2017

Reducing Technology Costs for Small Real Estate Businesses Using Cloud and Mobility

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2017

Abstract

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MS, Marymount University, 2005

BS, Marymount University, 2002

Doctoral Study Submitted in Partial Fulfillment

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Doctor of Business Administration

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Abstract

Increased client accessibility strategies, awareness of technology cost, and factors of third-party data security capabilities are elements small real estate business (SREB) owners need to know before adopting cloud and mobility technology. The purpose of this multiple case study was to explore the strategies SREB owners use to implement cloud and mobility products to reduce their technology costs. The target population consisted of 3 SREB owners who had experience implementing cloud and mobility products in their businesses in the state of Texas. The conceptual framework of this research study was the technology acceptance model theory. Semistructured interviews were conducted and the data analyzed for emergent themes. Member checking was subsequently employed to ensure the trustworthiness of the findings. Three important themes emerged: client accessibility strategies, product affordability, and transferability of information technology security risks. The findings revealed SREB owners used informal strategies based on the customer-centric necessity to implement cloud and mobility technology costs. The SREB owners' highest strategic priority was the ability to access their clients, followed by cost reduction and securing client information. The findings may contribute to social change by providing possible insights to survivability for SREB owners through cost reduction, reduced security risks, and the increased ability to deliver the dream of home ownership to their clients while contributing to the economy and enhancing the community standards of living.

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Dedication

To my parents, Monica McIntosh and Alexander James McIntosh; my grandmother, Donator (Katie) Louisy; my young brother, Andrew James McIntosh; my auntie, Linda McIntosh; and my cousins, Donna and Dascha, who passed while I was on this educational journey, I know they would be proud of me. I love and miss you all dearly.

Acknowledgments

My academic journey started in September 1997 at Marymount University and concluded with Walden University's doctoral program. Although, I am employed by Sam Houston State University, so maybe I am not completely done. When I think back to all those individuals who supported me on my journey, there are many who thought I was crazy; they could not believe why I would put myself through this arduous process.

From a support perspective, I do not have many people to thank. However, I would like to thank my two sons, Joshua and Anthony Holston. You both were always wondering why I always had my head in a book studying or sitting in front of the computer typing, sacrificing nights and evening entertainment for school work, well now you know. To my chairperson, Dr. Lazo, I thank you for putting up with my ranting, ravings, and the emotional roller coasters I put you through. To my second committee member, Dr. Jaime Klein, and my university reviewer, Dr. Cheryl McMahan, thank you. To Dr. Savard, you have no idea how your Residency 2 class was a pivotal moment in my doctoral process, “never give up” was the quote. To Edderon L. Cole, Vincent Stovall, Ben Hasan, Norma Barnett, Kenneth Johnson, Dr. Ash Moye, thank you for your support.

Lastly, I would like to thank from the bottom of my heart, Dr. Melvin Murphy. Melvin has been my rock, my fortress, my pillow to cry on, my sounding board, my confidant, my hallelujah. Melvin, you are truly, truly the only one who knows the details of my endurance during this journey, I love you…

Table of Contents

List of Tables

List of Figures

Section 1: Foundation of the Study

The motivation for conducting this study was to understand strategies small real estate business (SREB) owners use to implement cloud and mobility products to reduce their technology costs. SREB owners have focused on information technology (IT) investments that directly benefited their bottom line–either by reducing operating expenses, improving employee productivity, or acquiring and retaining customers (Rajan & Jairath, 2012). Cloud and mobility technology has enabled on-demand access to a shared pool of configurable computing resources that provide a service to customers through a pay for service model (Calloway, 2012; Mell & Grance, 2009). The pay for service model can employ virtual servers in datacenters providing cost savings in the total cost of computing (Marston, Li, Bandyopadhyay, Zhang, & Ghalsasi, 2011). Technology is not a second thought in organizations, but it is also not the driver of business; technology is an enabler. Technology as an enabler can enhance a business by bringing value to a company that in some way contributes to competitive advantage, reduction in costs, or both (Oliveira & Ferreira, 2014).

Background of the Problem

The problem I investigated was the lack of strategies by SREB owners to ascertain information regarding the use of cloud and mobility products to reduce technology costs. Leaders in large and small companies in many countries are already investing in mobile, cloud, and virtualization technology to assist in innovation and daily operations, maintain competitive advantage, and reduce costs (Trigueros-Preciado, Pérez-González, & Solana-González, 2013). In the United States, previous and current

economic slow-downs had especially affected the SREB owners who were responding by intensifying their use of IT with the use of cloud and mobility to cut costs and to protect and enhance their customer relationships (Reynolds, 2012).

Opala (2012) stated the success of any technological implementation depends on users' acceptance of such technologies. Some SREB owners have viewed cloud and mobility projects as investments that could directly benefit their bottom line, by reducing operating costs, improving employee productivity, improving innovation, acquiring and retaining customers, improving business sustainability, and reducing any communication gaps (Marston et al., 2011). Hendershot (2013) suggested mobile technology could reduce communication gaps and assist organizations to run projects more sustainable and efficient, thus transforming the way business operates. Reynolds (2012) stated that if history reflects possible future outcomes, then the IT industry should expect a substantial number of SREB owners who invest in IT now to lower operating costs, boost employee productivity, and increase customer connectedness to reap the benefits now and in years ahead.

Problem Statement

Small business (SB) owners who have not maximized the savings associated with using cloud and mobility computing had higher technology costs (Venkatesh & Sridhar, 2014). SBs that migrated to the cloud and implemented mobile technology produced overall cost savings of 85% to 90%; this savings resulted in a reduction of more than 65% of their technology operating costs and indirectly enhanced their industry competitiveness (Lacity & Reynolds, 2014; Venkatesh & Sridhar, 2014). The general business problem

was the increased cost of IT for SREB owners negatively affected profits. The specific business problem was some SREB owners lacked strategies to implement cloud and mobility products to reduce their technology costs.

Purpose Statement

The purpose of this qualitative multiple case study was to explore the strategies SREB owners use to implement cloud and mobility products to reduce their technology costs. The population included three SREB owners located in Texas who had experience implementing cloud and mobility products and had reduced their technology costs. Alasadi and Sabbagh (2015) and Chinomona (2013) stated the use of cloud and mobility products could contribute to the reduction of technology costs for SBs. The implications for positive social change may include improved changes to SREB owners' organization strategies associated with a higher sense of self-worth and dignity among SREB owners resulting in a higher quality of life and a more efficient performance from their SREBs.

Nature of the Study

In this study, I used the qualitative methodology to explore strategies SREB owners used to implement cloud and mobility products to reduce technology costs in a real-world setting. Frels and Onwuegbuzie (2013) noted qualitative research methods are suitable for exploratory studies when there is a need to describe or explain events. Researchers primarily use the quantitative method for testable empirical hypotheses by conducting surveys and simulation to answer the questions of who, where, how many, how much, and discover the relationship between variables (Pedrosa, Näslund, & Jasmand, 2012). The elements of mixed methods research include qualitative exploration

and quantitative hypotheses examination (Frels & Onwuegbuzie, 2013; Pedrosa et al., 2012). I chose to use the qualitative method over quantitative and mixed methods as I was not conducting a testing of empirical hypotheses testing. Within the qualitative method, I chose an explorative inductive approach for structured flexibility during the analysis of the data collected from each participant thus building emergent themes. Pedrosa et al. (2012) stated qualitative methods draw on interview questions, images, observations, and inductive analysis of the participants in their natural setting.

I considered the following four qualitative research designs to explore how SREB owners use strategies to implement cloud and mobility (a) ethnography, (b) grounded theory, (c) phenomenology, and (d) case study design. For this study, I chose the multiple case study design. A researcher uses the design of ethnography for investigations of cultural characteristics of a community using direct observation of interactions (Miles & Huberman, 1994). I focused on the individual SREB owners' strategies used for implementing cloud and mobility products in their prospective businesses, not in a community of SREB owners, so the ethnographic design was not appropriate for this study. Lawrence and Tar (2013) suggested grounded theory design centered on theory development. Ground theory design was unsuitable as I was not attempting to establish a theory for the SREB owners in this study. The phenomenological design is a suitable choice for qualitative research if the intent is to interview a significant group of participants several times to get a full picture of their experience with the phenomenon (Miles & Huberman, 1994). I used a multiple case study design to understand my participant's personal experiences of strategies used to implement cloud and mobility for

cost reduction. Frels and Onwuegbuzie (2013) and Yin (2014) stated a case study design involved an illustration of either a single or multiple case study of real-life behaviors or a contemporary event and illuminated the reasons of why, how, and what of the phenomenon. As I used the multiple case study design, I was able to observe the real-life lived experiences of the SREB owners. Furthermore, the use of the qualitative NVivio tool, along with the data collected, provided a technique to generate queries and research-evolved themes, thus illuminating the findings to understand the why, how, and what of this studied topic.

Research Question

The central research question explored in this study was the following: What strategies do SREB owners use to implement cloud and mobility products to reduce their technology costs? The central research question aligned with the components of the background of the study, problem statement, and purpose statements. I used each component as guides to the create the interview questions.

Interview Questions

1. What strategies did you use to implement cloud and mobility products to reduce your company's technology costs?
2. What research and educational training occurred before you made the decision to implement cloud and mobility products?
3. What were the deciding factors to implement cloud and mobility technology in your real estate company?

4. What are the steps you used to adopt and implement cloud and mobility products in your real estate company?
5. What are your security concerns about using cloud and mobility products?
6. How important is it to you to lower your company's technology costs but still be able to conduct your company's daily business?
7. Who is your company's current mobile and cloud service provider and what services do they provide for your company?
8. In your day-to-day work life, how do you use your mobile or cloud services to conduct real estate business?
9. How important is it to you to be mobile in your industry?
10. What additional information, if any, do you feel is pertinent to the purpose of this study that I did not address in the interview questions?

Conceptual Framework

The technology acceptance model (TAM) was the conceptual framework I used for this study. Davis (1986) introduced TAM, which centers on how individuals select, use, perceive, and train for the adoption of new technology. Davis had two key technology adoption determinants: (a) perceived usefulness, the extent to which a person believes using an IT will enhance his or her job performance; and (b) perceived ease of use; the degree to which a person believes using IT will be free of effort. Other authors expanded on Davis' model and included perceived mobility, cost, security, reliability, computer playfulness, perceived enjoyment, objective usability, and implementation as reasons why users' might adopt new technology (Davis, Bagozzi, & Warshaw, 1989;

Gupta, Seetharaman, & Raj, 2013; Hasan, Zgair, Ngotoye, Hussain, & Najmuldeen, 2015; Opala, 2012; Venketesh & Bala, 2008).

Davis (1986) stated the success of any technological implementation is dependent on users' acceptance of IT to enhance and improve job-related needs and to increase productivity and save time and money by reducing cumbersome activities. If the users become more productive in that portion of their job because of the ease of use, then the users become more productive overall (Davis, 1986). The advantage of using Davis's model for SREB owners was to provide a foundational construct of the influencing factors for their adoption of cloud and mobility technology.

Figure 1 illustrates an expanded graphical representation of TAM and the cloud and mobility adoption (CMA) framework that included (a) perception of CMA, (b) cloud and mobility security, (c) technology cost effectiveness, (d) cloud and mobility knowledge, and (e) cloud and mobility project implementation. I used CMA as a guide to formulate the central research question, along with the interview questions, and it served as the lens through which to view the data collected after I conducted the interviews with the SREB owners. TAM and the expanded framework CMA was the framework I used for this study to understand the different strategies SREB owners used for implementing cloud and mobility products to reduce their technology costs.

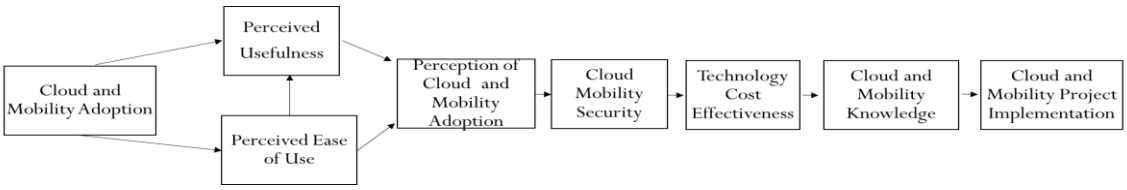

Figure 1. Cloud and mobility adoption (CMA).This diagram shows the layout of the five constructs for this study.

Operational Definitions

Any platform: This term refers to the users having access to their required data on any device of their choosing: smartphone, tablet, laptop, television, or PC (Zhiwei & Guojie, 2011).

Anytime: A user accessing his or her necessary data at any time of the day (Zhiwei & Guojie, 2011).

Anywhere: The user being anywhere with Internet accessibility for them to access their required data (Zhiwei & Guojie, 2011).

Clickwrap: An agreement formed entirely over the Internet, which set forth the rights between service users and service providers. The term describes the many online agreements that require a user to click a button or link to agree to the contract (Calloway, 2012).

Cloud: A technology that enables on-demand access to a shared pool of configurable computing resources that provide service to customers through a pay for service model (Calloway, 2012).

Thin client: A PC replacement technology to help customers immediately access any virtual desktop or virtualized application (Hodgman, 2013).

Wi-fi: The name used for wireless networking technology that uses Institute of Electrical and Electronics Engineers (IEEE) 802.11 standards frequency radio waves to provide wireless high-speed Internet and network connections (Lu & Wan, 2014).

Assumptions, Limitations, and Delimitations

Assumptions

An assumption is a known or believed specific perspective view of a subject matter (Roy & Pacuit, 2013). I had three assumptions when conducting this study. The first assumption was that participants would show a willingness to articulate their experiences. Another assumption I held was that participants would respond candidly to the interview questions. The last assumption was the participants had experience in implementing cloud and mobility products in their SREB environment and could provide the strategic steps other SREB owners could use to implement cloud and mobility in their company for a reduction in technology costs.

