

2019

Information and Communications Technology Strategies for Improving Global Virtual Teams' Success Rates

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Walden University

College of Management and Technology

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Walden University
2019

Abstract

Information and Communications Technology Strategies for Improving Global Virtual
Teams' Success Rates

by

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MBA, Monroe College, 2011

BBA, Monroe College, 2008

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Business Administration

Walden University

June 2019

Abstract

Ineffective strategies to integrate information and communication technology (ICT) to support global virtual teams (GVTs) have adversely affected organizations' performance. The purpose of this multiple case study was to explore the effective strategies participating GVT managers in 2 organizations in the United States used to integrate ICT to support teams' success. The population comprised managers in New York with at least 3 years of service integrating successful strategies in ICT to support GVT success. Transformational leadership theory was used as the conceptual framework for this study. The data collection process included asking 4 participants semistructured interview questions as well as reviewing archival data from the organizations. Data analysis using mind mapping analysis resulted in 5 major themes: forms of communication, redundancy, inclusion, accessibility, and infrastructure. The implications of this study for positive social change include the potential to create economic opportunities in developed and underdeveloped countries by incorporating or adapting some or all these strategies to improve efficiencies using ICT to support the success of GVTs. Improving GVT success rates could enable organizations to maintain and grow jobs benefiting employees, families, and communities.

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Dedication

I dedicate this research to my family. To my children, Kassandra and Karyn Fernandez and Adam Perez, for inspiring me to continue my education and for all of their support. To my grandchildren, Chaise and Chance, looking at their faces encouraged me to push harder towards my goal to be better for them. I want to thank each of my siblings, Hector Soto, Adam Soto, Brandy Mathews, Justin Santos, and my sister in laws, Michelle Soto and Taina Soto, for understanding the importance of allocating countless hours to do research and they had to pick up the slack. To my Mom, although we do not see eye to eye on many things, you never discouraged me from continuing my education. To my many nephews and nieces, this study is proof that if you keep your eye on the prize you can accomplish anything. To my cousin, Jessica Torres, thank you for always being supportive and listening to me rant about everything under the sun.

Acknowledgments

I want to thank Dr. Karin Mae for all her efforts to keep me moving through the process. Thank you for spending countless hours on the phone day or night and answering any questions or doubts I may have had. Thank you for being straightforward and honest when you knew and I knew I was not giving my all. Before coming to Team Mae, I had no real hope that I could get through this process. Thank you to all Team Mae for being supportive and providing their experiences to help me get to where I am today. To Dr. Muhammed and Dr. Endres, you believed in my work and guided me through this entire journey. I could not have done it without you. I want to give a special thanks to the participating organizations that permitted me to conduct my research.

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Section 1: Foundation of the Study

Organizations continue to transform through the evolution of information and communication technology (ICT). As the evolution of technology accelerates, organizations have sought different ways to maintain a competitive edge. Global virtual teams (GVTs) have consistently explored new ways to grow and develop strategies to improve workplace processes. Managers have sought to reduce costs and improve effectiveness by promoting the integration of ICT for enhancing the success rates of GVTs.

Background of the Problem

Regardless of individual members' locations, virtual teams are organized to improve the effectiveness and efficiency of work processes (Su, Dong, & Liang, 2014). The roles of virtual teams are necessary for organizations to maintain a competitive advantage. Members of the team can interact through using ICT rather than face-to-face interaction (Snellman, 2014; Su et al., 2014). Differences among virtual teams include distance, time separation, language, cultural differences, leadership style, and political influence (Barnwell, Nedrick, Rudolph, Sesay, & Wellen, 2014). Global leaders address international challenges through implementing GVT strategies by using ICT to support virtual teams. GVTs rely on ICT to achieve performance and deliver results (Morgan, Paucar-Caceres, & Wright, 2014). Organizations have a growing need to understand strategies for integrating ICT to support team leaders and members to improve the performance of teams and organizations (Snellman, 2014).

