2) provides an opportunity to contrast data collection within each unit of analysis. A random two-letter code assigned to each participant provides confidentiality of all interview responses. Table 4 lists each participant with accompanying employee tenure at FSF in years.

Table 4

Employee participants

Random Participant Code	Employee Firm Tenure
Key decision-makers:	
AA	5 years
CA	17 years
CB	11 years
SA	16 years
Average firm tenure	12.25 years
Technology management staff and client administrators utilizing technology:	
OD	14 years
OM	4 years
VB	2 years
VC	1 year
VD	1 year
Average firm tenure	4.40 years
Total average firm tenure	7.89 years

The difference in firm tenure between the two embedded units of analysis represents almost eight years of company tenure, representing a significant divide in length of service between key decision-makers and technology management staff or client administrators. Data collected includes audio-recorded employee participant interviews, written interview transcripts, researcher interview notes, fieldwork observations of context, reflexive considerations, FSF's corporate annual report (2020 edition), FSF public marketing collateral, internal firm documents of corporate vision, value proposition, core values, and goals, an employee listing, review of FSF's website, and a book authored by a key decision-maker. The span of data collection and analysis provides sufficient opportunity for data triangulation completed by the researcher to support reliability and trustworthiness of findings. Evidence collected from these reliable sources during research fieldwork binds the data to FSF's particular context during the summer of 2020.

Conclusions Addressing Research Question One

Owners and executives described the role of organizational culture and core values in establishing the expectations of ethical leadership behaviors (research question $RQ1_A$) as based on both the heritage of the firm and five core values that permeate the company: client first, integrity always, teamwork, continuous pursuit of excellence, and a fanatical attention to execution. CA articulated the prolific heritage of the firm by describing the rich experience of the firm's founding owner as a Yale University educated engineer, a world war two aviator who flew United States Naval combat missions, and an attorney educated at the University of North Carolina at Chapel Hill. Since the founding of FSF in 1950, owners and executives communicate the founder's aspirational characteristics as "the precision of an engineer, the courage of a combat pilot, and the tenacity of an attorney".

Table 5 shows the firm's five core values align relatively closely to the core values of the United States Air Force, indicating some degree of military influence in the company's heritage and corporate history. Every participant interviewed spoke directly to the value of placing client interest first, elevating it to a position of authority for the ethical leadership behaviors owners expect from employees. By giving priority to the client's financial interests, this core value permeates throughout the firm as a guiding ethical principle upon which decision-making often occurs. FSF prides itself on hiring individuals with a personal code of ethics that align to the firm's ethical expectations. Executive communication often rests on a foundation of respect for not only clients but also employees, and this communication style creates a work environment that displays a high degree of emotional intelligence. As OM stated, "If you did not have a high degree of emotional intelligence and human intelligence, it would become very obvious, very quickly".

Table 5

Comparison of FSF core values to U.S. Air Force core values

FSF Values	USAF Values
Client first	Service before self
Integrity always	Integrity first
Continuous pursuit of excellence	Excellence in all we do
Teamwork	
Fanatical attention to execution	

Core values permeate the firm via consistent communication in monthly staff meetings, and FSF employees recognize peers as modeling the firm's values via specific actions on a wallboard in an office common area. CB stated, "We have something called a behavior board where we can pin somebody's name up for one of those key values. We try to keep it top of mind". The Co-CEO's commit to modeling these core values and virtuous behaviors, and employees notice and emulate their servant leadership approach. OM reported, "They [Co-CEOs] really do live out the values. And so, if at any point there is a gray area or questionable situation, they don't hesitate when it comes to core values such as integrity or client first".

Organizational values, virtues, beliefs, and heritage stories support leadership approaches, behaviors, and ethical decision-making (research question $RQ1_B$) by exerting four distinct influences on employee actions: core value influence, relational influence, reputational influence, and technological influence. This study concludes these four influences have bearing on the interactions between FSF's organizational culture, leadership approach, and ethical decision-making. Designated the CRR-T Influence Model in Figure 1, interactions of influences founded on FSF's core values create an ability to support ethical decisions and protect the firm from reputational risk.

Figure 1

Core values, relational, reputational, and technology (CRR-T) influence model

Core values influence theme. The CRR-T influence model depicts FSF's organizational culture impacts the firm's hybrid leadership approach of transformational servant leadership (TSL) through the influence of five core values. Alignment of the firm's core values to an appropriate leadership approach positions the firm to create an organizational climate conducive to ethical decision-making. In modeling organizational core values, FSF executives utilize a transformational servant leadership approach to maintain a long-term, strategic view of

sustainable company growth. This TSL approach recognizes the core value of prioritizing client needs in service to others to promote human flourishing. One executive, CB, articulated an abiding commitment to servant leadership (Greenleaf, 1979) through providing personal service to clients by stating, “If I never show my face, if I never sit down with them personally, I just wouldn’t be able to keep my head high and feel good about myself”. This servant leadership approach partners with a transformational leadership approach through encouraging technological innovations throughout the firm to support improving client service levels.

Relational influence theme. The TSL approach utilized by FSF leadership impacts ethical behaviors and decision-making through the influence of relationships. Relational influences materialize amongst FSF employees and with clients. Rost (1991) proposes leadership represents an influence relationship, meaning leadership manifests both relationally and behaviorally. FSF executives forming relationships with client-facing employees in a TSL approach tightly aligned to firm core values influences all employees to make ethical decisions. SA confirms relationships with FSF owners and executives influence ethical decision-making by relating, “When you were a young boy, you tended to listen to and follow your father. I think the same applies to watching and observing the likes of [FSF first generation owner]”. OD attests to this phenomenon by declaring, “Ethics permeate everything we do”.

Supportive of ethical decision-making at FSF includes motivations generated from a culture of continuous learning. Self Determination Theory (SDT) proposes motivations for determining one’s opportunities and outcomes include competency, autonomy, and relatedness. All three motivations are apparent in FSF’s commitment to supporting employee continuous education, as SA summarizes, “This firm has always invested in professional designations as representations of education and acquired knowledge, one in recognition that it was necessary to

do the right thing and put client first, but also strategically to be a differentiator". Decision-making consistently influenced by aligned core values and relationships not only motivates ethical behaviors within the FSF workforce, but also creates market differentiation supportive of business sustainability.

Reputational influence theme. Ethical employee decision-making and behaviors reinforce organizational culture through the influence of firm reputation. Given firms participating in the financial service industry inherently carry high reputational risk if an ethical lapse occurs, protecting firm reputation and brand value requires vigilance in making ethical decisions at all levels in the organization. The impact of an ethical lapse could be an existential threat to the firm, as confirmed by CA: "Trust is implicit. If we ever broke that, it would be devastating". Technological influences add complexity and uncertainty to the three cyclical and interrelated influences of core values, relationships, and reputation.

Technological influence theme. Technological influences at FSF represent both an opportunity and a threat to maintaining alignment amongst organizational culture, leadership approach, and ethical decision-making. In the prior five years, the firm rapidly increased capital allocation to innovative technologies to improve client service capabilities and leverage technology as a strategic advantage. This hyper-investment supported the strategic objective to compete at a higher level of client services, as explained by SA: "An aspiration for the company is to grow. Leadership acknowledged that would be difficult with the existing technology infrastructure. If there wasn't a wholesale change in the infrastructure, it would be folly to chase growth". Yet, rapid deployment of emerging technology creates uncertainties, complexities, and potentially ethical challenges, therefore technologies act as a fourth influence of significance on ethical behaviors.

Technology leaders apply the organization's cyberspace business ethics in alignment with organizational cultural expectations through an intentional combination of core values, transparency, and communication clarity (research question $RQ1_C$). Developing an applied cyberspace business ethic model descriptive of FSF's context begins with an understanding of the instrumental role of internal environmental complexity and external environmental uncertainty. Deploying emerging technologies at FSF adds internal complexity to business processes and systems related to how client interactions occur. New methods of collecting, storing, and accessing client data create complexity challenges, along with additional risk of cyber threats and ethical considerations that leaders must thoughtfully mitigate. Simultaneously, external environmental uncertainties ebb and flow as emerging technology deployments evolve in the competitive financial services marketplace.

CB opined technological changes in the financial services arena create formerly unavailable growth opportunities, yet external environmental uncertainties require attention to the ethical considerations as new opportunities emerge. CB articulated emerging technology provides opportunities to expand business beyond the firm's current geographical footprint and existing client segments by stating, "As technology has evolved and expanded, you can really do this job nationally and have clients all over through the use of technology. Our industries are kind of being democratized, at least geographically. Technology is allowing people to work down-market and allow working with individuals that perhaps have less money". Capitalizing on the opportunity of new client markets, specifically client segments with less accumulated wealth provides an ethical challenge of how best to balance a desire for firm growth with new client interests. Awareness of the degree of internal complexity, external uncertainty, and the exacerbation of these conditions by disruptive technologies provides FSF technology leaders the

opportunity to utilize a model of core values, transparency, and communication clarity to confront and overcome the firm's ever-changing environmental context and exploit growth opportunities.

Core values provide the basis for developing FSF's applied cyberspace business ethic. Overcoming obstacles of complexity and uncertainty resultant from emerging technologies requires consistent application of the firm's client first, integrity, teamwork, excellence, and execution values. Maintaining a focus on core values in consideration of environmental complexity and uncertainty provides a basis upon which transparency and communication clarity occurs with FSF technology leaders. OD professed a belief that in a condition of elevated complexity and uncertainty "explaining the 'why' of how decisions were made creates understanding and acceptance". Expanding on this thought, OD stated, "There is a good bit of transparency in the decision-making process and communication working together". Documenting FSF technology leader's applied cyberspace business ethic in Figure 2 reflects alignment between the ethical paradigm being utilized and organizational cultural expectations expressed in firm core values.

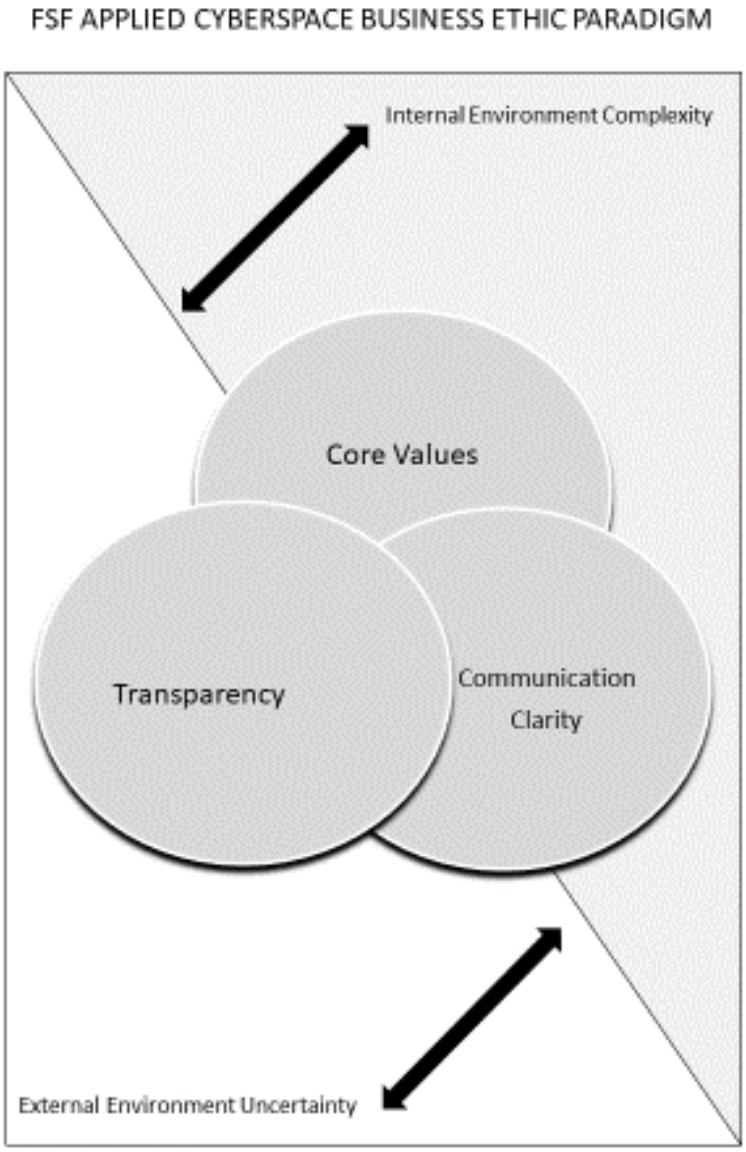

Figure 2

FSF applied cyberspace business ethic paradigm

Note: This model shows the dynamic environmental reality of internal complexity and external uncertainty that exists as emerging digital technologies deploy into the market. Anchoring ethical decision-making in organizational culture expectations and communicating to employees and

clients with transparency and clarity provides opportunity for an effective applied cyberspace business ethic model to emerge.