Limitations

Limitations are the restrictions about the bounds and validity of a topic of uncollected data (Street & Ward, 2012). There were three fundamental limitations of this study. The first limitation referred to Yin's (2014) assertion that participants might respond to questions by what they believed a researcher wanted to hear. Yin's assertion was accurate for this study because my participants asked me during the interview sessions if their responses were what I needed to hear. Second, the CMA model illustrated in Figure 1 suggested that participants' perceived usefulness and perceived ease of use of CMA depended on the users' experiences with cloud and mobility in their current business environment. This limitation illuminated the fact that participants needed to be knowledgeable and experienced with cloud and mobility products. The third limitation referred to the possible insufficiencies of the findings during the data collection

and data analysis phases. I was unsure if I created effective interview questions to garner sufficient data to produce emergent themes. However, form the data collected and analyzed there were insufficiencies in my interview questions as I was able to develop detailed emergent themes in my findings.

Delimitations

The delimitations of a study are the boundaries of the research (Vladu, Matis, & Salas, 2012). Vladu et al. (2012) stated delimitations provide a description of the framework of what the study does and does not include. The delimitations of this study were (a) the SREB owners were located in the state of Texas area and made up the selected participants, and (b) the total sample size was three SREB owners selected for the multi-case study who had used strategies to implement cloud and mobility products within their business environment.

Significance of the Study

Contribution to Business Practice

The reason I conducted this qualitative case study was to explore strategies SREB owners use to implement cloud and mobility products to reduce their technology costs. The study findings may be of value to SREB owners as they could allow the real estate businesses to increase their overall productivity while minimizing their technology costs and improving job-related needs, allowing the SREB owners to become more productive overall. The need for greater user productivity related back to Davis (1986) who proposed that when the users become more productive in their jobs because of the ease of use of the technology, then those users become more productive overall. Additionally, a study

conducted by The National Association of Realtors (NAR; 2015) included the findings that remaining up to date and increasing knowledge concerning new technology were one of the biggest challenges for real estate brokers and agents. Furthermore, Davis et al. (1989) theorized that lacking knowledge of the new technology could hinder people's adoption of that new technology. Consequently, one of the main reasons SREB owners adopted cloud and mobility services were in reference to cost flexibility (Hawkes, 2013; Poh Mui, 2013). The reduction in technology costs while using the new cloud and mobility technology is a significant contribution to the SREB owners' practice. Cloud and mobility services usage imply users can aim at reducing the total cost of technology ownership (Bolan, 2013; Mell & Grance, 2009; Zhiwei & Guojie, 2011).

Implications for Social Change

The findings of this study may assist in lowering the technology financial obligations of SREB owners that could contribute to increased productivity and profits of home sales and could potentially contribute to a positive social change for SREB owners through improved business success. This improved success, resulting from an increase in sales commissions from home sales could produce a higher motivation for charitable community involvement thus leading to a happy client. Heyong (2013), Lacity and Reynolds (2014), and Swidler (2011) stated that when a client is happy during the home buying process their happiness of homeownership could lead to community donations to charitable organizations such as Habitat for Humanity, volunteerism, and sponsorships. By constantly seeking to create a true connection between their business interests and those of their customers and communities, SREB owners can become an even bigger

force for good in the world—and, in doing so, extend their legacy of growth and value creation for many years to come, both affecting the business practice and providing a positive social change to the surrounding community.

A Review of the Professional and Academic Literature

The purpose of this qualitative multiple case study was to explore the strategies SREB owners use to implement cloud and mobility products to reduce their technology costs. My intent with this literature review was to (a) present this study in the context of strategies used to implement cloud and mobility products successfully, (b) justify the need for the research, and (c) ensure this study was built on the existing research literature. I conducted various searches of online databases such as EBSCO, ABI/Inform Complete, USA Today Google Scholar, ProQuest, PMI, Small Business Administration (SBA), The NAR (2014 & 2015), The White House National Economic Council, Meriam Webster, and IEEE to explore the literature on cloud and mobility. The keyword terms I used to search the literature included *technology acceptance, real estate business, virtual machines, cloud, mobility, security, training, knowledge, mobile provider, anytime, anywhere, thin client, wi-fi, wireless, smartphones, outsourcing,* and *IT project implementation.* I also expanded my search due to the challenges of finding academic, peer reviewed, and less than 5-year old articles related to cloud, mobility, and real estate companies.

Organization and Strategy of the Review

I organized the literature review to relate to each component from the five key areas presented in Figure 1 in the CMA conceptual framework: (a) perception of CMA,

(b) cloud and mobility security, (c) technology cost effectiveness, (d) cloud and mobility knowledge, and (e) cloud and mobility project implementation. I then expanded the areas to include subheadings for a more comprehensive examination, illustrated in Figure 2. Figure 2 shows the recurring subheading themes that I discovered during my research of the literature: (a) the history of adoption; (b) secure client information; (c) anytime, anywhere, any platform; (d) providers and cost; (e) training and education; (f) cloud and mobility implementation; and (g) insource and outsource. These subheading themes were part of my overall strategy in the literature review to provide a rounded, qualitative multiple case study that could likely represent both a meaningful contribution to the literature and perhaps the most appropriate design to gain insights into what strategies SREB owners use to implement cloud and mobility products to reduce their technology costs.

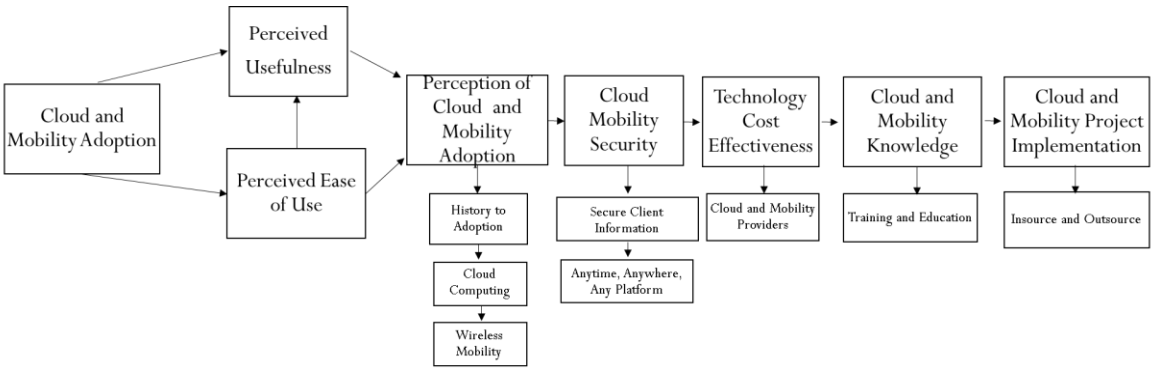

Figure 2. Literature review structure diagram.This diagram shows the layout of the literature within the literature review derived from the conceptual framework and then expanded. expanded.

Table 2 includes a summary of the frequencies of the peer-reviewed articles I found and reviewed. In all cases, a comparison within Ulrich's website through Walden University showed whether references were peer reviewed or nonpeer reviewed. The

government and corporate websites were not peer reviewed; however, I used the information I found on those websites as primary source research data or as comparison data. Also included were published dissertations and theses, which are classified as academic, scholarly articles. Table 1 contains the number of references listed in this literature review and the entire study, the number of peer-reviewed and nonpeer-reviewed references, the number of dissertation/doctoral studies, the percentages of peer-reviewed articles, and the total number of references less than 5 years old and greater than 5-years old.

Table 1

Summary of References in the Doctoral Study

Reference type	More than 5 years old 1986–2011	Less than 5 year's old 2012–2016	Total
Total literature used in study	22	159	181
Dissertation/doctoral studies	1	4	5
Nonpeer-reviewed articles	1	7	8
Peer-reviewed articles	8	165	173
Percentage of peer-reviewed and nonpeer-reviewed articles	(12.15%)	(87.85%)	100%

Note. This table summarizes the references used in the entire doctoral study.

The themes that I identified in Figure 2 resulted from my review of varying theories from Davis (1986), Opala (2012), and Venketesh and Bala (2008), which I then combined. The history of the adoption of cloud and mobility technology; cloud

computing; wireless mobility; secure client information; anytime, anywhere, any platform; cloud and mobility providers; training and education; and insource and outsource pertain to and were derived from the literature contained in this study to address the central research question of what strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs. Additionally, I used Figure 2 as an outline during my data analysis to reveal emergent themes.

Perception of Cloud and Mobility Adoption (CMA)

History to adoption. Gobbo and Benini (2014) stated the modern era of computing was born in 1936 with the existence of universal machines and general-purpose computers. The calculations for the processing of a program in the general purpose computers gave birth to compilers (Gobbo & Benini, 2014). From the birth of compilers emerged a need for highly-skilled computer operators, which equated to high technology costs for people, hardware, and software resources (Gobbo & Benini, 2014).

The enthusiasm for adoption for older technology was mostly in the hands of the skilled computer operators due to the complexity level of the technology system (Gobbo & Benini, 2014). Venketesh and Bala (2008) stated the increased hands-on experience with a system would provide the user with more information on how easy or difficult a system is to adopt. In the TAM theory, Davis (1986) stated that the determinants of technology adoption were (a) perceived usefulness, the extent to which a person believes using an IT will enhance his or her job performance and (b) perceived ease of use, the degree to which a person believes using IT will be free of effort., The factors measured if a user was less inclined to adopt the new technology as the determinants included user's

attitudes and intentions of technology adoption. Davis et al. (1989) expanded the TAM theory to include the theory of reasoned action (TRA). Davis et al.'s TRA is a general model of technology adoption focusing on consciously intended attitudes and behaviors. Davis et al. concluded the TRA findings revealed a user's intentions and could predict technology adoption; perceived usefulness is a determinant of user's intentions for adoption, and perceived ease of use is a significant secondary determinant of user's intentions for technology adoption.

In contrast, Venketesh and Bala (2008) expanded TAM theory and introduced the TAM3 theory to include even more determinants of technology adoption: *individual differences, system characteristics, social influence,* and *facilitating conditions.* The reason for this expanded theory was due to Davis's (1986) original TAM theory lacking an understanding of what makes technology useful and easy to use. Many authors have tried to address the questions of what makes technology useful and easy to use; however, those authors ended up focusing on context-specific technology determinants, such as e-commerce and electronic communications, or chose context-independent determinants that spanned across a broad range of systems (Venketesh & Bala, 2008). Venketesh and Bala's (2008) findings suggested an individual's experience, gender, age, and degree of voluntariness would directly influence that individual's technology acceptance behavior.

In comparison, Opala (2012) combined Davis's (1986), Davis et al.'s (1989), and Venketesh and Bala's (2008) theoretical models to better understand the adoption of cloud computing and the benefits it provides to organizations that include pay-as-you-go billing, on-demand capabilities, and the reduction in IT operational expenses. This

context-specific technology determinant allowed Opala to assist in providing business decision-makers with credible data about the factors influencing the adoption of cloud computing. The findings of Opala's study suggested increasing a more user-friendly environment to allow for the usefulness and ease of use for users to adopt the cloud and mobility technology. Additionally, the study findings determined that management's perception of security, cost-effectiveness, and IT compliance factors significantly influenced the decisions to adopt cloud computing. The decision of whether or not to adopt cloud-computing technology depends on managers' perception of security, cost effectiveness, and IT compliance requirements, however, cost-effectiveness scored higher that the other constructs (Opala, 2012).

Cloud computing. In August 2006, Google's CEO, Eric Schmidt made public the term cloud computing to define the delivery of IT shared resources, increased capacity, and availability of services (Opala, 2012). The introduction of cloud computing created a more user-friendly environment for IT while enhancing and improving job-related needs and increased productivity and time and money savings by reducing cumbersome activities (Opala, 2012). Davis (1986) stated the perceived usefulness and the perceived ease of use characteristics of the IT may indirectly influence usefulness by the affecting ease of use leading to the propensity of the user to adopt the new technology. If the user views the new technology as an enhancement to their productivity, there is an increased likelihood of adoption (Davis, 1986; Venketesh & Bala, 2008). If SREB owners view the cloud technology useful and easy to use the more likely they are to adopt and implement cloud within their business.

Cloud computing is defined by The National Institute of Standards (NIST; 2012) as a business model enabling shared services, increased capacity, and availability which can be provisioned dynamically with minimal support. Gupta et al. (2013) stated cloud computing is seen as a commercial progression of the academic-oriented grid computing and succeeding where utility computing (sorting, copying, and deleting files) struggled while making greater use of the self-management advances of autonomic computing. Other researchers Gonzalez and Smith (2014) defined cloud computing as an innovative way of enhancing the capacity to provide on-demand, pay-as-you-go billing with an automated delivery service.

Further researchers defined cloud computing as technology based on reading the textual information stored on servers permitting copies of the information stored on giant server pools and containing services accessed through the cloud (Frantsvog, Seymour, & John, 2012; Opala, 2012). Armbrust et al. (2010) contended cloud computing is another restatement of IT outsourcing, delivering applications, and infrastructure services over the Internet allowing users to access their information anywhere, anytime, and on any platform. However, most technology researchers agreed cloud computing created a disruption in the technology world and increased the individuals' ease of use (Frantsvog, Seymour, & John, 2012; Opala, 2012). Opala (2012) stated the introduction of cloud computing not only disrupted the technology world but improved the user experience through ease of use.

Cloud computing has four basic models. Ramachandran, Sivaprakasam, Thangamani, and Anand (2014) suggested the cloud computing four basic models:

public, private, hybrid, and community. Those models require a model of computation, a model of storage, and a model of communication (Armbrust et al., 2010; Zhao et al., 2013). Those models also all require statistical multiplexing which is necessary to achieve elasticity (Armbrust et al., 2010; Zhao et al., 2013). The elasticity can give the illusion of infinite capacity that requires virtualized resources (Armbrust et al., 2010). Those virtualized resources hide the implementation of the multiplexed and shared environments (Armbrust et al., 2010).

