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# Strategies for Integrating and Sustaining Disruptive Innovations in Small Businesses

Robert Allen
*Walden University*

# Walden University

College of Management and Technology

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Robert Allen

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Chief Academic Officer
Eric Riedel, Ph.D.

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Abstract

Strategies for Integrating and Sustaining Disruptive Innovations in Small Businesses

by

Robert Allen

MS, Florida Institute of Technology, 2003

BS, Oakwood University, 2000

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

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Abstract

The evolution of technology has led to a need for business leaders to embrace disruptive technology for the purpose of capturing new markets and remaining competitive. Multiple challenges have been faced by business leaders in the processes of integrating and sustaining disruptive innovations, resulting in the failure to achieve expected efficiency and profitability. The purpose of this multiple case study was to explore strategies used by business leaders to integrate and sustain disruptive innovations. The conceptual frameworks were Roger's diffusion of innovation theory and Christensen's disruptive innovation theory. Semistructured interviews were administered to 10 business leaders and employees from institutions of higher learning in the Northeastern region of the United States. The participants were selected using a purposive nonrandom sampling technique. The selection criteria included organizational leaders, technology professionals, training and development professionals, and organizational end-users. Three themes and several subthemes were identified. The strategies for integrating and sustaining disruptive innovations include training, changeover mechanisms, and the use of critical resources. The procedural and structural factors in processes to integrate and sustain disruptive innovations include identifying critical success factors, ascertaining benchmarks, determining levels of support and effectiveness. Obstacles faced during the processes of integrating and sustaining disruptive innovations were categorized into human, technology, changeover, and external issues. Social change may be realized through the improved success rates of small business leaders implementing disruptive innovations by increasing meaningful employment and enhancing livelihoods.

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Dedication

I dedicate this dissertation to sons Robert, Cameron, and Panji Allen for their unconditional love and support. I would like to also dedicate this dissertation to Adonna DeSouza and the rest of the DeSouza family. To my mother, Cynthia Allen, and my brother, Rodney Allen, thank you for not only believing in me, but for always being there to support my academic endeavors, despite a bitter divorce process that nearly cost me my dream of becoming the first and only academic doctor in our family. I give praises to our Lord and savior, and to Oakwood University, a Seventh Day Adventist Institution of Higher Learning, from which the foundations of my academic and Christian followings where derived from. Finally, I dedicate this dissertation to President Barack Obama, who inspired not only me, but many of us as minorities to say, "Can we do it? Yes, We Can!"

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Section 1: Foundation of the Study

Competitive pressures to adopt and assimilate disruptive technological innovations that modify the traditional business model to attract new markets and value networks are faced by business leaders (Christensen, 2013; Karimi & Walter, 2016; Lui, Ngai, & Lo, 2016). As technology continues to evolve, strategies for integrating disruptive innovations are required by business leaders to meet an increasing demand of connecting organizational stakeholders in an online or web-enhanced capacity (Camisón & Villar-López, 2014; Suwannathat, Decharin, & Somboonsavatdee, 2015). As modern lifestyles conflict with the inflexible nature of organizations modeled after traditional archetypes, business leaders often find themselves in a conundrum. One significant reactive approach is the attempt by business leaders to meet business critical success factors (CSFs) for integrating and sustaining disruptive innovations (Cochrane, 2014; Karimi & Walter, 2016; Tarhini, Ammar, & Tarhini, 2015).

In using current technological innovations, some industry leaders have responded to the need for organizational change in 21$^{st}$ century  through integrating disruptive technological innovations (Adams, Jeanrenaud, Bessant, Denyer, & Overy, 2016; Christensen, 2013). There is a rapid move by small businesses toward adopting and integrating disruptive technological innovations to target new markets and value networks (Padula, Novelli, & Conti, 2015; Quaadgras, Weill, & Ross, 2014). The active approach for implementing organizational change leads to the creation of new management dilemmas which must be addressed by business leaders to be more efficient,

profitable, competitive, and sustainable (Benn, Dunphy, & Griffiths, 2014; Heckmann, Steger, & Dowling, 2016; Pantano, 2015).

**Background of the Problem**

As future generations become more mobile, social media-oriented, convenience-minded, and tech-savvy, the need to develop and integrate technological innovations that enable improvement of the new ways to meet and satisfy consumers' demands has been identified. Due to rapid technological change, business leaders have experienced increased challenges in the implementation of organizational changes based on current and future forecasts of marketplace trends (Norman & Verganti, 2014; Pearce, 2016). To provide a remedy for challenges in the business environment, disruptive technological innovations are being embraced by corporate leaders as a means of shifting some of their business functions to accommodate and support nontraditional business models.

Because of the roles played by stakeholders in contemporary businesses, there is a growing need for establishing CSFs and developing strategies to build and increase organizational stakeholder relationships through an online or web-enhanced capacity. By understanding CFSs needed to assimilate and sustain disruptive innovations, effective strategies to minimize resistance to change and build positive and proactive change relevant to integration processes could be developed by business leaders (Brookes, 2015; Sabadie, 2014). Enterprise leaders could establish the strategies to integrate and sustain disruptive technology.

## Problem Statement

Business leaders face challenges with integrating disruptive innovations to achieve firm profitability and support new processes for corporate sustainability (Burch et al., 2016; Christensen, 2013; Christensen, McDonald, Altman, & Palmer, 2016; Westland, 2016). Disruptive innovations can lead to increased barriers and competitive forces that affect sustainability and the growth rate of small businesses. There has been a decline in the churning of businesses and new firm formations from 15% to 8% over the last two decades (CEA, 2016; Litan & Hathaway, 2014; Singh & Ogbolu, 2015). The general business problem faced by business leaders is the challenge of integrating disruptive innovations to enable their organizations to remain competitive, profitable, and sustainable. The specific business problem is that there is a lack of strategy by some business leaders to efficiently integrate and sustain disruptive innovations.

## Purpose Statement

The purpose of this qualitative multiple case study was to explore the strategies used by business leaders to integrate and sustain disruptive innovations. The specific study population consisted of 10 managers and employees from two small institutions of higher learning, who represent 18.48% of the leaders in 7,253 traditional institutions throughout the United States (U.S. Department of Education, 2016). The geographic location for this study is the Northeastern region of the United States. The results of this study may contribute to positive social change by enabling business leaders to minimize potential failures and increase success rates for integrating and sustaining disruptive innovations in traditional institutions of higher learning across the United States. The

social impact of successful integration of disruptive innovations could result in more accessible training and education programs for organizational stakeholders who have limited opportunities to attend traditional brick and mortar institutions.

**Nature of the Study**

The three types of research methods are qualitative, quantitative, and mixed methods research. The qualitative research method is the most appropriate choice that allows the use of open-ended questions in exploring and identifying how a phenomenon is experienced by participants (Cleary, Horsfall, & Hayter, 2014). Close-ended questions and statistical figures are used in quantitative research to test study hypotheses (Thamhain, 2014). Mixed methods research is an approach that is used by investigators to combine quantitative and qualitative elements (Sparkes, 2014). Quantitative and mixed methods researches were not ideal for this study about strategies for integrating and sustaining disruptive innovations in small businesses. The qualitative approach was the most appropriate method for this study.

The four types of qualitative research designs are ethnography, phenomenological, grounded, and multiple case study. Ethnography and phenomenological designs are used by in qualitative to examine a group, organization, culture of people, or specific community over a shared period (Cincotta, 2015; Lewis, 2015; Marshall & Rossman, 2016). In grounded theory, a set of rigorous research procedures that focus on systematic approaches are employed to establish generalized theories (Cho & Lee, 2014; Glaser & Strauss, 2014; Lewis, 2015). The case study research design is used to conduct a descriptive exploration of a subject (individual,

action, systems, strategies, or event) for a proposed (Hancock & Algozzine, 2016; Lewis, 2015; Yin, 2014). With the multiple case study, participants in their natural environments are targeted because of their likelihood of experiencing past or current problems (Hancock & Algozzine, 2016; Yin, 2014). The exploratory multiple case study design has been used to identify, triangulate, and assess perceived attitudes of participants towards organizational change due to integration of disruptive technological innovations (Baškarada, 2014). The multiple case study design was therefore most appropriate for this study, as it aims to explore strategies used by business leaders to integrate and sustain disruptive technological innovations.

## Research Question

The overarching research question for this study is: What strategies are used by business leaders to integrate and sustain disruptive innovations?

## Interview Questions

Participants responded to the following interview questions:

1. What strategies do you use to integrate disruptive innovations for your organization?

2. How effective are the strategies you use for integrating and sustaining disruptive innovations into your business model?

3. How does management identify CSFs for integrating disruptive innovations in your organization?

4. How does management ascertain benchmarks of success after integrating a specific disruptive innovation?

5. What obstacles do organizational stakeholders experience when integrating any particular disruptive innovation?

6. How much time do you allocate for training employees to use disruptive innovations?

7. What financial budgets does management allocate for training employees to use any specific disruptive innovation?

8. How does management use critical resources to integrate and sustain any particular disruptive innovation within your organization?

9. Is there additional information you can share regarding how you integrate and sustain disruptive innovations in small businesses?

**Conceptual Framework**

The diffusion of innovation theory and the disruptive innovation theory constituted the conceptual frameworks of this study. The basic tenets of both theories are: (a) the acceptance of technology model and (b) theories of resistance to change. Diffusion was identified as the sharing and exchange of innovations by individuals or groups through communication channels in the context of social systems over a period, (Rogers, 1995; Schiffman & Wisenblit, 2015). The diffusion of innovation theory is the process or procedure of how and when society as a whole accepts innovations.

The disruptive innovation theory involves the phenomenon of how markets and industry sectors can be changed through innovations by fostering simplicity, convenience, accessibility, and cost-effective methods. The sustainability of disruptive technologies assimilated in organizations is compared to the scrambling efforts of

someone escaping a mudslide in the technology mudslide hypothesis (Christensen, 2013; Weigel, Hazen, Cegielski, & Hall, 2014). The scramble at all costs to stay competitive must be continued by business leaders whose organizations are in a technological mudslide by integrating technological innovations, or they will risk losing their businesses. In this study, the concepts of disruptive innovation theory and diffusion innovation theory provided the essential elements relevant to the exploration of strategies and business CSFs for integrating technological innovations in small businesses.

## Operational Definitions

*Asynchronous:* A teaching method which employs a learner-centered approach, involving the sharing of online resources and the promotion of interactions between peers at different locations and times (Mallin et al., 2014).

*Compatibility:* The degree or level at which an innovation (product or service) is believed by consumers to be consistent or conducive to their current values, needs, and practical implications (Schiffman & Wisenblit, 2015).

*Disruptive innovations:* Technological innovations that enable business leaders to redirect business models or organizations' mission, vision, and goals to target a new market and value network (Christensen, 2013; Nagy, Schuessler, & Dubinsky, 2016)

*Ecommerce:* A process of selling, providing or exchanging products, services, and information through mediums such as the internet, local, and wide area computer networks (Turban, King, Lee, Liang, & Turban, 2015).

*Learning management system (LMS):* A form of software technology adopted in both business and academic environments for training and educating organizational stakeholders in web-enhanced learning environments (Moreillon, 2015).

*Observability:* The degree or level at which customers believe that the benefits of the innovation  may be envisioned, communicated, observed, or described from a conceptual perspective (Rogers, 1995; Schiffman & Wisenblit, 2015).

*Organizational citizenship behavior (OCB):* The attitudes, feelings, and emotional behaviors of employees that are conducive to the overall functions of the organization (Podsakoff, Podsakoff, MacKenzie, Maynes, & Spoelma, 2014).

*Organizational stakeholders*: Internal and external customers (shareholders, managers, employees, individuals, suppliers, and other business entities) who stand to benefit or encounter losses based on an organization's level of successes (Benn et al., 2014).

*Relative advantage*: The degree or level at which the innovation is believed by consumers to be exceptional compared to existing substitutes (Rogers, 1995; Schiffman & Wisenblit, 2015).

*Technological innovations*: The nature and rate in which technology changes within a specific period. It includes activities leading up to how products and services are discovered or developed by organizations, and how they are introduced by organizations to new markets (Bhattacharya, Hsu, Tian, & Xu, 2017).

**Assumptions, Limitations, and Delimitations**

**Assumptions**

An assumption is what is acceptably true in nature concerning research work, and how peers obtain and align information as influential factors to support truth and accuracy (Dinsmore, 2017). For this study, the primary assumption was that implementing strategies for integrating technological innovations always leads to the creation of opportunities for increased operational efficiency, minimized costs, increased profits, and improved overall quality of products or services for a new or broader market. The second assumption was that the success and sustainability of disruptive technological innovations employed in small businesses depended solely on the effectiveness of business leaders in aligning organizational strategies with CSFs. The third assumption was that business CSFs and strategies needed for assessing and managing organizational citizenship behavior could pose a threat to the process of organizational change (Marinova, Peng, Lorinkova, Van Dyne, & Chiaburu, 2015). The final assumption was the questions would be truthfully answered by participants.

**Limitations**

Limitations are defined by McCarthy and Muthuri (2018) as the weaknesses or areas of deficiencies in a study due to reasons beyond the researcher's immediate control. Limitations can also be created by constraints on generalizing, applying appropriate research methods, and applications of best practices. The anticipated limitations of this study included desired procedures and outcomes for conducting a multiple case study approach and reaching data saturation to answer the research question relative to the

actual population interviewed in this study. The second limitation was the ability to identify like terms and themes from responses to open-ended questions if participants could not recall accurate accounts of their experiences. Some responses to open-ended questions may have posed a threat towards accurately assessing organizational stakeholders' experiences with and perceptions of business CSFs in small businesses and strategies for integrating disruptive innovations. Depending on the outcome or results of the study, the lack of opportunities to further probe respondents may also be a limiting factor. No financial or overwhelming sample population constraints were anticipated in this study. The final limitation was in selecting small business leaders from institutions of higher learning located in the Northeastern region of the United States of America.

**Delimitations**

Delimitations are defined by Thomas, Silverman, and Nelson (2015) as limited boundaries of a study set by researchers which enable investigators to establish parameters for obtainable objectives, goals, and variables which are outside their control. In this study, organizational change processes for integrating technological innovations in small businesses were explored. The focus of this study was to identify strategies and business CSFs for integrating disruptive innovations and how the phenomenon was experienced by organizational stakeholders. This study was conducted at two institutions of higher learning located in New York and New Jersey that have integrated disruptive innovations over a 10-year period. The 10 participants selected from four categories of organizational stakeholders from each site location are the sample population for this study. The four categories were department managers, information technology specialists,

training directors, and instructors. Excluded from the study were persons under the age of 25, and those who had been employed for less than 5 years at their respective site locations.

<div align="center">**Significance of the Study**</div>

**Value to Businesses**

Findings from this study may be of value to businesses by enabling organizational leaders to gain knowledge concerning effective strategies, benchmarks, and best practices for sustaining and integrating disruptive innovations into their business processes. Information from this study may be obtained and used by industry leaders, managers, supervisors, and other practitioners to implement guidelines and procedures to support training initiatives. Information from this study may also be adopted and adapted by members of compliance and ethics committee to develop legal and ethical policies.

**Contribution to Business Practice**

The focus of this study was to help business leaders identify strategies for integrating and sustaining disruptive innovations. Contributions to business practice may include identification of strategies used by small business leaders of institutions located in the Northeastern region of the United States to integrate and sustain disruptive innovations. The findings of this research may be used by organizational stakeholders to fill gaps in understanding practical but effective methods of integrating disruptive innovations in small businesses. The results could add to existing literature relating to significant strategies for integrating disruptive technology within an organization.

**Implications for Social Change**

The general focus of this study was to foster positive implications for social change by helping business leaders overcome or minimize 21$^{st}$-century barriers to integrating and sustaining disruptive innovations. From the findings in this study, business leaders might be provided with a clear understanding of the types of obstacles and opposition affecting the integration of disruptive innovations. The situations that influence how strategies for integrating and sustaining disruptive innovations are implemented vary among communities and societies. Following the results of this study, scholars could be provided with methods for identifying and measuring benchmarked strategies and business CSFs. With improved integration and sustainability of disruptive innovation, communities could benefit from an increase in employment opportunities for the youth, provision of social amenities, increased economic activities, and better quality of life for local residents.

**A Review of the Professional and Academic Literature**

Leaders do not possess the strategies for efficient application of disruptive innovations to improve traditional business processes and organizational functions. The significant increase in literature on technological innovation and disruptive technologies between 1994 and 2016 is because of corporate leaders' improved awareness of competitive challenges and the pressures of integrating and sustaining 21st century technologies. In the literature review section, the problem statement and research methodology are aligned with peer-reviewed and scholarly sources to support the main research question: What strategies do business leaders use to integrate and sustain

disruptive innovations?

The purpose of this literature review was to highlight both current and previous research studies in which integrating and sustaining disruptive innovations are addressed. This involved obtaining information through the Walden University Library's databases such as ProQuest, EbscoHost, ERIC, Business Source Complete, and Science Direct. Key search terms included: *Technological innovations*, *disruptive technologies*, *learning management systems*, *online and web-enhanced environments*, and *organizational change*. The resource materials included books, online journals, and scholarly sources published in the past 10 years. More than 100 specific literature sources were explored. More specifically, 120 journals, five books, and five other sources (encyclopedia, working paper, conference paper, and periodical) were used, bringing the total of all sources to 130. Out of the total number of sources, 124 were dated 2014 and above. 95.38% of sources were less than 5 years old. Of these sources, the percentage of peer-reviewed journals is 83.87%.

Three key dimensions or attributes are used to analyze how organizations with traditional business practices experience the integration process of disruptive technology. They include organizational structure, traditional business processes, and organizational citizenship behavior. An analysis of traditional business processes and procedures was necessary because the integration of technological innovation involves redesigning traditional brick and mortar businesses. By redesigning organizational functions and certification affiliates, business leaders can comply with state and federal regulations. Some traditional business functions are redesigned to support a partial or full eCommerce

business model, which are illustrated and identified as independent business processes or

procedures within an organization (Turban et al., 2015). Finally, analyzing OCB was

essential because the process was used by researchers, business leaders, and practitioners

to focus on assessing how organizational stakeholders respond to organizational change

surrounding the integration of disruptive innovations.

This literature review discusses  the concept of technological innovations and

disruptive technologies, challenges and strategies for integrating disruptive technologies

in small organizations,  training and benefits of disruptive innovations, and structural,

procedural, and OCB attributes from several research perspectives. The literature review

includes specific points of interest relevant to integrating disruptive technological

innovations and subcategories that related to organizational change.