Corporate processes in place that control applied cyberspace business ethics include FSF's commitment to employee ethical training however, current professional development practices may not optimally support ethical decision-making (research question $RQ1_D$). Ethical guidance provided to FSF employees derives from three sources: professional certification codes of ethics, FSF internal ethical expectations, and each individual employees personal ethical and moral code. Firm executives rely heavily on codes of ethics provided by professional certifications and any ethical continuing education requirements to maintain active certification status. Employees hold category-specific professional certifications in wealth management, investments, insurance, retirement planning, and tax accounting arenas, but the firm relies heavily on the code of ethics standards of the Certified Financial Planner (CFP) designation.

CA articulated, "You have to be a CFP to be a lead advisor for any of our wealth clients, which is kind of our highest level. And within the CFP curriculum you have to have ethics training, and you are held to a very high standard of conduct, code of conduct, where you have to disclose any conflicts of interest or eliminate them". Given not all employees hold the CFP designation, FSF executives expect core values to guide employee ethical behaviors. CB reiterated this by stating, "From a culture standpoint and leadership in our organization, when there is ever a question of what's the right thing to do, in our opinion, we are just going to do the right thing". This reliance on core value permeation into ethical decision-making processes belies the nonexistence of formalized internal ethics training. OD confirms this reality in reporting, "No, there is no formal ethics training". The assumption that organizational culture supports business ethics pervades the organization, as SA confirmed, "With all the professional

development and continuing education, there is probably a good deal of ethics training going on in the background".

Without formalized internal ethics training, executives also rely on each individual's personal ethical and moral code to guide behaviors and decision-making. The researcher noted in fieldwork observations that FSF leaders relied on individual commitment to ethical behavior, yet did not clearly articulate specific organizational ethical expectations beyond core values. A reliance, or potential over-reliance, on third-party codes of ethics and individual employee understanding of ethics represents a possible internal threat unrecognized by executives.

Addressing the four research questions above provides clarity of how the organizational culture of FSF creates a leadership climate that accommodates the firm's applied cyberspace business ethic (primary research question RQ1). The following conclusions explain how the organization creates a leadership climate to accommodate ethical behaviors:

- communicating organizational expectations via five core values
- recognizing four influences documented in the CRR-T Influence Model that support ethical decision-making to protect against reputational risk (i.e., core values, relational, reputational, and technological influences)
- utilizing an applied cyberspace business ethic paradigm of core values, transparency, and communication clarity to manage complexity and uncertainty resultant from emerging technologies
- controlling ethical behaviors via third party and individual codes of ethics

Conclusions Addressing Research Question Two

FSF technology leaders describe their experience of confronting uncertainties resulting from emerging technologies as ensuring adequate value generation and reacting to change

resistance resulting from rapid deployment of emerging technologies (research question $RQ2_A$). With a hyper-investment in new technologies the previous three years, a high level of systems and process change experienced throughout the organization exists. Technology leaders face two realities given this increased capital allocation to emerging technologies: ensuring sufficient return on investment or value extraction from new technologies and overcoming any employee resistance to change.

Technology leaders communicate an understanding of the need for technological innovations to deliver value, as stated by OM, "I am comfortable in the sense that it is probably expensive. It's an investment. I am trying to make sure there is enough value and efficiency being delivered for the price we are paying. That's always top of mind for me...the value we are getting above the investment". This concern for value generation manifests in technology users who view technological innovations as opportunity for growth. One user of new technology, VC, observed, "I do see the opportunity to grow that side of the business now, especially with that burst of technology". VD confirmed the firm's technological hyper-investment provides connectivity to growth opportunities in stating, "I can't tell you how much money they have sunk into that to push to the next level". Opportunity often requires change, and some passive change resistance exists at FSF in the form of what CB refers to as "change fatigue".

Although the firm absorbs significant change through the recent phase of technological hyper-investment, CA observes, "We have got a lot of really smart people, and so I would say they are open to technology". This openness to emerging technology deployments creates the phenomenon of change fatigue, or weariness to exposure to increasing internal complexities. Passive change resistance appears in the form of questioning the purpose of technological innovations. OM honestly reflected on this resistance by recalling user feedback as, "I have

always done it this way. This works really well. It has worked really well until now. Why are we changing it? Why is it necessary?" Technology leaders utilize transparency and communication clarity as documented in the applied cyberspace business ethic paradigm to justify why continuous technological change benefits the firm.

Evaluating how technology leaders explore emergent technologies and determine when to implement new capabilities occurs though examining how innovations enter into the firm (research question $RQ2_B$). Although emerging technologies enter into the firm through various levels in the organization, a few leaders take the lead identifying new opportunities through learnings at industry functions and investigation of potential capability expansion. CA identified innovation leaders by stating, "I would say CB is probably the finder of technology. He does most of the research mapping and then OD and OM helps him with it as well". CB expanded on this insight by broadening innovation thinking to larger organizational teams, "I'd say in general it's kind of a steering committee. We need this technology, and then we have narrowed it down to one, two, or three. And so, employees have been involved in a final selection process. But the overall kind of initiative, to say we are going to have this technology, has been top-down. But once it gets into the firm, it is collaborative". The exploration of emerging technologies often initiates at an executive level then others assist with analysis, vendor selection, and implementation via collaborative efforts.

Repetitive and frequent cybersecurity training plays an important role in how technology leaders protect the organization from exposure to reputational risk resulting from emerging cybersecurity challenges (research question $RQ2_C$). CA reports employees are "trained monthly on recognizing cyber threats because a lot of the threats are not coming from outside. It's accidentally released on the inside in our experience. It's the person that accidentally launches

something by opening a PDF or an email, or somebody got phished and they fell for it and gave their credentials". CB estimated the firm's systems are "95% on the cloud", so reliance on third party vendors to provide adequate protection against cyber threats exists. CB confirmed, "Where we focus most of our time, energy, and efforts are on aspects where we can cause intrusions or issues. So we have regular trainings and all advisors have required trainings". A desire to protect client data supports this commitment to monthly cybersecurity training at staff meetings, as OD reflected, "There is a very, very strong sense of our responsibility to our clients in communicating with them and protecting their information, and we give them the highest quality service. Our slogan that's driven into everybody's head is 'call before you click'". This slogan represents the firm's requirement to authenticate digital communication with a phone call prior to taking action. Many participants interviewed mentioned the firm's security slogan, so cybersecurity permeates the thoughts of employees. A certain degree of organizational pride in cybersecurity training exists, as evidenced by SA stating, "The security infrastructure, for a small company, I think is pretty remarkable". The researcher observed during fieldwork FSF leaders recognize cybersecurity threats as the most significant ethical challenge resulting from emerging digital technologies that could substantially harm the firm's reputation.

Addressing the three research questions above provides clarity about how technology leaders address ethical challenges arising from emergent digital technologies at FSF (primary research question RQ2). The following conclusions explain how technology leaders address these challenges:

- ensuring adequate value generation from rapid deployment of emerging technologies

- exploring emerging technologies initiated at an executive level, then others assisting with analysis, vendor selection, and implementation via collaborative efforts to identify potential ethical challenges prior to implementation
- utilizing transparency and communication clarity as documented in the applied cyberspace business ethic paradigm to justify why continuous technological change benefits the firm
- requiring repetitive and frequent cybersecurity training to protect the organization from exposure to reputational risk

Relation of Findings to Literature Review

Each finding listed in the eight bullet points above directly relate to this study's literature review. Communicating organizational expectations via the firm's five core values directly relates to the body of knowledge concerning the role of organizational culture and climate in influencing employee behaviors and decision-making. Schneider and Barbera (2014) proposed organizational culture represents values and beliefs transmitted through workplace story, ritual, and myth experiences, whereas climate represents organizational value-meaning employees attach to policies, procedures, and practices. The FSF organizational culture utilizes heritage story, and even aspirational myth, describing firm founder characteristics as precision, courage, and tenacity. FSF's five core values permeate through the organization via heritage stories and ritual experiences like the annual Founder's Day party highlighting the importance of the firm's patriarchal values that remain prevalent today. Schein (2017, p. 6) formalized a common definition of organizational culture as "the accumulated shared learning in the workplace that forms expectations of beliefs, values, and behavioral norms". The enculturation of core values

into defining FSF behavioral norms reflects the core value influence on the executive team's leadership approach.

Farrell (2018) proposes successful leaders utilize the power of organizational culture to execute strategic initiatives, yet subcultures may exist at the business unit, department, or employee classification levels that complement or detract from the firm's primary culture. Subcultures represent structural and environmental complexity leaders must navigate to achieve mutual goals. In the FSF context, the two units of analysis of key decision-makers and technology leaders and client representatives represent distinct subcultures or internal environmental complexity leaders must navigate. Although mutual goals exist across both subcultures, key decision-makers with significantly longer firm tenure than technology leaders and client representatives assertively exert TSL to drive firm growth. Passive resistance to key decision-makers hyper-investment in technology appears in the form of change fatigue in the technology leader and client representative subculture.

The leadership approach at FSF rests in a hybrid model of transformational servant leadership (TSL) as defined by Rost (1991) and Greenleaf (1977), respectively. Rost described a transformational leadership approach as founded on an influence relationship intended to enact real change to accomplish mutual purposes. Rost (1991) proposes underlying transformational leadership virtues include prudence, practical wisdom, fortitude, and temperance, whereas transformational leadership attributes include inspirational, motivational, and intellectually stimulating. The FSF leadership approach reflects relational influence on colleagues intended to transform the firm's technological infrastructure to support exploiting new opportunities and improve client service. Leadership virtues at FSF include precision, courage, and tenacity that align to prudence and fortitude virtues supportive of transformational leadership. Leadership

attributes at FSF include motivating employees through intellectual stimulation found in the firm's continuous learning culture. Coupling transformational leadership with a servant leadership approach further strengthens FSF's ability to address ethical challenges.

Greenleaf's (1977) seminal work on servant leadership proposed this approach that signifies leaders serving followers with a communal awareness that promotes teamwork. Servant leadership virtues include justice, courage, and honesty, whereas servant leadership attributes include awareness, empathy, stewardship, and commitment to the growth of others. Through the core values of client first and teamwork, FSF leaders align to a servant leadership approach, and the firm's heritage values of courage and honesty as first exemplified in firm founders remain intact today. As a family owned private business, current FSF leadership understands the role of stewardship of the firm's reputation built on client trust and exhibits an awareness of supporting the growth of employees through continuous education.