Virtualization gives the ability to increase hardware utilization by running many applications at once through a thin client (Hodgman, 2013). Partitioning concepts are part of virtualization; this allows the mainframes to become VMware (Patel & Sarje, 2012). VMware is a software that can run on its own operating systems, and the applications, data, and memory are stored on a server(s) back in a datacenter accessible anytime, anywhere, and on any platform (Hodgman, 2013; Patel & Sarje, 2012). This accessibility leads to many names for cloud computing:

- Software as a Service,
- Anything as a Service,
- Platform as a Service,
- Infrastructure as a Service,
- Storage as a Service,
- Communication as a Service,
- Network as a Service,
- Monitoring as a Service, and

- Content Delivery as a Service (Alali & Chia-Lun, 2012; Mladenow, Kryvinska, & Strauss, 2012; Moreno-Vozmediano, Montero, Llorente, 2013;Voith, Oberle & Stein, 2012)

Wireless mobility. Communication as a service relates to the wireless mobility alliance with cloud computing (Barbarossa, Sardellitti, & Di Lorenzo, 2014). Wireless cellular networks provide mobility to move throughout the network from one cell to another while maintaining seamless connectivity (Mohapatra & Pachaury, 1994). Such networks maximize the utilization of the frequency spectrum by dividing a geographic area into small service cells that support operations on distinct frequencies/channels (Barbarossa et al., 2014). Each mobile user communicates through a transmitter called Base Station, which then connects to the cellular network (Barbarossa et al., 2014). Davis's (1986) determinants of ease of use and usefulness of technology relate to the SREB owners' use of mobile devices. If the mobile technology is easy to use and useful to their business SREB owners are more likely to adopt and implement mobile devices within their everyday work life.

The fundamental job of a real estate company is to represent their clients in the selling and buying of real estate property (Seiler et al., 2001). The real estate companies must continually sell their services and improve efficiency for prospective clients, then track and access their client's information, and communicate on a constant basis all day for seven days a week (Seiler et al., 2001). This is because most small business owners work outside the actual office location, and constantly need a device to access their client's data through the various mobility devices, to include smartphones, tablets, and

laptops (Gupta et al., 2013). Consequently, companies viewed investing in mobility as a potential to their return on an investment and increased productivity (Chaudhry, 2012; LePree, 2014).

The need for easy access to their client's data through their mobile devices relates back to Davis's (1986) model of ease of use and usefulness, in addition to the extended model shown in Figure 1, CMA. If a user finds the technology useful to their job, then they are more adept to adopting the technology for overall increased productivity. Hyde-Clarke (2013) stated the usefulness of mobile technology has assisted in improving business practices in the areas of education, commercial banking, and small business. Furthermore, other researchers mentioned the introduction of cloud computing and mobility as disrupters in the technology world and development of mobile applications running on the various devices has become relatively easy compared to old complex development processes (Gupta et al., 2013; Venkatesh & Sridhar, 2014).

Cloud computing, virtualization, and wireless devices are enablers of the consumer's ease of use of emergent technology around the world (Fei, Fangming, Hai & Vasilakos, 2014). The new technology enablers are key factors for SREB owners and are useful for conducting business operations anytime and anywhere. Etro (2011) and Fei et al. (2014) stated businesses need the ability to receive on-demand consumption of computing anytime and anywhere is a direct result of an increasing need for speed to market of products and services. Subsequently, the use of cloud computing and mobility have allowed individuals to receive increased speed to market at a rate of 30 to 40% a year. Opala (2012) stated the adoption of cloud and mobility computing had created a

significant need for constant innovation and improvements to keep pace with the new technology user's needs.

Cloud Mobility Security

Since the implementation of cloud and mobility technology, security concerns have emerged, and finding solutions to address those security concerns is daunting to many businesses. Opala (2012) referred to cloud and mobility security risk elements when determining data ownership as, confidentiality, integrity, privacy, and virtualization. Other authors agree on similar security characteristics of technology as internal security breaches, electromagnetic interference, and physical obstacles that limit coverage of wireless networks, and data security (Choo & Kwang, 2014; Khan, 2014).

Security directly contributes to the reliability of the system and a reliable software system is a system with reliable security (Gupta et al., 2013). Security reliability recounts back to Davis's (1986) model of the usefulness of the system for the user. Furthermore, Opala (2012) stated if a business owner decided to switch to the latest cloud and mobility technology, there has to be a balance of data security protection, intrusion/invasion prevention of the IT environment, continued high performance of the IT networks, along with improved customer and business communication.

Secure client information. The balance of understanding the business model and protecting that business model from security intrusion/invasion must occur between IT and business (Moreno-Vozmedian, Montero, & Llorente, 2013). Multiple authors have shared similar beliefs of the difficulties of the desire for new technology but while having

the ability to secure their data. There are four major security protection areas businesses should be aware of when using cloud and mobility:

- authentication and integrity over a user's data,
- protection of the users stored information in the cloud storage servers (encryption),
- virtualization security, and
- management of the cloud and mobility provider's transfer of stored data from one provider to another (Agarwal & Wang, 2010; Conner & Conner, 2013; Gupta et al., 2013; Guo, Zhang, Sun, & Fang, 2014; Hawrylak, Schimke, Hale, & Papa, 2012; Singh, Kharbanda, & Kaur, 2012; Vaquero, Rodero-Merino, & Morán, 2011).

One of the solutions addressed for the authentication and integrity of user data is to implement public key cryptography over the cloud. This would help to achieve authentication over data and would enable users to be authenticated via assigning blocking (Hawrylak et al., 2012; Peelukhana, Shanthi Bala, & Aghila, 2011; Singh et al., 2012; Vaquero et al., 2011; Yung-Wei, Kuan-Ying, Hui-Zhen, & Shyan-Ming, 2013). This blocking forces the users to enter a username/password before gaining access to their data. Additionally, to aid in the data integrity security and privacy the provider must implement the concept of public key cryptography (Madria & Sen, 2015). The public key cryptography is a digital signature.

The digital signature sends data over the cloud and extracts data from the cloud (Singh et al., 2012; Vaquero et al., 2011). Data security and privacy of customer

information were the number one concern for small businesses in a study conducted by (Dutta, Peng, & Choudhary, 2013). Users who use smartphones, laptops and tablets should engage in the use of passwords to prevent access their data (Verkooij & Spruit, 2013).

Applying a strong barrier over the cloud storage servers known as a firewall would address the solution to the second issue of data in the cloud storage servers. The firewall over the servers acts as intrusion detection systems to detect unconscious activity from the side of unauthorized servers and attackers (Conner & Conner, 2013; Peelukhana et al., 2011; Singh et al., 2012; Vaquero et al., 2011). The two most important objectives for the intrusion of data stored in the cloud and accessed through mobile devices is to gain access to company data (industrial espionage) or manipulation of data stored on the servers (Verkooij & Spruit, 2013). Sometimes the actual mobile device providers themselves may be the cause for security concern as their network engineers could have access to the user's data on the servers (Verkooij & Spruit, 2013).

The third issue of virtualization security exemplifies a series of threats and vulnerabilities due to the transformation from a dedicated infrastructure environment to a multitenant environment where machines and networks share data (Vaquero et al., 2011). Some solutions to addressing these issues were to conduct behavioral monitoring to detect anomalously and introduce hypervisor level Media Access Controller and trusted computing techniques, determining granularities for isolation (Vaquero et al., 2011). During the transition to a virtualized environment isolation by virtual or physical machines, local area networks (LANs), virtual machine manager, or datacenters could

lead to a drop in security because the traditional controls such as virtual local-area networks and firewalls proved less effective (Vaquero et al., 2011).

For the fourth solution, transfer of stored data from one service provider to another is possible if the service provider is ready to maintain trust relationships between different cloud providers. One entity (provider) trusts the second entity when it (the first entity) makes the supposition that the second entity will behave precisely as the first entity expects (Singh et al., 2012; Verkooij & Spruit, 2013). As long as all cloud and mobility providers have a trust relationship between each other they would be able to transfer data from one cloud provider to another, because the cloud and mobility providers seemed to maintain control over the customer's security of their data (Vaquero et al., 2011; Verkooij & Spruit, 2013).

Anytime, Anywhere, Any Platform. The premise that users can access their data at anytime, anywhere, on any platform at a cost reduction, is an important element of this study. The term anytime refers to a user accessing their required data at any time of the day (Zhiwei & Guojie, 2011). The term anywhere refers to the user being anywhere with Internet accessibility for them to access their required data (Zhiwei & Guojie, 2011). The term any platform relates to the users acquiring access to their necessary data on any device of their choosing, smartphone, tablet, laptop, television, or PC (Zhiwei & Guojie, 2011).

Many SREB owners now carry at least one mobile device, which means there are increased expectations for the SREB owners for connectivity to work anywhere, anytime (Pliska, 2012). Even though there is still a need in the real estate industry to continue the

old fashion habit of advertising and to conduct business through sale signs in the front yard, and ads in magazines and newspapers, these habits must be married with the adoption of accessibility anytime-anywhere (Goodwin & Stetelman, 2013). Thus, mobile technologies such as smartphones, laptops, and tablets have enabled SREB owners to engage with customers, suppliers, and colleagues at any time and from anywhere (Dery & MacCormick, 2012; Honggang, Shaoen, Min, & Wei, 2014; Pliska, 2012). Tysowski and Hasan (2013) stated handheld devices and service standards enable people to access information and acquire services in a global manner.

Without cloud and mobility, the SREB owners could not function efficiently in their work environment (Dery & MacCormick, 2012; Seiler et al., 2001). Lozowski (2013) articulated there have been 10 billion Wi-Fi-connected devices in 2012, with over 50 billion expected by 2020. Thus, cloud and mobility are providing innovative, competitive advantages to businesses functionality (John & Njihia, 2014). Mobile technology is now a reality of the preferred way of interactive communication, information sharing, and collaboration among consumer-to-consumer business-to-the consumer, and business-to-business (B2B) (Hurbean & Fotache, 2013).

The anytime, anywhere, any platform also comprises of the use of Voice over Internet Protocol (VOIP). VOIP is a form of telephone communication that can be used anywhere, anytime, on any platform. Cloud and mobility services act as a host for VOIP (Gold, 2012). The cloud and mobility services deliver inbound calls to the device of the user's preference. These inbound call preferences mean a voice call can both originate

and go through a wide range of devices that include iPhone or smartphone, iPad, tablet, laptop, television, or PC (Gold, 2012).

Technology Costs Effectiveness

Davis (1986) participants in the TAM were individuals and business leaders', who were the decision makers for deciding whether to adopt or not to adopt a given technology for integration of that technology in the organization. Using Davis' model and the CMA model as a guide, the literature researched revealed four main reasons small businesses borrow money: (a) beginning a business, (b) increasing inventory, (c) expanding the company, and (d) strengthening the financials (U.S. Small Business Association, 2011). Financial lending is not always easy for any small business, as there is always a gap between them and the banks' reluctance to issue loans (Deyoung, Frame, Glennon, & Nigro, 2011). Consequently, one of the areas to lower the SREB owner's financial costs was to decrease the technology costs. One of the main reasons SREB owners adopts cloud and mobility services are the cost flexibility (Hawkes, 2013; Poh Mui, 2013; Tripathi & Jigeesh, 2013). Affordable cloud and mobility services imply that users can aim at reducing the total cost of technology ownership (Bolan, 2013; Mell & Grance, 2009; Zhiwei & Guojie, 2011).

Kannabiran and Dharmalingam (2012) proposed the adoption of IT can assist small to medium-sized enterprises (SMEs) cut cost by improving their internal processes, and speed of communication with customers with better distribution of products for online use. Also, financial controls can give an automated and informative understanding of the impact of IT adoption within an organization (Lanz, 2013; Trigueros-Preciado et

al., 2013). Subsequently, the major benefits of advanced IT adoption are reductions in costs and increases in productivity (Kannabiran & Dharmalingam, 2012). Armbrust et al. (2010) stated cloud and mobility technology could reduce the purchasing cost, learning cost; use cost; platform switching cost; electricity; network expenses; and operations. Additionally, Aljabre (2012) stated some businesses had voiced concerns over the use of cloud computing. Some of the concerns included initial startup costs, and data center constraints, the possibility of outages, and loss of customer's information.

Opiola and Lockwood (2012) and Lacity and Reynolds (2014) suggested an assessment begin of business's IT demand for resources before deciding on the technology. The deciding factor for adopting a new technology is awareness of the current market offering for customer service and meeting or exceeding the service while being able to continue growing the business (Lacity & Reynolds, 2014). However, for SREB owners, the need to be in different places at different times far outweighs the possible startup adoption concerns. Zhiwei and Guojie (2011) stated cloud and mobility services provided an identifiable soft cost value of freedom from platform control and ease of use of application usage.

Berman, Kesterson-Townes, Marshall, and Srivathsa (2012) and Yan (2010) stated the top benefit of more than 31% of executives surveyed was cloud and mobility have the potential for decreased fixed IT costs and a more pay-per-use model. Furthermore, the Federal IT Shared Services Strategy in May 2012 concluded shared IT resources was a way to enable decreased cost of IT operations while increasing agility and responsiveness to customer product and service demands (Lippuner, Mehta, &

Kovacs. 2013). Conversely, Armbrust et al., (2010) claimed cloud and mobility services could produce cost reductions as a factor of up to five to seven times the technology operations.

Consequently, reduction in cost is a shift from capital expenses to operational expenses as there is no longer need to build hardware, install software, or pay for dedicated software license fees as businesses need only pay for the technology resources on demand (Berman et al., 2012). In concert, Dhar (2012) believed adopting cloud computing helps shift the cost structure from capital expenditure to operating expenditure, and this contributes to agile IT systems. These cost reductions could help close the financial gap between customers and providers while realizing a reasonable return on investment (Armbrust et al., 2010; Opiola & Lockwood, 2012). Walterbusch, Martens, and Teuteberg (2013) discussed that there are different price schemes for different service providers, but for public computing, there are three different pricing schemes to review: free of charge services, complete packages, and usage-dependent pricing. Furthermore, under the category of usage-dependent, the pricing scheme is further subdivided into pricing per user and component-based pricing (Walterbusch et al., 2013).

Cloud and mobility providers. Providers are organizations that make one or many services available to consumers based on a Service Level Agreement (Hamdaga & Tahvildari, 2012). To find a service provider and understand their product offerings, the SREB owners must search the Internet. Companies such as Rackspace, Amazon, Microsoft, Verizon, AT&T, CenturyLink, and Google all have different offerings

depending on the size of the business (Calloway, 2012; Madria & Sen, 2015). Benson and Morgan (2013) discussed how the advancement capabilities of mobile devices such as smartphones and tablet computers, have led to a significant rise of mobile subscribers in America (35%, and 44% in real estate), England (30%), Singapore (54%), Hong Kong (35%), Australia (34%), and Sweden (35%).