**Technological Innovations**

Technological innovations involve the development, implementation, and

practical applications of new ideas that change organizational structures and processes in

response to either competitive environments or proactive measures taken to improve

business efficiency. Innovations could change organizational structures by influencing

internal and external environments, targeting new markets, and creating value networks

(Dedehayir, Nokelainen, & Mäkinen, 2014). Technological innovation is a reflection of

the changes within the products, services, or processes that typically transform an

organization. By adopting technological innovations, business leaders can compete,

sustain, and differentiate their firms within competitive environments and link various

internal and external stakeholders (Ricciardi, Zardini, & Rossignoli, 2017) through online or web-enhanced technology.

Business leaders around the world are under pressure to integrate technological innovations as a means of responding to growing competition (Del Giudice, 2016; Palacios-Marqués, Soto-Acosta, & Merigó, 2015; Soto-Acosta, Popa, & Palacios-Marqués, 2016). Business leaders are pressured to integrate disruptive innovations to create a sustainable, interactive, and efficient operating environment for organizational stakeholders (Evans et al., 2017; Sarkar & Pansera, 2017; Wan et al., 2015).

**Diffusion of Innovations Theory**

The diffusion process consists of the following: innovations, channels of communication, time, and social system (Rogers, 1995). Innovation is defined by Rogers (1995) as new ideas observed from an individual's perspective. Innovation is defined by Schiffman and Wisenblit (2015) through firm-oriented, product-oriented, market-oriented, and consumer-oriented. The business-oriented perspective relates to products and services that are new to the company. For this study, the new products and services for traditional higher learning institutions involved integrating an online or web-enhanced technology. Kapoor, Dwivedi, and Williams (2014) explained the relation of product-oriented definition to the continuous or discontinuous adaptation, upgrades, or modifications to the products and services that firms are considering and offering. The discontinuous or continuous adaptation, upgrades, and modifications to technological innovations are critical and necessary for sustaining disruptive technology that supports a web-enhanced or online interactive community environment.

The market-oriented perspective refers to the consumer or end-user exposure to the innovation (Schiffman & Wisenblit, 2015). Factors used to assess the effectiveness and sustainability of an innovation include the knowledge of what stage of innovation the product-life cycle is in, the duration in that stage, and when the declining stage is likely to be reached. In addition, the way in which the innovation is first countered by the end-users has either a positive or a negative impact on their attitudes (Fan & Suh, 2014). The consumer-oriented perspective is referred to as consumers' perception of the product or service as new. For this study, the perceived new product or service offered to consumers is training in an online or web-enhanced environment.

Innovation product characteristics include relative advantage, compatibility, complexity, trialability, and observability. Since the innovation product characteristics for disruptive innovations are areas that initially influence diffusion, changes, and acceptance in social systems, expanding upon the concepts and theories helped in drawing conclusions and solutions to this study. Modernized approaches are used by business leaders to connect their stakeholders through web-enhanced or online environments to minimize organizational change dilemmas that significantly affect structural, procedural, and behavioral attributes of organizations with a traditional business model.

Strategies to assess thoroughly and minimize or prevent change management dilemmas are needed by corporate leaders to successfully integrate, support, and sustain disruptive technological innovations in organizations operating with traditional business models (Aizstrauta, Ginters, & Eroles, 2015). Aytekin, Değerli, and Değerli (2015) said that organizational leaders use the conceptual framework of the diffusion of innovation

theory to anticipate proactive or reactive strategies. From a research perspective, diffusion of innovation theory is a point of reference which organizational leaders and scholars may find as a prevalent objective of this study. For traditional organizations integrating a disruptive technology like LMS, the aim of proactive and reactive strategies is to produce results and practical implications for identifying and meeting business CSFs that guide organizational change processes.

**Disruptive Innovations Theory**

The disruptive innovation theory is used to focus on using technologies that enable organizations to improve their products and services. Some of the technologies include LMSs (de Almeida, Silva, & Sampaio, 2017). The negative implications of disruptive innovations theory can lead to disruptions of the traditional brick & mortar business model, traditional business processes, and organizational cultures. Other negative implications include new operational costs and additional human resources, which may render all subsiding technologies or operational processes obsolete. Disruptive innovation theory is used by scholars as a lens through which business leaders can focus on minimizing obstacles to organizational change involving technological innovations, identifying CSFs, and developing strategies for integrating a disruptive technology.

**Disruptive Technologies**

The implementation of disruptive technologies in several industries is costly to integrate and sustain in both small and large organizations. However, these technologies are also a key part of the organizations' strategic plan to improve business processes and

reduce costs through more efficient operations (Bengtsson & Wang, 2016; Wan et al., 2015).

For most start-up companies, integrating disruptive technologies creates lucrative opportunities while at the same time, giving rise to a competitor's dilemma. Lauterbach and Mueller (2014) posited that small and large organizations that follow traditional market trends and traditional business and management practices often fail, reporting a new life expectancy of less than fifteen years for the companies. The integration of disruptive technologies was viewed by some scholars as a critical strategic component that can either enable or disable an organization, which is the case for organizations in a variety of industries (Christensen, 2013; Dedehayir et al., 2014). One form of disruptive technology emphasized within this study is learning management systems (LMSs). LMS is described as an e-Learning or web-based technology that is used by business leaders to manage professional and academic environments for better planning, distribution, training, educating and evaluation of specific learning processes (Judge & Murray, 2017; Yoo, Huang, & Kwon, 2015).

**The Challenges of Integrating Technological Innovation**

The challenging situations experienced by small to medium enterprise (SME) leaders when integrating technological innovations include the adoption process (defining strategies), external competition, and just-in-time training for organizational stakeholders (Bateman & Davies, 2014; Comedy & Grama, 2016). Other pressures include limited financial resources for training programs and changing management practices that could lead to internal competitiveness between management and employees (Wan et al., 2015).

In some industries, technological innovations like Web 2.0 are born out of the creative digital era and are transforming organizational learning concepts. The technologies involving virtual collaboration systems, technology convergence, and online communities or social learning environments are now possible, which enable organizations and its stakeholders to connect on a global scale. In some cases, the continuous process and patterns of technological learning and *catch-up* strategies employed (pathways and leapfrogging) to narrow the technological gap within competitive industries remain as significant challenges for small business leaders (Bateman & Davies, 2014). The inability of organizational stakeholders to meet the strategies and business CSFs could jeopardize the integration and sustainability of disruptive innovations (Decker, Haltiwanger, Jarmin, & Miranda, 2014). Some benefits of integrating technological innovations or disruptive technologies include high success rates of new businesses, growth opportunities for sustainable businesses, and competitive advantages for others while the major disadvantage is a high failure rate of business ventures (Christensen et al., 2016; O'Brien, 2016).

The way in which training, knowledge, information, and skills are acquired by internal stakeholders (management and employees) and external stakeholders (customers and suppliers) continue to evolve as the driving force behind technological innovations in contemporary business environments. Because of increasing consumer expectations, stakeholders' needs must be satisfied by business leaders, expectations of organizational learning and development communities met, and a competitive advantage maintained over existing competitors and new entrants. Yousefi (2014) posited the overall

expectations of organizational stakeholders' training, knowledge, information, and skills are shifting from a traditional classroom teaching and learning environment to a technological perspective. Like many other researchers in innovation field, Ionita, Visan, Niculescu, and Popa (2015) asserted that technology-based training (online or web-enhanced technologies) that use collaborative networks and mobile deployment leads to the provision of a strategic advantage for training and managing soft skills of organizational stakeholders.

Another challenge faced by organizational leaders when integrating technological innovations is identifying and developing a return on investment from training and development (Wan et al., 2015). Kirkpatrick's four-level training evaluation and Philip's models were used by Ho, Arendt, Zheng, and Hanisch (2016) to evaluate the outcomes of training and job performance of organizational stakeholders and research and strategies identified for continued studies. Ho et al.'s research is of benefit to business leaders who are in need of overcoming technological challenges by analyzing the reaction, learning, behavior, and results in which the training and job performance-related initiatives produced. The first three levels of Kirkpatrick's training evaluation model are the diffusion of innovations theory, disruptive innovation theory, and the theory of acceptance (Schiffman & Wisenblit, 2015). Ho et al. noted the evaluation of training in the hotel and other industries did not surpass the third level, due to a lack of tools and knowhow. The need to train the trainers on effective evaluation, and the need to use technological innovations such as laptops and tablets for the access of training and evaluations from anyway were suggested by the researchers. By mentioning such type of

access, the use of LMS was implied by Ho et al. as part of the solution to improve the effectiveness of training and evaluation and in the end, achieve higher returns.

Disruptive innovations surrounding massive open online courses, including the integration, scalability, and practical implications continue to grow at an alarming rate and have increasingly become a challenge for organizational leaders within education and training industries (Bonk, Lee, Reeves, & Reynolds, 2015). An expected trajectory or trend of massive open online courses was highlighted by Blackmon (2016) and subsequently the current to past trends of e-Learning phenomena were evaluated and contrasted. Although there were some potential growth, product quality improvement, and overall support opportunities for integrating massive open online courses and training programs, issues such as assessments, turnover rates, and maintaining viability were indicated by Blackmon as remaining a problem if not properly managed.

Several studies targeting the usability of technological innovations (information systems) in both public and private industries were conducted by some researchers over the past few years. The adoption and integration of e-Learning technology continue to evolve within some scientific categories: ergonomics, computer science, designs, and educations (Dolenc & Aberšek, 2015). From an educational perspective, employee training is the most prevalent factor for increasing knowledge, skills, job performance, and talent management efforts (recruitment and retention). From a corporate perspective, the significant drivers of gaining sustainable and competitive advantages include building enterprise networks, organizational and social learning environment, and creating knowledge management systems to foster productivity and efficiency. Deraniyagala,

Amdur, Boyer, and Kaylor (2015) posited that challenges on *usability* issues about interactions between the users and the actual technological innovation (LMS and information systems) are faced by organizational leaders if not integrated and evaluated accordingly.

**Benefits and Strategies for Integrating Technological Innovation**

Some of the benefits and strategies that surround the changing implications of web 2.0's self-directed learning (SDL) in a digital ecosystem have been explored by scholars (Rahimi, van den Berg, & Veen, 2015). The benefits of SDL technology stem from the way in which human resource (HR) developers in small and large organizations are using technology and transforming the creative digital era for workplace learning. Some transformational changes that could be used by organizational leaders in integrating disruptive innovations include implementing virtual collaboration, technology convergence, connectivity on a global scale, and building online communities.

The strategies that could be used by business leaders and human resources (HR) specialists to deploy SDL technology, transforming their organizations to meet the training needs of both internal and external organizational stakeholders were also discussed by Boyer, Artis, Fleming, and Solomon (2014). The most successful strategy was providing support and encouragement within an elective SDL environment as this was found to lead to higher performance levels. Therefore, integrating technological innovation such as SDL requires organizational support for the realization of the technology's benefits.

From a competitive perspective, the two main alternative strategies used by business leaders to counter disruptive innovations are integrating technological innovations and good management. Denning (2013) explored strategies to counter the negative implications of disruptive innovations. Integrating technological innovations, rather than just having good management was found by Denning to be the most effective approach to competing with countering disruptive innovations. Business leaders are advised to focus on new markets and create value networks to compete successfully against disruptive companies.

Gemici and Alpkan (2015) identified practical implications for corporate leaders to adopt new strategies for integrating technological innovations. One of the strategies identified is to manage both the traditional and the new technology's business models and this is best when the cost and revenue structures of the traditional and the disruptive business models differ. It was recommended by the authors that business leaders ought to react to disruptive innovations with flexibility in their strategic plans, considering all the internal and the external factors. Ambidexterity ought to be considered by business leaders in reacting to disruptive innovations (Gemici & Alpkan, 2015).

The increased use of LMS in organizational environments is becoming an essential asset for many modern businesses (Cahir, McNeill, Bosanquet, & Jacenyik-Trawöger, 2014). The benefit and success of online or web-enhanced blended learning technology depends on how processes and strategies implemented for adoption, integration, and continued use by organizational stakeholders, are established by managers. CSFs that influence either the overall usage, satisfaction of organizational

stakeholders, or sustainability of LMSs for training and support have been examined

(Cahir et al., 2014). Eom and Ashill (2016) for instance, found that CSFs in online

education include instructor centered parameters such as course or training program

design and the instructor or the parameters which can be improved through instructors'

input, for instance student-student dialogue, intrinsic motivation, self-regulation and

instructor-student dialogue. From a research perspective, other characteristics may

include quality, complexity, information, and serviceability.

Another benefit is the effectiveness in practices or practical implications of online

or web-enhanced service training to health care professionals located in distant and

remote locations (Marrinan, Firth, Hipgrave, & Jimenez-Soto, 2015). Marrinan et al.

posited that distant and remote locations often have very little resources to finance and

facilitate traditional means of training. From a virtual perspective, Marrinan et al.'s study

depicted how blended learning, management strategies, training, and knowledge-based

performance functions for medical practitioners are supported by blended learning.

Valid methods have been suggested to business leaders for use in establishing

decision support systems in current businesses for managing HR training and

development. Chatzimouratidis, Theotokas, and Lagoudis (2012) incorporated a multi-

criteria and multi-scenario contextual structure to assess qualitative characteristics of

organizational training and development. Chatzimouratidis et al. identified five criteria

and six scenarios as the basis for incorporating an analytical hierarchy process (AHP).

The methods employed and studied by Chatzimouratidis et al. are: (a) on the job training,

(b) mentorship, (c) apprenticeship, (d) vestibule-training using simulators, (e) online or

web-enhanced learning, and (f) face to face (instructor-led and classroom based training). The researchers noted that online or web-enhanced training is the most efficient method in terms cost effectiveness, ease of use, fast implementation, and distribution within an organization.

LMSs lead to the creation of cost-effective ways to train employees by providing simple online or web-enhanced learning solutions for adapting to technological changes related to managing employee benefits, enhancing their skills, job performance, and building practical knowledge (Dodson, Kitburi, & Berge, 2015; e-Learning courses updated, 2014). By integrating e-Learning technology into employee training, a process that made organizational training more interactive and engaging for employees was developed by the International Foundation of Employee Benefit Plans in Canada. E-Learning courses are used by managers to train workers, team leaders, and manage and monitor their employees' progress and learning outcomes.

Research conducted in Australia revealed that adoption of LMS technology for training has a significant influence on institutional learning strategies. A study was carried out by Stoddart (2015) with the aim of exploring whether the educational technologies have the capacity to lead to a change in the teaching and learning practice as well as their outcomes in a university. The integration and evaluation of the educational technology were done using the resources, activity, support and evaluation (RASE) model. Two emerging themes relevant to successful integration were highlighted by Stoddart: (a) the level of acceptance and coherence of e-Learning technology within the

culture of an organization and (b) how an LMS is adopted by each department in relation to balancing transitions between the new and the old LMSs.

To evaluate a web-enhanced versus traditional classroom-based training programs, a study aimed at evaluating the retention and effectiveness of learning the use of automated external defibrillation among non-critical care nurses was conducted by Saiboon et al. (2016). The knowledge, confidence level and skill of 80 nurses were evaluated by the authors at baseline, immediately at the end of the training and 6 months after the training. The nurses were randomly categorized into two groups: those that undertook learning through the traditional techniques and those that learned through a self-instructed video. Both groups had acceptable levels of competency, confidence and knowledge. Business leaders are provided with an insight into decision-making strategies for evaluating current or future online or web-enhanced versus classroom-based training programs for their organization.

Other ways in which organizational leaders may benefit from integrating technological innovations in modern businesses is by using online social networks. Emphasis was made by Cilliers, Chinyamurindi, and Viljoen (2017) on how online or web-enhanced social networks are changing the traditional work environment for business leaders. The authors posited that online social networks such as Facebook are being used for the enhancement of supervisor and co-worker support and enable the development of a platform for highlighting employment related demands because of its ability to result in quick and direct communication. The integration of social media networks in the workplace was also found to increase the morale and a feeling of

belonging, workplace engagement and ultimately their performance. Thus, considering the social media networks as disrupting the communication in the workplace environment, their integration has many positive implications for work processes and the organization's brand.

There is an increased use of LMS innovations in organizations in which talent management systems are employed (Douthitt & Mondore, 2014; Radwan, Senousy, & Alaa El Din, 2014). Over the past few years, the importance of integrating both LMSs and learning content management systems (LCMS) with current information systems used for managing talent pools has been emphasized by HR practitioners in multi-national companies who use talent management systems. The relationship of the two emerging technologies, in one or more aspect, can offer strategic advantages towards obtaining critical objectives, management competencies, sustainability, and competitive advantages.

**Implications of Training, Business Processes, and Integrating Technological Innovations**

As an alternative solution to the issues surrounding professional training, information technology (IT) solutions consisting of e-Learning technology (LMS, info path, and content management systems) was presented to resolve difficult situations within the mining industry in South Africa. Practical implementations of e-Learning in the training of workers in areas that are known to have factors that encourage e-Learning adoption were found by Matthee, Henneke, and Johnson (2014). This was found to be readily accepted when the training was made to be compulsory. It was also indicated by

the authors that when carried out, the e-Learning leads to cost reductions and ultimately the efficiency of the administration, fewer HR requirements and improved reporting. However, this can only be achieved when there are adequate resources and realistic expectations.

Within the SMEs, technological innovations have led to the creation of online or web-enhanced training modules (Shorey et al., 2018). In Australia, training using online or web-enhanced technologies were completed by prospective students preparing to register for a Bachelor of Science in Nursing program. Formerly, the only method for the distribution of such training programs was through traditional means. The new mode of distribution and delivery of training relative to the changed processes and application developments needed for its deployment has been studied (Livotov, 2015).

The impact of e-Learning on the knowledge, satisfaction and attitudes of undergraduates in health professions was examined by George et al. (2014). Using a systematic review of literature, it was established by the authors in 24 percent of the studies that tested the knowledge gains; online learning had significantly higher gains in comparison with traditional learning. Moreover, out of the 29 studies in which the satisfaction of students was measured, it was shown in the four studies that there was a higher level of satisfaction with online learning with an indication of no variations in the level of satisfaction in 20 studies. Based on the evidence it was concluded by George et al. that, e-Learning is equal and if possible, better than the traditional learning.