Zhu et al. (2015) found a high correlation amongst the dimensions of transformational leadership, ethical leadership, and virtuous leadership, indicating these leadership approaches are psychometrically indistinguishable. FSF's hybrid TSL combines the dimensions of ethical and virtuous leadership with transformational leadership to achieve mutual purposes. Blending the two leadership approaches into a unified transformational servant leadership approach uniquely describes the FSF leadership model.

The recognition that four influences support ethical decision-making to protect against reputational risk in the form of core values, relational, reputational, and technological influences directly relates to the ethical decision-making body of knowledge. Melo et al. (2015) explored relationships between culture, ethics, and technology, suggesting the behaviorist B.F. Skinner provided a basis for governing the use of technology by elevating the ultimate value of survival

of humanity and culture. Skinner proposed a behavioral ethical technology seeks the survival of humanity and supports the welfare of individuals (Melo et al., 2015). The importance of this proposition lies in the assumption that technology can strengthen culture when technologists make ethical choices or inspire ethical questions. FSF utilizes technological innovations within the context of a strong organizational culture heavily reliant on core values to make ethical decisions resultant from emerging technologies. The FSF reality of a cycle of core value, relational, reputational, and technological influences as documented in the CRR-T Influence Model supports Skinner's proposition that when technologists make ethical choices and inspire ethical question (as is the case with confronting cybersecurity threats), culture strengthens. Stated succinctly, FSF's strong organizational culture influences ethical decision-making, which thereby strengthens the firm's organizational culture in a symbiotic cycle that helps mitigate cybersecurity and reputational risk. Mathur (2019) finds that perceived cybersecurity risk by clients creates a significant increase in an organization's reputation risk, especially in financial services, aligning to the FSF leadership context that identifies cybersecurity and reputational risk as potential existential threats to the firm.

Utilizing an applied cyberspace business ethic paradigm of core values, transparency, and communication clarity to manage complexity and uncertainty resultant from emerging technologies directly relates warranting sustained attention to ethical problems, dilemmas, and polarities arising from rapid technological advancement (Reamer, 2017). Reamer's concept of uncertainties and risk of emerging technologies directly relates to this finding, as rapid technological change creates unknown outcomes and the potential for de-humanization and inauthentic interactions between FSF leaders and their clients. Further, FSF approaches ethical decision-making utilizing the three components of Self-Determination Theory (SDT) of

competency (continuous education culture), autonomy (individual expertise and trust), and relatedness (common understanding of core values and behavioral expectations.

Controlling ethical behaviors via an individual's code of ethics relates to a relational and behavioral understanding of ethics and virtues found in literature review. Leadership defined as a relational and behavioral expression with followers requires courage for the leader to act boldly in confidence of the Christian principles supportive of righteous decision-making. In scripture, the Proverbs of Solomon speaks to the courage required for virtuous leadership in stating, "The wicked flee when no one pursues, but the righteous are bold as a lion" (*English Standard Version Bible*, 2001/2001, Proverbs 28:1). Righteous behavior, virtuous decision-making, and providing a trustworthy example of faithfulness necessitate the courage of bold business leadership. FSF leaders strive to exhibit virtuous decision-making that provides a trustworthy example for clients, requiring the aspirational heritage-virtue of the founder's courage and boldness as a wartime aviator.

Webster (2018) finds human interaction with cyberspace and emerging technologies like AI melds the ethics and virtue of human personality, cognitive capabilities, and soul with machine neural networks. In this conflation of humanity and technology resides an emerging field of applied cyber-ethics. FSF's use of digital communication media with clients (particularly in the CoVid-19 health pandemic) offers the potential to improve client dialogue while simultaneously potentially dehumanizing clients when digital communication channels replace in-person meetings. FSF further identified a threat of artificial intelligence utilized in robo-invested portfolios, and the firm reacted by increasing personalized and customized client services, thus mitigating the risk of client dehumanization by segregating machine neural networks from human relationship building.

Ensuring adequate value generation from rapid deployment of emerging technologies relates to concepts of benefits generated by technological innovations. Kohl et al. (2018) introduced the concept of a distorted benefit perception of users when emerging technology introduction occurs, wherein perceived safety and privacy concerns often outweigh the benefits of technology usage. In the FSF context, passive resistance to change or change fatigue represents the perception of some that the benefit of safety in status quo potentially outweighs the economic benefit of emerging technologies upon introduction into the firm. FSF technology leaders remain cognizant of this internal complexity of distorted benefit perception.

Utilizing transparency and communication clarity as documented in the applied cyberspace business ethic paradigm to justify why continuous technological change benefits FSF relates to interactions amongst culture, values, open communication, collaboration, and trust. An essential element of organizational culture includes the social exchange of trust between the organization and individuals (Bachmann & Inkpen, 2011; Paille et al., 2013). An organization's espoused and enacted cultural values support the dissemination of information throughout the organization by the leadership values of trust, open communication, and collaboration (Cekules, 2015). The social exchange of trust occurring within relational interactions amongst individuals reflects the leader's efforts to engender trust with followers, and thereby increase commitment to organizational cultural values. Technology leaders at FSF that use clear communication to engender transparent results create organizational trust that increases commitment to organizational values.

Requiring repetitive and frequent cybersecurity training to protect the organization from exposure to reputational risk relates to concepts of required cyber governance that considers ethical, moral, and social impact evaluations. Fielder et al. (2018) suggest the complexity of

cybersecurity risk assessments increases given the number and potential severity of uncertainty exposures the organization encounters. Emerging cyber-threats warrant expanding emerging technology risk governance. Linkov et al. (2018) propose emerging technologies require non-traditional risk considerations when assessing new cyber threats, including ethical, moral, and social impact evaluations. FSF leaders provide cybersecurity risk governance via cybersecurity policies, procedures, and training regimens that consider ethical and social impact evaluations of the reputational damage that would result from a cyber-breach of client data. Findings from this study address all research questions and relate to, and indeed are additive to, the body of knowledge of cyberspace business ethics found in the literature review.

Data Outliers or Discrepancies

VC and AA represent the only two participants that use the term "fiduciary responsibility" to describe the relationship of FSF with clients as a position of trust to act in the client's best interest. Although the value of client first implies a fiduciary responsibility, FSF may not adequately emphasize the role of fiduciary duties clearly defined in industry literature. Secondarily, every participant interviewed cited organizational core values and heritage stories as fundamental to organizational culture. None cited a mission statement, and only one participant alluded to a vision statement and value proposition but did not articulate the firm's aspirational vision beyond "grow the firm the right way". Research could not verify the existence of any FSF mission statement, and the absence of this critical data could indicate executives have not articulated with clarity the reason the firm exists beyond serving client's financial well-being. One participant stated the Co-CEO's "have made it pretty clear they want to grow, and more than just incremental growth". A commitment to exponential growth without the guidance of

mission statement could result in unanticipated ethical challenges, especially if continuation of the hyper-investment in technological innovations occurs.

Qualitative Data Analysis

Utilizing NVivo qualitative research software for axial coding techniques to identify relationships of words, ideas, and concepts organically emerging from collected data, the word tree map represented in Figure 3 assisted in determining key relationships in all collected data and initial data codes created by the researcher.

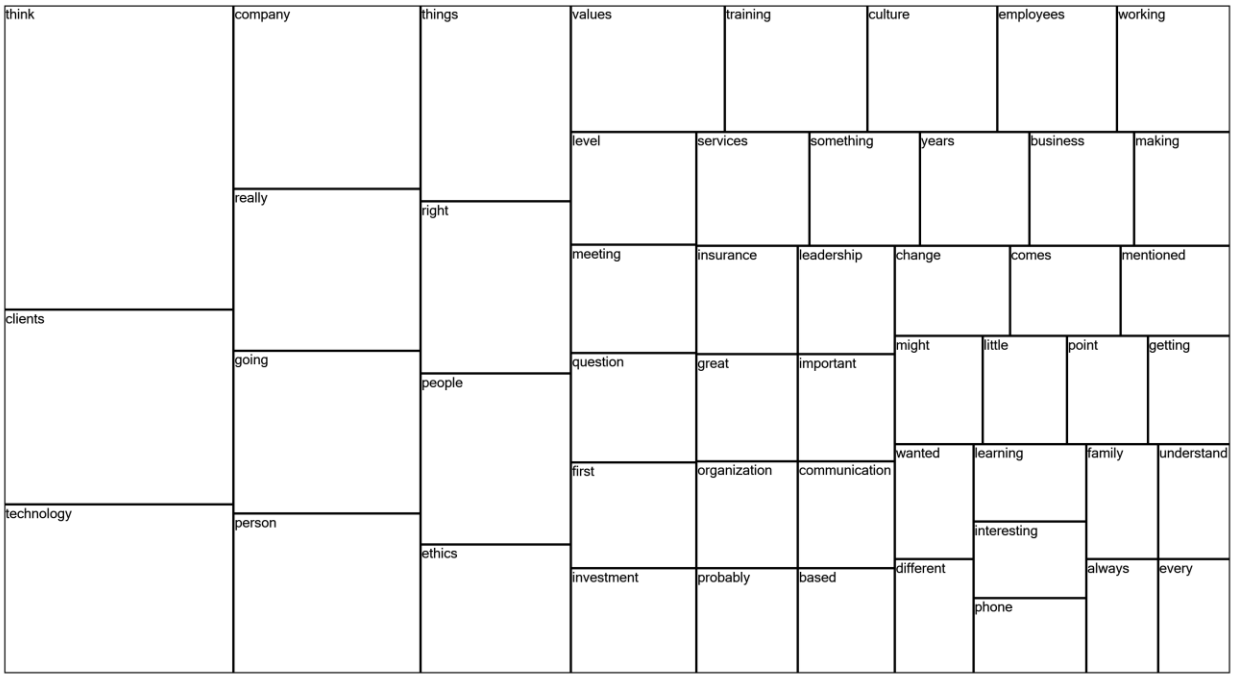

Figure 3

Word tree map identifying word choice relationships and patterns

The word tree map identified patterns in words that assisted in developing themes and sub-themes emerging from the data. Evaluating the word tree map supported identifying four distinct data patterns relevant to the study, including:

- company: values, culture, employees, think
- clients: right, services, change, people
- ethics: organization, learning, family
- technology: investment, communication, interesting

Generation of a word cloud in NVivo further visually represents the frequency of word use, revealing the essential word choice and assisting in developing relationships amongst words in collected data. Although word clouds are visually engaging and create emotional connectivity to the ideas expressed, qualitative analysis requires further exploration of the ideas and concepts embedded in word choice. The word cloud represented in Figure 4 substantiates the word tree map to begin the process of developing data codes, further analyzing the relationships and patterns found within collected data.

Figure 4

Word cloud of frequent word use in collected data

Utilizing word patterns identified in tree mapping and word cloud analysis, 25 codes organically emerged from data analysis after primary and secondary coding analysis. Using a concept coding methodology, assignment of levels of meaning to the data occurred. Saldana (2016, p. 120) suggests concept coding "stimulates reflection on broader social constructs" such

as ethical leadership, and concept coding provides a useful means to analyze data collected from a wide variety of sources (e.g., participant interviews, researcher observations, research journals and memos, and documents). Use of values coding as a secondary coding method allowed further honing of codes to assist evaluating FSF's organizational culture, core values, belief systems, and leadership approaches.