Problem Statement

Changes in ICT continue to create challenges for GVT business managers (Morgan et al., 2014; Snellman, 2014). The ICT industry accounts for 41% of the research and development by companies, with approximately \$133 billion dollars spent on ICT in the United States in 2013 (Shackleford & Jankowski, 2016). The general business problem is some GVT managers negatively affect the efficiency of organizations. The specific business problem is some GVT managers lack strategies to integrate ICT to support the success of GVTs.

Purpose Statement

The purpose of this qualitative multiple case study was to explore the strategies some GVT managers used to integrate ICT to support the success of GVTs. The targeted population comprised managers of a virtual team in the ICT industry who had developed and used successful ICT strategies to integrate ICT to support the success of GVTs. I selected senior GVT managers in two organizations in the telecommunication field in New York City, New York with a minimum of 3 years work experience with GVTs to share their successful strategies to integrate ICT to increase GVTs success rates. The implications for positive social change are the efficacious strategies enable GVT managers to improve communication and trust with employees and increase the work-life balance to benefit employees' families and communities.

Nature of the Study

In this study, I used the qualitative method. Using the qualitative method, the researcher uses open-ended questions that provide an opportunity for the participants to

use their own words to describe their experiences (Doody & Noonan, 2013). Qualitative researchers seek to understand experiences, beliefs, behaviors, and interactions (Pathak, Jena, & Kalra, 2013). Pathak et al. (2013) emphasized the value of quantitative research, stating that the method enables researchers to examine numeric data to identify variables, relationships, or differences. The mixed method approach, which includes both qualitative and quantitative methods (Lucero et al., 2016), and the quantitative method did not align with my study because to address my specific business problem, I did not need to examine variables, relationships, or differences in combination with the qualitative method.

I used a multiple case study design to gain an in-depth understanding of the experiences of the participants in the organization. A case study design is one of the most challenging designs to employ and is used to contribute to existing knowledge to understand complex phenomena (Yin, 2014). In a case study, the focus is on the exploration of a phenomenon and real-world perspective (Yin, 2014). I considered other research designs such as narrative, ethnography, and phenomenology, but these designs did not support the need for my study. Narrative design typically includes use of a personal storytelling design, reenacting the story from beginning to end (Wang, Koh, & Song, 2015), and this did not align with the study approach. An ethnographical design did not align with this study because ethnographic researchers emphasize the *when* and *how* specific outcomes shape social behavior and explain *why* and *how* culture is influential to results (Jerolmack & Khan, 2014), which was not my goal with this study. Phenomenologists study participants for extended periods of time (Zou, Sunindijo, &

Dainty, 2014) and seek to capture the meanings of participants' lived experiences (Moustakas, 1994). I did not study participants for extended periods; therefore, the qualitative case study design was most appropriate for my study.

Research Question

What ICT strategies do some GVT managers use to integrate ICT to support the success of GVTs?

Interview Questions

1. What strategies do you use to integrate ICT to support the activities and success of GVTs?
2. What were the key challenges to implementing your strategies for using ICT to improve the success rates of your GVTs?
3. What steps did your organization take to overcome the key challenges associated with managing ICT for your GVT?
4. What forms of ICT does your organization use to enhance GVTs' communications?
5. How have you assessed the effectiveness of your strategies and processes for using ICT to improve the success rates of your GVTs?
6. What forms of ICT in your GVT did you find to be less effective?
7. What additional information you would like to share about integrating ICT to support the success of GVTs?

Conceptual Framework

I used transformational leadership theory as the conceptual framework for my study. Burns (1979) introduced the transformational leadership theory during 1978 (Bass, 1997). According to the theory, the leaders are power holders, in which they control the motivation to engage followers to share the same interests (Burns, 1979). The standards of a transformational leader encourage a higher level of motivation and increased morale (Burns, 1998). During 1985, Bass (1997, 1999) modified Burns's ideas to reflect the effect the theory had on followers moving from personal self-interests to focusing on those of the group, organization, or society. Transformational leaders have four fundamental characteristics: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Hoon Song, Kolb, Hee Lee, & Kyoung, 2012). Transformational leaders catalyze an environment of trust and motivation, encouraging individuals to collaborate and work collectively as a team and follow in the same manner that the manager leads (Kelloway, Turner, Barling, & Loughlin, 2012). Transformational leadership theory applied to my study, as did the findings of Hoon Song et al. (2012). I determined that transformational leaders supported the collaboration of team effort and leadership to enhance the virtual teams' performance.