The hype about e-Learning, LMSs, online or web-enhanced training, and organizational development are learner-centered activities involving technological

innovations which are used by business leaders to improve their business environment. How people learn and why, what is e-Learning, and does e-Learning work have been exploredin past studies. Foundational studies that enable a recap of the history, issues and current trends of computer-based training to e-Learning trends have been built by several scholars (Blackmon, 2016; Sharma, Sharma, Garg, & Garg, 2016). To understand the effects of e-Learning within a corporate environment, it was suggested by Blackmon (2016) that business leaders should focus on corporate learning skills (how mastering technical, social, and product-knowledge is done by stakeholders) to gain a better perspective of integrating training to satisfy the needs of internal and external customers.

The experience of the University of Geneva in the use of e-Learning to develop the health workforce through a master's program in francophone Africa was reported by Chastonay et al. (2015). Factors that were monitored included the students' participation, performance, community outcomes and perception of the program. It was established by the authors that the interactive nature of the e-Learning environment helped increase the students' motivation and formed a basis for collaboration between them. Problems encountered were associated with the internet, the failure of the tutors to meet expectations due to overbooking and the difficulties of finding adequate financial support. Based on these experiences, there is a need for further training to assure that e-Learning activities are effective, efficient, and create value for the time and resources invested. Further, as it pertains to financing, the sponsorship of individual students as opposed to the educational institutions was proposed by the authors as a means of effectively dealing with the financial burden of students.

In other studies, several articles related to e-Learning in workplace settingsandorganizations transitioning from facilitating traditional face to face training environments to organizations that integrated a disruptive technology to facilitate video training and online or web-enhanced training were analysed by Cheng, Wang, Mørch, Chen, and Spector (2014), and Hedderly and Scott (2015). In some cases, LMSs (also known as e-Learning platforms)are adopted by business leaders to support a blendedhybrid and synchronous training environment. Some advantages for integrating e-Learning disruptive technology have been identified and relevant points of interest and strategies for business leaders to consider when integrating and implementing video and e-Learning programs provided (Cheng et al., 2014; Hedderly & Scott, 2015). Some of the strategies include understanding organizational culture, developing teir leveled processes to reach certain benchmarks, assigning committees, and establishing specific communication and delivery methods (simulations, audio,andvideo with close captioning). Case studies, procedural, and scenario-based training courses should be considered by business leaders to ensure a successful transition of organizational change. The research conducted by Cheng et al. (2014), and Hedderly and Scott (2015) serves as both a model and a guide for business leaders that are in pursuit of similar organizational changes.

LMSs are software solution programs sold to organizations as web-based platforms designed to manage specific applications related to learning within a business or academic environment and include training, testing, assessment, and evaluation (Ramírez-Correa, Rondan-Cataluña, Arenas-Gaitán, & Alfaro-Perez, 2017). LMSs have

been adopted by business leaders to create a market for academic content management (Blackboard, Moodle, WebCT, Angel, e-College, and Sakai) and corporate training content management (Cornerstone-OnDemand, Oracle, SAP, SABA, and SumTotal). LMSs are used by corporate talent and development leaders to administer, document, track, and report, automate recordkeeping, conduct online training, and employee registration (Bakar & Jalil, 2017). Each LMSencompasses online or web-enhanced learning elements which differentiate facilitators and learners from a traditional face to face teaching and learning environment. Cheng et al. (2014) stated that LMS uses electronic forms of media that fully support interactive learning environments (virtual classrooms, videos, communication, and discussion boards).

A study was conducted by Alrasheedi, Capretz, and Raza (2016) which sought the perspective of the management on the CSFs impacting on the integration and use of mobile learning in higher institutions of learning. The factors that were found to be critical to the adoption of technology in higher education settings included the commitment by the management (to training and development), change management and learning practices. The critical role of the management in driving post-implementation behavior in disruptive technology integration settings is pointed out in the results. An understanding of the management staff's thought processes was emphasized by Alrasheedi et al. as a sure way of helping the adoption process of technology.

In current competitive economic environments, client companies and training organizations are encouraged to consider integrating more innovative strategies to develop and provide better training services. A focus on improving both content and

delivery using technological and collaborative web-enhanced innovations to create added-value is advantageous for both client companies and training organizations. Navimipour and Zareie (2015) posit that e-Learning is preferred globally by organizations due to its cost effective and timely learning nature in meeting the varied needs of continuing education and in training employees at different locations. The beneficial and profitable nature of innovative technology and collaboration among organizations for both clients and the training industry was explored by Navimipour and Zareie explored. From a research perspective, it was concluded by Navimipour and Zareie that to increase the level of satisfaction with e-Learning, the technology used for e-Learning, motivation, educational content and employee attitude towards the training needs to be focused on by training organizations need.

Studies have been conducted by several authors and the role played by traditional learning concepts in online or web-enhanced learning and training activities, the level of importance for the traditional approach, and the emergence of new learning theories identified (Northey, Bucic, Chylinski & Govind, 2015; Young, 2016). Online or web-enhanced activities were explained by Young as an arrangement of instructions within communication mediums such as print and electronic forms of communication designed to engage and facilitate the interactions of planned learning between organizational stakeholders. Some of the electronic forms of communication involving a computer or digital-based technologies include e-mails, synchronous or asynchronous discussions and chatroom sessions, virtual classrooms, video conferencing, web conferencing, teleconferencing, and the use of online resources (databases and credible internet sources)

(Northey et al, 2015). Technological innovations (disruptive technologies) involving online and web-enhanced training or learning as a relationship of interactive teaching and learning activities conducted using an online modality (LMS or e-Learning) were described by Young. According to Young, the concept of online and web-enhanced training or learning could be interchangeable with the term *online or web-enhanced activities*. From a research perspective, organizations with a traditional business model that integrated a technological innovations (disruptive technology) as a means of facilitating and sustaining an online or web-enhanced environment are subject to specific dimensions or attributes that negatively affect the organizations' ability to successfully integrate and sustain an online or web-enhanced environment (Obal, 2017).

Within a commercial banking industry in Malaysia, researchers used surveys to analyze the sales training practices of employees to determine the effects of traditional training approaches that middle and upper management implement and assess. How sales training programs such as on the job training, lectures, product and service related subjects, and sales-based training programs were among traditional training practices that could present, future challenges for organizational leaders developing strategies for implementing online or web-enhanced training using an LMS was highlighted by Little (2015).

In Thailand, HR management strategies were employed by business leaders to reduce high employee turnovers by integrating LMS technology and incorporating the use of mobile devices and social media platforms for corporate training (Harnessing Technology, 2013). As with many organizations, the aim was for the reduction of cost

and increase of efficiency by business leaders through knowledge management, centralization, and automation of business training processes that allowed them to integrate, support, and sustain an LMS.

How an employee's level of productivity is the key to survival in contemporary organizations was emphasized by McEdwards (2014). Given this assumption, advanced methods for presenting and implementing new employee training opportunities are high in demand to not only increase organizational performance, but must remain to be cost effective, efficient, user-friendly, not time-consuming, and relevant. Since traditional workplace training programs are rather expensive, and do not sustain long-term training benefits to employees, alternative methods to enhance employee's knowledge, skills, and overall work performance, using asynchronous e-Learning technology has been the solution for some organizations. The adoption and integration of technological innovations (e-Learning or LMSs) for training in an asynchronous manner is an efficient, effective, and customizable means of training employees were demonstrated by McEdwards and the effects of LMS for improved performance and increased satisfaction versus traditional modes of training advocated.

**Structural Dimensions of Integrating Technological Innovation**

Within an industry, it was noted that over a twenty-year period, organizational structures have undergone significant changes in response to environmental pressures (Camisón & Villar-López, 2014). One contributing aspect to the environmental pressures was the changing demographics and specific trends of organizational stakeholders. Another contributing factor on environmental pressures was the advancement of

organizational innovations (integrating new technologies) that required implementing strategies to meet the needs of organizational stakeholders from a nontraditional perspective.

From a structural perspective, scholars suggest that strategic plans to recruit, retain, and offer various incentive plans to key organizational stakeholders working in an online or web-enhanced capacity should be developed by business leaders of online organizations (Howardson & Behrend, 2014; Portugal, 2015). The overall costs associated with developing strategic plans could be staggering. However, having a strategic plan could prevent any short or long-term detrimental effects such as the attrition of internal and external organizational stakeholders, legal action, and a negative reputation. How online or web-enhanced business environments (public and private sectors) are growing at a rapid pace and the sustainability of online or web-enhanced business environments and their undoubted dependence on the quality and organizational structure of key stakeholders were advocated by Howardson and Behrend (2014), and Portugal (2015). Within a traditional business environment, a strategic recruitment, retention, incentive plans, and thorough financial calculations need to be created by organizational leaders to successfully integrate and implement disruptive innovations that significantly affect the overall structure of the organization's traditional business model. Business leaders should be aware that providing various incentive plans, such as proper training, ongoing support, and other benefits would increase the cost of operating in an online or web-enhanced capacity. Recruiting, training, and retaining organizational stakeholders in an online or web-enhanced capacity were emphasized by Portugal (2015)

as very critical to the implementation and sustainability of integrating a disruptive

technology such as an LMS.

The study of Kranz, Hanelt, and Kolbe (2016) was aimed at establishing the

internal processes within an organization as it pertains to the changes in business models

in response to innovations that are disruptive. It was argued by Kranz et al. that disruptive

innovations lead to a change in the logic of a firm as embedded in the firm's knowledge

base, established business models and routines. The absorptive capacity (the reevaluation

of prior capital, and the identification, acquisition, assimilation and exploitation of the

new knowledge for the development of new offerings) and the ambidexterity (the

alignment and efficiency in managing business demands while at the same time adapting

to environmental changes) of firms were changed. Their multiple case study design

involved six ERP system vendors in the face of the disruption caused by the introduction

of software as a service (SaaS). The innovation and organizational factors are shown in

the findings of Kranz et al. to moderate the link between disruptive innovation potential

and changes in business model. Furthermore, firms in which business models were

changed more promptly were those with higher abilities for integration and reconciliation

of the exploitative and the explorative activities related to the innovation of business

models and increased compatibility between their current and their new model required to

effectively respond to the disruption.

The use of disruptive technology as a means of enhancing and supporting online

or web-enhanced environments within a practical organizational setting is discussed by

several authors (Sganzerla, Seixas, & Conti, 2016; Yamagata-Lynch, Cowan, &

Luetkehans, 2015). Wiener, Hoßbach, and Saunders (2017) posited that transformational trends of online or web-enhanced environments are trending with an increased shift in demand for technological innovations that support online or web-enhanced business structures, processes, and the internal and external environments of organizational stakeholders. From a research perspective, the rate of increased demands for online or web-enhanced services creates structural, transitional, and OCB attributes for business leaders following traditional business trends and scrambling to be sustainable in a partial or full e-commerce (online or web-enhanced) market (Deng, Wang, & Galliers, 2015).

The business models of traditional versus nontraditional business universities were described by Kalman (2016). It was explained by Kalman that while the resources within a traditional setting includes dormitories, physical campuses and green lawns among others, the investment of open universities include the technologies of distance education and the resources and processes that enable the performance of administrative duties from a distance. An analysis and harmonization of business models were proposed by the author for the identification of commonalities and for the exploration of the alternatives of doing business. It was explained by Kalman that success in business model change can be best realized when there is a good fit between a university's customer value proposition, its infrastructure and financial components as well as other business components.

How organizations are scrambling to find their niche or market share and how hasty or haphazard adoption and integration of processes are affecting the overall transition for organizational stakeholders has been explained by other researchers

(Abdallah, Phan, & Matsui, 2016; Christensen, 2013). In general, long-term infrastructures to support online or web-enhanced technology was advocated for by Abdallah et al., the pros and cons of adopting and integrating online or web-enhanced training or learning in organizations with a traditional business model described, and practical models, sources, and testimonies of both successes and failures provided.

**Business Processes and Procedural Attributes of Integrating Technological Innovation**

The business processes (procedural dimension) of integrating disruptive innovations involve redesigning business functions to incorporate a partial or full e-commerce business model. Several concepts of e-commerce were explored by Turban et al. (2015), which consisted of an in-depth and broad array of information relevant to e-commerce from a global perspective. New business-to-business (B2B) and business-to-consumer (B2C) developments regarding online or web-enhanced activities within the business and professional environments, individual's life, and academic environments were emphasized on by Turban et al. It was expressed by Turban et al. that *business functions* are independent business processes within an organization. In the recommendation, one business function was identified by Turban et al. identified and corporate leaders advised to incorporate a legal support system for implementing a specific disruptive technology.

The functioning of e-commerce within e-marketplaces was explained by Madden, Banerjee, Rappoport, and Suenaga (2017) and consumer retailing via the Internet, online consumer behavior, and various business models of e-commerce (B2B, B2C, consumer-

to-consumer, government-to-consumer, e-government, and e-Learning) highlighted.

Other implications and concepts for business leaders include the provision of innovative

trends, structures, and new practical applications for technological innovations and

disruptive technologies such as web 2.0 and social media networks, mobile commerce

(m-commerce), and legal and ethical concerns surrounding e-commerce (Madden et al.,

2017). A regulatory support was recommended by Madden et al. as crucial in the

facilitation of business processes surrounding eCommerce adoption for instance, the

handling of credit card fraud.

The shifting away of growing numbers of small businesses from traditional

employee training methods and the adoption of online or web-enhanced performance and

training support platforms were discussed by Kaminskienė, Trepulė, Rutkienė, and

Arbutavičius (2014). It was reported by Kaminskienė et al. reported that effective training

may be realized in the situation where attention is paid to the organization, design and the

technical dimensions which are of importance to the learners. The authors also posited

that the programs in which learners are offered support are more effective compared to

where the learning is fully independent.

The implementation of online safety training programs for organizational

stakeholders to minimize operational risks within some industries in the United States has

increased over the past few years. Strasburger (2014) posited that web-enhanced

technology for safety training programs enable the facilitation and provision of

immediate management and support by organizational leaders. Emphases were made by

Strasburger on how web-enhanced technologies enabled meeting of city, state, and

federal compliances surrounding safety and mandated reporting systems by organizational.

The motivational factors that influence organizational learning environments were investigated by Weng, Tsai, and Weng (2015). Some factors that contribute to stakeholder's motivation to use e-Learning or LMSs in the workplace include managerial support, job support, and organizational support. Managerial and job support prevailed in e-Learning systems for individual learning while organizational support had a significant impact on e-Learning system for social learning (Weng at al., 2015). The key factors for organizations adopting online or web-enhanced business environments over the past ten years were attributed to advances in technological innovations in one industry and the increased consumer demand within the same industry. Online or web-based are more efficient and effective approach for connecting organizational stakeholders than traditional business environments (Weng et al., 2015).

Using a case survey methodology, the competencies which were best suited for successful business process changes were studied by Jurisch, Palka, Wolf, and Krcmar (2014). How changes in business processes are intricate activities that require internal stakeholders (IT department and leaders driving project and change management initiatives) to meet a number of organizational capabilities was explained by Jurisch et al. It was demonstrated by Jurisch et al. that strategic planning involving advocates of change management, project management, and information technology play significant parts in making a positive impact on business change processes. IT systems and capabilities should be used by business leaders to incorporate online or web-enhanced

approaches to facilitate and support business change processes for organizational stakeholders.

The advantages and disadvantages of online or web-enhanced environments regarding core progress assessment were emphasized by Arkorful and Abaidoo (2015). Organizational stakeholders should use different strategies to ensure that work is within the scope of legitimate resources and collaborative efforts are preapproved. The rapid progress of online or web-enhanced technology as a disruptive innovation was explained by Arkorful and Abaidoo and the main difficulties associated with integrating the technology into an organization with a traditional business model remaining unsolved, highlighted. The assessment of whether the work that organizational stakeholders produce is their own can neither be done by content managers of online or web-enhanced environments nor how assigned work is completed by organizational stakeholders validated. Several authors have posited that no clear and concise indicators, such as visual clues, of the organizational stakeholders' progress or understanding of the online or web-enhanced content and materials exist (Mohammadyari & Singh, 2015). The lack of training indicators has been the major hindrance to the business leaders of organizations with a traditional business model trying to integrate an online or web-enhanced environment. Researchers who agree on the pros and cons of adopting each strategy have also advocated for different technological and non-technological approaches to ensure the validity of core assessments (Chen, 2014a; Wan et al., 2015).

Focusing on social media and digital marketing, Tiago and Veríssimo (2014) presented an analysis of the implications and benefits of online or web-enhanced

connectivity for organizational stakeholders and the requirements necessary for the

transformation from a traditional brick and mortar business model. As the expansion rate

of small businesses continues to grow, an unparalleled need for online or web-enhanced

environments has emerged. The need for online or web-enhanced environments was

believed by Tiago and Veríssimo (2014) would surpass traditional methods of connecting

organizational stakeholders. Business leaders in both the private and public sectors have

been forced by disruptive innovations LMSs to transform their firms. Since structural

attributes of a small business may play a vital role in disruptive innovation dilemma, the

review of literature serves as a strategic guide to aid in organizational transformations.

Business leaders have been afforded with opportunities by the developments in

technological innovations to transition their organizations to new levels of: (a) satisfying

the needs of both internal and external customers, (b) targeting new markets, building

stronger relationships, and (c) creating value networks on a virtual level (online or web-

enhanced environments). To meet their organizational goals, business leaders must be

aware of the disruptive innovation dilemmas facing the redesign of traditional

independent business functions. Lived experiences related to: (a) current trends in online

or web-enhanced technology, (b) the impact of strategic guidance for organizations, (c)

issues of organizational governance, (d) physical facilities, and (e) performance

operations in virtual environments have been assessed.

Scholars have noted that sustainable training for integrating disruptive

technologies forms a grounded framework for a successful reformation of business

processes as a tool for change management (Hussein & Dayekh, 2014). The foundation

for favorable online or web-enhanced training outcomes in step-by-step procedures

evolving from the inadequate to orderly and highly accomplished have been offered in

maturity models. The new standard makes it necessary to incorporate at least a partial e-

commerce business model to compete in the current global economy. Diverse process

models were examined by Hussein and Dayekh (2014) and the most credible aspects of

each process model known to yield desired results highlighted. Business leaders were

provided with strategies and methodologies to integrate disruptive innovations by

Hussein and Dayekh while considering the impact of change on the internal and external

organizational stakeholders of their business environments. Some of the impacts include

cultural change, resistance to online or web-enhanced activities, methods, and

adjustments to working with and sustaining the disruptive innovations.