Hawkes (2013) suggested companies adopted cloud and mobility services with time management in mind and suggested the high use of smartphones and computer tablets can improve efficiency and productivity. Additionally, Hawkes stated that using cloud-computing programs assisted in the collaboration of documents such as spreadsheets in accounting software, guides to teach best practices to employees, and maintaining lists with software applications such as Wunderlist—all activities SREB owners used daily. Furthermore, Yu and Buahom (2013) suggested using mobility technology provided opportunities for attracting and retaining customers with the many different mobile devices anytime and anywhere, thus enhancing an individual's overall technology experience.

Many mobility service providers offer a bundled deal of phone line and broadband for a fixed monthly payment while others will add on satellite or cable TV services as part of the deal (Gold, 2012). Some mobility service providers might even offer Internet protocol television services and offer broadband Internet free or at discounted rates (Gold, 2012). Some mobility service providers' offered through wireless fidelity 3G, or 4G mobile phones for automatic synchronization to the cloud over-the-air, and to a laptop or PC after the mobile device is connected. Piccinelli and Gubian (2011)

used the iPhone as an example mobile device that the installed Apple iTunes utility provided a backup feature, which utilized synchronization protocol to copy the iPhone data to a workstation and the iCloud environment. The backup feature is the default behavior of iTunes to make an unencrypted backup without asking, whenever the iPhone connects to a workstation or in the cloud (Piccinelli & Gubian, 2011).

Rackspace's public cloud pricing offers pay-as-you-go pricing for many different operating server environments such as Linux, Windows, and Red Hat; each server offering has a breakdown of pricing based on performance, storage, databases, backups, monitoring, and bandwidth. Maltby (2010) stated after Hurricane Ike in 2008, the company Boiler Management, Ltd., in Houston began using cloud computing through Wi-Fi after they lost connectivity to conduct business. Consequently, now, Boiler Management, Ltd. has no more concerns about troubleshooting server issues, as a connection to their customer's information is always constant (Maltby, 2010).

Verizon has the same offering to SREB owners as Rackspace. However, pricing was not available on their website for SREB owners; the SREB owners will need to contact the company directly for details. Rackspace, Verizon, and CenturyLink are just three example businesses that offer some of the different targeted cloud and mobility services provided today. Lower prices and IT advancements have removed the various technology barriers for SREB owners. Barriers such as virtualization, network bandwidth, and cloud computing have moved into the mainstream of society (Yan, 2010). One of the things SREB owners need to be cautious about is the mired fees, legal liabilities, and limitations with both the mobile and cloud service providers.

Calloway (2012) wrote an article that brings focus to the clickwrap-hidden agreements of limitation and liability clauses. Clickwrap agreements are contracts formed entirely over the Internet, which set forth the rights between service users and service providers. The term clickwrap describes the many online agreements that require a user to click a button or link to agree to the contract (Calloway, 2012). Clickwrap agreements define the scope of the contractual relationship between the customer and service provider (Calloway, 2012). SREB owners must employ legal services before entering into any contractual relationships with service providers. Some contracts abolish a customer's right to recover any damages from the service provider, regardless of the cause of the damage, and some service providers limit a customer's maximum possible recovery in litigation (Calloway, 2012).

Cloud and Mobility Knowledge

The central research question of what strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs is related to TAM and CMA in the conceptual framework. CMA listed not only how individuals select, use, and perceive technology but also how individuals trained for the adoption of new technology. Davis (1986) proposed users might have difficulty judging the applicability of the new technology in relation to their jobs if they have never seen or used the technology before. The NAR (2015) specified remaining up to date and increasing knowledge concerning new technology was one of the biggest challenges for Real estate brokers and agents. The lack of knowledge of the new technology could hinder adoption (Davis et al.,1989). Akaeze (2016) advised when small businesses lack

the necessary education, training, and support required to run their business this contributes to incompetence and eventual small business failures.

To understand some of the perceived strategies of implementing new technology, Venketesh and Bala (2008) stated individual users should anchor their perceptions of their technology beliefs, and later adjust their perceptions of ease of use based on hands-on experience. Therefore, all users of new technology adoption should submerse themselves in learning and understand the new technology to assess how easy or difficult the technology is to use (Venketesh & Bala, 2008). Authors, Davis (1986) and Akaeze (2016) referred to training as significantly related to self-reported usage of the new technology, correlating to the success of the small business. Consequently, training and education are factors affecting the successful adoption of cloud and mobility in the SREB industry (Hasan et al. (2015).

Training and education. Increasing the SREB owner knowledge level of the use of cloud and mobility to reduce technology cost could include multiple options: formal education, hands-on experience through on-the-job training, coaching and mentoring (Alasadi & Sabbagh, 2015; Hasan et al., 2015). Venketesh and Bala (2008) believed adoption of new IT is effective if different modes of training are used to manipulate various factors of IT adoption. Alasadi and Sabbagh (2015) proposed there were two main ways of training: (a) formal education related to an extended period of study applied to both longer-lasting and longer-term activities, and (b) training associated with behavior modification through increasing specific job knowledge and useful skills for job performance.

The NAR (2014) conducted a survey of multiple real estate companies to determine their use and experience of technology. A summary of the NAR survey provided a picture of realtors' technology characteristics and needs. Technology is moving quickly so finding ways to keep up-to-date was the biggest challenge (NAR, 2014). Conventional formal classroom training occurred sometimes; however, realtors were using the technology in of itself to increase their knowledge level for adoption (NAR, 2014).

The ease of use of technology tools allowed the realtor to receive on-the-job hands-on-training and coaching and mentoring from colleagues, all with the use of smartphones, tablets, laptops, and databases (NAR, 2014). These different tools allowed the realtors to always to be mobile and maintain accessibility to their client information with the cloud (NAR, 2014). However, the NAR (2015) reported realtors would like to see additional technology support and training, allowing them to be more on the cutting edge of technology resulting in an easier to use technology adoption and increased home sales. Venketesh and Bala (2008) advised providing intervention through training can assist employees to decide how to cope and adapt to new IT allowing for ease of use and adoption based on job relevance.

Chinomona (2013) stated there is evidence in the small business arena that training enhances the survival rate of small firms, improves productivity, sustains competitive advantage, and ultimately improves the company's financial performance. Furthermore, Chinomona specified there is a positive relationship between business owner expertise and employee skills training and explained it was important for small

businesses to be able to adjust their viewpoint towards their human capital regarding a powerful representative towards growth and profitability for the firm. Venketesh and Bala (2008) proposed businesses who understood and embraced the need for employees to receive training found a favorable perception of usefulness and perceived ease of use for IT regardless of whether the training occurred before or after implementation of the new IT. Consequently, increasing the knowledge for small businesses contributes to a strategy for implementing cloud and mobility products for the reduction of technology costs (Alasadi & Sabbagh, 2015; Chinomona, 2013).

Cloud and Mobility Project Implementation

So far, I have included in this study the history and definitions of cloud and mobility adoption, security concerns, provider information, cost-effectiveness and efficiency, and knowledge acquisition derived from the expanded conceptual framework. However, there is another area to consider, the implementation of the technology. Opala (2012) suggested the success of any technological implementation depends on users' acceptance of such technologies along with human behavior elements. Those behavioral components of an organization are the intent to adopt, threat and technology awareness, and trust in operating systems and security applications (Han, Wu, & Windsor, 2014). Therefore, even though cloud and wireless computing are not new technologies of adoption, their use is a new approach. Therefore it is important to know the various implementation options (Dinh, Lee, Niyato, & Wang, 2013). Consequently, the next natural step is to understand the project methodology options to implement the

technology into the SREB owner's environments within budget and with a specified timeline.

Flaherty (2013) addressed the essence of project management is to produce or deliver on time within budget and in line with the organizational strategy regardless of the project type. There are different kinds of project portfolio management models available to organizations identify major dimensions (alignment, benefits, costs, risks, and interdependencies) an organization can choose from but should consider very carefully which ones best suit their needs in managing their portfolio of assets (Lerch & Spieth, 2013). Heising (2012) suggested a systematic portfolio management model for the ideation and concept definition stage. The portfolio model can assist in ensuring appropriate ideas and concepts are selected and supported thus being implemented faster (Heising, 2012). Asad Mir and Pinnington (2014) advised any organizations should choose an appropriate model approach to project management to drive expected changes through projects aimed at better meeting organizations need.

Conforto, Salum, Amaral, da Silva, and Magnanini de Almeida (2014) and Wysocki (2012) suggested when an organization has a degree of uncertainty of the delivery product and the functionality then an agile methodology is appropriate for use. Wysocki listed four agile models to choose from, rational unified process (RUP), scrum, dynamic Systems development method (DSDM), and adaptive software development (ASD). RUP is an iterative project management lifecycle (PMLC) model; scrum, DSDM, and ASD are adaptive PMLC models (Wysocki, 2012). The iterative model consists of repeated process groups running sequentially within an iterative feedback loop after each

iteration is complete (Khan et al., 2011; Wysocki, 2012). Additionally, the iterative model is a learn-by-doing model and requiring a solution at the functional level but are missing feature details; SREB owners have a known solution and functionality (Khan et al., 2011; Wysocki, 2012). Consequently, implementing the cloud and mobility technology using the agile, iterative model is recommended for SREB owners.

The SREB owners' requirements for implementing cloud and mobility technology is derived from their company's overall strategic mission, goals, objectives, along with their development plan for targeted competitive advantage for current and future years (Carcary, Doherty, & Conway, 2013). Lerch and Spieth (2013) suggested there must be a continuous process to manage projects, application, and infrastructure assets and their interdependencies, to maximize portfolio benefits, minimize risk and cost and ensure alignment with organizational strategy over the long run. Furthermore, Obradovic, Jovanovic, Djordjevic, Beric, and Jovanovic (2012) stated the project manager and team should compile a list of tasks to be delivered to achieve the goal of the project. Agile iterative PMLC is a model some companies should use to implement the new technology into their environment. Agile iterative PMLC project management methodology consists of the five phases of project management, initiation; planning; executing; monitor and control; and closure within an agile iterative PMLC (Khan et al., 2011; Project Management Institute, 2013; Wysocki, 2012).

The initiation phase is associated with the scope and requirements, people, budget, timeline, and stakeholders (Khan et al., 2011; Project Management Institute, 2013; Wysocki, 2012). In the case of the SREB owners, the scope is to implement cloud

and mobility technology with a set amount of budget, within an established timeline. The planning phase is the scope revisited along with a scoping plan (Khan et al., 2011; Mulchay, 2013). Additionally, the areas of schedule, time, quality, human resources, communications, risk, and procurement are also part of the planning phase (Mulchay, 2013; Project Management Institute, 2013; Wysocki, 2012). Laufer (2012) stated planning and control epitomize the backbone of successful projects. The execution phase includes any changes and a look at performance of the project (Mulchay, 2013; Project Management Institute, 2013).

Monitoring and controlling phase is a continuous look at the scope; time; cost measurements; and a revisit of the risk and changes with any possible corrective actions taken (Khan et al., 2011; Laufer, 2012; Mulchay, 2013; Project Management Institute, 2013; Wysocki, 2012). The last phase is the closure of the project. This closure phase includes the lessons learned document, customer sign-off, and the release of resources and vendors (Mulchay, 2013; Project Management Institute, 2013; Wysocki, 2012). To understand the success or failure of a project, one must view the type of organizational cultural environment at a strategic and operational level through understanding the type of leadership style within an organization (Trompenaars & Hampden-Turner, 2012).

There is no right or wrong implementation model for SREB owners to use to implement new technology into their environment. However, focusing on their customer and their company's capabilities allows them to concentrate on the ultimate reason for adopting the new technology. Home buying and selling can be make-or-break for SREB owners as everything is interrelated, subsequently focusing on people and assisting them

to envision living in their new homes and meeting their needs is the ultimate outcome (Poh Mui, 2013). Consequently, the SREB owners must be innovative with their real estate product offerings to fit meet their customer's real estate needs through many different venues. Flaherty (2013) explained for innovation to work the team must first agree on the definition of the strategic goal of the problem to be solved for the project, then define a clear statement of what needs achieving; this should jolt the creative sessions. Additionally, Flaherty stated embracing cloud and mobility technology for the reduction of cost addresses one of the innovative areas of real estate.

Insource and outsource. Since any project implementation carries risks and issues to manage, a risk sourcing plan for the project should be created and include four major areas risk avoidance, risk transference, risk mitigation, and risk acceptance (Mulchay, 2013; Project Management Institute, 2013; Wysocki, 2012). SREB owners should assess the risks of outsourcing and in-sourcing a project. Peslak (2012) stated Gottschalk and Solli-Saether defined outsourcing as the "practice of turning over all or part of an organization's IT function to an IT vendor" (p. 15). Dhar (2012) defined IT outsourcing as an act of assigning or shifting some or all the information technology-related decision-making rights, business processes, and internal activities and services externally in a contractual agreement.

Peslak (2012) also stated the risk around outsourcing occurred in areas such as application development, application management, datacenter operations, PC acquisition, PC maintenance, systems development, systems maintenance, telecommunications/LAN; and IT project management. With the lifestyle of the SREB owners and the need to

reduce technology costs, outsourcing the implementation of cloud and mobility technology can be more appropriate for risk reduction (Hoon, 2013). Han and Mithas (2014) claimed for many organizations, the reduction of operating costs is a fundamental goal of IT outsourcing.

Gannon (2013) advised outsourcing the use of the Internet to provide applications to users eliminates business concerns and gives advantages regarding mobility and collaboration. Additionally, outsourcing the implementation could provide the needed competitive edge for the SREB owners by getting the cloud and mobility product up and running much quicker, thus allowing the business to remain focused on their customer (Han & Mithas, 2014). Willcocks, Venters, and Whitley (2013) wrote outsourcing technology development provides a competitive advantage, provides access to larger skilled resources, shortens the product lifecycle times, and reduces development costs.

Wysocki (2012) suggested outsourcing of projects occurred when there was a shortage of qualified staff members who could perform the implementation. Outsourcing a technology product is also an excellent candidate for the agile, iterative PMLC (Wysocki, 2012). However, some SREB owners might view outsourcing their implementation of the technology project as a negative for their business for fear of change. Consequently, SREB owners must decide whether to outsource or insource their technology before decision making. McKinney (2012) recommended companies should find their level of confidence to quench the fear of uncertainty of outsourcing or insourcing thus avoiding the risk of an unsuccessful project.