Table 6

List of data collection codes

Code Names	Code Description
AI	Artificial intelligence
Change fatigue	Tendency of employees to become exhausted from changes caused by emerging technologies
Client relationships	Importance of client relationships to FSF sustainability
Communication challenges	Challenge or gap in communications between sets of participants or employees
Confidentiality commitment	FSF interest in protecting all proprietary information as confidential
Core value of clients first	Core value that client needs take priority for service
Core value of excellence	Core value of continuous pursuit of excellence
Core value of attention	Core value of fanatical attention to detail and execution
Core value of integrity	Core value of integrity & ethical behavior
Core value of teamwork	Core value of teamwork and collaboration
Cybersecurity	Cyber-security training or commitment to mitigating cyber threats
Digital communication	Various ways in which communication between employees and clients is transitioning to digital environments.
Ethics support levels	Levels of support employees draw upon for behaviors and decision-making
Ethics training	Ethical training issues
Executive leadership	Description of the executive leadership team and leadership approach
Generational owner transition	Challenges associated with the generational ownership transition from G1 to G2
Heritage and history	Commentary on the importance of FSF heritage and history to organizational culture
Mission statement	FSF mission statement
Organizational culture	Issues related to org culture (and climate)
Reputational risk	Exposure to risk of firm reputational damage
Self-determination theory	SDT: competency, autonomy, and relatedness

Technological innovation	Hos innovative technology ideas originate
Technology acceptance	Acceptance of emerging technologies by employees to improve efficiencies
Technology hyper-investment	FSF commitment to invest heavily in technology in the previous 3-5 years
Values and virtue	Dependence on core values and individual virtue to make decisions

Once identification of data relationships confirmed 25 final codes, utilizing NVivo to document the number of data files (i.e., interviews, observations, journals, memos, and documents collected) in which each code emerged and the frequency of data referencing each code allowed organizing idea relationships into data themes and data patterns, or sub-themes. Table 7 reports final axial coding findings of four themes, eight sub-themes, and 16 primary codes, establishing critical relationships emerging from the data. Representation of the four central themes emerging from the data appears in the CRR-T Influence Model (Figure 1).

Table 7

Relationships of data themes, sub-themes, and codes

Themes	Sub-themes/Patterns	Code relationship
Core value influences	Communication clarity	Communication challenges
		Values and virtues
	Cultural effect on leadership	Organizational culture
Relational influences	Client service focus	Clients first
	Service orientation	Fanatical attention to detail
		Heritage and history
Reputational influences	Employee value connectivity	Generational owner transfer
		Reputational risks
	Ethical awareness	Ethics support levels
		Integrity
	Competence training	Ethics training
		Cybersecurity
Technological influences	Technological emergence	Technology hyper-investment
		Technology innovations

Technology acceptance
Change fatigue

Data analysis and development of data relationship, patterns, and themes resulted from achieving sufficient data saturation and effective data triangulation. Data saturation occurred when new data collections added little original knowledge not documented in prior data collection efforts. The researcher determined after nine participant interviews representing 60% of the firm's employees, the study was unlikely to discover critical new learnings from further interviews, observations, journals, memos, or document collection. A research strategy of data triangulation required cross-validating and verifying key findings from various collected documents. Themes, patterns and data relationship triangulation occurred by documenting the number of sources supporting each code and the frequency of data collected within each code. With sufficient data saturation and effective data triangulation, theme and pattern development supports reliability and validity of findings.

Core Value Influence Theme

The first theme of core value influences rests on sub-themes of communication clarity and the cultural effect on leadership. Core value influences appeared in the data through relationships amongst communication challenges, values, virtues, and organizational culture. The role of core value influences as a data theme includes explaining how organizational culture effects FSF's executive leadership approach: transformational servant leadership. CB identified this linkage of organizational culture and leadership approach through the influence of core values on leadership, stating, "We try to continually emphasize that [core values]. I'd say that does lead us, in that overall organizational values inform how we approach things". The influence of core values on leadership approach and behaviors explains how FSF espoused core values permeate the organization as sanctioned by executive leadership actions.

Core value influences directly link to the first research question RQ1 in describing how FSF's organizational culture creates a leadership climate that accommodates the firm's applied cyberspace business ethic, and more specifically addresses two sub-questions $RQ1_A$ and $RQ1_B$ that explores linkage between core values and leadership approaches. Core value influences also align to the study's conceptual framework (Appendix A) positioning organizational culture context as a primary driver of ethical decision-making. Although aligned to the idea of organizational culture context found in the conceptual framework, the theme of core value influences much more narrowly identifies values and supporting virtues as critical influencers on leadership approaches. This influence materializes through the sub-themes of communication clarity and associated cultural effect on leadership. Therefore, the difference between the thematic core value influences and the conceptual framework positioning of cultural context resides in a deeper understanding of the specific aspects of culture that influence leaders.

Mangi et al. (2015) propose the formation of organizational culture disseminates through a firm's traditions and rituals to impact employee thoughts, acts, and performances. This impactful linkage between organizational culture and employee actions establishes the firm's expectations for normalized leader behaviors. This study found the primacy of FSF core values as the critical influencer on firm normalized leader behaviors, supported by follower experiences of TSL.

Relational Influence Theme

The second theme of relational influence rests on sub-themes of a client service focus and a service orientation. Relational influences appeared in the data through relationships with the client first value, fanatical attention to detail, and firm heritage and history. The role of relational influences as a data theme includes explaining how FSF's executive TSL approach positively

affects follower ethical decision-making and behaviors. AA directly explained the linkage between the TSL and doing the right thing when articulating, “I really think that leadership has done a great job making sure that what we are doing is truly, at the end of the day, in the best interest of clients. And knowing if we can do that, you are always going to do the right thing”. The relational influence of leaders on follower behaviors and decision-making explains how executives’ TSL approach centered on the primacy of meeting client needs creates a climate supportive of ethical decision-making.

Relational influences directly link to the second research question RQ2 in describing how technology leaders address ethical challenges arising from emergent digital technologies, and more specifically addressing two sub-questions $RQ2_A$ and $RQ2_B$ that explores linkages between leaders confronting the implementation of new technologies and associated uncertainties and complexities. Relational influences partially align to the study’s conceptual framework (Appendix A) positioning self-determination theory (SDT) and decision theory (DT) as methods utilized to address uncertainty and risk exposures associated with emerging technologies. Findings in this case study reflect relational influences from FSF leader to follower affect follower decision-making when coupled with SDT components of competency and relatedness. Although DT may be a method used by some employees when confronting ethical challenges and considering complexity and uncertainties, relationships with others influence behaviors more so than theoretical considerations at FSF.

Van Dierendonck et al. (2014) suggest the level of uncertainty in an organization’s internal and external environment influences the effectiveness of a leadership approach. In highly uncertain environments, transformational leadership exceeds servant leadership effectiveness. In environments of relative stability, servant leadership exceeds transformational

leadership effectiveness. This study finds the FSF's internal environment of expanding complexity and external environment of ebbing and flowing uncertainty lends itself to a TSL approach accommodating dynamic environments that evolve over time as influenced by emerging technologies.

Reputational Influence Theme

The third theme of reputational influences rests on sub-themes of employee value connectivity, ethical awareness, and competency training. Reputational influences appeared in the data through relationships amongst generational owner transitions of authority, reputational risk exposures, integrity, internal and external ethics support, ethics training, and cybersecurity awareness. The role of reputational influences as a data theme include explaining how ethical decision-making and behaviors affect FSF's exposure to reputational risk. CA believes the firm's reputational goodwill accruing with clients assists overcoming any future ethical challenge, stating, "If it happened, I think there are clients who have enough faith and confidence in us, if we addressed it head on and said exactly what happened and what we are doing to address ramifications" the potential to survive a short-term reputational threat exists. The influence of reputation on organizational culture explains the cyclical nature of how values, leadership, and ethical behavior interact in a symbiotic relationship.

Reputational influences directly link to a research sub-question $RQ2_C$ in describing how technology leaders protect the organization from exposure to reputational risk resulting from emerging cybersecurity challenges. Reputational influences represent a finding not included in this study's original conceptual framework, as it represents a new understanding of how ethical decision-making impacts firm reputation and supports organizational core values. Whereas the conceptual framework focused on decision-making theory, behavioral motivations, and an

application of virtues to ethical challenges, this study finds relationships and reputational considerations more directly support ethical behaviors at FSF.

Linkov et al. (2018) claim emerging technologies require non-traditional risk considerations when assessing new cyber threats, including ethical, moral, and social impact evaluations. The authors suggest a comprehensive approach to emerging technology risk governance that assures broad stakeholder collaboration, including input from industry, academia, government, non-government organizations, and civil society. This understanding of non-traditional risk considerations involving ethical, moral, and social impact existing in new cyber threats addresses the complex combination of factors associated with mitigating reputational risk. This study found reputational influences including integrity, ethics training, and cybersecurity awareness create a complex network of considerations when confronting ethical challenges, extending beyond decision theory considerations.

Technological Influence Theme

The fourth theme of technological influences rests on a sub-theme of technological emergence. Technological influences appeared in the data through relationships amongst technology innovation, technology hyper-investment, technology acceptance, and resultant change fatigue that materialized within the FSF employee base. The role of technological influences as a data theme includes explaining how investment in emerging technologies both positively and negatively affect FSF's entire network of organizational culture, leadership approach, ethical decision-making, and reputational protection. The effect of FSF's hyper-investment in technological innovation penetrates the entire organization. CA observed, "All of these technologies are things that we have said are very important to us to provide the best delivery to our clients as possible. And they are very, very expensive technologies". The

influence of technological innovation on FSF's organization explains how strategic asset allocation creates dynamic conditions that directly affect organizational culture, leadership behaviors, and exposure to ethical risks.

Technological influences directly link to the research sub-questions $RQ1_C$ and $RQ1_D$ in describing how technology leaders apply cyberspace business ethics in alignment with cultural expectations and firm procedures. Technological influences are also aligned with the study's conceptual framework (Appendix A) positioning of uncertainties and risk exposures inherent in emerging technologies. However, this study found the nature of technological influences on FSF's values, leadership approaches, and ethical decision-making permeates throughout the entire influence cycle as visualized in the CRR-T Influence Model, rather than simply generating new uncertainties and risk exposures.

Huhtala et al. (2015) propose the perception of a leader's ethical conduct spreads amongst followers, and a leader that does not uphold ethical standards or cultural expectations can create emotional fatigue in the follower cohort. The authors find a lack of resources needed to conduct work ethically reduces employee engagement and commitment, resulting in emotional exhaustion and burnout. A leader that reliably models ethical behaviors and secures sufficient resources to fulfill work requirements ethically reduces the follower cohort's exposure to burnout or emotional fatigue. This study found FSF's tight alignment of a hyper-investment in emerging technology coupled with a pervasive commitment to core values with a TSL approach allows it to overcome change fatigue.

Summary of the Findings

A summary of this study's qualitative data analyses concludes a dynamic network of core values, relational, reputational, and technological influences create a significantly more complex

social environment at FSF than imagined prior to research. This complex social environment affects how organizational culture, leadership approach, and ethical decision-making interact to protect against reputational risk when hyper-investing in emerging technologies. Internal complexities and external uncertainties create an environment requiring FSF to rely on a cyberspace business ethic of core values, transparency, and communication clarity to ensure mitigation of the firm's reputational risk as emerging technologies deploy.

Application to Professional Practice

Applicability of these findings to the professional practice of business exists in the form of naturalistic generalization that occurs in reflection upon the thick narrative descriptions and detailed interpretations presented in this qualitative single case study. Stake (1995) proposes qualitative case study naturalistic generalization originates in a narrative account of the particular case context, personal description of the case setting, and study participant's personal descriptions of reality. This combination of factors allows the case study reader to relate vicariously to the experiential descriptions within this case study. This case study's evaluation of ethical technology leadership in the particular context of FSF provides naturalistic generalization to readers by providing relevance of key assertions to differing contexts. Although single case study findings may not be transferrable to differing contexts, naturalistic generalization and assertions found in this study support their applicability to the professional practice of business.