Methodology and procedural implications were presented by several authors to

lead to a wider variety or broader spectrum of online or web-enhanced environments

within a small organizational setting (Sabadie, 2014; Yamagata-Lynch et al., 2015). A

number of determining factors for a small business was identified by Vargas (2015) to

achieve innovation, high performance, and competitiveness. The significant growth of e-

Learning activities that organizational leaders have used to train employees in recent

years was emphasized by Walsh (2014). Web 2.0 technologies were believed by Walsh to

have enabled corporate training departments with more options to deliver synchronous

and asynchronous training for organizational stakeholders. The web-conferencing

technology was explored by Walsh and the obstacles during implementation and best

practices that affect high-quality e-Learning resources revealed. CSFs for implementing

disruptive learning technology within the workplace to include leadership, learning

culture, technology infrastructure, and financial support were identified by Walsh.

Transitional or transformational philosophies encompass interactive, self-paced and

perpetual training, and the accessibility and responsiveness of organizational learning

(organizational-center versus customer-centered). A qualitative perspective of integrating

online or web-enhanced technology in an organization with contemporary business

practices was provided by Walsh.

The need to provide a continued access and a flexible schedule using an

interactive television, tele-class, and online or web-based training within a technical

business setting was illustrated by Hsia, Chang, and Tseng (2014). How the integration of

online or web-enhanced technology was a success and exceeded expectations; was

explained by Mangum, Lazar, Rose, Mahan, and Reed (2017). From a training and

learning perspective, how the just in time component will continue to be an ongoing

process in organizations integrating disruptive innovations was emphasized by Mangum

et al.

**Implications of OCB Attributes and Integrating Technological Innovation**

OCB was defined as discretionary but proactive behaviors of employees (Lin,

Law, & Zhou, 2017; Elorza, Harris, Aritzeta, & Balluerka, 2016). Although OCB is not

typically required by business employers for employees, it was explained by Liu, Chen,

and Holley (2017) that OCB is very conducive to organizational functioning. Dekas,

Bauer, Welle, Kurkoski, and Sullivan (2013) posited that integrating technological

innovations not only changes the fundamental nature and structure of the contemporary

work environment, but also sets a precedent for the evolution of OCBs in the modern
workforce. A direct relationship between employees and technological innovations could
improve overall organizational performance. Insights could be gained into the new forms
of OCB attributes that significantly contribute to organizational success within work
environments that encourage the integration of technological innovations by business
leaders.

In contemporary business environments, demands of redesigning, restructuring,
and retraining organizational stakeholders from the integration of technological
innovations tend to produce work-related stress, apprehension, and resistance during the
business process change (Jurisch et al., 2014). Depending on the nature and complexity
of the integration and change process, the importance of understanding OCB (employee's
attitudes) in relation to integrating new technology has been emphasized (Oh & Chen,
2015). The attitudes of organizational stakeholders during the integration of new
technologies for sustaining productive and efficient work performances could
significantly affect OCBs (work behaviors). A negative or positive outcome could be
achieved by business leaders' ability to manage employee's attitudes by influencing their
work behaviors (Laumer, Maier, Eckhardt, & Weitzel, 2016; Lloyd, Boer, Keller, &
Voelpel, 2015). Van Niekerk and Blignaut (2014) identified a positive correlation
between OCB attributes (civic virtue and loyalty) and integrating new technological
innovations. The different effects of having technological changes introduced by
managers with a *relationship-oriented* leadership style versus managers with a *task-
oriented* leadership style were studied by Van Niekerk and Blignaut.

The impact of cultural acceptance of online interaction and management of education and training programs for organizational stakeholders was analyzed by several researchers (Tarhini, Hone, Liu, & Tarhini, 2017). Hofstede's cultural dimensions were utilized by Tarhini et al. to assess the impact of individual culture on the acceptance and adoption of e-Learning. Behavioral intention and subjective norms in technology acceptance and adoption were found to be sensitive to the cultural variations in all the four Hofstede's cultural dimensions. The influence of culture on how stakeholders engage, connect with, and benefit from using online technologies for training was emphasized by Fish and Snodgrass (2015). The cultural perspective should be included by Business leaders in establishing CSFs and corporate strategies for adopting online or web-enhanced management and training innovations.

How business leaders designed web-enhanced training methods for prepping and implementing change management was explained by Cahir et al. (2014). For effective change management, building a sense of acceptance, competency, independence, understanding, and self-determination of professional development or training programs using LMS technology must first be learned by organizational stakeholders. It was noted by Akturan and Çekmecelioğlu (2016) that building an understanding of teaching and learning environment are relevant attributes of OCB and may often present challenges for integrating innovations. How the use of LMS technology to foster autonomy for a population of increasingly diverse stakeholders play significant roles in change management training initiatives with professional learning programs was explained by Cahir et al.

Many organizations have taken advantage of web-based training for its convenience, flexibility, and low-budget approach to keep their employees acquainted with the latest knowledge and skills (Khanna & Kendall, 2015). To ensure the productivity and performance of the employees, an electronic performance monitoring system that observes the online behavior of the employees has been implemented by organizational leaders. The implications of the surveillance practice as part of the organization's procedural attributes when integrating technological innovation on different types of e-learners were investigated by Chen (2014b). Chat room and forum discussions as well as email messages were constantly monitored for the purpose of providing just-in-time assistance (scaffolding). Positive learning experiences with high levels of satisfaction with their outcomes were reported by the students. This clearly implies that monitoring for support purposes is appreciated and is crucial during the integration and adoption of e-Learning as it enables the achievement of the expected outcomes.

New scales for measuring the effectiveness of self-regulated learning strategies among employees in online training have been developed (Kizilcec, Pérez-Sanagustín, & Maldonado, 2017; Stone, Deadrick, Lukaszewski, & Johnson, 2015). The two different learning strategies that could be adopted by learners are personal or social learning strategies. Certain factors were found by Sun, Xie, and Anderman (2018) to significantly affect the results of e-Learning. Some of the factors are (a) the type of strategies selected by the learners, (b) individual's online proficiency and determination, and (c) other external factors such as professional requirements or standards. It was concluded by Sun

et al. that better results are achieved by e-learners with varying learning strategies, valuable information for training using LMSs are possessed by organization leaders, and different self-regulated learning strategies could be incorporated by software designers to support the system design and development processes. The effects of personalized learning with the use of an LMS were explored by Kurilovas, Kubilinskiene, and Dagiene (2014) and LMS found to be an efficient means for enabling learners to acquire knowledge and skills with their own ability and capacity. The ways of meeting the learning needs of the current and future stakeholders should be established by organizational leaders (Kurilovas et al., 2014). From a research perspective, meeting learning needs would help management to minimize OCB dilemmas.

Within a competitive business environment, OCB is continually impacted by innovations surrounding both management and technology (Hwang & Choi, 2017). To drive organizational change by organizations that have successfully sustained environmental pressures, Peltokorpi, Allen, and Froese (2015) advocated that a consistent and committed workforce should be retained by corporate leaders. However, it should be understood by business leaders that organizational challenges of retaining key human resources are created by organizations. Various OCB attributes of employees have been identified by many researchers in two distinct industries to determine predictive relationships between organizational commitment and employee turnover intentions (Becton, Carr, Mossholder, & Walker, 2017; Lloyd et al., 2015).

The existence of differences in the characteristics of persisters versus non persisters as it pertains to loyalty to e-Learning environments and the factors that impact

on this loyalty also studied were shown by Waheed, Kaur, and Kumar (2016). The increased rate of adoption and the competitive need for technological innovations in businesses with traditional and nontraditional business practices have been noted. Waheed et al. highlighted that increased usage of e-Learning (disruptive technologies) may result from the provision of quality knowledge. Due to the isolation of a number of factors, the efforts surrounding retention and loyalty towards online or web-enhanced environments may be questionable. By identifying more particular traits of persisters and non-persisters, practitioners could be provided with the critical step toward rendering solutions to reduce and reverse the attrition rate by scholars. OCB and cultural attributes are focused on by quantitative researchers to assess how organizational change surrounding the implementations of a disruptive innovation is responded to by individuals and groups (organizational stakeholders) within targeted businesses. A clear illustration is provided by Waheed et al.'s study on how the attributes of traits and characteristics or persisters and non-persisters in relation to the turnover and retention of organizational stakeholders is affected by integrating disruptive innovations, online or web-enhanced platforms. In this case, turnover refers to the decision to discontinue the use of e-Learning environment and vice versa.

The mediating role of organizational climate in the impact of leadership on OCB was analyzed by Li, Chiaburu, and Kirkman (2017). Two forms of OCB were analyzed: affiliative OCB and taking charge. There were high levels of affiliative OCB found by Li et al. when there was a high level of both empowering leadership and organizational support. On the other hand, taking charge (control) was highest with a high level of

empowering leadership and low levels of support. The two types of OCB as methods could be used by business leaders for measuring the context, ideas, and risk-factors regarding their organizational climate, business processes for integrating technological innovations, and OCB. Business leaders were advised by Li et al. not to focus on designing organizational climates to increase OCB, and further suggested they focus on organizational characteristics such as empowering leadership conducive to supporting technological innovation that warrant organizational change.

A quantitative study was conducted by Douglass and Morris (2014) to identify the students' perspectives on the SDL. The students were organized in eight focus groups, each comprising 10 students. The emerging themes included faculty, self and administration-controlled barriers to the promotion of SDL. Although the students acknowledged that they had control over their learning, they also noted that administrators and faculty had significant impacts on their ability and desire to learn. Thus, organizational support is a CSF in the integration and sustenance of disruptive innovation.

Literature of past and present research studies are reviewed to gain significant organizational data and industry related reports that could present empirical basis for their investigation or help to form triangulating patterns and themes (Yin, 2014). The review of literature involves a broader understanding of selecting and employing a research method for assessing the breadth and depth of strategies needed for integrating technological innovations in small businesses and how business leaders and their organizational stakeholders experience disruptive technologies. By conducting literature

reviews, researchers could come to an understanding of the legal issues and remedies surrounding: (a) how small businesses in specific industries experience the integration of disruptive innovations, (b) traits and characteristics of decision-makers and organizational stakeholders who have experience with online or web-enhanced technologies, and (c) e-commerce and e-government structures for employing frameworks and applications for traditional college.

A detailed overview on an array of topics concerning how organizational stakeholders perceive and experience the integration of technological innovations or disruptive technologies in small to medium business environments is contained in their literature review. Over the past decade, disruptive innovations have been a significant driving force of organizational change in modern businesses. To adequately assess and organize literature sources relevant to change process, the review of professional and academic literature incorporated the following key areas: (a) innovations relative to technological creativity, conceptual theories, and disruptive technologies, (b) challenges, benefits and strategies, (c) the training and business functions, and (d) structural dimensions, business processes or procedural attributes, and OCB attributes.

In summary, the background on the often-interchangeable concepts of technological innovations and disruptive technologies and relevant conceptual frameworks surrounding innovations is contained in the innovations section. The challenges, benefits, and strategies section comprise of background on how scholar-practitioners, business leaders, and organizational stakeholders perceived and experienced disruptive innovations. The focus of the training and the business function

section is on the implications for online or web-enhanced innovations. The contextual attributes or transitional dilemmas that are experienced by organizational stakeholder during the business change process are encompassed in the structural, business processes, and OCB sections.

## Transition and Summary

The purpose of this qualitative multiple case study was to explore strategies, needed by business leaders to successfully integrate and sustain disruptive innovations. The background to the problem, the problem and purpose statements, nature of study, research and interview questions, conceptual framework, operational definitions, assumptions, limitations and limitations, the significance of the study, and a review of professional and academic literature were contained in section 1. To mitigate competitive pressures to increase profitability, disruptive technological innovations that modify the traditional business model are integrated by business leaders (Christensen, 2013). The academic literature review section included scholarly articles that support the conceptual frameworks of diffusion of innovation, disruptive innovation theories, and basis for identifying strategies business leaders need to integrate disruptive innovations.

The explanations of the role of the researcher, study participants, research method and design, population and sampling, ethical research, data collection instruments and technique, data organization technique, data analysis, and reliability and validity are contained in section 2.In section 3, The findings, recommendations for actions, and further research are provided. An application to professional practice, implications for

social change, reflections of research experience, and conclusion are also contained in

section 3.

Section 2: The Project

Section 1 of this study included the background of the problem, problem and purpose statements, the nature of the study, research and interview questions, the conceptual framework, assumptions, limitations, and delimitations, the significance of the study, and a review of professional and academic literature. In Section 2, the research method and design researcher's role, and study participants and their qualifying characteristics are identified. Section 2 also includes sampling methods and techniques for data collection and organization, data analysis, and a discussion of the reliability and validity of the study instrument.

**Purpose Statement**

The purpose of this qualitative multiple case study was to explore the strategies used by business leaders to integrate and sustain disruptive innovations. The specific study population consisted of 10 managers and employees from two small institutions of higher learning who represented 18.48% of the leaders in 7,253 traditional institutions throughout the United States (U.S. Department of Education, 2016). The geographic location for this study was the Northeastern region of the United States. The results of this study could contribute to positive social change by enabling business leaders to minimize potential failures and increase success rates of integrating and sustaining disruptive innovations in traditional institutions of higher learning across the United States. The social impact of successful integration of disruptive innovations could result in more accessible training and education programs for organizational stakeholders who

have limited opportunities to attend traditional brick and mortar institutions (Gu et al., 2014; Rose, 2015).

**Role of the Researcher**

My primary role as the researcher was in the data collection and analysis process. Semistructured interview questions were used to collect, transcribe, code, and analyze participants' responses to generate meaningful data and present the findings in the most unbiased and logical format possible. Researchers are able to anticipate and address ethical dilemmas that may occur throughout the stages of the research process by using relevant research questions.

Due to 20 years of combined academic, professional, and military background experience, I am able to assume the role of an unbiased observer and evaluator for this study. My educational background and work experience were conducive to achieving academic and professional excellence and conducting and completing research at the doctoral level. I did not have prior knowledge of or relationships with the research participants.

In an effort to sustain the integrity and quality of this study, my role was to become familiar with the interviewing and data collection techniques used in the current study. Researchers should adhere to the ethical standards outlined in the Belmont Protocol Report. The web-based National Institute of Health (NIH) training program on protecting human participants was completed and the Belmont Report and research ethics were adhered to. To mitigate bias and not view data from a personal lens and maintain

reliability, practicality, and validity of the final report, the study was reviewed to ensure that no flaws in logic or errors were found in the initial assumptions.

A researcher must ensure that research questions are sufficient or relevant to the research objectives and design (Alshenqeeti, 2014). I ensured the interview questions are adequate to answer the research question. By selecting a research design, investigators could justify the rationale for an interview protocol (Roulston, 2014). The interview protocol was developed and used as a guide during data collection. Semistructured interviews are used to collect and interpret information from participants as they are experiencing or have experienced the phenomena highlighted in this study (Dombrowski, 2014). Using an exploratory multiple case study research design approach, semistructured interviews were conducted to analyze strategies and business CSFs for integrating technological innovations. The data collected should be analyzed by an investigator using the interview protocol to identify reoccurring trends, common themes, and patterns (Griensven, Moore, & Hall, 2014).

For this study, I developed and followed an interview protocol (see Appendix A) for conducting the interviews. I also obtained permission and approval from the Institutional Review Board (IRB) of Walden University. I received approval (number 09-21-17-0156833) before collecting information, commencing the semistructured interviews, and analyzing the results from the data to identify emerging trends, common themes, and patterns.

**Participants**

In this study, the participants were grouped into four categories: upper

management or key decision makers, part-time or full-time faculty, senior information

technology personnel, and directors of training and professional development. The

eligibility criteria for each category were that study participants must be gainfully

employed at a traditional institution of higher learning that has integrated a disruptive

innovation for over 10 years, the age of respondents must range between 25 and 65 years,

and the geographical location of the study must be the Tri-State area of New York state

and New Jersey. To ensure the selection of participants who meet the eligibility criteria,

the purposive nonprobability sampling technique was used to arbitrarily select 10

participants who had unique characteristics, experiences, attitudes, and perceptions about

the strategies needed to integrate technological innovations. Purposeful sampling

techniques enable researchers to focus specifically on a sample population with key

characteristics that are of interest and best suited for exploring research questions

presented in a study (Brewis, 2014). Roulston (2014) noted that a small number of

participants in qualitative studies are often selected because of the depth and variance of

collected data as it pertains to how each participant experienced the phenomena in

question . Van Rijnsoever (2017) also emphasized that sampling a large number of

participants in qualitative studies is not practical or beneficial to the researcher as it

costly, time consuming, and may not add value beyond the point of data saturation.

The Walden University IRB approval was obtained before commencing with data

collection. Trust and respect for participants should be built in order to create an

environment that is conducive for the participants to open up concerning their experiences (Dombrowski, 2014). Trust was built, rapport was established, and participants' professional knowledge and work experience was respected. Petkov and Kaoullas (2016) said that researchers should always be accessible, receptive, and responsive to suggestions of managing participants. The initial approach for gaining access to the participants was to contact institutional leaders via telephone or email to obtain permission to conduct the study in their organization. Because I reside in the geographic region selected for this study, maintaining a network of both current and previous part-time employment opportunities and current social networking relationships helped expedite the approval process.

To establish a working relationship with participants, three strategies were used. The first strategy was to establish a working relationship with participants at institutions of higher learning to gain a better perspective of how the phenomenon was experienced at targeted institutions (Roulston, 2014; Roulston & Shelton, 2015). The second strategy was to assure confidentiality in every aspect of the interview process to build participants' trust. Dombrowski (2014) said that networking is essential in building relationships. In that respect, the third strategy was to attend social networking functions centered on integrating technological innovations and training seminars to establish good working relationships with study participants.

## Research Method

A qualitative research method was the most appropriate approach for this study because exploration does not require the use of figures (Sekaran & Bougie, 2016).The

utilization of interpretive techniques that seek to describe, decode, translate, come to terms with the meaning of certain phenomena, and does not represent the frequency of the phenomenon in qualitative research is explained (Lewis, 2015). Qualitative approaches are used to collect and analyze data through focus groups, interviews, case studies, action researches, and observations (Lewis, 2015; Smith, 2015). From a practical perspective, an in-depth analysis of a phenomenon is sought by qualitative researchers. The in-depth approach is typically drawn upon from written or recorded materials, behavioral observations, debriefings and other contributing factors considered to be evidence gathered from the physical environment being studied (Schwester, 2015; Taylor, Bogdan, & DeVault, 2015). In qualitative method, the intentions of the researcher are to probe into gathering a deeper and more philosophical understanding of certain situations from the participants' experience (Lewis, 2015; Marshall & Rossman, 2016).