Peslak (2012) stated businesses should be aware outsourcing could have a negative morale effect within the organization as well as the overall effect of a view of the profession as there are risks associated with outsourcing knowledge, people, performance measurement, formulating scope, budget, and schedule estimates, and knowledge. McKinney (2012) countered this with the statement that external resources can bring a perspective of seeing problems either internal resources do not see, or who are afraid to speak for fear of losing their job. Based on the fundamental need for SREB owners to stay competitive, the use of outsourcing a technology product could help maintain the SREB owner's reputation in the real estate industry. Reputations grounded in the strategic business objective have better chances of providing a sustainable competitive advantage (Dowling & Moran, 2012).

When SREB owner's reputation has a negative image, in the eyes of their customers the damage to their business could be catastrophic (Stoica, Roach, & Price, 2012). Consequently, trustworthiness on low pricing strategy and brand loyalty builds the necessary positive reputation needed to operate in the real estate industry (Stoica et al., 2012). Dowling and Moran (2012) stated a strong reputation works by increasing the trustworthiness of the seller and the trust of the buyer, thereby reducing risk and the associated transaction costs. With the outsourced service providers' responsible for the implementation of the cloud and mobility projects, along with making sure security is monitored and up to date, the SREB owners need only worry about conducting business anytime, anywhere, on any platform. Freeing the SREB owners from in-house project

implementation frees up time for maintaining a strong positive reputational image that includes the personal touch with the SREB owners' clients (Stoica et al., 2012).

Schaeffer and Olson (2014) suggested leaving all responsibility to the service providers for the hard parts in using cloud and mobility technology, as they do not have the bandwidth or sufficient reliable in-house networks for cloud storage. Smedescu (2013) cautioned about weighing the advantages and disadvantages of outsourced and cloud computing by reviewing the main positive and negative features. Positive features are pay-as-you-go billing model, automatic scalability, pay for the modules you use, outsourcing of everything, and the opportunity for entrance into new markets (Smedescu, 2013). Negative features are security issues, locked into one vendor, not understanding all the costs, not choosing the right vendor, and lack of knowledge of the technology (Smedescu, 2013).

Figure 2 of this literature review display a summarization of TAM and the CMA model found in the conceptual framework section. TAM and the CMA models align with the research in this literature review as to the reasons why individuals and businesses chose to adopt any technology. Specifically, the research provided in this literature review revealed themes for adopting cloud and mobility technology. In addition to the ease of use, usefulness, other factors of adoption were uncovered that contribute to the central research question of what strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs?

Transition and Summary

The next section will continue in a natural flow from my focus in Section 1 on the problem and purpose statements, research and interview questions, conceptual foundation, and the literature review. Section 1 included the specific business problem and central research question under study: What strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs? Section 1 also included (a) the rationale for the qualitative multiple case study design, (b) identification of the population and geographical location of the study, (c) a review of the expanded TAM used as the conceptual framework, and (d) a description of the data collection process for this study.

Section 2 will contain information about the role of the researcher, the data design, method, and collection process. Section 2 will also include participants, population sampling, ethics, data instruments techniques and analysis, and will conclude with the reliability and validity of the research study. Section 3 will begin with a restatement of the purpose of the study followed by information related to the findings from this study on professional business practice, possible contributions to social change, recommendations for action, recommendations for future inquiry, and my reflections as the researcher.

Section 2: The Project

In this section, I will begin by reiterating the foundation of this study. The general business problem was that the rising cost of IT for SREB owners has negatively affected profits (Venkatesh & Sridhar, 2014). The specific business problem was some SREB owners lacked strategies to implement cloud and mobility products to reduce technology costs. The central research question was: What strategies do SREB owners use to implement cloud and mobility products to reduce their technology costs? In this section of the study, I will also present the methodology used for data collection, data storing, and an analysis of the participants' data obtained from the interview process.

Purpose Statement

The purpose of this qualitative multiple case study was to explore the strategies SREB owners use to implement cloud and mobility products to reduce their technology costs. The population included three SREB owners located in Texas who had experience implementing cloud and mobility products and had reduced their technology costs. Alasadi and Sabbagh (2015) and Chinomona (2013) stated the use of cloud and mobility products could contribute to the reduction of technology costs for SBs. The implications for positive social change may include improved changes to SREB owners' organization strategies associated with a higher sense of self-worth and dignity among SREB owners resulting in a higher quality of life and a more efficient performance from their SREBs.

Role of the Researcher

The researcher's responsibility in a qualitative study is to collect data through multiple avenues, such as direct observation in face-to-face interviews, focus group

interviews, and documents (Khan, 2014; Roulston & Shelton, 2015). Furthermore, the researcher's role includes developing research questions; selecting a conceptual framework; selecting participants; collecting, coding, and interpreting the findings of inquiry; and then preparing the results in written form (Yin, 2014). Roulston and Shelton (2015) stated the key issue for the researcher while interviewing the participants is for the researcher to recognize their inquirer position. The researcher should work to remove relationship biases with the topic, participants, or research area of the study (Roulston & Shelton, 2015). Ben-Ari and Enosh (2011) referred to the importance of the researcher identifying and separating personal associations, beliefs, values, and interests that may degrade their research efforts. I worked diligently to remove my personal beliefs, values, and associations while conducting my study through member-checking—assigning codes to participants and sending all the participants the results of the data collected during the interview and when necessary, revising responses at the participant's request.

My past work experience had led me to the following roles in the IT field and around cloud and mobility as a program director, IT operations manager, program manager, project manager, and training manager. These roles did not interfere with my goal of maintaining objectivity during the interview process. I made every effort to avoid biases in my research findings by using member-checking as part of my mitigation and validation plan. Houghton et al. (2013) and Koelsch (2013) suggested that member-checking is useful for additional validation during the data collection process as it can provide additional scrutiny in favor of the participants.

My collection of data focused on the SREB owners. I was the primary data collection instrument for this study. I had the responsibility to control biases and any subjective personal feelings towards the participants. Roulston and Shelton (2015) stated when researchers are the primary data collection instrument they may have difficulty controlling their biases as they interact with their participants. Ben-Ari and Enosh (2011) and Nielsen (2011) stated it is the researcher's responsibility to preserve objectivity throughout the study and provide a truthful presentation of the research findings. I remained objective and did not let my own cultural and historical experiences and views impact my interpretation of the data collected.

During the data collection process, I created a safe and harmless interview site for each participant. *The Belmont Report* protocol provided a list of researchers' responsibilities during the data collection process that included maintaining respect for the participants and protecting the participants, while making every effort to secure their well-being (Koelsch, 2013). Khan (2014) asserted a researcher is never to cause unnecessary or irreversible harm to participants and should make every effort to secure prior voluntary consent. Furthermore, McElhinney, Cheater, and Kidd (2013) proposed the researcher should always treat everyone equally thus ensuring justice and providing fairness of distribution and with no burden on the participants.

Nielsen (2011) stated the researcher assumes all ethical responsibility to protect the rights and welfare of the participants. I used an interview protocol (see Appendix D) to assist me in treating my participants fairly. Creation of an interview protocol in a qualitative study allows the researcher to standardized interview questions and provide

fairness, consistency, and a repeatable process over the course of the research study (Gioia, Corley, & Hamilton, 2013). The combined use of *The Belmont Report* protocol and my interview protocol provided me a roadmap to ensure a safe, ethical, and humiliation free environment for all of my participants.

Participants

The participants in this qualitative multiple case study included three SREB owners. The eligibility criteria for the participants was: (a) the annual revenue of each of the SREB owner's companies was less than the defined standard set by the U.S. Small Business Association (2014) of $7.5 million, (b) the locations of the participants'business were within the state of Texas, (c) the participants were SREB owners, and (d) the participants were above the age of 18. I had no gender eligibility criteria for participant's because gender was irrelevant to my study.

I followed the standardized accessibility process Gioia et al. (2013) suggested for all participants. My first access to participants occurred after the initial introduction phone call and was followed by me sending an e-mail with the consent form for signature approval (Appendices A and D). McDonald, Kidney, and Patka (2013) discussed multiple means to access the participant, such as advertising through social media, television, or newspapers. However, I did not use any forms of social media, television, or newspapers to access the participants. I remained in regular communication through e-mail and telephone with the participants throughout the conclusion of my presentation of the findings. Hoyland, Hollund, and Olsen (2015) suggested maintaining accessibility to the participants; a researcher should conduct continuous negotiations to ensure agreement

and consent to demonstrate transparency of the researcher's identity and the nature of the project and findings.

Irvine, Drew, and Sainsbury (2013) proclaimed that gaining access to a participant either through a face-to-face or telephone interview was necessary to gain the confidence and support from them to build a relationship. By following a standardized access process, I built relationships with the participants. These relationships with my participants allowed me to create a commonality connection through real estate and at the time reminding me my role was to listen, learn, and observe. Khan (2014) stated it is important for a qualitative researcher to establish a connection with the participants as the relationship contributes to the reality of the phenomenon. However, Rossetto (2014) cautioned researchers to maintain boundaries carefully to protect the researcher-participant relationship and ethical obligations. If the participants show signs of distress or become negative in their responses, Rossetto suggested the researcher should pull back and remember the researcher's role is to listen, learn, and observe.

After the initial telephone call, I sent the participants an introduction letter with the reason for the study, along with the consent forms so the participant could make an informed decision on whether or not to participate in this study. Khan (2014) stated researchers should receive a voluntary consent from all participants before the interview. The participant interviews focused on capturing the circumstances of what strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs. Peredaryenko and Krauss (2013) specified the primary reason for a

qualitative inquiry is to understand a phenomenon and gain lived experiences from participants in the study.

Research Method

I chose to use the qualitative methodology for this study to seek and understand the *why* or *how* of what strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs. Frels and Onwuegbuzie (2013) stated qualitative research is a useful methodology as it can assist the researcher in answering the *why* and *how* of a study. Additionally, I used the qualitative methodology to focus on and understand the social setting of the three SREB owners rather than predicting or controlling the setting. Janesick (2011) described the qualitative methodology as a holistic approach that views relationships within systems and subcultures that relate to a face-to-face interaction with the participants.

Pedrosa et al. (2012) stated the use of qualitative methods could assist the researcher in capturing the participants' lived experiences. In this study, I interviewed, observed, and recorded all participants' responses to generate thematic findings. Morse (2015) stated the qualitative researcher's goal is to obtain thick and rich data results from participants through observations during the interview process.

Yin (2009) stated qualitative researchers should conduct interviews with the idea to develop themes derived from textual descriptions, thus obtaining differing perspective views of each participant. These differing participant perspectives contribute to the analysis of qualitative themes and descriptions. Walshe, Ewing, and Griffiths (2012) suggested that in the interview process, qualitative researchers should observe and

ascertain the participant's perspectives and behaviors while the participant works in their environment. I chose to use the qualitative method over quantitative and mixed methods approaches as I was not conducting empirical hypotheses testing; instead, I selected an explorative inductive method. Pedrosa et al. (2012) stated qualitative methods draw on interview questions, images, observations, and inductive analysis of the participants in their natural setting.

The mixed methods and quantitative approaches would have yielded some of the necessary relevant data from the participants of my chosen study if I would have been using a hypothesis to test a theory, but the intent of my study was not to develop or test a theory but rather to simply explore what strategies SREB owners could use to implement cloud and mobility products to reduce their technology costs in a real-world explorative setting. Agerfalk (2013); Frels and Onwuegbuzie (2013); and Venkatesh, Brown, and Bala (2013) concluded the quantitative method is primarily used to conduct surveys and simulation to answer the questions of *who*, *where*, *how many*, and *how much* and discover the relationship between variables, while mixed methods use a combination of both qualitative and quantitative methods. Furthermore, a mixed methods researcher focuses on the resolution of multiple research problems rather than only one and this requires a more complex design (Caruth, 2013; Leedy & Ormrod, 2013).

Research Design

I used the multiple case study design for this study. My use of this design allowed for the real-life lived experiences of the participants to be gathered and analyzed to produce thematic findings. Frels and Onwuegbuzie (2013) and Yin (2014) stated a case

study design is an illustration of either a single or multiple case study of real-life behavioral or contemporary event. The use of a case study is to illuminate the reasons of *why, how,* and *what* of a decision (Yin, 2014). I observed each participant's behavior during the interview process to understand their decision as to why they chose to adopt cloud and mobility technology products into their work environment and understand what strategies they used to complete the implementation.

Miles and Huberman (1994) proposed researchers have five qualitative research designs for usage: ethnography, historical, grounded theory, narrative designs, and a case study. The ethnographic design is appropriate for investigations of cultural characteristics using direct observation of interaction with subjects (Miles & Huberman, 1994). However, this design did not accord with the nature of this study because it did not include cultural characteristics (Miles & Huberman, 1994). A grounded theory design is based on theory development and was unsuitable for this study because there was no intent to establish a theory for cloud and mobility for SREB owners (Lawrence & Tar, 2013).

A phenomenological design is a suitable choice for qualitative research if the intent is to describe personal experiences (Miles & Huberman, 1994). However, I did not consider the phenomenological design for my study because the premise focused on collective organizational experiences rather than an individual's personal experiences. A historical research design is suitable for studies exploring past events (Sundarmurthy, Musteen, & Randel, 2013). The focus of this study was on current, rather than on the historical development of cloud and mobility practice, so the historical design was not

appropriate. The multiple qualitative case study design supported this study, and I conducted an in-depth analysis of the use of cloud and mobility to provide me insights into how SREB owners successfully implemented and used cloud and mobility products to assist them in managing their IT costs. Additionally, the multiple case study design aligned most closely with the focus of this study because of the necessity to obtain data through multiple interviews and direct observation of the SREB owners at work.

O'Reilly and Parker (2013) stated data saturation happens when themes are repeated during the data collection phase, representing a point at which the discovery of new information ends. Cardon, Poddar, and Fontenot (2013) researched various qualitative studies and determined that the sample size for a case study could be a small sample of participants. A multiple case study with multiple participants involves semistructured interviews and allows for data saturation confirmation, which increases the reliability and potential validity of study findings (Cardon, Poddar, & Fontenot, 2013).

Population and Sampling

The population for this qualitative multiple case study consisted of SREB owners located in Texas. The total sample size of this study was three SREB owners. Yin (2009) stated there are no standard criteria regarding sample size when using multiple case design because a sampling logic is irrelevant. Furthermore, Marshall, Cardon, Poddar, and Fontenot (2013) researched various qualitative studies and determined the sample size for a case study tends to be small.