Applicability of Findings to the Professional Practice of Business

Northouse (2016) suggests principles of leadership ethics include respect, service of others, justice, honesty, and community building. Visibility of each of these ethical leadership characteristics appeared in the rich description above of the FSF narrative, creating relevance of this particular case to other business practitioners. To create an effective cyberspace business

ethic that recognizes inherent ethical challenges resulting from implementation of emergent digital technologies, selection of an ethical leadership approach in alignment to firm core values supports forming a useful cyberspace business ethic framework. This study proposes business practitioners that align their company's core values to leadership approaches appropriate to their particular context support development of an effective cyberspace business ethic. Northouse (2016) suggests ten leadership approaches upon which alignment of core values transpires:

1. Trait approach – utilizing intelligence, self-confidence, determination, and integrity to influence follower behaviors
2. Skills approach – utilizing technical, human, and conceptual skills to optimize follower outcomes
3. Behavioral approach – aligning leader behaviors, relationships, and task level direction to model desired follower outcomes
4. Situational approach – adapting flexible leadership styles and development levels to particular situations
5. Leader/Member exchange theory approach – developing high quality dyadic leader-follower relationships and partnerships to achieve mutual goals
6. Transformational approach – creating relational connections to increase motivation and morality of both leaders and followers that enact change
7. Authentic approach – incorporating a leader's self-knowledge, self-regulation, and self-concept in a reciprocal process with followers to act on core values
8. Servant approach – serving others through listening, empathy, awareness, persuasion, foresight, and stewardship to build community

9. Adaptive approach – recognizing aligning leadership behaviors to situational challenges in adaptive work environments
10. Psychodynamic approach – understanding the underlying motivations that govern behaviors of leaders and followers; why individuals behave the way they do and how to effectively influence behaviors and outcomes

The insight of FSF executives aligning core value influence with a hybrid transformational servant leadership approach offers naturalistic generalizability to other contexts, increasing business practitioner awareness and empathy for the interactive nature between values and leadership approaches supportive of ethical leadership. In the absence of intentional core value-leadership approach alignment, risk exposure to unethical decision-making and potential reputational damage may increase.

Relevance of Influence Findings to Improved Business Practice

The CRR-T Influence Model (Figure 1) visualizes how core values, relational, reputational, and technological influences form symbiotic relationships amongst organizational culture, leadership approach, and ethical decision-making. The Applied Cyberspace Business Ethic Paradigm (Figure 2) builds on this understanding of dynamic influences by visualizing FSF's reality of core values supporting how technology leaders address uncertain and complex environments inherent in deploying emerging digital technologies. Understanding how influences interact with internal and external environmental conditions generates understanding useful to the professional practice of business in other contexts.

Core Value Influence as Relevant to Improved Business Practice. Through recognizing the significance of core value influence as a conceptual bridge between organizational culture and leadership approach, those practicing the profession of business may

view their particular workplace context with a new sense of intentionality. Creating understanding that stimulates reflection on alignment of organizational core values to leadership approach offers business practitioners insight to enhance their cyberspace business ethic. This study provides insight into how core value permeation through FSF's organizational culture influenced the selection and execution of a hybrid leadership approach of transformational servant leadership in alignment to core value achievement.

Permeation of core values through the organization occurred through articulation of firm values by owners and executives, hiring practices that identified candidates with complementary personal values, internal recognition of employee actions that exhibited core values, and quarterly employee performance reviews providing leader feedback on actions supportive of core values. Consistent public and private reinforcement of follower behavior supportive of firm core values provides leaders strategic alignment awareness in selecting an optimal leadership approach to promote ethical decision-making and protect against reputational risk exposure.

Further, alignment of core values to corporate mission, vision, and value proposition enhances the bridge between core values and leadership approach. As noted in the FSF context, weak linkages between the firm's mission and vision act as a potential barrier to developing an optimal cyberspace business ethic. This insight of strategic alignment provides additional relevance of this study to business practitioners. In consideration of these ten leadership approaches and core values unique to each company, business practitioners can identify alternative interpretations of core value's influence on leadership approach in manners suitable to their environmental context.

Relational Influence as Relevant to Improved Business Practice. Through recognizing the significance of relational influence as a conceptual bridge between leadership approach and

ethical decision-making, those practicing the profession of business may view their particular workplace context with a new sense of intentionality. Creating understanding that stimulates reflection on alignment of leadership approach to ethical decision-making offers business practitioners insight to enhance their cyberspace business ethic. This study provides insight into how leader-follower relationships through FSF's hybrid leadership approach influenced making ethical decisions at every hierarchical level in the firm.

Relational influence occurs top-down, bottom-up, and horizontally amongst peers at FSF. Applying an understanding of self-determination theory (SDT) motivations to include competency, autonomy, and relatedness explains how FSF leaders formed motivational relationships with others in the firm. Employees with a high awareness of personal competency (exhibited through continuous education and professional certifications), autonomy (exhibited through leader trust in follower decision-making ability), and relatedness (exhibited in commitment to teamwork and mutual support) articulated a strong affinity to uphold FSF core values.

Executed within a TSL approach, FSF leaders accrued relational influence through teamwork building events, annual heritage events like the Founder's Day party, financial support of continuing education and professional credentialing, and philanthropic efforts that included all firm employees in community service decision-making. This study found relational influence acted as a motivator for ethical decision-making at FSF, and as environmental uncertainties and complexities increased due to deployment of emerging technologies, relational influence appeared as a primary guardrail against unethical behaviors. The relevance of this finding to business practitioners resides in awareness that a leader's relational influence promotes elevated levels of caring in followers and supports innovation. Conversely, without strong relational

influence in executing a leadership approach, the development of an applied cyberspace business ethic may not adequately support ethical decision-making as emerging technologies deploy into operations.

The insight of FSF's executives aligning a TSL approach with ethical decision-making through relational influences offers naturalistic generalizability to other contexts, increasing business practitioner awareness and empathy for the interactive nature between leadership approach and ethical decision-making. In the absence of an intentional leadership approach to ethical decision making alignment, risk exposure to unethical decision-making and potential reputational damage may increase. Business practitioners can identify alternative interpretations of relational influence on decision-making suitable to their environmental context retaining the insight that leadership offers both relational and behavioral influences on followers to achieve ethical ends.

Reputational Influence as Relevant to Improved Business Practice. Through recognizing the significance of reputational influence as a conceptual bridge between ethical decision-making and core values, those practicing the profession of business may view their particular workplace context with a new sense of intentionality. Creating understanding that stimulates reflection on alignment of ethical decision-making to core values offers business practitioners insight to enhance their cyberspace business ethic. This study provides insight into how ethical technology decision-making affects enacted core values through the influence of organizational reputation.

Reputational influence on core values occurs as technology leaders confront ethical challenges resulting in decisions impactful to organizational reputation. As noted above, decision theory (DT) describes how individuals integrate alternatives, risks, and probabilities to form a

preference amongst options with different risk exposures and given uncertainties (Glickman et al., 2019), therefore DT assists leaders navigating complexities and uncertainties inherent in the rapid innovation of emergent technologies. Applying an understanding of DT within the FSF context, ethical challenges resulting from deployment of innovative technologies caused FSF leaders to consider risks, probabilities, and alternatives to make decisions that mitigate reputational risk. As FSF cybersecurity risk exposures increased with the deployment of new technologies, decisions to increase layers of cybersecurity protection and training represented technology leader's use of decision theory to formulate a cyber-strategy. Reliance on third party cloud vendors for core applications requires FSF to certify each vendor's cybersecurity protocols to protect against external cyber threats. The firm's internal focus includes monthly employee training to recognize and mitigate cyber-threats, like phishing or spoofing emails that lure unaware employees to reveal their logon credentials thereby providing hackers unauthorized access to its data architecture.

Formalizing ethical behavioral expectations for employees offers an opportunity for FSF leaders to embed existing cybersecurity training into a more broadly defined cyberspace business ethic designed to mitigate reputational risk and nurture positive reputational influences on the firm. This study finds reputational influence that reinforces (or erodes) the intensity of a financial service firm's client trust supports (or opposes) preserving the current set of core values. The relevance of this finding to business practitioners resides in awareness that a firm's reputational influence reinforces or erodes organizational culture depending on the nature and intensity of public perception of the firm's ethical decision-making.

The insight of FSF executives aligning ethical decision-making with core values through a bridge of reputational influences offers naturalistic generalizability to other contexts, increasing

business practitioner awareness and empathy for the interactive nature between ethical decision-making and core values. Although this ethics-values interaction occurs within the company, reputational influences add external factors to customers' perception of an organizational commitment to core values that promotes enhancement of trust. In the FSF context, the researcher's interpretation of reputational influence as the strongest influence comparative to core values, relational, and technological influences resides in the repetitive use of the client-first core value as the basis of ethical decision-making with the objective of mitigating reputational risk exposures.

Technological Influence as Relevant to Improved Business Practice. Through recognizing the significance of technological influence providing trilateral connectivity amongst core values, leadership approach, and ethical decision-making, those practicing the profession of business may view their particular workplace context with a new sense of intentionality. Creating understanding that stimulates reflection on how emerging technologies interrelate with a cycle of core value, relational and reputational influences offers business practitioners insight to enhance their cyberspace business ethic. This study provides awareness of FSF's reality wherein emerging technologies create ethical challenges that influence how enacted core values affirm a specific leadership approach to stimulate ethical decision-making, thereby protecting the firm from reputational risk.

Technological influences at FSF exist in the form of cloud service provider functional capability and cybersecurity protocols (external capability influences), as well as the firm's employee motivation and cognitive considerations when making ethical cyberspace business decisions (internal psychological and organizational influences). External capability influences add complexity to the ethical decision-making environment, whereas internal psychological and

organizational influences add uncertainty to ethical decision-making. With this understanding, business practitioners create the capacity to reflect on emerging technology as not only a generator of complexity and uncertainty but also an influencer of how employees react to ethical challenges resultant from deployment of technology.

Cyberspace Business Ethic as Relevant to Improved Business Practice

Given core value, relational, reputational, and technological influences affect how FSF leaders confront ethical challenges resulting from technological innovation, the emergence of an applied cyberspace business ethic paradigm provides knowledge relevant to business practitioners in differing contexts. FSF technology leaders align core values to transparency and communication clarity to address fluctuating intensity of environmental complexity and uncertainty. As emerging digital technologies become pervasive at FSF, technology leaders apply organizational core values supportive of disclosing potential ethical challenges with clarity and preciseness in order to make ethical decisions with speed and decisiveness. As study participants indicated, addressing ethical lapses with speed and decisiveness coupled with communicating corrective action to clients with clarity and transparency acts to minimize the firm's reputational damage. As environmental uncertainty and complexity increases, the commitment of technology leaders to transparency and communication clarity regarding ethical challenges and action taken to address challenges provides the essence of FSF's applied cyberspace business ethic.

Evaluating the impact of FSF core values on both the cyclical CRR-T Influence Model (Figure 1) and the environmentally dynamic Applied Cyberspace Business Ethic Paradigm (Figure 2) provides an opportunity for improvement of the professional practice of business by creating awareness and reflection concerning how each unique organizational culture interacts

with ethical challenges resulting from emerging digital technologies. This study finds espoused and enacted core values retain centrality to an evaluation of organizational culture, and as emerging technologies become pervasive in business operations defining, executing, and articulating an applied cyberspace business ethic protects against an organization's reputational risk. The theology of Christian virtue as it relates to organizational core values provides further insight into the basis of an applied cyberspace business ethic by recognizing humanity as creators of technology.

A Philosophy of Technology, Virtue Ethics, and a Biblical Worldview

Just as the technological revolution followed the industrial revolution in the evolution of modern culture, emerging technology deployed for business purposes represents an evolution of an organization's culture. Technology emerges at the nexus of art and science as a creation of civilization. Within a framework of technology as an outcome of art and science, a philosophy of technology becomes useful to understand how technology and humanity intersect. Bunge (2014) proposes a philosophical metaphysics of technology exists, and this author suggests a hypothesis of this metaphysical reality: "Nothing comes out of nothing and nothing goes over into nothingness" (pp. 191-200).