Quantitative research method is used to identify the objective, formal, and systematic processes for collecting and precisely measuring, describing, testing and assessing a cause and effect relationship of independent and dependent variables. A quantitative method was advocated by McCarthy and Muthuri (2018) and Griensven et al. (2014) as appropriate when the purpose of a study is to explain, describe, and predict outcomes of the variables in the research question. A quantitative research method has limitations designed to control and reduce or prevent biased interactions between the researcher and study participants (Griensven et al., 2014; McCusker & Gunaydin, 2015). The need for establishing a high level of involvement to build a participant-researcher relationship is low in quantitative research method.

In a mixed methods approach, in-depth exploration of an event associated with a qualitative research method is combined with empirical testing associated with quantitative research methods (Griensven et al., 2014). The advantage of using a mixed methods approach, from a sequential research design perspective, is that a qualitative method could be employed by a researcher for theory based and interpretive analysis and a quantitative method to isolate, collect, analyze, and quantify primary and secondary data (Gabryś, 2016). The quantitative or mixed methods research was not an ideal method for this study because the hypothesis, independent and dependent variables were not tested.

A qualitative method was the best choice for this study. By using a qualitative research method, a participant-researcher relationship was formed without the limitations presented in a quantitative research method. In qualitative methods, the themes and patterns of information collected in structured or semistructured interviews are exclusive to the set of participants involved in the study (Brewis, 2014). Because quantitative method involves mathematical computations and statistical models to yield unbiased data, a significantly larger population could be generalized by the researcher (McCarthy & Muthuri, 2018). The study could be explored and concluded by a qualitative researcher with theories unfolded and further assessed and in-depth subjective and interpretive views about a phenomenon provided (Lewis, 2015; Yanchar, 2015). The qualitative method was the most appropriate for this study.

Systematic and subjective approaches are explored and implemented (Swafford, 2014). To understand the contextual factors of strategies and business CSFs experienced

when integrating technological innovations and to provide constructive meaning, a qualitative research method was the most conducive for this study. The uses of quantitative and mixed methods research to isolate, collect, analyze and quantify primary and secondary data with post positivism and advocacy or participatory perspectives was explained by Judge and Murray (2017). As noted by McCusker and Gunaydin (2015), in quantitative and mixed methods, precise measurements of different variables, their relationships, and seek to answer the *who*, *what*, *how*, and *why* of the research questions are identified. It was emphasized by Thamhain (2014) that quantitative methods represent empirical and theory testing of hypotheses. The research questions developed in mixed methods research directly address qualitative and quantitative assumptions and variables to obtain a definitive solution or predictions to resolve a dilemma (Mayoh & Onwuegbuzie, 2015; McCusker & Gunaydin, 2015). Quantitative and qualitative methods are similar in nature regarding practical research implications to search for answers to a dilemma (problem or opportunity) but the methods of data collection and analysis are different (Green et al., 2014).

Three types of research methods were described by Mertens (2014): qualitative, quantitative, and mixed methods. Being a novice, I had a better understanding of why quantitative studies are essential for empirical testing of study hypotheses. Since McNabb (2015) posited that directional hypotheses are the best choice to analyze the relationship of different variables. The quantitative method was not ideal for this study because the relationship between specific disruptive technologies, firm strategies, and business CSFs when integrating technological innovations was not assessed.

Implementing a mixed methods approach encompasses empirical testing of directional hypotheses and acquiring a more in-depth understanding of an event (Griensven et al., 2014). Mixed methods approach was inappropriate for this study because of the significant sample size needed for reliability, validity, and practicality, and the amount of time required to disseminate surveys, collect, and analyze data. A mixed methods approach was not conducive to the timeline and scope of resources needed to complete this study within the allocated timeline for University of Walden DBA Program. A qualitative approach was the most suitable research method for this study because the strategies used by small business leaders in integrating and sustaining disruptive innovations were explored.

### Research Design

An exploratory multiple case study research design was appropriate for this study. Case studies are used by qualitative researchers to examine organizational phenomena and for experiential knowledge creation (Mariotto, Pinto Zanni, & De Moraes, 2014; Yin, 2014). Case study design is used to examine organizational policies, procedures, functions, and systems to distinguish and illustrate uniqueness, similarities, and characteristics of real life experiences for particular scenarios or a given situation (Lewis, 2015). Yin (2014) noted that for interpreting and gaining a thorough understanding of complex phenomena in qualitative studies, a case study is appropriate for interviewing participants in their natural business setting. Because business CSFs and the process of integrating and sustaining disruptive technologies vary in different organizations, an exploratory multiple case study research design was suitable for this study. Yin posited

that case studies are used by investigators for exploring *how*, *what*, and *why* questions, contextual aspects of the phenomena, and the occurrence of the phenomena in the natural organizational setting. The objective of this multiple case study design was to explore strategies used by small business leaders in integrating disruptive innovations within the past ten years. By using a case study design, researchers triangulate multiple data sources from interviews, organizational policies, published documents, and observations, code, and interpret patterns and themes (Yin, 2014).

To reinforce reliability and credibility of a case study design, a multiple case study rather than a single case study should be conducted (Hancock & Algozzine, 2016; Yin, 2014). A single case study is objectionable because of the following reasons: (a) concerns of insufficient data generation (b) may be too generalized, (c) susceptible to confirmation bias, and (d) subjective opinions interpreted from the researcher's worldwide view instead of participants' perspective. Multiple case study design is used to establish credibility through replication, data saturation, and distinct contextual business environments used to compare and contrast outcomes of the phenomena from the experiences of qualified study participants (Yin, 2014). Questions developed in case studies are used to focus on identifying shared experiences concerning the explored phenomena (Tetnowski, 2015). A multiple case study design was used by Leavy (2014) to analyze the concepts and tools of three books in order to advance the establishing of two communication approaches to corporate strategies, and integrating technological innovations, entrepreneurship, and leadership.

An exploratory multiple case study approach was employed by Mariotto et al. (2014) to identify and define a shared method for classifying design driven innovations. A case study research was described by Mariotto et al. as a study that incorporates the viewpoints of lived experiences of humans. Hancock and Algozzine (2016) posited that case study research design is utilized to assess, identify key themes, transcribe, and interpret findings from the participants' subjective points of interest through semistructured interviews. Many scholars use multiple case studies to examine ones' experiences outside of the realms of human awareness (Minniti, Melo Jr., Oliveira, & Salles, 2017; Yin, 2014). McCarthy and Muthuri (2018) noted the limitations of data collection and analysis in case studies in terms of effective communication. Multiple case study research design is used to form structural explanations and conceptual themes (Anderson, Leahy, DelValle, Sherman, & Tansey, 2014; Ketokivi & Choi, 2014). An exploratory multiple case study design was used to collect and analyze data to identify collective experiences with CSFs and strategies that used by small business owners for integrating disruptive innovation.

The focus of this study was to analyze and describe the lived experiences of organizational leaders who have integrated technological innovations over the past ten years, at traditional institutions of higher learning. Two institutions of higher learning were selected for the site locations, and a multiple case study research design used because it was the most appropriate design for this study. Other qualitative research designs considered were ethnographic, phenomenological study, and grounded theory (Jerolmack & Khan, 2014; Lewis, 2015; Merriam & Tisdell, 2015). A multiple case study

is ideal when a researcher's intent is to analyze the differences between cases to identify similar findings across selected cases (Yin, 2014). In an ethnographic design approach, the social and societal scenes of human life supporting interactions from an individual's and the group's perspective are focused on. Ethnographic studies are used to identify and analyze shared feelings, experiences, practices, and actions from a cultural perspective that encompass documents and artifact collection methods (Lewis, 2015; Swafford, 2014). The process of conducting an ethnographic study is interactive in terms of researcher-participant relationship (Takhar-Lail & Chitakunye, 2015; Tetnowski, 2015). Lewis (2015) posited that an ethnographic study is extensive regarding time spent on sites conducting observations and interviews in the participant's natural environment. The structural process and context of an ethnographic study also enable researchers to gain a better perspective on interpreting and describing cultural behaviors (Jerolmack & Khan, 2014; Lewis, 2015; Tetnowski, 2015). An ethnographic design was not practical for this study because no cultural context was implied, regarding strategies for integrating disruptive innovations within a traditional business model. However, an ethnographic approach could be valuable in future proposed studies related to the exploration of transitional dilemmas of integrating disruptive innovations in traditional institutions of higher learning.

Other research designs considered for this study were phenomenological and ground theory. Because of the nature of this study and the timeframe for completing research, phenomenological and ground theory approaches were not applicable. The purpose of this study was to identify strategies, and a case study was advocated by

Walden University's DBA Committee Members as better suited for identifying strategies

than a phenomenological research design.

To ensure data saturation, a qualitative research design was used to extract

feelings, emotions, attitudes, motivation, perceptions, and self-directed behaviors related

to the phenomena of this study. Henderson (2016) indicated that qualitative researchers

may undertake *pretasking* to prepare participants for the study topic. Pretasking is used to

establish and conduct individual or group interviews. In qualitative studies, the key

determining factor of sample size is data saturation, especially when data saturation with

a small sample population can be obtained by a researcher (Morsea, Lowerya, & Steurya,

2014). In this study, data saturation was reached from a small sample size. When

establishing participant researcher relationship, pretasking can be conducted with

individuals or within a group interview setting (Henderson, 2016). Pretasking was used in

this study to isolate specific CSFs and strategies needed for integrating a disruptive

innovation. Pretasking is used to establish participants perceived, past, current, and future

experiences (Yanchar, 2015; Yin, 2014). The exploratory multiple case study was the

most appropriate design for exploring the lived experiences of study participants

regarding business CSFs and successful strategies for integration of disruptive

innovations at the site locations selected.

**Population and Sampling**

In this qualitative, multiple case study, a purposeful sampling method was used to

explore strategies for integrating disruptive innovations at traditional institutions of

higher learning. By selecting a purposive sampling method, one or more predefined

groups or subgroups of the target population that were readily accessible were identified and selected (Marshall & Rossman, 2016; Valerio et al., 2016). Participants were selected based on criteria relevant to their actual characteristics or levels of experience with the explored phenomena (Yanchar, 2015). It was suggested by Marshall and Rossman (2016) that sampling methods used in qualitative research should be best suited for achieving the goals and purpose of a proposed study.

The sample population for this study consisted of 10 organizational stakeholders. Guo, Porschitz, and Alves (2013) posited that a small sample size of 10-12 is sufficient for conducting an exploratory, multiple case study. The participants were selected from two traditional institutions of higher learning that have adopted a learning management system over the last ten years. The goal of this study was to select a sample population of ($N$=10) participants (5 per organization) and group them into four clusters: $C$1= organizational leaders (2 senior managers or key decision makers), $C$2= technology professionals (2 senior information technology managers), $C$3= training and development professionals (2 directors), and $C$4= organizational end-users (2 faculty employees). The age demographics for all participants selected for this study ranged from 25 - 65. Emmel (2015) stated that small sample populations enable researchers to gain a broader perspective on the dilemmas or phenomena in question through one-to-one interviews. The traditional institutions of higher learning selected for this study were in the combined geographic areas of New York City, and New Jersey.

To support selecting a small population sample and appropriate interview settings for qualitative multiple case study, Draper and Swift (2012) posited that a sample size

between five and twenty-five is appropriate for data collection. Guo et al. (2013)

conducted a qualitative case study using a small sample population to explore the career

experiences of Asian participants that were deported. Other researchers noted that setting

criteria for participants, site selection, and interview settings for qualitative studies are

key factors for establishing validity and reliability (Dombrowski, 2014). In this study, a

nonrandom sampling method was used to select participants, site locations, and interview

settings that support the aforementioned criteria for ensuring qualitative validity

including credibility, transferability, dependability, and reliability. Valerio et al. (2016)

and Yanchar (2015) indicated that sampling is the process of selecting elements from a

population to represent that population, and that a population is the total of all the

elements in which some inferences are made. Population elements are the participants or

objects on which researchers take measurements, and a sampling frame is a list of

elements in a population from which the sample is actually drawn (Denscombe, 2014).

When selecting small elements within a population, conclusions about the entire

population are drawn (van Rijnsoever, 2017; Yanchar, 2015). In this study, a

semistructured interview question protocol was used to draw conclusions from study

participants about the best strategies and business CSFs employed to integrate and sustain

disruptive innovations in their organizations.

Validity and reliability were key factors for selecting a small population sample of

10. A member checking strategy was used to establish data saturation (Marshall &

Rossman, 2016). This pretasking approach consisted of conducting semistructured

interviews with qualified participants, interpreting shared experiences of qualified

participants, and validating interpreted responses with qualified participants to maximize reliability and validity about the phenomena being studied (Morsea et al., 2014). Data saturation in qualitative studies is a key-determining factor of a sample size. Morsea et al. (2014) emphasized that when a minimum amount of new information is obtained through the data collected, reaching data saturation is more effective when using a small sample population. Data saturation was ensured through pretasking (member checking) a small sample size of participants for this study (Iivari, 2018).

In overall, two types of sampling methods implemented in qualitative and quantitative studies have been identified: probability sampling, and non-probability sampling (Brewis, 2014; Marshall & Rossman, 2016). Because probability sampling is used in quantitative studies, and non-probability is associated with qualitative studies, a non-probability (purposeful) sampling method was selected for the exploratory, multiple case study research.

## Ethical Research

In ethical research, investigators use the informed consent process to (a) protect and safeguard the rights of study participants, (b) ensure adherence to lawful procedures that pose no physical or psychological harm or threats, and (c) establish study validity (Flick, 2014; Liang & Chia, 2014). Ross (2014) concluded that high levels of ethical and professional behaviors should be demonstrated by stakeholders in a research study. Walden University Institution Review Board (IRB) established guidelines for doctoral studies. The IRB guidelines were adhered to by applying for and obtaining approval

before commencing data collection. The process of obtaining informed consent was as follows:

1. The organizational leader, the President, or IRB of each site location was contacted, and the purpose of the qualitative study presented and a request for their corporation to participate was sent to them via email.

2. Upon obtaining the agreement document(s) signed by the organizational leader, President, or IRB of each site location, acknowledging participation in the study (Appendix B), the authorizing authority was asked to provide a list of study participants that meet the criteria identified for this study.

3. Meetings and conference calls were established with all preapproved study participants and the purpose of the study explained, question and answer sessions conducted, levels of interest assessed, and working relationships with each participant built to begin pretasking initiatives.

4. I emphasized and reiterated to all study participants that they had a right to refuse or withdraw from the research without penalty, or loss of any benefits, and may do so before, during, or after the interview by contacting me, their organizational leader, or the IRB at Walden University.

5. I emphasized and reiterated to all study participants that participation in the study was strictly voluntary and they could decline to answer any or all questions which were discomforting to them.

6. I explained to all study participants, their privacy rights and reassured them of the safeguarding procedures for protecting their identity and confidentiality.

7. All study participants received a written informed consent statement form (Appendix D) and without cohesion, were asked to review, complete, and sign the form at their leisure to indicate their voluntary acceptance to participate in this study.

8. I discussed the guidelines illustrated in Walden University's IRB approval process with study participants with emphasis on how obtaining signed consent forms before commencing on data collection was required.

Meetings were scheduled at times that were conducive to the participants' and a conference call or face-to-face interviews held with purposively selected respondents in conference rooms at their respective sites. To document the interviewing process, the informed consent form was used to obtain permission to record the interview sessions using an electronic mobile device, laptop and digital recorder. Participants who declined to sign the consent form did not participate in this study. Handwritten notes of participants' responses to interview questions were also taken. Special benefits or incentives were not received by the study participants and organizational leaders except for an electronic copy of the interview transcript, and received a completed copy of this study following its completion. The informed consent form (Appendix D) contained information on participant's rights and how their personal information was kept private and secured. The study design was validated through faculty and peer-reviewed before it was issued to the research participants to ensure their privacy and rights were protected by an alignment of the participants' interests. By employing an informed consent process,

proactive measures were taken to prevent exposing study participants to physical harm, discomfort, pain, embarrassment, or loss of privacy.

To ensure the privacy and confidentiality of study locations, organizations, and participants, the identities and responses were not disclosed to anyone other than the researcher. For the data collection process and final report, the site locations, names, and identities of study participants were replaced with alphanumeric classification codes such as SL1A-D, SL2A-D, and SL3A-D. The first three characters in the coding schema corresponded to the organization and site location (SL1, 2, and 3). The fourth character in the coding schema corresponded to the actual qualifying position or current role of the study participant. The letter A to D represented: A for deans or department chairs, B for information technology specialists, C for training and professional development managers, and D for faculty. Pseudo names and codes are used to protect the confidentiality and privacy of study participants and case organizations (Koonrungsesomboon, Laothavorn, & Karbwang, 2015; Liang & Chia, 2014). By using the coded schema to generalize all background information of study participants, data were collected without jeopardizing ethical and privacy guidelines illustrated in the IRB's approval process. Corti, Van den Eynden, Bishop, and Woollard (2014) posited that secure storage of research data is of concern to scholars and researchers. All electronic data were kept on a removable and password protected digital storage device and non-electronic data in a secured fireproof file cabinet. After 5 years of completion of study, all study data will be permanently destroyed. Prior to initiating the data collection process, I

obtained permission and approval from Walden University's IRB, and was assigned

approval number 09-21-17-0156833, which was added to the final doctoral dissertation.

### Data Collection Instruments

This multiple case study was focused on how business CSFs are accomplished by

organization leaders using disruptive technological innovations that modify the

traditional business model to attract new markets and value network (Chen, Wang,

Huang, & Shen, 2016; Christensen, 2013; Dedehayir et al., 2014). Advancements in

technology affect the overall operations, competitive advantages, revenue, and

sustainability of traditional business models worldwide (Chen et al., 2016; Prajogo,

2016). The focus of this study was to identify strategies, used by business leaders to

integrate technological innovations. According to Yin (2014) the researcher is the

primary data collection instrument in qualitative studies. An interview protocol

(Appendix A) was developed for use in collecting primary data through semistructured

interviews with study participants at their respective site locations. Some sources of

secondary data include documentation, policies, procedures, peer-reviewed journals, and

scholarly sources. Publicly available information is used to support the concept of

reliability and validity for their studies (Garside, 2014; Leung, 2015; Morse, 2015a).