The sampling technique for this study was a purposeful sampling approach. A purposeful sampling approach enabled me, during the interviews with each SREB owner, to collect descriptive data for understanding the strategies used and experienced for implementing cloud and mobility to reduce their technology costs. Chamberlain (2012) and Rubin and Rubin (2012) found purposeful sampling for interviews enables researchers to elicit richer data based on the anecdotal experiences that accumulate long-term. Ishak and Bakar (2014) suggested there is no arduous randomization process of sampling a case study for qualitative research resulting in an allowance for creativity.

The overall criteria for selecting each participant within the population were based on each participant being licensed as a residential or commercial real estate broker. Each participant was over the age of 18. The population selection criteria were enough to allow for rich descriptive data collection and data saturation. Abdullah, Wahab, and Shamsuddin (2013) stated rich information findings would compensate for a small sample size. I sat down with the participants in their environment of choosing to allow for comfort and familiarity then I began the interview process. Abdullah et al. recommended that participant interviews should be conducted in unbiased locations (i.e., coffee shops, public libraries, restaurants) to allow participants to feel relaxed about responding to interview questions.

Ethical Research

Walden University's Institution Review Board (IRB) assigned me an approval number after evaluating my research study. The IRB is responsble for protecting the

rights and welfare of human subjects participanting in research activities. The IRB number for this study was 09-26-16-0039520. One of the challenges for researchers in their study is the assurance no harm will come to the participants and precautions are taken for their well-being (McElhinney et al., 2013). In my study, I worked to ensure participants felt safe and comfortable during the interview sessions. Kahn (2014) stated ethical considerations are more important in qualitative research as approaches are often an intrusion in participant's lives.

Throughout this study, I took measures to ensure objectivity. Some of those measures of objectivity are included in the Table of Contents of this study and in the consent form sent to the participants along with my introduction letter (Appendix A), and interview questions. Kahn (2014) stated all participants must volunteer to participate and should receive information about their rights along with a brief statement about the research study.

Angelos (2013) suggested the informed consent for participation in research is a critical component. The consent form contains participant's rights and options to choose whether they want to leave or participate in the study. The research participants had complete independence and control over their participation in this study and their option for withdrawal at any time during the study. Angelos recommended the importance for the researcher was to give the participants the ability to withdraw from the study at any time. Janesick (2011) stated the researcher should always provide information to the participant concerning procedures for withdrawing from the study. None of the

participants in this study opted to withdraw verbally, electronically through e-mail, or by telephone.

To minimize ethical issues, I e-mailed an introduction letter along with an informed consent form to the participants. I gave each participant a copy of the introduction letter and consent form written in the English language. The letter introduced me and explained the purpose of this study. Each participant read the informed consent form and signed before participating in this study.

Yin (2014) stated all participants' data should remain confidential for 5-years for retrieval purposes. I stored the participant's data using NVivo and Microsoft Word in the Microsoft OneDrive cloud, and the data will remain there for 5-years Additionally, I secured participants data by imposing digital safeguards (i.e. encryption or password security) and removed personally identifiable information from the recordings and notes. I explained to the participants in the consent form the safety procedures of their data. Kahn (2014) proposed researchers should explain to their participants the storage process of their data and include location and length of time. Leong, Bahl, Jiayan, Siang, and Lan (2013) urged researchers after the requisite storage timeframe researchers should make sure all data is irrevocably destroyed on all devices before they are discarded or reused, this ensures participant data cannot be extracted and exploited by malicious parties.

Data Collection Instruments

I was the primary data collection instrument for this qualitative multiple case study, and I used semistructured interviews with open-ended questions. Peredaryenko and Krauss (2013) suggested conducting the interviews face-to-face is to observe and parse

individual visual body behavior for different reactions to the interview questions. Conversely, the interviews are to elicit views and opinions of the participants (Janesick, 2011; Moustakas, 1994). The observations are to understand the participants' behavior and activities in their environment (Janesick, 2011, Moustakas, 1994; Walshe et al., 2012).

After collecting the responses from the interview questions, I created codes in the NVivo software for transcribing the participants' responses for anonymity. Even though Debbi, Elisa, Nigel, Dan, and Eva (2014) and Peredaryenko and Krauss (2013) stated organization documents provide further evidence of the research problem contributing to the possible evolving patterns or themes, the only organization documents reviewed were the participant's real estate websites. I recorded participant interviews and transcribed the interviews in preparation for member-checking. Walshe et al. (2012) suggested the use of audio recording for transcribing is to add to the observations as a form of physical trace evidence of the personal interview process.

To enhance the reliability and validity of the data collection of this study, I conducted a member-checking process with codes assigned. Mangioni and McKerchar (2013) stated the use of various codes assists in the process for assuring reliability and validity and reduces the number of biases and errors that could occur in the study. Additionally, I sent all the participants the results of the data collected during the interview and when necessary, revised responses at the participant's request. Houghton et al. (2013) and Koelsch (2013) stated member-checking adds additional validation of the

data data collected once shared with the participant for accuracy, thus ascertaining if the researcher documented the participant's information correctly.

After I had sent the participants a copy of the consent form and a copy of the interview questions before the interview, I followed up by presenting them with their signed consent form and another copy of the interview questions at the beginning of the interview. I input the participants' responses into the NVivo software which allowed me to create multiple types of queries to test, and retest the internal consistency of the data collected. Cambra-Fierro and Wilson (2011) stated retesting participants' responses leads to consistency and improved validation.

I stored the raw audio data collected from the interviews in the Microsoft One Drive cloud folder and made it available to the participants upon request. I removed identifiable information and any personal references transcribed from the interviews. Houghton et al. (2013) stated it is essential to have accessibility to stored participant's data for later retrieval.

Data Collection Technique

To address the threats to validity, test-retest, reliability, and internal consistency each participant had to go through the same data collection technique through a standardized interview protocol shown in Appendix D. Moustakas (1994) stated the researcher should follow the same fundamental processes for participants for consistency of the data collection technique. I used semistructured interview questions, observations, audio recording, and personal notes combined for data collection. Janesick (2011) stated semistructured interviews with the participants are to elicit views and opinions of each

participant. Irvine et al. (2013) explained interviews allow a participant to say what he or she does, and observations enable the researcher to see what a participant does.

Data collected using semistructured interview questions is advantageous for providing a visual encounter through social cues such as voice intonation and body language (Irvine et al., 2013). Anyan (2013) found individual semistructured interviews method offered flexibility in communicating freely about the topics of interest between the respondents and the researcher in a face-to-face interview format. Additionally, observations during a semistructured interview provide the researcher an advantage of understanding the actions, roles, and behavior of the participants in their environment of choice (Walshe et al., 2012).

However, semistructured observation interviews are limited to understanding structures and processes of the study and maintaining researcher role, biases, and privacy and consent within the participant's environment setting (Walshe et al., 2012). Lopez-Dicastillo and Belintxon (2014) concluded observations during the data collection process of participants presents challenges that should be addressed during the research process to ensure validity and relevance. West and Kreuter (2013) stated during the interviewer process; the researcher may observe some participants showing more responsiveness than other participants. The researcher interprets the less active participants as a thin-slice observation based on first impressions and intuitions (Kreuter, 2013). This can result in interviewer observation errors that can hinder the quality of the study. However, the researcher can correct the thin-slice observation through a deep

knowledge of those factors that influence their quality of their study topic (Kreuter, 2013).

To maintain the least amount of subjectivity in my study, each participant had a minimum of 60 minutes to respond to the interview questions. I created a standardized file structure naming convention to assist me in minimizing some of the data collection disadvantages. Houghton et al. (2013) and Peredaryenko and Krauss (2013) stated the data collection phase could sometimes present challenges in maintaining an impartial position, which can be a disadvantage. To counter this drawback, Peredaryenko and Krauss suggested researchers employ a variety of different data sources to assist in supporting a qualitative case study. Collecting data that is information-rich is one different source type (King & Nair, 2013). I collected the participant's responses using semistructured interview questions, and observations of the participants' behavior.

After each interview was complete I labeled the audio and transcript files consistently by the participant transcript identification number. I used a file name structure SREB1, SREB2, and SREB3 for standardization of the interviews. Then I transposed the transcripts of each participant into the NVivo software for coding and analysis of the responses while looking for reoccurring themes from the data collected. Carver (2014) found turning audio data into written transcripts can allow for coding and analysis and concluded identifying aspects of the participant data collected while conducting selective or complete coding can represent evolving themes in the study. Evolving themes occurred during the querying of the written participant's transcripts.

With the participants' views derived from the semistructured interviews, the participants' opinions, and my observation of the participants' behavior during the interview assisted me in member-checking. Member-checking provides increased validation during which the data collected from the participant during the interview is returned to the participant for additional scrutiny of the transcript thus solidifying if the researcher documented the participant's information correctly (Houghton et al., 2013; Koelsch, 2013). Member-checking is the process of going back to research participants for their confirmation of the transcripts, or it can be an opportunity to gather material to elaborate your categories (Harvey, 2015). Moreover, Koelsch (2013) stated member-checking provides order for assessing the accuracy of which a researcher has represented a participant's subjectivity. My use of the member-checking comprised of providing each participant a copy of the results from the transcripts of their interview, and when necessary, I revised the transcripts at the participants' request. I did not conduct a pilot for this study.

Data Organization Techniques

After the personal interviews had been completed, I transcribed the interview recordings using iTalk software and maintained them in a secure folder in the Microsoft OneDrive. I had a separate folder for each participant with handwritten notes from the interview that aided me with validity to the audio recordings. Additionally, after the interview, I reviewed the digital audio transcripts while replaying to ensure the accuracy of the transcript. Perera and Hewege (2013) stated researchers should carefully read the interview transcripts as this can assist the researchers to gain a general idea of what

happened while they were in the field. After a short period of internal reflection, I shared my transcripts with the participants to verify accuracy of the transcripts. Peredaryenko and Krauss (2013) referred to the reflection as reliving, or awakening to certain nuances and subtleties recalled during the interview.

Cambra-Fierro and Wilson (2011) suggested that researchers code and label audio and transcripts consistently for participants' information. I imported the transcripts to the NVivo software for coding and analysis of the interviews then labeled the audio and the transcript files consistently by file name and number structure. I used the file name structure of SREB1, SREB2, and SREB3 for standardization of the interviews.

Houghton et al. (2013) believed using NVivo could enhance rigor and provide an audit trail of decisions made during the data collection procedure. I stored all data on my personal computer with a backup made on the Microsoft OneDrive, and the data will remain there for 5-years. Yin (2009) suggested the researcher should store data in a manner retrievable later. Five years after completion of the study, I will destroy all paper by shredding and erase all data stored online within the Microsoft OneDrive. Leong et al. (2013) mentioned new solutions to destroy data permanently after the requisite storage timeframe to ensure the audit trail concludes after obligated storage timeline.

Data Analysis

Data analysis involves working with and organizing data by breaking the data down and synthesizing the data to search for patterns and deciding the relevance of the data (Mangioni, & McKerchar, 2013). I used a cross-case analysis to compare case-specific factors and determine patterns of associations, by generating code tables and

matrices. Bazeley and Jackson (2013) and Chowdhury (2015) stated data analysis consists of coding, sorting, sifting, paraphrasing, transcribing field notes, and organizing qualitative data collected. In this study, the data analysis process included coding, sorting, querying, and analysis of the data gathered from the interviews, participant behavioral observations, and online websites.

Once the multiple sources of data analysis (participant behavioral observations, semistructured interviews, and website document review) were substantiated, I completed data triangulation to confirm data and to ensure data was complete. The five types of triangulation are (a) analysis triangulation, (b) data source triangulation, (c) investigator triangulation, (d) theory triangulation, and (e) methodological triangulation (Yin, 2009). Data source triangulation is especially appropriate for this qualitative multiple case study because corroboration of the data collected using semistructured interviews and online websites assisted in determining construct validity.

I used iTalk software to transcribe the interviews. I used codes in the NVivo software to serve as a table of record that contained a list of predetermined codes to gather information. The codes assisted me in the construction of reliable data gathering for producing a network of themes to output into tables for better viewing.

The NVivo tool provided me the ability to manage, analyze, and report on my semistructured interview data responses, websites, images, and social media posts when necessary. The NVivo tool provided me the ability to deeply analyze my data using search, query, and visualization tools, thus uncovering subtle connections to justifying my findings. Overall, the NVivo software allowed me a quick data analysis with

impactful outputs. By using the NVivo software, I was able to see how cloud and mobility technology plays a factor in the SREB owners' lives.

I used face-to-face semistructured interviews, broker website documentation, and my observations of the participant's patterns of behavior during questioning, and audio recorded in chronological order for data coding of patterns and themes from the participants' perspective and continually analyzed and crosschecked by organizing the data into different categories. Coding is defined by Glaser and Laudel (2013) as a means for applying codes to structured text. The text usually consists of paragraphs that characterize narrative units. However, codes can be applied to text segments of all lengths (Glaser & Laudel, 2013). The coding of interviews matched the concepts used in Van Kaam's method of coding with groupings, subgroupings, and themes. I used a thematic network design to assist in correlating the key conceptual framework constructs.

Koh et al. (2014) stated the use of thematic network design is to present as a web-like illustration that summarizes the main themes derived from the collected data. When a researcher uses thematic data analyses, they are striving to extract the themes that are prominent and relevant in the text at different levels (Debbi et al., 2014). Thematic networks facilitate the structuring and depiction of these themes (Koh et al., 2014). The themes and patterns I collected afforded me the understanding of what strategies SREB owners used to implement cloud and mobility products.

I used the thematic multiple case study design as a guided to understand the strategies SREB owners use to implement cloud and mobility products to reduce their technology costs. As I observed the participants' patterns of behavior during the

interview process, I established relationships with the participants by engaging with them during the questioning process. Braun, Clarke, and Terry (2014) proclaimed thematic analysis systematically identifies, organizes, and offers insight into patterns of meaning across a data set. The thematic analysis could assist the researcher in bringing to light the significance and richness of the data allowing the researcher to see and make sense of collective or shared meanings and experiences of the participants. Additionally, Janesick (2011) suggested when a researcher uses thematic analysis, they are striving to extract the themes that are prominent and relevant in a text at different levels. I derived the prominent structural themes that included textual descriptions of the data analyzed.