In other words, a reason for all technological advancement exists and reflects the outcome of human intellectual and spiritual desire to work, produce, and create. This philosophy of action embedded in technology requires technological creators to work within a set of cultural value judgments and scientific rules (Bunge, 2014). Value judgments providing moral guidance during technological innovation indicate a strong linkage between the creation of new technologies and ethics. Technologists and the business practitioners that utilize technology accept a degree of ethical responsibility in the creation and use of emerging digital capabilities

therefore a rationality for the ethics of technology figures a useful starting point in humanity's journey from a philosophy of technology to a theology of humanity.

Given technology interacts with culture via humanity's ethical guidance, technology represents a means to achieve an end. In the case of emerging technologies, the ends may not even be imaginable when creating technological designs. Artificial intelligence (AI) is an example of how technologists created an emerging reality that in prior generations seemed an unimaginable end: "Whatever behaves like an intelligent being is intelligent" (Bunge, 2014). Humanity's creation of AI confirms the maxim something must came out of something, yet this emerging technology can only apply ethical guidance as learned. AI cannot create new ethical understandings beyond that learned from human consciousness nor apply virtue ethics to achieve its intended ends. Virtuous ends require virtuous means, so a virtue ethic of technology must include humanity.

Excluding virtue ethics and virtuous behaviors from an applied cyberspace business ethic exposes an organization to the risk of a cyborg ethical foundation devoid of the human condition. A cyborg, or cybernetic organism, utilizes technology to enhance human capabilities. Emerging technologies like cochlear implants that enhance hearing beyond the persons capabilities appear as an example of a cyborg application of technology interacting directly with the human mind. As emerging technologies continue to advance, a virtuous cyberspace business ethic gains importance to ensure humanity's intellectual condition maintains balance with spiritual condition.

Moreland and Craig (2017) argue the use of intellectual virtues such as attentiveness, honesty, fair-mindedness, and intellectual tenacity achieves cognitive goals of knowledge, understanding, insight, and wisdom. As a contemporary of Jesus of Nazareth, the Roman pagan

stoic Seneca (c. 4 B.C. – 65 A.D.) developed a philosophy of virtue ethics intended to promote knowledge, understanding, wisdom, and human well-being. Seneca recognized the duality of the divine and human worlds in exploring philosophy and virtue, as translated by Campbell in 2014:

> Philosophy has the single task of discovering the truth about the divine and human worlds. The religious conscience, the sense of duty, justice and all the rest of the close-knit, interdependent 'company of virtues', never leave her side. Philosophy has taught men to worship what is divine, to love what is human... (pp. 184-185).

Seneca's description of a 'company of virtues' recognizes the relationship between divinity and humanity by explaining knowledge, understanding, and wisdom come from the divine creator of humanity. Often described as a stoic philosopher with an understanding near to the theology of the apostle Paul, Seneca acts as a bridge from virtue ethics philosophy to a Christian theology of righteousness.

Implications of Findings to a Biblical Framework

Scripture explains interactions amongst knowledge, understanding, and wisdom in relation to righteousness: "To know wisdom and instruction to understand words of insight, to receive instruction in wise dealing, in righteousness, justice, and equity; Let the wise hear and increase learning, and the one who understands obtain guidance" (*English Standard Version Bible*, 2001/2001, Proverbs 1:2-3,5). Acquiring the unmerited gift of wisdom requires gaining knowledge, conceptualizing understanding, and seeking wisdom as a grace of God, in that "Blessed is the one who finds wisdom, and the one who gets understanding, for the gain from her is better than gain from silver and her profit better than gold" (*English Standard Version Bible*, 2001/2001, Proverbs 3:13-14). Therefore, wisdom as a grace of God stands as a witness to righteousness, justice, and equity.

Unique to a Christian understanding of wisdom and righteousness, human virtue requires a practical humility and sense of unity with others. The scriptures teach, “Live in harmony with one another. Do not be haughty, but associate with the lowly. Never be wise in your own sight” (*English Standard Version Bible,* 2001/2001, Romans 12:16). This wisdom of unity in the body of Christ manifests in virtuous behaviors and traits beyond humility. Paul’s letter to the Christians in the city of Colossae (modern Turkey) describes why the wise act in humility. “Put on then, as God’s chosen ones, holy and beloved, compassionate hearts, kindness, humility, meekness, and patience, bearing with one another and, if one has a complaint against another, forgiving each other; as the Lord has forgiven you, so you also must forgive” (*English Standard Version Bible,* 2001/2001, Colossians 3:12-13). The grace of forgiveness stands as a sign of wisdom, righteousness, and virtuous Christian traits.

Ultimately, Christ’s atoning sacrifice via crucifixion, death, and resurrections represents the centrality of Christianity as the reality of God’s perfect righteousness and the basis of human virtuous behaviors. Faith in Christ’s atoning sacrifice requires forgiveness, as “For if you forgive others their trespasses, your heavenly Father will also forgive you, but if you do not forgive others their trespasses, neither will your Father forgive your trespasses” (*English Standard Version Bible,* 2001/2001, Matthew 6:14-15). Therefore, the responsibility of those made in the image of God includes exhibiting virtuous behaviors with others in every aspect of life, including the practice of business.

Implications of Findings to Leadership

The findings of this study reflect two key concepts relevant to the biblical framework described above and the leadership field of study: core values based on a Christian virtue ethic and transformational servant leadership as a relational influencer on ethical decision-making.

FSF's core values represent the central feature in the firm's cyberspace business ethic. The values of client-first, integrity, teamwork, excellence, and attention to detail represent expected FSF leader behaviors, rooted in seeking knowledge, exerting intellectual capital to gain understanding supportive of client objectives, and displaying the wisdom to use emerging technologies without creating dehumanizing outcomes. These virtuous behaviors based on a Christian virtue ethic underlie how FSF enacted core values influence the execution of transformational servant leadership to create harmony amongst employees and clients. Further, FSF's core values act in support of the firm's applied cyberspace business ethic by expecting transparency and communication clarity in seeking justice for ethical lapses rather than a punitive response in a dynamic environment of uncertainty and complexity. This reliance on core values to seek justice, including forgiveness of an employee judgment lapse, supports the learning culture embedded within the organization. The firm's applied cyberspace business ethic encourages learning to create institutional wisdom supportive of ethical decision-making.

Secondly, TSL as a relational influencer on ethical decision-making aligns to the Christian virtues of kindness, humility, meekness, and patience Paul described in his letter to the Colossians. The relevance of this finding to the leadership field of study resides in explaining how alignment of FSF's leadership approach to core values supports ethical decision-making and protects the firm from reputational risk, given the complexity and uncertainty inherent in deploying emerging digital technologies. Selection of an alternative leadership approach could yield similar outcomes in a different business context, yet this finding indicates FSF's applied cyberspace business ethic benefits from core value alignment to a TSL approach due to the grounding of its cyberspace business ethic and core values upon an application of Christian virtue. Although a secular participant in the financial services industry, a Christian virtue ethic

buttresses FSF's applied cyberspace business ethic through a pervasive reliance on core values to make ethical decisions.

Recommendations for Action

This study's findings represent an opportunity to improve applied professional business practice through four recommendations for action. Ten action steps to execute these four recommendations enhance the effective execution of an organization's cyberspace business ethic. The first recommendation requires leveraging the core value influence for competitive advantage by documenting the role of organizational culture in establishing employee behavioral expectations supportive of the firm's applied cyberspace business ethic. Implementing these action steps ensures organizational culture, and more specifically core values, permeates through the company to establish employee self-awareness and self-accountability to achieve ethical behavioral expectations.

Step One: Align organizational mission, vision, core values, and value proposition statements to ensure a consistent framing of employee behavioral expectations while creating a leadership climate supportive of ethical decision-making.

Step Two: Provide employees continuing education opportunities championed by executives to periodically reinforce ethical behavioral expectations.

Step Three: Include core values-based adherence of ethical behavioral expectations in quarterly employee performance reviews.

The second recommendation requires leveraging the relational influence for competitive advantage by selecting an appropriate leadership approach supportive of the firm's applied cyberspace business ethic. Implementing these actions steps ensures leader-follower

relationships create a climate of mutual accountability while providing sufficient environmental clarity to make ethical decisions that minimize reputational risk exposures.

Step Four: Identify an appropriate leadership approach or hybrid of leadership approaches in alignment with organizational core values that creates a leadership climate conducive to establishing bilateral trust, commitment, and mutual goal clarity between leaders and followers.

Step Five: Utilize the selected leadership approach to influence ethical decision-making through identification of dynamic internal environmental complexities and external environmental uncertainties to provide adequate context for making key decisions.

The third recommendation requires leveraging reputational influence for competitive advantage by establishing a cyberspace business ethic supportive of organizational culture reinforcement. Implementing these actions steps ensures technology leaders understand the dynamic between ethical and reputational risk exposures inherent in implementing emerging technologies.

Step Six: Define the conceptual framework of a cybersecurity business ethic based on core values, transparency, and communication clarity in alignment with leadership approach.

Step Seven: Identify exposures to reputational risk based on likelihood of occurrence and severity of reputational impact and document each exposure on a nine-box reputational threat matrix.

Step Eight: Train technology leaders to recognize interactions between ethical challenges when implementing emerging technologies and accompanying reputational risk exposures.

The fourth recommendation requires leveraging technological influence for competitive advantage by evaluating interconnectivity amongst emerging technologies, core values, leadership approaches, and ethical decision-making. Implementing these actions steps ensures technological innovations align to core values, vision, and mission statements while enhancing technology leader's commitment to ethical outcomes.

Step Nine: Ensure technology strategy and resource allocation prioritization includes alignment of organizational core values to outcomes resulting from emerging technologies.

Step Ten: Train all technology leaders annually on the organization's cyberspace business ethic, including a signed ethics commitment statement to establish accountability.

Identification of Those Impacted by Study Results

Those impacted by the results of this study include business executives responsible for protecting the organization's reputation and culture, technology leaders accountable for delivering innovative technological solutions to complex challenges in uncertain environments, and employees utilizing digital technologies to interact with customers, business partners, and peers. FSF's senior decision-makers strongly upheld corporate core values as the central driver of their TSL approach, whereas FSF technology leaders and client service representatives primarily relied on relationships and behavioral expectations to guide ethical decision-making. Similarly, the results of this study impact different organizational contexts and hierarchical levels within each particular context in unique ways.

Dissemination of Study Results

Dissemination of results from this study occurs through electronic storage of the study by Liberty University's School of Business that provides opportunity for business students to access

the study for original research based on study title and key words. Graduate and post-graduate business students in technology or leadership cognates may benefit most from access to this study. The researcher may share findings with technology leaders and peer groups in business settings as opportunities arise. Sharing the study with participants occurs upon completion of the doctoral program, offering insights unique to the participating firm's context. Designing a summary of findings in common business language utilizing the CRR-T Influence Model to visualize core learning assists in the dissemination to those in professional practice.

Recommendations for Further Study

Recommendations for further study include building on the findings of this study, addressing the limitations of this study, conducting the study in a differing context, utilizing a different research method and design, and redesigning the conceptual framework of this study to include different theories. Building on the findings of this single case study might include examining core values, relational, reputational, and technological influences in multiple business settings to determine the effectiveness of an organization's cyberspace business ethic in differing contexts. Conducting the study in a different context or industry than a financial services firm offers additional opportunity for original applied business research. Applying a phenomenological, grounded theory, narrative, or ethnographic qualitative research method and design may yield useful and original insights not identified in this single case study, given the phenomenon of ethical business behavior, decision-making theories, and organizational culture context differentiate study design. Redesigning the conceptual framework to decouple decision-making motivations from virtue ethics may offer additional new insights not found in this study.