Semistructured interviews were conducted using open-ended questions as the

primary data collection instrument (Appendix A). The objective of conducting

semistructured interviews with study participants was to explore and identify shared

experiences related to strategies for implementing and sustaining a disruptive innovation

to meet business CSFs. The interview protocol served as a guide to explore how

integrating a disruptive innovation affects organizational functions, business processes, organizational structure, and cultural attributes. Time and costs associated with development training, resources, benchmarks, and obstacles were explored.

A variety of data collection instruments are used when conducting qualitative research, which include surveys, questionnaires, secondary literature sources, and personal interviews (Lewis, 2015; Tetnowski, 2015). An interview is an acceptable standard of practice, used to unveil the meanings or experience of participants in qualitative studies (Emmel, 2015; Yin, 2014).For effective data collection, scholars used open-ended questions to gather relevant information (Gustafsson Jertfelt, Blanchin, & Li, 2016). This study included open-ended questions as a guiding instrument for collecting interview data from business leaders and organizational stakeholders. Dombrowski (2014) noted that interviews should be designed by qualitative researchers to foster and draw upon shared experiences and minimize errors of interpretation and discovery.

Prior to conducting semistructured face-to-face interviews, study participants were pretasked at their sites by sharing samples of the open-ended interview questions (Appendix A). By pretasking study participants, I established good working relationships through meetings and conference calls to collect rich qualitative data. To understand the phenomena of organizational change regarding integration of a disruptive innovation, an interview guide containing 9 open-ended interview questions was used as a primary tool for data collection. A data collection instrument distributed to prequalified study participants in person, as well as sent each participant and email. I did not gather

discriminative and demographic characteristics of race, religion, and gender because they had no barring factor in the study.

Marshall and Rossman (2016) posited that interview participants should be engaged, interview recorded, and member checking conducted to enhance reliability and validity. Other data collection instruments include smart phone and digital voice recorder. I used the smart phone and digital voice recorder to audio record the 30 to 45 minutes' interviews. Next, the audio tape was transcribed to generate the interview transcript. Then, member checking of the interview transcript with study participants was conducted for accuracy and reflection of participants' intentions. Participants received the request for member checking within 48 hours of the interview and had one week to verify the accurate interpretations of their responses.

## Data Collection Technique

Data were collected through semistructured interviews with key decision makers and organizational stakeholders, including faculty, training directors, and key technical support personnel. To ensure accuracy, transferability, and dependability, interviews are recorded (Dombrowski, 2014; Yin, 2014). With the consent of study participants, an electronic recording device was used to record the interviews. The procedures for data collection from study participants using the semistructured interviews are:

1. A list of four to six participants was obtained from the approving authority of each site location and validated to ensure that listed organizational leaders and stakeholders met the selection criteria for the study (Participants' Section).

For the interviews, 10 – 12 participants were selected using a purposive nonrandom sampling technique.

2. Invitations were sent through e-mail to the prescreened and selected study participants and then a relationship established by building a rapport.

3. I met each study participant at their site location and time of convenience scheduled to conduct face-to-face interviews using open-ended questions (Appendix A).

4. Prior to starting each interview, all signatures on consent forms (Appendix D) were validated for each participant and the participants asked if they needed further clarification regarding the consent form or had any questions related to their participation in the study. Upon further consent of each participant, interviews were recorded using an electronic mobile device and later transcribed in Dragon, naturally speaking software.

5. During the interview process, to encourage an open dialog, I reassured each study participant of their confidentiality by excluding all names and site locations from this study. The interview questions were focused on understanding *how* and *what* strategies and CSFs are used by business leaders to integrate and sustain a specific disruptive technological innovation.

6. The duration of each interview was approximately 30 – 45 minutes. Marshall and Rossman (2014) suggested that researchers allocate a sufficient amount of time for participants to provide substantial responses.

7. Throughout the interview process and upon completion, notes are taken and all interpretations reiterated from each participant to receive and provide feedback as a form of member checking (Marshall & Rossman, 2016; Morsea et al., 2014). All study participants received a copy of interview interpretations for final confirmation of accurate representations of their responses. Secondary data were collected from approved organizational documentations in the public domain to support interpretations from interview responses and all data entered into NVIVO for qualitative analysis.

Advantages of the using interviews for data collection process include (a) noting of social cues regarding voice, tone, pitch, and body language, (b) spontaneous responses, and (c) cost-efficient method of obtaining feedback from respondents (Marshall & Rossman, 2016; Zhang, Kuchinke, Woud, Velten, & Margraf, 2017).The electronic recording of each interview provide researchers with accurate transcript of study participants' responses (Dombrowski, 2014). Disadvantages of the face-to-face interview process include (a) misinterpreting social cues, (b) researcher's ability to proactively listen and simultaneously record and interpret in-depth responses, (c) malfunctioning of recording device, and (d) time frame for transcribing 30-45 minutes of recorded data (Dombrowski, 2014).

After receiving IRB approval, the semistructured interview was conducted within a 30-60 day period to monitor and assess all benchmarks of success and failures. A sample size of 10 – 12 participants was selected from four clusters comprising of business leaders, technology professionals, training and development specialists, and

faculty employees. The data collection technique involved using nonrandom face-to-face, telephone, or Skype interviews with different clusters of participants. The NVIVO software was used for data organization to ensure effective and efficient means of electronic dissemination, collection, and storage of data.

NVIVO software is used to examine data collected from business environments (Elo et al., 2014; Marshall & Rossman, 2016). The data collection technique used also consisted of employing a mapping rule to code the raw data. Data organization is critical in qualitative studies (Dombrowski, 2014; Marshall & Rossman, 2016). For efficient organization, quick reference, and retrieval purposes, all collected data were stored in electronic form in a folder or database of computer-based spreadsheet, word, and audio recordings. For security reason, all data were collected and will be digitally stored on a password protected backup drive for 5 years.

**Data Analysis**

The purpose of this qualitative exploratory multiple case study was to address the overarching research question: what strategies are used by business leaders to integrate and sustain disruptive innovations? The four methods, used for triangulation of multiple sources to draw conclusions about a phenomenon are data triangulation, investigator triangulation, theory triangulation, and methodological triangulation (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). A methodological triangulation was the most appropriate approach to this qualitative research because this method is used to collect multiple data about the same phenomenon (Carter et al., 2014). Method triangulation is used to identify theories, compare and contrast themes, conceptual

frameworks, and interviews relevant to qualitative research design methods (Joslin &

Müller, 2016).

Yin (2014) suggested that both general and collected data in case study research

are analyzed at the interviews, organizational policies, procedures, systems and published

documents' levels. The data analysis process involves coding, grouping or categorizing,

clustering and thematizing descriptive, and exploratory methods (Yin, 2014).

Methodological triangulation was an ideal approach for identifying, comparing and

contrasting themes and patterns in primary and secondary data to order, guide, or revise

any preliminary data analysis plan (Wilson, 2014). From an interpretive perspective,

analysis of themes and patterns is conducive to addressing the validity and reliability of a

qualitative study (Graneheim, Lindgren, & Lundman, 2017; Manganelli et al., 2014). By

using methodological triangulation for analysis of data in this exploratory multiple case

study, a clear and in-depth probe was undertaken to gain a broader understanding of the

phenomena in this research.

The logical and sequential process of data analysis for this study consisted of four

steps. First, a coding system was used to gather information from all participants. The

coding characteristics included site location, job classification, participant's code,

recording methods, and cluster category. The alphanumeric coding scheme for

categorizing each location was SL1, SL2, and SL3. For each qualifying position or

participants' job classification, letters A-D were used. The coding scheme for two

recording methods consisted of RE representing recorded electronically and HW meaning

handwritten. For all participants, a numeric code ranged from 1-4, relative to each site

location. Alphanumeric codes comprising of C1-C4 were used to identify clusters.

Second, all written and digitally recorded data collected were analyzed through the

application of interview transcripts, documentation, policies, procedures, peer-reviewed

journals, and scholarly sources. The NVIVO software and Microsoft excel are useful

tools for coding and identification of patterns and themes (Emmel, 2015; Yin, 2014). The

NVIVO software was used for data analysis.

Member checking is used to validate the interpretation of data and search for

clustered patterns and emerging themes of invariant constituents (Harvey, 2015). To

support validity and reliability, content analysis method is used by qualitative researchers

to measure text-based responses to open ended interview questions (Graneheim et al.,

2017). Semantic content or the component of information is reviewed to measure and

substantiate clusters of emerging patterns and themes (Elo et al., 2014; Walters, 2016).

For this study, a coding system was used to identify emerging patterns and themes.

The conceptual framework for this study was the diffusion of innovations theory

and is the *process* or *procedure* of how and when change is *accepted* by a society as a

whole. The conceptual framework, research questions, and data collection instruments

were aligned to support data analysis and identification of patterns and themes regarding

strategies for integrating disruptive technological innovation within the traditional

business environment. Analysis of the business CSFs was essential in exploring how the

strategies employed are experienced by participants at two institutions of higher learning

with traditional business environments. Open-ended interview questions were used to

gain proactive and reactive implications from the perspectives of organizational leaders

and internal stakeholders. The data analysis technique involved identifying favorable and unfavorable responses of all participants, and correlating key themes with current and past literature relevant to the conceptual framework of this study. Next, data relative to the roles of participants at targeted organizations: management, training and development, faculty end-users, and IT support were coded and categorized. Another factor that was assessed was innovation involving LMSs technology. The four elements of diffusion process were significantly relevant to the study. The four elements are innovation, communication channel, time, and social system; and could prove to be an invaluable asset for how strategies for integrating disruptive innovations in a traditional business environment are experienced by the participants.

## Reliability and Validity

Enhancing the reliability and validity by qualitative and quantitative researchers is attempted in their studies. Reliability in a qualitative study is how dependability is addressed based on accuracy, precision, and consistency of the procedures used to conduct the study (Marshall & Rossman, 2016). The validity of a qualitative study was described by Johnson and Rasulova (2017) as the extent to which the assessment is testing what one is measuring to support credibility, transformability, and conformability. The concepts of reliability and validity support trustworthiness and rigor of qualitative research (Morse, 2015a; Yin, 2014).

### Reliability

**Dependability.** Reliability is how dependability is addressed (Marshall & Rossman, 2016). The dependability of a qualitative study or what is actually measured

depends on the nature of freedom, precision, accuracy, consistency of data collected, and the reliability of the measurement instrument researchers disseminate. Morse (2015) posited how rigor and validation of data collected in qualitative studies enable researchers to enhance dependability through member checking of data interpretation, reviewing transcripts, interview protocols, or triangulation of data sources. Dependability is addressed using member checking to support three perspectives of the instrumentation and data interpretation process: stability, equivalence, and internal consistency (Munn, Porritt, Lockwood, Aromataris, & Pearson, 2014). Researchers are accountable for identifying contextual changes in settings and reporting how it affects the research process (Marshall & Rossman, 2016). Member checking was used to address dependability and enhance the reliability of the study findings.

Issues that affect stability are (a) time delay between measurements, (b) insufficient time between measurements, (c) respondents' discernment with the study if disguised, and (d) topic sensitivity (Noble & Smith, 2015). Bryman and Bell (2015) suggested that extending intervals between interviews and follow-up interviews allow researchers to minimize and resolve issues that affect stability. Other sources of errors are:

1. Respondent errors: These are differences of opinions from respondents or participants in the study with strong characteristics.

2. Situational factors: These conditions place a burden or strain on the interview or the measurement process.

3. The measurer: Level of experience may hinder or distort responses through

improper use of words, paraphrasing, or arrangement of questions, and

4. The actual interviewing instrument tool used may be too confusing and ambiguous, or elusive.

**Validity**

The two major forms of validity in the qualitative study reflect an internal and external perspective. In qualitative studies, reaching data saturation helps researchers to validate the confirmability, transferability, and creditability of their findings (Noble & Smith, 2015; Yin, 2014).

**Confirmability.** Confirmability is used to enhance internal validity. Confirmability is a means of analyzing whether or not what it is intended to be measured, is measured by a study or an instrument, and support and confirmation of the research findings in other research is ensured (Tiira & Lohi, 2014; Yin, 2014). The interview protocol was used as a guide to establish validity by reviewing transcribed interpretations, accurate definitions, and detailed explanations of experiential accounts of the phenomena with study participants. Furthermore, participants were probed during interviews and follow-up member checking interviews conducted to support confirmability.

**Creditability**. Creditability is a means of ensuring internal validity. Member checking of data interpretation, reviewing of interview transcripts, triangulation, interview protocols, and participant observations are used as methods of enhancing the creditability of a qualitative study (Yin, 2014). According to Elo et al. (2014), creditability could be ensured by keeping a reflective journal on the data analysis process

involving the preparation, organization, and reporting of data. In this study, member

checking of data interpretation, interview protocol, and triangulation were used as

methods of demonstrating creditability of the findings from the perspective of the study

participants.

**Transferability**. Transferability refers to how the use of data collection, data

analysis techniques, or the results of a study is applicable to other studies that are similar

in context (Aravamudhan & Krishnaveni, 2015). Researchers are concerned about how

the knowledge in one context of a study is relevant towards transferring or forming new

concepts in another context. By enhancing transferability, generalized data relevant to

people, the actual environment or setting, and periods involved in the study could be

identified or associated (Aravamudhan & Krishnaveni, 2015; Duggleby & Williams,

2016). Parker and Northcott (2016) emphasized that transferability is a reflection of how

the outcome of a study is generalized and transferable across various contextual

environments or settings. In this study, data were collected and organized from written

and recorded observations and any assumptions were accurately accounted for to

establish transferability.

Some widely accepted forms of ensuring conformability, creditability, and

transformability relative to content validity, criterion related validity, and construct

validity were identified by Aravamudhan and Krishnaveni (2015). Content validity is the

measurement of whether the scales within the instrument are used to meet the needs of

the investigative questions. Criterion related validity involves the correlation or success

rate for prediction, assumptions, or forecasting methods. In construct validity, convergent

and discriminative aspects of the measurement tools are focused on (Aravamudhan &

Krishnaveni, 2015; Hoefman, Al-Janabi, McCaffrey, Currow, & Ratcliffe, 2015; Polit,

2015).

      **Data saturation.** Data saturation occurs when researchers are unable to obtain

any new relevant data (Morse, 2015b). The validity of a qualitative study could be

ensured by reaching data saturation (Marshall & Rossman, 2016). Fusch and Ness (2015)

implied that no new data, no new themes, or no new coding are common characteristics

used as a guide to reach data saturation. In this qualitative multiple case study, NVIVO

was used to identify key themes and frequencies and member checking of data

interpretation with participants was used to attain data saturation. Another method used to

ensure data saturation was reached is methodological triangulation involving multiple

data collection methods, including reviewing interview transcripts, interview protocols,

and triangulation of data sources.

### Transition and Summary

      An overview of the purpose statement, the role of the researcher, and the criteria

for selecting study participants is contained in section 2 of this study. A rationale for

selecting a qualitative method, a multiple case study, population and sampling technique

is also contained in section 2. Other contents of the section included how ethical research

practices were observed, an explanation of how data collection and analysis methods

were provided, and how the reliability and validity of the study was assured. In Section 3,

the study finding on strategies for integrating disruptive innovation in small to medium

organizations, applications to professional practice, implications for social change, and

recommendation for actions and further study are presented. A brief reflection of the

research experience within the doctoral study and concluding statement is also contained

in section 3.

Section 3: Application to Professional Practice and Implications for Change

Section 3 includes an introduction to the study, a presentation of the findings in relation to the conceptual framework, and the literature review. This section also includes data analysis of the results with themes identified, an application to professional practice, implications for social change, recommendations for action and further research, my reflections, and the conclusions for this study. In general, the results of the study are presented and discussed, and the entire study summarized and concluded.

**Introduction**

The aim of this study was to explore the strategies used by business leaders for the integration and sustenance of disruptive technologies. A qualitative multiple case study design was used in which 10 semistructured interviews were conducted with organizational leaders, technology professionals, training and development professionals, and end users. These interviews were analyzed with the help of NVIVO software. From the analysis, three themes were identified: Strategies for integrating and sustaining disruptive innovations, the role of structural, procedural, and OCB attributes in the integration and sustenance of disruptive innovations, and challenges encountered in the integration and sustenance of disruptive innovation. In this section, the results are presented and discussed. The findings are compared with other past studies and linked back to the literature, especially the diffusion of innovation theory and the disruptive innovation theory.

**Presentation of the Findings**

The overarching research question was: What strategies are used by business leaders to integrate and sustain disruptive innovations? Three themes were identified and for each of them, subthemes were also identified and discussed. The discussion of the findings involved comparing the findings with those of previous research, and relating them with the conceptual frameworks.

**Theme 1: Strategies for Integrating and Sustaining Disruptive Technologies**

A number of strategies for integrating and sustaining disruptive innovations are discussed in past studies. In this study, the subthemes were constructed from the question: What strategies do you use to integrate disruptive innovation? The strategies identified included training, changeover mechanisms, and resource utilization.

According to the diffusion of innovation theory, the process of innovation diffusion begins with the acquisition of information regarding the innovation (Kapoor et al., 2014). It is during this stage when the functions of the technology are explored. Although some of the trainees may have prior knowledge of the existence of the technology before the training period, the knowledge gained through training is the how-to knowledge and principles knowledge. Therefore, training is the first step through which the right knowledge regarding an innovation may be presented by an organization for the purpose of aiding in the formation of attitudes towards that innovation. Aside from the knowledge gained through training, the process also enables the development of a knowledge management system through which creativity in the use of the disruptive innovation is fostered.

I sought to understand the role of training in the integration of disruptive innovations in two ways. First, I sought to understand the role of the training period and the financial budget allocated by the respondents for training. Training is a major strategy employed in the integration of disruptive technologies. The persons who are trained are the managers, faculty, staff, and students.

Navimipour and Zareie (2015) said that effective training may be realized if attention is paid to the organization, design, and the technical dimensions of the training which are of importance to learners. In this study, such technical dimensions were found to comprise the design of the training period and the determination training budgets. This applied to the types of training identified by the participants: Mentoring and coaching.

A number of respondents indicated that in their institutions, training was carried out in blocks of either 1-2 hours or 2-3 hours in a day. In such organizations, the training would then be extended to between 1 and 4 weeks, with the longest lasting for 5-8 weeks. This was done in sessions during the semester and conducted three times a year, while in some organizations, the training was carried out during intersessions. This kind of organized time allocation was provided only in the situation where the trainees would be issued with certificates.

Some respondents indicated that in their organization, training did not follow an organized plan with limited time frames. For example, participant 2 indicated that as much time as required would be taken by their organization to train both staff and students. This led to the establishment of factors that determine the allocation of the training period.