The formatting of the interviews questions provided me information on the five focus topic areas of the literature review: (a) perception of CMA, (b) cloud and mobility security, (c) technology cost effectiveness, (d) cloud and mobility knowledge, and (e) cloud and mobility implementation. Coding reflected the themes of the study central research question: What strategies can SREB owners use to implement cloud and mobility products to reduce their technology costs. Drew (2014) and Kapoulas and Mitic (2012) stated after a theme is identified then a code based on the frequency of that theme can be assigned based on the participant's understanding along with a visual diagram derived from textual and structural descriptions to elucidate similarities and differences and provide significant statements from units within categories. I placed the results of the themes into a table and confirmed these themes aligned with the responses from the participant interviews and the participants' individual website documentation. By using

the qualitative thematic case study network design, I was able to focus on the SREB owners and the strategies they used to implement cloud and mobility.

The concepts measured by the instruments included the nine semistructured interview questions in determining what strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs. I calculated the scores and their meanings from the frequency of the themes. Houghton, Casey, Shaw, and Murphy (2013) stated the calculated scores and their meanings would derive from predetermined codes created as each conceptual question is part of the central research question and will have an associated theme. Houghton et al. suggested reviewing the codes repeatedly for clarity.

Reliability and Validity

Reliability

Mangioni and McKerchar (2013) explained the overall objective for reliability in any study is to ensure another researcher can follow the same procedures using the results in the findings and conclusions of a study. Anney (2014) suggested these same findings and conclusion ensure data dependability. Additionally, the overall goal of reliability is to reduce the number of biases and errors that could occur in the study (Mangioni & McKerchar, 2013; Street & Ward, 2012).

Dependability. Anney (2014) defined dependability as evaluating the findings and the interpretation and recommendations of the study to ensure they are supported by the data received from the informants of the study and findings over time. My first step to ensuring reliability and dependability was to document my steps by utilizing a multiple

case study design, semistructured interviews, observations, transcript review, and member-checking. Additionally, Mangioni and McKerchar (2013) suggested the critical piece of reliability is for the researcher to document the behaviors consistently along with responses in attempting to understand the meaning of the data collected (data interpretation). By the utilization of standardized interview questions (Appendix C), and interview protocol (Appendix D), I worked to ensure that the wording of the questions was consistent with my doctoral study thus adding to the reliability. Houghton et al. (2013) stated to ensure dependability of a study the inclusion of raw data, interview notes, and summaries as contributors can guarantee an audit trail.

Validity

There are three forms of validity construct, internal, and external (Mangioni & McKerchar, 2013). External and internal validity could be a nonstatistical qualitative assessment of content (Hobart et al., 2013). Mangioni and McKerchar (2013) stated internal validity is the method of instruments used and provides the data appropriate to the research that demonstrates authenticity. Populations, settings, treatment and measurement variables relate to external validity (Hobart et al., 2013; Mangioni, & McKerchar, 2013).

Construct validity is used to recognize appropriate operational measures for concepts of the study (Hobart et al., 2013; Street & Ward, 2012). To enhance the validity of the data collected and ensure credibility, I used a member-checking process with codes assigned to evolving keywords. Houghton et al. (2013) and Koelsch (2013) stated member-checking is used for validation during which the data collected is taken back to

the participant site and exposed to the scrutiny of the participants' who provided information, thus ascertaining if the researcher documented the participant's information correctly.

Creditability. Anney (2014) defined credibility as the level of confidence that is placed in the truth of the research findings. The researcher brings credibility to their study if their interpretation of the participants' original views represents credible information drawn from the participant data collected (Anney, 2014). I safeguard creditability in this study by using data source triangulation. Data source triangulation involves the collection of data from different types of people, such as individuals, groups, families, and communities, to gain multiple perspectives and validation of data (Carter, Bryant, DiCenso, Blythe, & Neville, 2014). I used the transcripts from my standardized semistructured interviews, the participants' behavior obtained through observations, and the website documentation to triangulate the data. The two main reasons for triangulation are to confirm and ensure the data is complete (Houghton et al., 2013).

Transferability. Transferability refers to whether the findings can transfer to a different situation but still preserve the intended meaning (Houghton et al., 2013). Houghton et al. (2013) and Keane, Lincoln, and Smith (2012) stated to determine transferability of the original context of the research the researcher must adequately describe the findings to avoid judgments. Houghton et al. stated the researcher should provide accounts of the research method and examples of raw data to the readers and leave them to their interpretations. The researcher should collect thick and rich descriptive data to allow comparison context to other possible contexts to ensure

transferability is contemplated (Anney, 2014). If another researcher decides to follow the same procedures outlined in this study, their findings and conclusions will transfer to their study. However, transferability of results from this study may be difficult as some knowledge level of cloud and mobility technology products is required. Thus, I will leave the transferability of my findings to the reader and future researchers' as my study is unique to SREB owners.

Confirmability. Confirmation is the process of comparing data gathered from multiple sources to explore the extent to which findings can be verified (Carter et al., 2014). Street and Ward (2012) stated triangulation refers to the verification of data by multiple reference points that provide a measure of reliability when facts and interpretations originate from different source types of data. Houghton et al. (2013) stated confirmability refers to the neutrality and accuracy of the data and is closely linked to dependability. Mangioni and McKerchar (2013) explained that confirmability attempts to ensure an audit trail for other researchers so they can follow the same procedures used in the study and discover similar findings and conclusions. I used NVivo to enhance the rigor of my study as NVivo provided a comprehensive audit trail of decisions made during data collection and analysis.

Data saturation. Data saturation occurs when the discovery of new information ends in the sense that participants repeat emergent themes during the data collection phase of a study, thus representing a point at which the discovery of new data ends (O'Reilly & Parker, 2013). The total sample size of my study was three SREB owners. Yin (2009) stated there are no common criteria regarding sample size when using

multiple case design because a sampling logic is irrelevant. As a qualitative purposeful thematic multiple case study, I used themes and patterns of analysis of the three SREB owners until the themes become repeatable thus reaching my data saturation. Fusch and Ness (2015) wrote data saturation is achieved when there is enough replicated information in the study, and there is no ability to obtain additional new information, and there is no need for further coding as it is no longer feasible.

Transition and Summary

This section involved the structure for my qualitative thematic case study. Moustakas (1994) stated the case study approach involves portraying the essences of the experience and observing the behavior of the participants. In this section, I presented the role of the researcher, the data design, method, and collection process. Additional parts of Section 2 included the participants, population sampling, ethics, data instruments techniques and analysis, and it concluded with reliability and validity of the research study. My focus remained consistent throughout this study—to understand what strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs.

All data collected, analyzed, and synthesized related to the participants' knowledge level of cloud and mobility products to reduce their technology cost. I will present my findings of the data collected and analyzed in Section 3. Section 3 will begin with the purpose of the study and then move on to a summary the findings, presentation of the findings, applicability for professional use, implications for social change, my recommendations for action and further research, my reflections, and a conclusion.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple case study was to explore the strategies SREB owners use to implement cloud and mobility products to reduce their technology costs. Three SREB owners participated in this research based on the eligibility criteria I presented in Section 2. Each participant interview occurred in an environment where the participants felt comfortable providing detailed responses to nine semistructured interview questions (see Appendix C). From the data collected, various strategies emerged that other SREB owners can use when adopting cloud and mobility products.

Presentation of the Findings

The central research question for this study was: What strategies do SREB owners use to implement cloud and mobility products to reduce their technology costs? After the data collection process, transcript review, and member checking were completed, three core themes emerged. The emergent themes were (a) client accessibility strategies, (b) product affordability, and (c) transferability of IT security risks.

Emergent Theme 1: Client Accessibility Strategies

The first theme that emerged among strategies SREB owners use to adopt cloud and mobility was client accessibility strategies. After reviewing the participants' responses and inputting the data into NVivo 10, it became apparent to me that none of the three SREB owners interviewed had any formal written strategies they used when deciding to adopt the use of cloud and mobility products. Case participant SREB2 stated, "We have to keep up with what is happening in the technology world and to keep up with

the clients." Case participant SREB1 stated, "No real strategies were used, it was convenient and easier than conducting a face-to-face meeting with the customer to obtain signatures, now I have access to applications at my fingertips." Additionally, case participant SREB 2 stated, "we had conflicts when we first started using the Microsoft products (e.g., Excel spreadsheets), and so we switched to a cloud-based management software such as buildium and appfolio."

The SREB owners' first priority was keeping in contact with their home buyers. Although technology cost and security mattered to the SREB owners, accessibility to their customers was the SREB owners' first priority. The findings from the SREB owners concur with the two key technology adoption determinants from Davis' (1986) TAM: (a) perceived usefulness, or the extent to which a person believes using an IT will enhance his or her job performance and (b) perceived ease of use, or the degree to which a person considers using IT will be free of effort. Cloud and mobility technology adoption is useless to SREB owners if they do not have accessibility to their client and their client information. Accessibility to clients is how the SREB owners generate revenue.

Case participant SREB3 stated:

> If I do not have accessibility to my clients, I will be out of business. For example, my phone went down one time, and before I could leave the office, I had to call Sprint and have a new operational phone, so I had to buy another phone right there on the spot. Without my phone, I cannot communicate with my clients.

Case participant SREB1 stated:

> It's imperative as real estate agents and real estate brokers to know your clients within your community and know how they want you to access them. Millennials want to communicate by texting; they don't want to communicate by a phone call in fact if you call they may not answer. They expect a link in the text to a document to sign. I use Dotloop and Zipforms to work with client information.

Case participant SREB2 stated:

> The growing pain for any small business is how I get my employees to access the data. It is crucial for us to be mobile, to conduct our real estate business with our customers. We are using Dropbox for business, and then as a backup, we also use OneDrive for business to store photos, property management and real estate contracts and agreements. Additionally, we incorporated using buildium and appfolio software that is all cloud based.

Table 2 shows the frequency of participants' comments concerning client accessibility strategies.

Table 2

Number of Times Client Accessibility Strategies Discussed

Client Accessibility Strategies	*n*	Percentage
SREB1	133	63%
SREB2	50	24%
SREB3	29	14%
	212	100%

Note. n = frequency or number of coding references

Emergent Theme 2: Product Affordability

The SREB owners' second priority was related to technology product affordability. The theme of product affordability confirms Davis' (1986) TAM findings and the extended CMA diagram (see Figure 1) relating to the idea that the success of any technological implementation is dependent on users' acceptance of IT to increase productivity and save time and money. Case participant SREB1 stated, "I am currently paying for the iCloud storage and membership to ERA real estate." Case participant SREB3 stated, "I pay Sprint as my phone provider and DocuSign as my cloud software." Case participant SREB2 stated, "I looked at numerous opportunities so I could use something cloud based to get rid of my cost.

The SREB owners needed to keep their operating overhead low freeing up additional capital for other uses. Zhiwei and Guojie (2011) stated cloud and mobility services provide an identifiable soft cost value of freedom from platform control and ease of use of application usage. Conversely, Kannabiran and Dharmalingam (2012) proposed the adoption of IT can assist SMEs cut cost by improving their internal processes and speed of communication with customers with better distribution of products for online use.

Case participant SREB1 stated:

> It is important to keep my costs low as possible. Because I could be using my money doing something else and I hate to spend the money if I don't need to needlessly. After overhead expenses, one area I use the extra money for is making sure my company is marketed on Internet websites like Yelp and Google correctly.

> I paid $100 to $200 a month for a few months to a company to have them monitor and make sure that all my information was correct.

Case participant SREB3 stated:

> Lower overhead is vital to me. But my initial investment of DocuSign was not low I believe. I paid $200 first then $40 to $50 annually, so my overhead increased slightly at first. But I feel it has paid off towards my business generation. But to me, it is important to lower my product costs.

Case participant SREB2 stated:

> My issue is how I get my employees to be operational and proficient at a lower cost. Now with cloud-based products, we have one shop, one kill, one price, with multiple users logged on to their workstations.

Table 3 shows the frequency of participants' comments concerning the product affordability.

Table 3

Number of Times Product Affordability Discussed

Theme Client Product Affordability	*n*	Percentage
SREB1	16	33%
SREB2	19	39%
SREB3	14	29%
	49	100%

Note. n = frequency or number of coding references

Emergent Theme 3: Transferability of IT Security Risks

The third priority for SREB owners was security risks. The theme of security risk aligns with Davis' (1986) TAM and the CMA of the usefulness of the system for the user. Opala (2012) stated if a business owner decides to switch to the latest cloud and mobility technology, there has to be a balance of data security protection and intrusion/invasion prevention in the IT environment. All three of the SREB owners believed they have solved most of their security risks by transferring their risk to outside providers. Case participant SREB2 stated, "Everything is now outsourced, so no more concerns." Case participant SREB1 stated, "I cannot run scared of security concerns too much because my whole life is out there already as a real estate broker."

Case participant SREB3 stated:

> I do not want to be hacked. However, I am not really concerned about security because basically, other companies are handling my security. I use DocuSign for just signatures, and the contracts are in the provider software online. Also, I do all my business banking online, and that is through a secure website.

Case participant SREB2 stated:

> At first, we were always concerned about security risks because we were using customer social security numbers, pulling credit reports, and conducting background checks and housing the customer data in-house on our business servers, but when we upgraded to Dropbox and OneDrive for a business that concern somewhat went away. Dropbox for business does a number of backups of our data, and OneDrive for business is housed with Microsoft. So now if we have

> a security issue and we are hacked, this is considered a reportable event. This is a reportable event because we do have social security numbers and so forth but I have transferred my risk to the outside providers, and the risk of their servers versus my servers being hacked is less.

Case participant SREB1 stated:

> Personally, our office computers are covered, I have a McAfee account so I feel like as far as virus protection, and I keep a warranty on the computer so if there is a problem I can call and find out you know what's happening. So far, I don't believe I've been had any hacked. My LinkedIn account was hacked, and I had to change my username and password. But for the outsourced software I use, I suppose if I am infected that many other people would be infected, and hopefully, I can work my way out of it eventually. I actually had my bank account hacked recently through a debit card. But the bank was able to put the money back within a couple of days, and they solved the situation. So just vigilance and watching these things and hopefully we will not be affected and if we are we'll just deal with it.

Table 4 shows the frequency of participants' comments concerning transferability of IT security risks.