Limitations of this single case study include binding this study to a specific context and time, applying a certain epistemology, ontology, and Christian worldview to virtue ethics, not

examining extraneous factors that may affect decision-makers, and not evaluating leader's capacity for critical reflection. Each limitation offers opportunity for further research. Additional research could include qualitative, quantitative, or mixed methods design to explore and evaluate influential factors on ethical behaviors from a business, psychological, or sociological perspective. The concept of a reliably transferrable applied cyberspace business ethic needs closer examination and may generate new research questions related to the improved practice of business. Given the anticipated exponential advancement of emerging technologies in the next decade, research opportunities to explore an applied cyberspace business ethic may be plentiful and varied.

Reflections

This qualitative single case study provided an opportunity for multi-disciplinary evaluation of the participating firm's applied cyberspace business ethic, drawing on insights from organizational leadership theory, business anthropology, applied business technology, decision motivation theory, virtue ethics philosophy, and a Christian theology of righteousness.

Discussion of Researcher Biases and Preconceived Ideas

Personal biases that may enter into this study include the researcher's understanding of modern stoicism philosophies concerning virtue ethics. The researcher finds commonality with a philosophical understanding of virtue ethics with Christian theology, considering the former intellectualizing how to achieve a fulfilling life on earth and the latter spiritualizing, even surrendering to, eternal life fulfillment. This preconceived notion of congruence between virtue ethics philosophy and a Christian theology of righteousness may contribute to a personal bias when reflecting upon the reasons business practitioners behave in certain ways.

Further, the assumption that emerging technologies create ethical business challenges relates to the researcher's thirty years of corporate business experience in leading finance and technology functions. This experience contributes to the researcher's preconceived value that business practitioners inherently desire to do the right thing and to make the most ethical decision. Unfortunately, the modern reality of highly competitive business environments can be less idealistic, and this reality adds to the need for additional research that explores applied cyberspace business ethics.

Potential Researcher Effects on Participants

Possible effects of the researcher's perspectives on study participants include design of the semi-structured interview questions and subsequent follow-up questions, leadership biases that may influence field notes, data organization, and data coding, and the researcher's personal epistemology and ethical understanding. The design of semi-structured open-ended interview questions provided opportunities for participants to speak at depth of their understanding of reality, allowing the researcher to probe further into answers to gain additional insights. The line of reasoning the researcher utilized in follow-up questions could affect participant feedback.

The researcher's leadership biases may also appear in field notes, research memos, and participant observations, as well as when organizing and coding data to develop themes, relationships, and multiple meanings. The researcher's personal understanding of two branches of philosophy, epistemology and ethics, could also affect the researcher's subjectivity in interpreting participant's understanding of reality. Data triangulation and researcher reflexivity used throughout the research process aided in discovering any potential researcher bias or effect on study participants.

Changes in Researcher Thinking as a Result of this Study

This study changed the researcher's understanding of the interactions amongst organizational culture, leadership approach, and ethical decision-making in that findings clarify the role of core values, relationships, firm reputation, and technological innovations in influencing applied technology leadership ethics. Prior to conducting this study, the researcher viewed emerging technology as a means of achieving great ends but potentially at a price of sacrificing virtuous ethical business practice. Collecting customer data, harvesting consumer data for marketing insights, passively tracking cell phone location, artificial intelligence that omits virtue from machine learning all carry the risk of devaluing the human condition in the practice of business. This study's findings indicate the human condition directly influences ethical decision-making during periods of rapid technological innovation, and although emerging technologies increase risk exposures an applied cyberspace business ethic can ground leaders to act in the best interest of business sustainability.

Reflection on Biblical Principles

An applied cyberspace business ethic acts as guiding principles for leaders to conduct business with excellence, protecting the firm's reputation by focusing strategic intent on virtuous behavior. The scriptures state it plainly, "Finally, brothers, whatever is true, whatever is honorable, whatever is just, whatever is pure, whatever is lovely, whatever is commendable, if there is any excellence, if there is anything worthy of praise, think about these things" (*English Standard Version Bible*, 2001/2001, Philippians 4:23). Modern capitalism often falls under attack for creating economic and social inequity, yet when the basis of capitalistic endeavors rests on biblical principles economic activity can become a great societal good. The application of values

and virtue to the practice of technology leadership provides an opportunity to do what is true, honorable, commendable, and excellent through economic activity.

Summary and Study Conclusions

This single case study qualitatively evaluates ethical technology leadership at FSF, focusing on the role of organizational culture, leadership approach, and the firms applied cyberspace business ethic as it existed in the summer of 2020. Data collection occurred through participant interviews of 60% of the firm's employee base, researcher observations, relevant document collections, researcher field notes, and memos. Two embedded units of analysis allowed evaluation of differences in perceived realities between key decision-makers and technology leaders and users.

Key Findings Summary

This study contributes two key findings: (1) identification of interactivity amongst core values, relational, reputational, and technological influences on ethical decision-making, and (2) discovering how values, transparency, and communication clarity help technology leaders confront uncertainties and complexities resultant from emerging technologies. The study also discovered key decision-makers relied heavily on core values to influence ethical decisions in relation to technology deployments, while technology leaders and users more often relied on relational and reputational influences when making decisions. Given the centrality of organizational core values on FSF's applied cyberspace business ethic, the study discovered a philosophy of virtue ethics assists in understanding the rationality of core values and a Christian worldview enhances understanding of how virtuous business behaviors promote the highest and best use of capitalism supportive of the human condition. The study further offers ten steps to employ key findings in differing business contexts to enhance leader's understanding and

application of a cyberspace business ethic helpful to navigating ethical challenges resultant from deployment of emerging technologies.

Closing the Gap in the Literature

This study closes the gap in existing leadership literature by utilizing a multi-disciplinary approach to understand how FSF leaders define and apply a cyberspace business ethic to mitigate reputational risk exposures that arise due to technological innovations. In proposing the CRR-T Influence Model (Figure 1) and FSF Cyberspace Business Ethic Paradigm (Figure 2), this study offers new insights into a framework of how leaders make ethical decisions in technologically uncertain and complex environments. Combining philosophical and theological insights creates an opportunity to evaluate ethical technology leadership through a certain lens that fills a gap in existing literature through an alignment of ontology (relativist), epistemology (subjectivist and constructivist), and axiology (Christian worldview) to understand how a financial service firm's leaders address ethical challenges resultant from emerging digital technologies.

Conclusion

This study's evaluation of ethical technology leadership considers organizational culture, leadership approach, and ethical decision-making in a particular bounded context, providing business practitioners insight into development of an effective cyberspace business ethic. By answering the questions of how a financial services firm creates a leadership climate that accommodates a cyberspace business ethic and how technology leaders address ethical challenges arising from emergent technologies, this study creates new insights into the practice of ethical technology leadership. An applied cyberspace business ethic founded on Christian principles of virtue, service, and wisdom supports leader's creation of sustainable competitive advantage during periods of rapidly emerging technological innovation.

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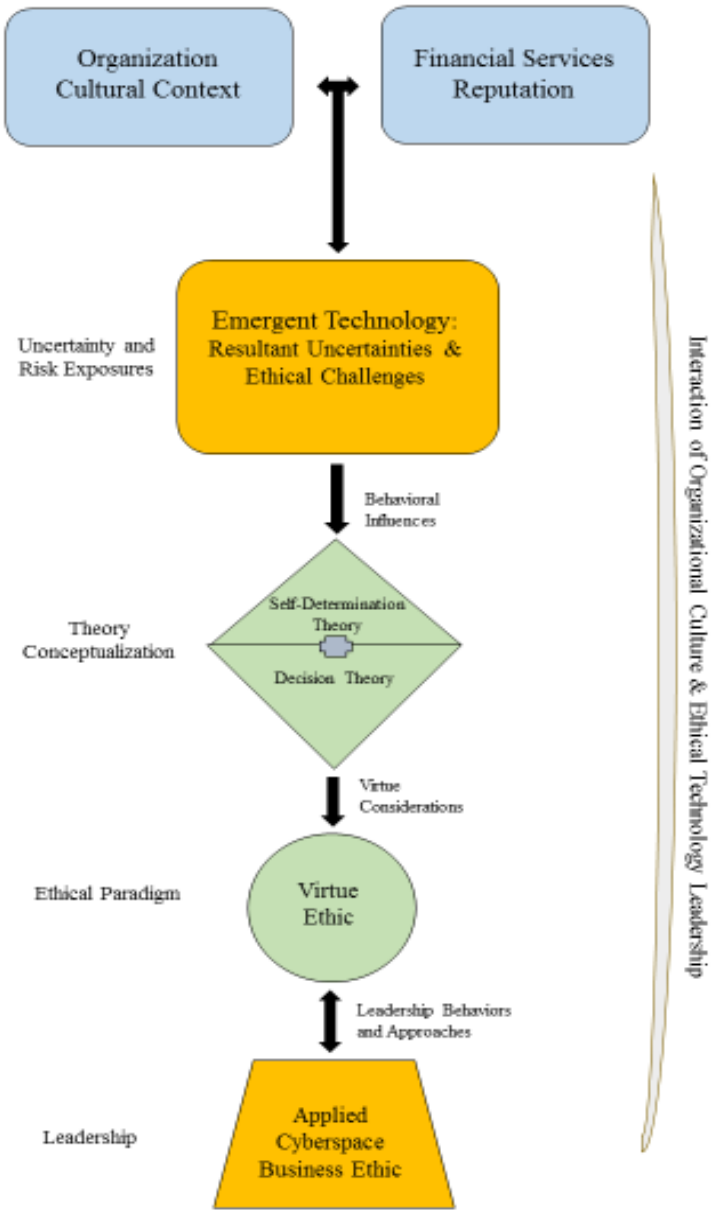
Appendix A

Research Conceptual Framework

Figure 5

Conceptual Framework of this Qualitative Single Case Study



Appendix B

Interview Guide

Interview Date _____

Gender M / F

Position _____

Years in Industry _____

Years of Firm Tenure _____

Race White / African American / Hispanic / Asian / Multi-racial

Introductory Statement

Today's interview session explores an interesting business phenomenon that appears when rapidly changing technology creates ethical leadership challenges. Although use of new technologies often improves one's ability to work more efficiently, new technologies may also introduce complexities, uncertainties, and business risk. The way in which employees address uncertainties occurs within each company's unique organizational culture, company core values, leadership approaches, and an understanding of ethics. Whether managing the firm's operations or interacting with clients, decision-making occurs within the reality of the firm's expectations for operating a successful and sustainable business. Before beginning the interview, please note the researcher protects the confidentiality of this firm and all participants per ethical guidelines and professional standards of academic research.

Interview Questions

Organizational Culture

1. Describe the firm's organizational culture that appears in the form of core values, symbols, rituals, language, stories, and how employees interact with one another.

2. What aspects of organizational culture have endured since the firm launched in 1950?
3. How does the firm's organizational culture influence leadership approaches, employee behaviors, and decision-making?
4. In what ways do organizational cultural expectations support ethical business practices?
5. In your opinion, why is protecting the company's public reputation important to the firm's success?
6. How does the firm's culture encourage innovation and use of new technologies to improve client services with new capabilities?
7. Who is responsible for introducing innovations into the firm, and how open are employees to adapting to uncertainties that may exists with new technologies?
8. In your opinion, does the firm embrace cutting-edge technologies, take a cautious approach to new technologies, or not consider technology a competitive advantage? Why?

Leadership Approaches

9. Does the leadership team encourage achieving client goals with new financial tools, products, and innovative wealth management techniques, or do leaders support exceeding client expectations with stability and consistency?
10. Describe the firm's leadership climate. Are leaders authentic, accessible, open to new ideas, supportive of mutual accountability, and able to articulate a clear vision of the firm's future?
11. How do leaders inspire, motivate, intellectually stimulate, and encourage employees to achieve goals? Are their efforts effective?