The complexity of the disruptive technology was cited by the participants as a factor that determined the time required for training. Further, an explanation was provided by participant 7, that innovations which are complex in nature required a longer time for learning and mastering, and the training would last a number of weeks or many months. However, even for simple innovations, the general orientation of the students and staff with technology was also considered to be a major factor that determined the length of time that was required to learn an innovation.

Many participants agreed. For instance, individuals who have experienced the disruptive technology were noted by participant 4 and 7 to take less time to become familiar with innovations. This was supported by participant 7 who found experience with a similar disruptive technology as a significant factor in determining the training period. Participant 8 explained that the lack of basic computer skills or having trainees who are not tech savvy greatly increased the training period.

Other factors that determined the training period included the availability of the end users in the training and their role (for instance, facilitators or customers) in the use of the technology. Also, the training period was determined by the speed with which the participants adapted to the new changes. According to Kapoor et al. (2015), the length of the training period was determined by the level of acquisition of the how-to knowledge and as such, it ought to be sufficiently long. However, length of training may be limited by other factors, such as the availability of finances to facilitate training.

Carrying out successful training was considered by the participants to be dependent on the capability of the organization to effectively budget for the training. The

participants acknowledged that training constituted the largest budget item, although this depended on many factors, including the organization's size and its industry of operation. Also, the use of external facilitators as well as IT support and the provision of stipends for the important stakeholders ought to be considered. It was further established that the most senior management was responsible for budgeting.

The establishment and implementation of an effective changeover mechanism from the old technology to the new technology were found to be highly significant as an integration strategy. More particularly, completely switching to the new innovation and extending the business to permit the concurrent use of new and the old technology and accelerate innovation were listed by Yeh and Walter (2017) as ways of successfully responding to disruption. It was further explained by Yeh and Walter that a successful response to technological disruption is dependent not only on the changeover mechanism chosen, but also on attributes of the organization and the nature of the disruptive technology.

The stage of actual implementation of the technology corresponded to the decision stage in the innovation diffusion process. A means of technology adoption was sought by people at the individual level and in small ways before their commitment. This enabled the verification of whether the technology is advantageous and if found to be, then it led to a high level of acceptance. Thus, there is a need to permit a longer period of decision making in the changeover processes, in which users who may potentially reject a technology can get persuaded to accept it through support (Ifinedo, 2017).

The diverse ways through which the participants' organizations transitioned from the old to the new system were indicated. These included piloting, piecemeal or overlap and the complete shutdown of the old system. These changeover mechanisms were identified in the literature as among the strategies of responding to disruptive technologies (Ifinedo, 2017).

In participant's 6's pilot program, a single department was begun with and the success replicated in other departments across the college. The pilot program acted as a way through which the system could be tested first before it was spread. This approach was also employed by participant 10, where their organization carried out the testing and experimentation with the system and then after the best results were determined, it was implemented in the entire organization.

The piecemeal integration was also explained by participant 6. It was noted that this involved a slow rollout of the disruptive technology as the old one was weaned out. Both the old and the new technology were accessed by the users, but the old technology was slowly phased out as more functions were transferred to the new technology. According to Gemici and Alpkan (2015), the management of both the traditional and the new technology business models is best practiced when they have different costs and revenues. It was however not explained in the findings whether this was determined prior to the adoption of the changeover strategy. Lastly, the complete shutdown involved a complete doing away with the old system and immediately bringing in of the new system.

According to the literature, testing and experimentation go beyond just the identification of the technological performance of the system to the observation of the

response of the human actors within the organization (Hsu, 2016). This enables the

identification of early resistance and its underlying factors. These can be addressed

before the innovation is spread to all the other departments (Hsu, 2016). This is supported

by the diffusion of innovation theory which categories people based on their propensity

to adopt new technologies. For instance, a complete changeover to the new system and

shut down of the old system can be done when there are more innovators and early

adopters. However, when there are more laggards and the late majority, rolling out the

system in piecemeal can be considered by the organization as the specific areas of

concern are addressed.

Aside from the nature of the technology and the possibilities of experimentation,

there are also the business factors that may determine the changeover mechanism

deployed. The strategy of completely switching is explained by Yeh and Walter (2017) as

normally achieved when the income from the new market is expected to grow and

eventually replace that which is lost from the use of the existing technologies. It is also

posited by Yeh and Walter that the extension of the business to include both the old and

the new technology on the other hand is used in the situation where the organization's

aims include both the preservation of the profits within the existing markets and the

generation of new profit streams through its entry into the new market.

The third strategy identified by the participants is the utilization of critical

resources. In the theory of disruptive innovation, the utilization of resources is identified

as one of the major determinants of successful integration and sustenance. More

particularly, the factors which determine the success or failure of an incumbent firm are

highlighted by Yeh and Walter (2017) as it pertains to the response of organizations to disruptive innovation, including the availability of resources, the processes used by employees for the transformation of resources into services or products and the organization and employee values. Therefore, the utilization of resources is at the heart of the integration and sustenance of disruptive technologies.

Resources are further classified in disruptive innovation framework as intangible and tangible assets, and relationships and knowledge controlled and owned by organizations (Yeh & Walter, 2017). In this research, the participants were asked to indicate how critical resources are utilized in their organizations. From their responses, critical resources were identified as technological equipment, software and systems such as software applications, computers, network, enterprise systems, Google resources such as Gmail, Google docs, Google drive and Google sheets, computer labs, the faculty learning center, system updates and the organization's website. The human resources were also identified by the participants as critical including the IT department, strategic planning committees and trainers. Lastly, external resources such as guidelines and protocols and quality matters, and other accrediting institutions were also classified as critical resources.

The utilization of these resources was found to be of significance in ensuring that the disruptive innovations remain sustainable. For this reason, the constant availability of IT support and availability was ensured, as a way of enabling collaboration, teaching, training as well as interactive learning. Further, the continued management and maintenance of these resources as indicated by the participants were of importance

before, during and following the full integration. The communication between systems was also ensured to avoid multiple databases which run within a similar environment.

Continuous system updates were carried out through reviewing, reinforcing and updating the members of faculty, staff and students on the changes in the learning management system. According to the disruptive innovation theory, one of the core pillars of sustenance is year-on-year improvements of innovations through the introduction of new and enhanced products (Behara & Davis, 2015). This was ideally supported in the practice of continuous system updates as the various parts of the systems were enhanced and new functionalities introduced.

Finally, the search for newer resources was mentioned by the participants and where necessary, it was determined whether the purchase of new systems was more beneficial than maintaining older technologies as a way of saving on resources. This is also consistent with the disruptive innovation theory as markets belonging to large organizations that perpetually seek sustenance are usually taken over by disruptive technologies (Greco, 2016; Lim & Anderson, 2016). As a technology ages in the market, it becomes less disruptive and eventually, another disruptive innovation is introduced (McHenry, 2016). Therefore, continuously scouting for new technologies with the capability of reaching out to newer markets and enhancing profitability should be the responsibility of businesses that seek competitiveness.

The products of such disruptive technologies are many times cheaper, better performing, and simpler and have greater convenience (Lim & Anderson, 2016). This means that the new technologies must be assessed by the organizations for such qualities

before a final decision is made on changing over to the new technology, or the continued

use and maintenance of the current technology. The decision to seek new technologies

and their trial to determine if they meet the set criteria for changeover therefore leads to

the introduction of the concepts of monitoring and evaluation, which are part of the

procedural and OCB factors that facilitate the integration and sustenance of disruptive

innovations.

**Theme 2: The Role of Structure, Procedural and OCB Factors in the Integration**

**and Sustenance of Disruptive Innovations**

Procedural and OCB factors were identified in this study as impacting on the

success of the integration and sustenance efforts of organizations. The findings are in line

with the study of Cheng et al. (2014) in which procedural factors such as the development

of tier level processes to reach certain benchmarks, the assignment of committees and the

establishment of particular delivery and communication methods were identified. These

resonate with the procedures adopted by the organizations in this study, including the

identification of CSFs, the ascertaining of benchmarks and the determination of

effectiveness.

CSFs are identified in the literature as a reactive approach for the integration and

sustenance of disruptive innovation (Tarhini et al., 2015). Before a system-wide adoption

of disruptive technologies, an evaluation of their performance to determine if it is higher

than the existing system needs to be done, together with an evaluation of the market

needs to determine if they have increased, such that they cannot be fully satisfied with the

existing system (Lim & Anderson, 2016). In many cases, the systems are usually

available to institutions on a trial basis from which the determination of whether a choice

will be made integrate them or not is carried out by organizations. This choice has to be

based on clearly defined methods and parameters.

In this study, I asked the participants to explain how the CSFs are identified by

their respective organizations. The first step in monitoring and evaluation involved the

identification of CSFs. This is in alignment with the diffusion of innovation theory in

which the decision to adopt an innovation, is preceded by the evaluation of an innovation

by individuals based on its compatibility, trialability, relative advantage, observability

and complexity (de Almeida et al., 2017). These factors may differ depending on the

nature of technology and the organization. In this study, this was done especially in

organizations where the disruptive technologies were rolled-out in piecemeal or piloted

and as such, success meant that the system could be implemented in other departments or

in its entirety.

The CSFs were considered by the participants in terms of the methods used to

identify them, and the parameters for measuring the success of the disruptive technology.

Under methods, the use of surveys was reported by the participants, including instructor

satisfaction surveys and course content surveys in establishing CSFs. Also, experiments

were used, including mini or quasi experiments and class or program evaluations.

The qualitative techniques which include observation or interviews (questioning)

were also used by the participants, where questioning was conducted by participant 10 as

it pertains to whether the system worked for them. Questioning in participant 9's

organization was also carried out through faculty round tables where the questions

enabled the identification of concerns, best practices, strategies, new ideas and what worked and what failed to work. Also, the qualitative methods were used in the review of the course retention system, exploration of the root causes of failure and analyses of feedbacks from staff, students and faculty.

The parameters identified following the evaluations included the mapping of success and the satisfaction of the needs of the stakeholders. Satisfaction in this case involved their capability to perform their jobs or academic functions in an effective and efficient manner, taking into account cost effectiveness. It also included the determination of whether tasks and assignments were successfully completed and whether the expected outcomes were achieved and the measurement of the number of successful people in the new system.

According to Karimi and Walter (2016), tools (disruptive technology) are evaluated through the comparison of the assessment outcome against its actual. As such, the success of the technology is not revealed in the results, but rather the success of the specific application of the technology. This means that the ascertaining of benchmarks is a sure way of establishing whether the disruptive technology is used appropriately, and the generation of favorable results is enabled through the present use. This can help in modifying the use of an innovation prior to its spread to different departments.

In response to the question on how the management ascertains the benchmarks of success, the participants indicated that following the full rollout of the systems, benchmarks were ascertained as a midterm evaluation strategy. In certain institutions, the ascertaining of benchmarks was done every three to four months and as such enabling the

institution of correction mechanisms where a need was established. As such, benchmarks were ascertained as a continuous system evaluation. Just as in the case of the identification of CSFs, both qualitative and quantitative methods were employed.

Qualitative methods included the observation of faculty members and of progress during the gradual system implementation and obtaining feedbacks from faculty members. This enabled the identification of bugs within the system and finding their solutions before further rollout. It further led to a less disruptive system as the users continued to gain experience with it. Also, feedbacks included problems and complaints from persons using the system.

Quantitative methods, on the other hand included testing and experimentation for the determination of the best outcome. It was indicated by the participants that the collection of data was done through the use of course review questionnaires, and numbers in the old and the new system compared. In some organizations, key performance indicators such as attendance rate, usage rate, number of complaints, actual exam scores, academic success ratios, attendance rates, grades, withdrawal and retention rates and graduation rates were measured.

The third procedural factor found to be practiced in the participants' organizations was the determination of effectiveness. The acceptance of a technology was explained by Laurell and Sandström (2016) as depending on the confirmation that it possesses an acceptable performance level along certain dimensions. Two classes of the threshold performances for acceptable innovations such as the minimum net utility in which the cost and tolerable minimum performance are also considered were further stated by

Laurell and Sandström. This performance can only be established through a final determination of the effectiveness of the technology.

I directly asked the participants to explain the effectiveness of the strategies used in their organizations for the integration of disruptive technologies. A final evaluation was performed by their organizations to measure whether the disruptive technology is effective or not, following training, the successful integration and progressive system monitoring and evaluation. The technology was considered to be effective if it satisfied the criteria of accessibility, usefulness, comfortability with the system, efficiency of use, if it was not problematic and if the faculty had gained proficiency and expertise with it. Based on these parameters of effectiveness, some systems were less effective, others were considered to be very effective while for other organizations, effectiveness was varied. Contrary to the argument by Laurell and Sandström (2016), cost was not considered in setting the parameters of evaluating effectiveness. The parameters therefore were anchored on the expected threshold performance.

The technologies that were effective included eGradebooks and cloud computing. As it pertains to those were less effective, the problem was the lack of readiness to move to the new system even after several warnings were issued, training conducted, and the users prepared for the changeover. For the systems considered to have varying levels of effectiveness, the strategies were noted by participant 6 as sometimes effective, and other times, their expectations were not matched. Ensuring effectiveness was believed to be achieved through a slow rollout of the system as opposed to either piloting or a complete shutdown of the old system.

OCB factors are defined as those which lead to the development of favorable behaviors such as commitment to training (Alrasheedi et al., 2016) and the motivation towards the use of LMSs (Weng et al., 2015) while at the same time, preventing the development of unfavorable behaviors such as a negative attitude towards the technology which leads resistance to change. In this study, the only OCB factor identified was the provision of support. Furthermore, no positive OCB was reported, but there are a number of instances of resistance to change that were identified. It was classified as a challenge and thus discussed in the third theme.

Learning about disruptive technologies by individual stakes place mostly during the period of implementation and attitudes towards the disruptive technology are formed at this stage (Christensen & Knezek, 2017). Positive attitudes may be useful for reinforcing the learning while the learning process may be impeded by negative attitudes. The process of forming affirmative attitudes towards an innovation can be aided through the provision of support (González-Sanmamed, Sangrà, & Muñoz-Carril, 2017). Support is also of importance during the confirmation period, where reinforcement to continue or discontinue the system use is sought by individuals (Cochrane, 2014). These reinforcements may not be directly related to the technology, but the manner in which the technology is handled. This includes the availability of the resources that support the technology, and the perception of their long term sustainability.

Although specific OCBs associated with the provision of support are not explicitly identified in this research, it is believed that organizational support is a CSF in the integration and sustenance of disruptive innovations. This is in line with the findings

of Si, Radford, Fabian, and Fan (2016) in which the technical and pedagogical support was identified as crucial for addressing the barriers linked with technology adoption among medical educators and students. The provision of support was also found in the study of study of Lochner, Conrad, and Graham (2015) to be a crucial solution to the integration challenges with the adoption of LMS in secondary schools. Furthermore, support from the top management was considered by Blount, Abedin, Vatanasakdakul, and Erfani (2016) as a critical success factor in the integration of ERP into the curriculum. Moreover, in the study of Ingebrigtsen et al. (2014), operations was established to be the level at which leadership has a greater importance in the phases of implementation and use of technology. It was also indicated by Ingebrigtsen et al. that an instrumental role is played by leadership in ensuring that the organization is ready for change and that iterative learning, IT utilization and skills are maintained. Other forms of support identified in different studies include legal (Turban et al., 2015) and regulatory (Madden et al., 2017).

In this research, support, however, appeared to be mainly anchored on the technical aspects of the system. For instance, although the users had been trained on how to access and use the system, and the system had been rolled out, support was useful. This is because it enabled problems to be addressed as familiarity was gained with the new technology by the users. An example of this is in participant 3's organization where collaboration FRC was collaborated with for the creation and development of online assistance programs.

For participant 9, support during the integration was provided through the alignment of IT with the affected departments to help in solving problems arising during system use. These results are in line with the study of Hilton (2016) in which technological challenges such as lack of email addresses for students; longer periods in wait for unblocking particular websites and complex processes for download approvals were found to be associated with support. Although technical support is directly linked with OCB in the study of Hilton, the significance of the provision of technical support during the integration process is clearly implied.

The navigation of the system by the users and the discovery of its ease of use are enabled by solving problems during implementation of innovations (Yamagata-Lynch et al., 2015). Although support is crucial during the integration process, the attitude formed regarding a technology as posited in the diffusion of innovation theory is not always an indicator of whether the technology will be accepted or not (Kapoor et al., 2014). Moreover, a positive attitude may not be an indicator of technology utilization (Cigdem & Topcu, 2015).

**Theme 3: The Obstacles Faced during the Integration and Sustenance of Disruptive Technologies**

Disruptive technologies are mainly created by small businesses which have fewer resources with the aim of destroying the competence of large firms through the introduction of environmental turbulence (Greco, 2016). Although entrants have the capability of generating such technologies, they face numerous barriers in developing and diffusing these technologies between markets. In support of this, the adoption and use of

disruptive technologies in institutions of higher learning are regarded by Flavin (2016) as having failed to experience universal success. Failures are therefore acknowledged by the author. This is in support of the variability of effectiveness as established in this research.

I asked the participants to identify the obstacles faced by organizational stakeholders in the integration and sustaining of disruptive innovation. Numerous obstacles to integration and sustenance of disruptive technologies were identified and classified broadly as those attributed to human factors, technological issues, the disruptive technology itself and the external factors. These challenges are linked to business and procedural processes involved in the integration and sustenance of disruptive innovation as well as the OCB factors.

Human issues included the resistance to change which was the most dominant, training issues, the lack of discipline and support systems and processes. All these issues are associated with OCB either as factors (support) or the actual behaviors (discipline, resistance to change) or business processes (training).The support of all the stakeholders is required in the successful implementation of new systems. The critical nature of support as indicated in the diffusion of innovation theory is that it enables the determination of discontinuation of system use by the users (Schiffman & Wisenblit, 2015). However, resistance to change was noted by the participant 10 as having arisen in all organizations where stakeholders were required to adopt new learning processes that would support new technologies. The reason is that the process of implementation goes along with a learning curve. Indeed, an explanation is provided by Glover, Hepplestone, Parkin, Rodger, and Irwin (2016) that in the situation where the use of technology is

transformative, in many cases, the transformation is led by the innovators who are minority and are enthused by technology, have accepted the value brought about by the technology and have a strong desire for an enhanced student learning. This leads to the confirmation of the propositions in the diffusion of innovation theory.