Table 4

Number of Times Transferability of IT Security Risks Discussed

Theme Transferability of IT Security Risks	*n*	Percentage
SREB1	15	47%
SREB2	10	31%
SREB3	7	22%
	32	100%

Note. n = frequency or number of coding references

The findings of this study revealed no formal or written strategies SREB owners chose to implement cloud and mobility products to reduce their technology costs. The SREB owners' only strategies were to keep up with the needs of their customers, and if technology allowed them to achieve this goal effectively and efficiently then, they would research products to use that met those needs. The discovery I made in this study with the highest priority for SREB owners was the importance they placed on their ability to access their clients and their clients' information over the cost and security factors.

The findings of the study were consistent with Davis' (1986) TAM in that the SREB owners would not adopt any cloud or mobility products if they did not find the technology met their specific needs (usefulness) or the products were not easy to use. Hawkes (2013), Poh Mui (2013), Tripathi and Jigeesh (2013), and Kannabiran and Dharmalingam (2012) referred to cost as the highest priority for SREB owners. In a peer-reviewed article, Khan (2016) stated one of the main goals of organizations adopting cloud and mobility products are the advantages the products offer in reduction of cost

resources. To SREB owners in this study, cost and security factors were important but not their top priority.

Applications to Professional Practice

The findings of this study revealed how SREB owners used their strategies to implement cloud and mobility products. Each theme exposed the insight that no formal or written strategies were necessary for successful application of cloud and mobility products. The SREB owners' highest strategic priority was the ability to access their clients, followed by cost reduction, and then securing client information. The results of this study can aid other SREB owners to understand comparable approaches to adopt cloud and mobility products. Furthermore, I derived the findings on the informal strategies SREB owners used from technology usage, daily hands-on experience with their customers, on-the-job training, and coaching and mentoring. Akaeze (2016) referred to exploration steps as a form of training that relates to self-reported usage of the new technology correlating to the success of the SB. Consequently, additional formal and informal training contributes to improved business practice within the real estate community.

The research findings are also meaningful for software cloud application and mobile providers to improve business practice for a heightened awareness of their SREB owner customer base. Walterbusch, Martens, and Teuteberg (2013) discussed the different price schemes and service packages offered by various service providers based on usage-dependent pricing. From the findings of this study, the many cloud and mobility providers can create an improved and detailed business service offering aligned with

simple pricing schemes for this specific customer base. Lastly, these study results may provide the SREB owners and mobility and cloud providers an improved strategic business plan for the specific requirements and conditions for success within each of their respective industries.

Implications for Social Change

The impact of improved client accessibility strategies positively affects SREB owners by cultivating enriched customer service relationships while simultaneously increasing organizational reputation and revenue. Furthermore, the adoption of cloud and mobility attributes to improved customer service relationships by making it easier to share information swiftly and securely at a lower cost. Therefore, implications for positive social change include increased customer and community collaboration, a better work environment for real estate agents, and an improved quality of life for SREB owners and their clients. Ahlquist (2014) suggested implications of any research related to social change influenced values on an individual's consciousness self-level along with commitment, purpose, collaboration, and organizational citizenship.

When SREB owners are collaborating with their clients, they are striving to assist in delivering the dream of home ownership. This collaboration dreams of home ownership builds lasting customer relationships while achieving societal and community trustworthiness through organizational brand loyalty (Stoica et al., 2012). Moreover, meeting the SREB owners' additional goals of (a) reduction in technology costs and (b) lower data security vulnerability leads to increased return on investment and survivability. Dowling and Moran (2012) stated a strong reputation works by increasing

the trustworthiness of the seller and the trust of the buyer, thereby reducing risk and the associated transaction costs. Subsequently, the findings of this study may provide a positive social change for other SREB owners by demonstrating effective strategies for client accessibility, technology cost reductions, and reduced security risk while maintaining a positive value-add image within their surrounding communities.

Recommendations for Action

After identifying the themes, I developed three main recommendations for action. The findings captured the participants' perspectives within their own real estate businesses and disclosed the challenges of what the most important factors are before adopting cloud and mobility technology. The findings illuminated for other SREB owners' suggestions for prioritizing and understanding their clients and how best to access them and their information while reducing cost and lowering security vulnerability.

Recommendation 1: Increase Customer Awareness.

From the case participants' responses and data analysis from this study, I recommend SREB owners explore multiple technology offerings to access their clients. Sultan (2013) wrote SBs rely mostly on informal person-to-person communications and their operations are people-centric. The participants' responses in Theme 1 offer real-life examples of how to learn and understand their clients, and the buyers in their real estate industry. Figuring out the desires and generation of those buyers and the latest technology they use (smartphones, tablets, and cloud applications) will improve communication through face-to-face, text, e-mail, or phone correspondence. Improving communication

with the buyers contributes to generating revenue for SREB owners. Nelson and Quick (2015) found organizations with strong communications with their customer's function better than those without.

Recommendation 2: Increase Awareness of Cost and Security.

The responses from the SREB participants in theme 2 and 3 did divulge new priorities of apprehension for their industry; cost and security. I recommend SREB owners have a detailed strategy for researching the cost and security elements. Khan (2016) wrote the critical elements for the effective strategies include cost and security. Maintaining low operating overhead and releasing the extra capital to fund other necessities such as advertising and perhaps formal training will contribute to increasing revenues. Furthermore, outsourcing the risk of protecting client and company data to a third-party provider, will not only lower possible security vulnerabilities to hackers but also contribute to lower costs because there are no in-house servers and databases to maintain.

Recommendation 3: Insource Versus Outsource.

From the data analysis and case participants' responses from this study, I recommend SREB owners create a strategic approach to evaluating risks and issues to determine whether to insource or outsource their technology needs. SREB2 in Theme 3 discussed the differences between the uses of the in-house and outsource technology options. All the participants in Theme 3 outsourced their technology to providers as a form of risk transference. SREB2 stated, "everything is now outsourced, so no more

concerns." Mulchay (2013) and Project Management Institute (2013) suggested businesses should assess the risks of outsourcing and in-sourcing a project.

The lifestyle of the SREB owners and their need to focus on accessing and continuously engaging with their clients, along with the significances of reduced technology costs and lower security vulnerability, petition for a recommendation of outsourcing cloud and mobility technology to an outside service provider. Gannon (2013) advised outsourcing the use of the Internet to provide applications to users eliminates business concerns and gives advantages regarding mobility and collaboration. Moreover, outsourcing the implementation can give the competitive edge to the SREB owners by getting the cloud and mobility product up and running much quicker, thus allowing the business focus to remain with the customer (Han & Mithas, 2014).

The findings of this study can be disseminated through various literature channels and conferences such as PMI and Educause. Moreover, the findings can be used for training by the NAR. Once study results are published I will provide copies to the SREB owner participants. Furthermore, I will provide results of my study for a media release through various media outlets. Lastly, I plan to attend various conferences to present my findings and possibly conduct training and speaking events in the real estate and education environment.

Recommendations for Further Research

This study merits future research on the influences of real estate purchasing among the millennial community. SREB 1 stated, "Millennials want to communicate by texting, they don't want to communicate by a phone call in fact if you call they may not

answer." Technology has changed over the years. Consequently, an exploration of new forms of client accessibility targeting the millennial community is recommended for future research

This study had three fundamental limitations. The first limitation was related to how participants might respond to questions in their assessment of their belief in what the researcher wants to hear. This first limitation became a reality for me as the participants I recruited for this study conveyed not only their experiences with implementing cloud and mobility products in their environment but added additional information they believed I should hear about them on a personal level.

The second limitation of this study was related to the possibilities of insufficiencies of the findings during the data collection and data analysis phases. Although I saw no insufficiencies in the data collection process, it was quite evident the SREB owners did not have formal written strategies to understand their customer needs only informal technology strategies to provide increased customer accessibility. The third limitation of this study was the assumed limitation of the data collection results due to lack of knowledge and understanding of the participants in relation to cloud and mobility products. This limitation was contradicted in the aftermath of the data collected. Consequently, this third limitation was not a limitation.

The resulting two limitations can be addressed by first increasing the population size of the SREB owners within the United States or other countries. This may make it easier for the researcher to filter the participants' responses to the interview questions and perhaps achieve added new themes. These new emergent themes may contribute to a

comprehensive understanding of the SREB owners client informal or formal accessibility strategies. In addition to the expansion of a larger SREB owners population, another recommendation for further research is an exploration of other types of small businesses such as the medical and construction industries. This expansion for research in other small business industries could perhaps provide another perspective thus broadening the scope of future studies.

Reflections

I selected the subject of exploring the strategies SREB owners use to implement cloud and mobility products to reduce their technology costs because of the lack of scholarly research in the field. As I collected the data for my study, I assumed my past work experience in the roles I held as program director, IT operations manager, program manager, project manager, and training manager would interfere with my objectivity during the interview process. But I discovered my past and present work experiences had no influences on the interview and data collection processes. In fact, one of the SREB owners instructed me to use the iTalk cloud application instead of my USB recording device to conduct the interview. Not only did the SREB owners increase my cloud and mobility knowledge, they all want to work with me in the future for joint writing ventures within their industry.

This doctoral journey has been phenomenal and affected me in ways that have surprised me to the core. First I was not prepared to endure the challenges of obtaining scholarly peer-reviewed articles for cloud and mobility topics, then translate those articles into a dissertation. Additionally, I was not prepared for the length of time a doctoral

journey takes to complete and all the personal and extreme life sacrifices I had to make. During my 5-year undergraduate degree, 3-year graduate degree, and now the 6-year doctoral journey I developed an enormous will to survive and never give up. I obtained this will to never to give up through life's trials and my experiences attained during my doctoral editing process. I will use my Doctor of Business Administration degree in project management from Walden University to help my community by being a mentor to women and children and teaching them that with hard work, they too can achieve their goals. I want to lead by example and become a testimony that dreams do come true.

Study Conclusions

I used a multiple case study to explore the strategies SREB owners use to implement cloud and mobility products to reduce their technology costs. Three SREB owners located in the state of Texas who had experience implementing cloud and mobility within their environment participated in this research. Data analysis consisted of using NVivo 10, recorded transcripts, and member checking to confirm the responses from the participants were correct. I achieved data saturation when I exhausted all emerging themes. The three main themes emerged from the data included (a) client accessibility strategies, (b) product affordability, and (c) transferability of IT security risks. My findings of the study indicated SREB owners used no formal or written strategies to implement cloud and mobility to reduce their technology costs. The SREB owners' only strategies were to keep up with the needs of their customers, and if technology allowed them to achieve this goal effectively and efficiently, then they would research products to meet their needs. These findings from the SREB owners concurred

with Davis' (1986) TAM two key technology adoption determinants: (a) perceived usefulness, the extent to which a person believes using an IT will enhance his or her job performance and (b) perceived ease of use, the degree to which a person believes using IT will be free of effort.

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Appendix A: Introduction Letter

Dear Potential Research Participant:

As a small real estate business, I thank you for your time. I am conducting a doctoral study of what strategies you used to implement cloud and mobility products to reduce your technology costs? The purpose of this empirical, qualitative thematic multiple case study is to explore what strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs?

If you agree to participate in this study, I will conduct an interview with you that will last approximately 30 to 60 minutes. Your participation in the study is completely voluntary. Your information is confidential, and I will not release the specifics of any interview with anyone. I will use the information to determine various trends and relationships along with the other interview data to form conclusions about the best way to see what strategies SREB owners can use to implement cloud and mobility to reduce technology cost. After you agree to participate in the study, I will be providing detailed questions during the interview.

While the study may be published in the ProQuest Dissertation Database, the individual interviews with each participant will be kept confidential. No individual other than my doctoral study committee at Walden University will have access to the interview transcripts. I will not release information that could impact your position within your organization.

If you have any questions, please contact me at any time. Thank you for your consideration.

Sincerely,

Linda McIntosh

Appendix B: Interview Protocol

Interview Protocol	
Hello, Mr./Mrs./Ms. (name) My name is Linda McIntosh. I want to thank you for agreeing to participate in my DBA study and arranging time in your busy schedule to allow me to interview with you.	As I already mentioned on the phone and in the consent form I sent you my study relates to understanding what strategies SREB owners can use to implement cloud and mobility products to reduce their technology costs? Do you still agree to participate in my study?
	If a participant wants to back out of the study, make a note and thank them for their time. If participant agrees to proceed with the interview questions.
• Watch for nonverbal queues • Paraphrase as needed • Ask follow-up probing questions to get more in-depth	1. What strategies did you use to implement cloud and mobility products to reduce your company's technology costs? 2. What research and educational training occurred before you made the decision to implement cloud and mobility products? 3. What were the deciding factors to implement cloud and mobility technology in your real estate company? 4. What are the steps you used to adopt and implement cloud and mobility products in your real estate company? 5. What are your security concerns about using cloud and mobility products? 6. How important is it to you to lower your company's technology costs but still be able to conduct your company's daily business? 7. Who is your company's current mobile and cloud service provider and what services do they provide for your company? 8. In your day-to-day work life, how do you use your mobile or cloud services to conduct real estate business? 9. How important is it to you to be mobile in your industry? 10. What additional information, if any, do you feel is pertinent to the purpose of this study that I did not address in the interview questions

Follow–up Member-Checking Interview	
Hello, Mr./Mrs./Ms. (name) thank you for agreeing to meet for our follow up review of your responses to my questions from our interview.	I will begin with stating the original question followed by your recorded response. Please feel free at any time to interrupt me if you do not agree with interruption of your responses. I will be happy to edited anything you would like. My goal is to make sure I elicit your views and opinions not mine, and that you feel comfortable and uncoerced during this process
	1. What strategies did you use to implement cloud and mobility products to reduce your company's technology costs? 2. What research and educational training occurred before you made the decision to implement cloud and mobility products? 3. What were the deciding factors to implement cloud and mobility technology in your real estate company? 4. What are the steps you used to adopt and implement cloud and mobility products in your real estate company? 5. What are your security concerns about using cloud and mobility products? 6. How important is it to you to lower your company's technology costs but still be able to conduct your company's daily business? 7. Who is your company's current mobile and cloud service provider and what services do they provide for your company? 8. In your day-to-day work life, how do you use your mobile or cloud services to conduct real estate business? 9. How important is it to you to be mobile in your industry? 10. What additional information if any, do you feel is pertinent to the purpose of this study that I did not address in the interview question