12. How do leaders encourage teamwork, improve competency, and support independent thinking of employees?
13. How do firm leaders promote a climate of ethical decision-making?

Emerging Digital Technologies

14. How has technology changed the way you work the last decade?
15. Briefly describe the newest technologies used to operate the business.
16. How does the firm explore and deploy new technologies into operations?
17. As new technologies launch in the business, how does the firm protect against reputational risks such as cybersecurity threats?
18. What type of training prepares employees to recognize cyber-threats?

Technologically Induced Uncertainties

19. Have new technologies increased or decreased complexity and uncertainty in how you work?
20. Do the firm's employees primarily communicate with peers, business partners, and clients electronically or in person?
21. In your opinion, does electronic communication liberate or dehumanize people as the speed of communication increases? Why?
22. Does the firm offer clients robo-managed portfolios or artificial intelligence traded portfolios? Do you believe these types of emerging products present a threat or an opportunity to the firm?
23. Describe how the firm uses and controls social media to communicate with clients and prospects.

24. Can you describe a time when new technology resulted in additional uncertainty? How did employees react to that challenge? (Question only asked to the technology leader.)
25. Please describe the process for exploring new technologies and the introduction of new technologies into operations. (Question only asked to the technology leader.)

Ethical Decision-Making

26. Does the financial services industry, company, or individual create ethical behavior expectations? Meaning, who determines the standard for ethical behavior at work?
27. Do you believe the firm's core values support employees' understanding of expected ethical behaviors? How?
28. What policies and procedures exist that set employee ethical behavior expectations?
29. Can you recall an experience when the firm confronted an ethical dilemma? How was the challenge overcome?
30. Describe your understanding of how employees can use client data to grow the business.
31. How would public disclosure of an ethical violation by a leader potentially damage the firm's reputation?

Closing Statement

Your interview adds to the quality and practical value of this study, so thank you for the time committed to this conversation and the thoughtfulness of responses. My commitment to each participant includes accurately transcribing and documenting this interview to ensure truthful presentation and fair interpretation of all viewpoints. The researcher protects all participant names and identifiers during employee interactions, and throughout the collection and

storage of research data. If you have any additional thoughts or desire to clarify responses, please do not hesitate to contact me to provide supplementary information.

Appendix C

Supplemental Participant Documents

Permission Request Letter

June 1, 2020

Dear Sir:

As a graduate student in the School of Business at Liberty University, I am conducting research as part of the requirements for a Doctor of Business Administration degree. The title of my research project is *Ethical Technology Leadership,* and the purpose of my research is to understand how a financial service firm's leaders address ethical challenges that arise when using digital technologies to conduct business

I am writing to request your permission to contact members of your organization to invite them to participate in my research study.

Participants will be asked to contact me to participate in an audio-recorded in-person, or Zoom, interview, allow me to observe some of the participants' interactions with others, and review their interview transcripts for accuracy. I will observe all of the participants who are key decision-makers and senior leaders but only three of the participants who are members of technology management or client administrators. These three participants will be selected at random. If social distancing does not allow for observations in the office environment, I will limit observations to the interview period. A request for documents related to the firm's organizational culture and technology policies will be submitted to the Co-Chief Executive Officers, both of whom are included in the key leaders and decision-makers participant group, for consideration as well. The interview will take approximately 90 minutes to complete and the observations should take approximately 15 minutes to complete. Document collection should take approximately 30 minutes to complete. I will provide the interview transcript within three weeks after the interview and request they provide feedback within one week upon receipt of the transcript. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please respond by forwarding the attached permission letter document by email to mlpickel@liberty.edu.

Sincerely,

Mark L. Pickel
Doctor of Business Administration Candidate
Liberty University

Permission Response Letter

June 1, 2020

Mark L. Pickel
Doctor of Business Administration Candidate
Liberty University

Dear Mark Pickel:

After careful review of your research proposal entitled *Ethical Technology Leadership*, I have decided to grant you permission to contact our staff and invite them to participate in your study.

Check the following boxes, as applicable:

☐ Documents that articulate the firm's mission, vision, values, and strategies will be provided to the researcher upon my approval.

☐ All participant interviews will be conducted in a private room at Colton Groome & Company's corporate building. If a participant is uncomfortable meeting in person due to social distancing protocols, a Zoom interview will be scheduled.

☐ All participant interviewee names and interview responses will be confidential.

☐ I am requesting a copy of the results upon study completion and/or publication.

Sincerely,

Co-Chief Executive Officer

Recruitment Email

Dear _____:

As a graduate student in the School of Business at Liberty University, I am conducting research as part of the requirements for a Doctor of Business Administration degree. The purpose of my research is to understand how a financial service firm's leaders address ethical challenges that arise when using digital technologies to conduct business, and I am writing to invite eligible participants to join my study.

Participants must be 18 years of age or older and currently employed full time by Colton Groome & Company. Participants must also be either key decision makers in the firm's senior leadership team or members of the technology management staff or client administrators who use technology. Participants, if willing, will be asked to participate in an audio-recorded, in-person, or Zoom interview; allow me to observe some of the participants' interactions with others; and review their interview transcripts for accuracy. I will observe all of the participants who are key decision makers and senior leaders, but I will only observe three of the participants who are members of technology management or are client administrators. These three participants will be selected at random. If social distancing does not allow for observations in the office environment, I will limit observations to the interview period. A request for documents related to the firm's organizational culture and technology policies will be submitted to the Co-Chief Executive Officers, both of whom are included in the key leaders and decision-makers participant group for consideration as well.

The interview will take approximately 90 minutes to complete and the observations should take approximately 15 minutes to complete. Document collection should take approximately 30 minutes to complete. I will provide the interview transcript to you via email within three weeks after the interview and ask you to reply by email confirming or correcting the transcript's accuracy within one week upon receipt of the transcript. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

In order to participate, please contact me at mlpickel@liberty.edu or 828-225-6748 to schedule an interview. A consent document is attached to this email. The consent document contains additional information about my research. Please sign the consent document and return it to me when we meet for your scheduled interview.If a Zoom interview is preferable to an in-person interview, please print, sign, scan, and email your consent form to me prior to the Zoom interview.

Sincerely,

Mark L. Pickel
Doctor of Business Administration Candidate
Liberty University

Recruitment Follow-Up Email

Dear _____:

As a graduate student in the School of Business at Liberty University, I am conducting research as part of the requirements for a Doctor of Business Administration degree. Two weeks ago, an email was sent to you inviting you to participate in a research study. This follow-up email is being sent to remind you to respond if you would like to participate and have not already done so. The deadline for participation is June 1, 2020.

If you choose to participate, you will be asked to participate in an audio-recorded, in-person, or Zoom interview, allow me to potentially observe your interactions with others, and review your interview transcript for accuracy. I will observe all of the participants who are key decision-makers and senior leaders, but I will only observe three of the participants who are members of technology management or are client administrators. These three participants will be selected at random. If social distancing does not allow for observations in the office environment, I will limit observations to the interview period. A request for documents related to the firm's organizational culture and technology policies will be submitted to the Co-Chief Executive Officers, both of whom are included in the key leaders and decision-makers participant group for consideration as well.

The interview will take approximately 90 minutes to complete, and the observations should take approximately 15 minutes to complete. Document collection should take approximately 30 minutes to complete. I will provide the interview transcript to you via email within three weeks after the interview and ask you to reply by email confirming or correcting the transcript's accuracy within one week upon receipt of the transcript. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please contact me at mlpickel@liberty.edu or 828-225-6748 to schedule an interview.

A consent document is attached to this email. The consent document contains additional information about my research. Please sign the consent document and return it to me when we meet for your scheduled in-person interview. If a Zoom interview is preferable to an in-person interview, please print, sign, scan, and email your consent forms to me prior to the Zoom interview.

Sincerely,

Mark L. Pickel
Doctor of Business Administration Candidate
Liberty University

Consent

Title of the Project: Ethical Technology Leadership

Principal Investigator: Mark L. Pickel, DBA candidate, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. In order to participate, you must be at least eighteen years old and currently employed full-time by Colton Groome & Company. You must also be either a key decision maker in the firm's senior leadership team or a member of the technology management staff or client administrators who use technology. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

What is the study about and why is it being done?

The purpose of the study is to understand how a financial service firm's leaders address ethical challenges that arise when using digital technologies to conduct business. This study will explore how organizational culture influences leadership approaches, decision-making, and the practice of business ethics when leaders confront uncertainties caused by new technologies.

What will happen if you take part in this study?

If you agree to be in this study, I would ask you to do the following things:

1. Participate in a confidential sixty to ninety minute interview in a private office at the firm's corporate building. Interview questions will explore issues of the firm's culture, leadership approaches, ethical decision-making, use of technology, and the firm's public reputation. An audio recording of interviews will be made to accurately document responses. Interview recordings will be stored in a secure location and responses will be kept confidential. If a participant is uncomfortable meeting in-person, participants will scan and email consent forms to the researcher and a Zoom interview will be scheduled.
2. Review the transcript of your interview to ensure accuracy. The researcher will provide you a transcript of you interview within three weeks after the interview and request that you provide feedback within one week upon receipt of the transcript.
3. Allow potential observation of your interactions with colleagues to help understand how the firm's culture influences employee behaviors. I will observe all of the participants who are key decision-makers and senior leaders, but I will only observe 3 of the participants who are members of technology management or are client administrators. These 3 participants will be selected at random. Observations will be made in fifteen-minute intervals and will not intrude upon your work. The researcher will record observations in a notebook to be stored in a secure location. If social distancing does not allow extended observations in the office environment, the researcher will limit observations to the interview period.
4. A request for documents related to the firm's organizational culture and technology policies will be submitted to the Co-Chief Executive Officers, both of whom are included

in the key leaders and decision-makers participation group for consideration. Co-Chief Executive Officers will be asked to provide documents that help explain the firm's culture and leadership approaches, such as company history, core values, mission statement, vision statement, ethics agreements, technology management policies, and corporate goals. This should take approximately 30 minutes to complete.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include gaining insight into how leaders in a financial services firm address ethical challenges arising from the use of new technologies.

What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher, researcher's faculty sponsor, and dissertation committee will have access to the records. Data collected from you may be shared for use in future research studies or with other researchers. If data collected from you is shared, any information that could identify you, if applicable, will be removed before the data is shared.

- Participant responses will be kept confidential through the use of alphanumeric codes assigned by the researcher. Interviews will be conducted in a private office at the firm's corporate building in a location where others will not easily overhear the conversation. If you are not comfortable meeting in-person due to social distancing protocols, a Zoom interview will be conducted.
- Data will be stored on a password-locked computer and documents in a locked file cabinet in the researcher's office. Data collected for this study may be used by the researcher in future presentations. After three years, all electronic records will be deleted.
- Interviews will be recorded and transcribed for accuracy. Recordings will be stored on a password locked computer for three years and then erased. Only the researcher, the researcher's faculty sponsor, and the dissertation committee will have access to these recordings. Interview recordings will only be used by the researcher for educational purposes.
- Limits to confidentiality are minimal, as individual interviews will be conducted privately and participant identities will not be disclosed. The alphanumeric code list of individual participants will be secured in a locked credenza separate from other collected data in the researcher's office.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address or phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Mark Pickel. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at mlpickel@liberty.edu or 828-777-9651. You may also contact the researcher's faculty sponsor, Dr. Kimberly Johnson, at kjohnson61@liberty.edu.

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

☐ The researcher has my permission to audio-record me as part of my participation in this study.

_____

Printed Subject Name

_____

Signature & Date