The fear of organizational change was also cited by participants as a factor that contributes to resistance, as it pertains to the unwillingness to let go of paper by people. This fear was established to be caused by the lack of basic computer skills, or the lack of computer or technology orientation among most employees. This fear is described in the study of Krause (2017) as the lack of self-efficacy. It is also noted in the study that the facilitation of classroom integration was carried out by instructors who had a belief in their abilities to use technology. In another study, the utilization of Web 2.0 tools in education settings was also found to be influenced the faculty's self-efficacy (Sadaf, Newby, & Ertmer, 2016). The need for building organizational cultures that are anchored on support (managerial and peer) is emphasized as the solution to resistance to change and associated behaviors.

As it pertains to business processes used in the integration and sustenance of disruptive innovations, the challenge of longer training periods was noted by participant 9 as arising among persons without basic computer skills or who are not tech savvy. This leads to increased utilization of resources and time, thus driving costs upward. Additionally, situations where there are no strategic plans to support the integration and sustenance of the disruptive technology, lead to insufficient communication and ineffective training. This calls for the determination of a threshold for participation in

training or the need to conduct training needs analysis for the proper characterization of the trainees and the subsequent design of training schedules for maximum impact.

Furthermore, a need is presented as it pertains to the enhancement of business processes such as interdepartmental communication prior to the integration of disruptive technologies. These two factors are crucial in the sense that the introduction of disruptive technologies as presented in the literature involves changes in business models from traditional to new models. As such, integration should be contextual, proper preparations must be made by organizations as a change in the organizational culture may be experienced during the integration and sustenance processes.

The technology issues identified as obstacles included the lack of personal computers, computer illiteracy, lack of internet and the issues associated with the disruptive technology itself. It was noted by participant 3 that college facilities are used by students who lack access to computers at home. The alternative is going to their local library or using the systems in their places of employment. This was considered to be of great significance as the convenience that comes with the disruptive technology was not enjoyed by these students, but instead, extra effort was required for these students, resulting in resistance. The other challenge faced by students is their lack of finances to maintain access to the internet at home. The lack of access to technology is indicated in the literature as among the barriers to technology integration (Hsu, 2016).

In the study of Hew and Tan (2016), the predictors of IT integration were found to include the pedagogical practices and beliefs of teachers and IT resource availability. Given that internet and computers are part of IT resources, and that their unavailability

and especially at home, impedes the integration process. Thus, the findings are in line with the findings of Hew and Tan (2016). Technological resources are classified under the critical resources which must be ensured before technology integration. As in the case of training, accessibility of the required technology ought to be considered critical in decisions pertaining to the integration of disruptive innovations.

Many other factors that impede the integration and sustenance of disruptive technologies were noted by the participants. These included the lack of knowledge about the technology by stakeholders, computer illiteracy among the members of the faculty the integrate LMS platforms into their everyday class activities a challenge and the changes in the nature of work which leads to the need for strong retraining and education programs. These programs are costly and time consuming and their implementation within a resource constrained environment may be challenging.

As it pertains to the prior knowledge of the technology, it was explained by Nogami and Veloso (2017) that stakeholders' lack knowledge and information about the technology leads to a lack of confidence in the innovation which impedes its adoption. The knowledge of the technology under integration is revealed in the findings of Zhang and Zhang (2017) as among the factors leading to increased intention to adopt a disruptive technology by early adopters. This implies the need for stakeholder awareness campaigns before the integration as a way of building support for the innovation.

The knowledge of the technology ought to be obtained from the media. However, in the situation where the innovation is not known by the subjects prior to the training, interventions proposed by Lochner et al. (2015) include the provision of additional

information and positive experiences with LMS. Professional development which targets

addressing individual concerns related to the integration of LMS is also proposed as a

solution to integration challenges.

The terminology and the approach to integration used by the IT team may lead to

miscommunication and accelerated integration processes which may present a conflict in

the faculty and student learning environments. For example, in terms of the

implementation of the technology, a complete shutdown of the old system may be

problematic as the users may be slow to adapt to the abrupt changes. Also, this kind of

changeover mechanism also does not allow for system testing for the identification of

areas that are problematic thus leading to massive failure and the lack of adoption or use.

External issues are also listed as part of the obstacles to technology integration.

According to Coleman, Gibson, Cotten, Howell-Moroney, and Coleman-Stringer (2016),

a high degree of frustrations may be caused by external barriers and as such, leading to

resistance which leads to a slowdown in the integration of technology. Obstacles that are

beyond the organization's control are revealed in the findings. For instance, for LMS

such as Moodle and Blackboard, the service backend is maintained and managed from an

external server. This makes the back end not accessible to the IT department, and as such,

making it difficult for the system to be adapted to the specific needs of an organization,

or for local problems to be solved.

## Applications to Professional Practice

The study was specifically aimed at exploring strategies used by business leaders

to integrate and sustain disruptive innovations. Strategies are highlighted in this study

that may be useful in enabling small educational organizations to improve on the CFSs

that enhance the choice of students to study within an online environment. According to

Hsu (2016), larger organizations often seek to enhance and improve their services to

satisfy more, the needs of their customer base. This makes their services overly expensive

and unaffordable to the larger customer base. Therefore, successfully implementing and

sustaining disruptive innovations repositions small business managers to take hold of the

neglected market, and thus achieve increased profitability and sustainability (Karimi &

Walter, 2016).

Nagy et al. (2016) also posit that numerous small business fail in their attempt to

integrate and sustain disruptive innovations. This comes from their inability to establish

CSFs (Cochrane, 2014). Although they have the ability and the disruptive technology to

succeed, they fail to attain competitiveness, profitability and sustainability (Yamagata-

Lynch et al., 2015). A solution is presented in the results of this study through the

strategies that are critical to the success of small businesses in the integration and

sustenance of disruptive technology. These encompass the issues pertaining to training,

change over mechanisms and the provision of support. Furthermore, business leaders are

informed of sustenance strategies, including the use of critical resources, and monitoring

and evaluation techniques such as methods of ascertaining benchmarks, CSF parameters

and ways through which they can attain effectiveness.

Given that the study was conducted among institutions that have implemented the

disruptive innovation for the past 10 years, in the findings, business leaders are provided

with the best practices for integrating and sustaining disruptive technologies. If followed

and adapted to the contexts of small businesses, and especially educational institutions, business leaders will be enabled to *do it right* through the findings and to overcome associated challenges and as such attain long term competitiveness. The findings of this study, therefore, are an invaluable resource for business managers.

## Implications for Social Change

The findings of this study could contribute towards social change through increasing the success rates of small businesses in the education sector by enabling them to gain a greater market share and to operate more profitably and sustainably. This could lead to greater educational opportunities for larger majority who may not cope with the traditional educational environment. The results of this study could contribute towards empowering communities by increasing their skill set. The findings could also enhance the sustainability of small businesses, thus contributing towards increased employment opportunities and enhanced livelihoods of the millions of people that depend on the success of small business to survive.

## Recommendations for Action

The findings of this study are applicable to small educational institutions struggling to survive by increasing their ability to offer their courses more efficiently, effectively, remotely and at lower costs. By using the findings of this study for a more successful integration of disruptive innovations, a higher profitability through increased student enrollment could be achieved by the small businesses in the education sector. Moreover, by using the strategies for sustenance, success rates (graduation and

employability) could be achieved by smaller businesses within the limits of their resources and capabilities.

The findings of this study are also applicable to businesses in other sectors that are seeking to integrate and sustain disruptive innovation. This comes from the applicability of learning management systems not only to institutions of higher learning but also to corporate entities. According to Bakar and Jalil (2017), LMSs can be employed in achieving corporate trainings more cost effectively, and as such enhancing the value of human resources. Since the highest budgets of corporate entities are taken up by training (Kimiloglu, Ozturan, & Kutlu, 2017), resource constrained organizations, such as small businesses, can tap into the power of LMSs to bring costs down and as such become more profitable and competitive in the long run. When applied more carefully, and with the consideration of contextual variations, the results could enable the successful integration and sustenance of other technologies in businesses. All these are achievable through acting on the following recommendations:

1. For successful training of users, training needs analysis needs to be conducted by business leaders. This enables the determination of the trainees' previous knowledge and experience with the technology for a more efficient allocation of sufficient training period within the organization's resource limits.

2. To achieve an enhanced positive attitude towards the new technology, the equipping, capabilities, and availability of the internal IT team to solve the technical issues arising during the implementation period need to be ensured.

3. As opposed to complete shutdown of the old system, piecemeal integration needs to be ensured by business leaders where the system is first tested by a small group of people, such as a section of a department. If the system is found to be usable and useful, then it ought to be rolled out in phases and overlapped with the old system.

4. The critical resources related to the technology should be constantly available including IT equipment and human resources.

5. Although improvements such as regular updates may be made to the technology, it must be decided when it is more advantageous to purchase another technology rather that than to continually provide system updates to different aspects of the disruptive technology.

6. Given the range of methods used to identify CSFs, there is a need to evaluate the methods that work best for business leader and the measures which represent more fully, a successful integration.

7. Regular assessments need to be carried out by business leaders to discover whether the technology is in proper use. This may be done before the system's complete roll out as it easier to institute corrective mechanisms at a small scale.

8. Following the end of the period set for integration, a final evaluation needs to be conducted by business leaders to determine whether their pre-determined threshold performance is met, and what actions are necessary to increase the effectiveness of the new technology.

If these strategies are implemented, they will enable small businesses seeking to integrate and sustain disruptive technologies to enhance their OCB and other issues associated with the final acceptance of the technology. This would also ensure that the roll out of the technology is more successful, and that competitiveness is achieved by the organization. Moreover, the acting on the recommendations would lead to technology adoption and use, which would then ensure that profitability and sustainability is a reality.

### Recommendations for Further Research

In conducting the study, the concept of disruptive innovations was examined, considering only their benefits such as increased operational efficiency, increased profits, minimized costs, and enhanced overall quality of products and services. Only the concept of innovations as leading to external disruptions was considered. This means that the possibility of the innovation to lead to complex organizational issues that may aggravate the level of resistance such as innovations that threaten the employment security of workers were not considered. The variation in the recommended strategies under such contexts, therefore needs to be considered in future research.

The participants in this study were drawn from institutional management and faculty. This means that the opinion of a significant stakeholder group, the students was not considered. However, students are also users, and are expected to accept, adopt and use the LMSs as a disruptive technology. Given that the number of consumers is large, interviewing a few would not have led to representativeness (Palinkas, 2014).The use of quantitative methods, therefore ought to be considered in future studies to establish the

perception of students about the strategies used for integrating and sustaining disruptive innovations.

Aside from the issues related to the scope of the study, the qualitative methods used in this study may not enable a wide scale generalization of the findings (Leung, 2015). This therefore limits the usability of the findings of this research. Having identified the strategies, statistical techniques, therefore need to be used in future research to determine the level of importance and significance as well as the relevance of the findings of this research in various contexts.

**Reflections**

This study was aimed at exploring the strategies of integrating and sustaining disruptive innovation. Given my experience with education technology, as well as my military experience, I initially thought the process of completing the research would be very smooth. However, I became discouraged by challenges such as returned submissions. Due to my work and life, sometimes I had to let go of family commitments to revise the work and resubmit. At some point, I had a decreased motivation, especially when I missed the period I had expected to have submitted my final work. However, with the understanding of family, and reorganizing my schedules, I finally gained momentum. I am filled with excitement as I finally complete my DBA program. The lesson learnt is invaluable, that, how we organize ourselves to handle the challenges in life can either lead to an increased energy to fulfill our vision our vision, or feelings of being drained.

**Summary and Study Conclusions**

The profitability and the competitiveness of small businesses can be increased by disruptive innovations (Wan et al., 2015). However, significant challenges have been encountered in their integration and sustenance in small businesses, leading to massive failure (Cochrane, 2014). Strategies for integration and sustenance that could change the fate of these businesses are highlighted in the study. These strategies include training, the choice of changeover mechanisms, the provision of support, the utilization of critical resources, and monitoring and evaluation (ascertaining benchmarks, the establishment of CSFs, and overall effectiveness). The successes experienced from the use of these strategies lies in how they are utilized. While training needs to be designed and preplanned with the consideration of the results of training needs assessment, the timeframe that would be required to achieve user familiarity and acceptance needs to be considered in the choice of the changeover mechanisms. Further, while benchmarks may be ascertained before wide scale integration, the determination of CSFs ought to be considered as a midterm evaluation and carried out from time to time. Also, the determination of effectiveness ought to lead to correctional mechanisms to enhance overall efficiency and effectiveness. These strategies must be used to attain success, profitability, sustainability, and competitiveness of disruptive innovations, especially in educational institutions. The contextual variability must also be considered in their use, without which the successful integration and sustenance would be jeopardized.

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Appendix A: Interview Protocol

Date: _____

Site Location:      (SL1, 2, and 3)

Job Classification:  (A –D)

Participant Code:    (1 –4)

Recording Method:   (RE, HW)

Cluster Category:    ($C1 – C4$)

Research Question

The overarching research question for this study is what strategies do business leaders use to integrate and sustain disruptive innovations?

Background Profile Questions:

Participants will respond to the following background/profile questions:

1. What is your current job title, role or position, and your daily responsibilities?

2. How long have you been employed in your current position?

3. How would you describe your level of experience with management strategies for integrating disruptive technologies at your current or previous organization?

Interview Questions

Participants will respond to the following interview questions:

1. What strategies do you use to integrate disruptive innovations for your organization?

2. How effective are the strategies you use for integrating and sustaining disruptive innovations into your business model?

3. How does management identify critical success factors for integrating disruptive innovations at your organization?

4. How does management ascertain benchmarks of success after integrating a specific disruptive innovation?

5. What obstacles do organizational stakeholders experience when integrating any particular disruptive innovation?

6. How much time do you allocate for training employees to use disruptive innovations?

7. What financial budgets does management allocate for training employees to use any specific disruptive innovation?

8. How does management utilize critical resources to integrate and sustain any particular disruptive innovation within your organization?

9. Is there additional information you can share regarding how you integrate and sustain disruptive innovations in small businesses?

Appendix B: Letters of Cooperation from Community Research Partners

October 12, 2017

Dear Mr. Allen,

Based on my review of your research proposal, along with the written approval of Walden University's Institutional Review Board (IRB), I give permission to conduct the study entitled "Strategies for Integrating and Sustaining Disruptive Innovation in Small Businesses" on our premises or through preferred web-enhanced teleconferencing mediums with our employees. As part of this study, I authorize you to conduct and record interviews, employ a transcriber (if applicable), collect data, provide pre-tasking question and answer sessions, review college documents (e.g. relevant to training guideline, policies and procedures), and follow-up discussions with our employees regarding their interview responses. Participation for each employee will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: providing a conference room conducive for conducting interviews (if applicable), authorizing access for researcher to review college documents relevant to training guideline, policies and procedures, and authorize qualified employees to participate in the proposed study at dates and times that are not disruptive to our organization, or their work schedules. We reserve the right to withdraw from the study at any time if our circumstances change. Additionally, all staff requested to be interviewed must receive my prior approval in writing.

As a student, you will also be responsible for complying with our site's research policies and requirements, including any additional approval processes set forth by our organizations' IRB (if applicable).

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

In addition, I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's research committee (i.e. supervising faculty/staff) without a formal written consent/permission from the Walden University IRB.

Sincerely,

President

**INSTITUTIONAL REVIEW BOARD FOR HUMAN SUBJECT RESEARCH**

c/o Office of Sponsored Programs

To:         Robert Allen
            Walden University

From:

Subject:    IRB Approval (Expedited Review)

Study:      Protocol # 2018-313: Strategies for Integrating and Sustaining Disruptive Innovation in
            Small Businesses.

Date:       October 31, 2017

The IRB has APPROVED the above study involving humans as research subjects. This study was
approved as: Category: Expedited; special class of subjects: None.

IRB Number:   2018-313                          IRB identification that should be used on all
                                                consent forms and correspondence.

Approval Date:      10/30/2017
**Expiration Date:**   **10/29/2018**

**This approval is for one year. It is your responsibility to insure that an application for continuing
review approval                     Appendix D) has been submitted before the expiration date
noted above.** If you do not receive approval before the expiration date, all study activities must stop until
you receive a new approval letter.

**Consent Form**: All research subjects must use the approved Informed Consent Form. You are
responsible for maintaining signed consent forms (if approved for Active Consent format) for each
research subject for a period of at least three years after study completion.

**Mandatory Reporting to the IRB**: The principal investigator must report immediately any serious
problem, adverse effect, or outcome that is encountered while using human subjects or any complaints
from your subjects. In addition, the principal investigator must report any event or series of events that
prompt the temporary or permanent suspension of a research project involving human subjects or any
deviations from the approved protocol using Appendix D.

**Amendments/Modifications:** You are required to carry out this research as described in the protocol. All
amendments/modifications of protocols involving human subjects must have prior IRB approval, except

those involving the prevention of immediate harm to a subject. Amendments/Modifications for the prevention of immediate harm to a subject must be reported within 24 hours to the IRB using Appendix D.

For exempted and expedited review protocols: the protocol will be reviewed by the entire IRB committee at its next meeting. Should questions arise that cannot be answered by the materials already provided, additional information may be requested from you. This most likely will not affect the approval status of your project—you are approved to initiate the project as of the date above, and you will not receive notice of the committee's final review. Only in the rare situation when serious questions arise will the IRB instruct that the project be discontinued until those questions are answered.

**Records/Documentation:** You are required to keep detailed records concerning this research project and appropriate documentation concerning Informed Consent in a readily accessible location for a period of not less than three (3) years. The IRB reserves the right to inspect all records, research tools and databases that are associated with this research.

If you have any questions, please do not hesitate to contact █████████████

Good Luck on your project.

Sign the Verification Statement below. Return the original signed copy of this memo to the IRB Office, c/o Office of Sponsored Programs████████████ and retain a copy for your records. The IRB Office must receive the signed verification statement before research may begin.

<div align="center">

**VERIFICATION:**

</div>

By signing below, I acknowledge that I have received this approval and am aware of, and agree to abide by, all of its stipulations in order to maintain active approval status, including timely submission of continuing review applications and proposed protocol modification, as well as prompt reporting of adverse events, serious unanticipated problems, and protocol deviations. I am aware that it is my responsibility to be knowledgeable of all federal, state and university regulations regarding human subjects research.
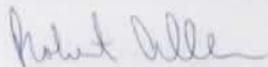
_____     10/31/2017
Signature of Investigator            Date