Operational Definitions

Global leaders: Leadership that has the competencies from learned experiences in short- or long-term assignments in traditional and nontraditional complex environments (Terrell & Rosenbusch, 2013).

Global virtual teams (GVT): People at different locations, from different cultures, that have an array of disciplines, and team members work on specific projects implementing technology to support desired outcomes (Pinjani & Palvia, 2013).

Information and communication technology (ICT): Computer-based operating systems or applications for processing information and to communicate (Berkowsky, Cotton, Yost, & Winstead, 2013).

Assumptions, Limitations, and Delimitations

Assumptions

An assumption is an individual's perception concerning any given topic without weighing the credibility of the statement (Baki, Rafik-Galea, & Nimehchisalem, 2016). For this study, my first assumption was the participants would not share any details with their peers concerning their interview or disclose information once it was completed (see Polak & Green, 2016). Another assumption was that the participants would be objective. I also assumed the participants were trustworthy and would provide truthful information. My final assumption was that each participant would elaborate on their experiences and answer the interview questions honestly.

Limitations

Limitations of a study are potential weaknesses of internal and external validities of the study (Connelly, 2013). One potential weakness was the number of participants willing to participate in the study because of the restrictions to a geographical area. Another limitation beyond my control as the principal researcher was the sample of

managers participating in the study may not have sufficiently represented the total population of GVTs.

Delimitations

Researchers describe delimitations of the study to ensure they identify the boundaries (Small, 2009). A resource conflict or a narrow point of the activity is a delimitation (Bartoska & Subrt, 2012). The restriction I placed on this study was that the participants were only from New York City GVTs within the telecommunication industry. This restriction decreased the research boundaries and could have the potential to overlook different challenges that other managers in other geographical locations might face.

Significance of the Study

Contribution to Business Practice

Other GVT managers may use the findings from this study to enhance their strategies to integrate ICT to support the success of GVTs. GVT managers are adapting to new ways of managing organizations' workplace performance because of changes in the organizational environment. Problems in organizations can develop because teams are not adapting to change. Ignoring such issues can create a bigger problem than leaders could expect. I searched through the literature to gain a better understanding of underlying issues that created challenges for GVT when integrating ICT to support the success of GVTs. Different dynamics affect the global virtual economy, and managers could use successful strategies to integrate ICT to drive support and increase GVTs' success rates.

Implications for Social Change

Organizations may use the strategies to improve efficiencies while integrating ICT to support GVTs. Incorporating different strategies for GVTs in combination with leadership capabilities may provide the necessary information to enhance the use of ICT for an organization to be effective in supporting GVTs' success rates. Managers implementing different strategies to influence positive workplace performance contribute to social change by creating an environment where employees can improve efficiencies. Improving efficiencies within ICT to support GVTs could help to create jobs by effectively integrating strategies to expand on potential business opportunities, benefiting families and communities.

A Review of the Professional and Academic Literature

In this review of the professional and academic literature, I expand the knowledge of the topic of strategies for using ICT to support GVTs' performance in varying organizational environments. In this heading, I review literature from a variety of sources that pertained to transformational leadership, GVT, ICT, the telecommunications industry, and workplace activities. Throughout my study, I included information and comparisons of previous research in each of the areas to understand strategies to integrate ICT to support the success of GVTs; however, after a broader review, I narrowed my search to focus on transformational leadership in the telecommunication sector of ICT.

The literature review provides linkages between previous peer- and nonpeer-reviewed information (Boyd et al., 2014). Referring to previous studies provides supporting documentation for ongoing research on using ICT to support GVTs. To obtain

literature to contribute to my study, I searched key terms and phrases in different databases to secure validated sources of information. I used multiple databases for my study, which were accessed through the Walden University Library and Google Scholar, including ProQuest Central, ScienceDirect, and EBSCO Host. I used the following search terms in the form of single word and multiple word phrase combinations to retrieve different results: *global virtual teams*, *virtual teams*, *information and communication technology*, *transformational leadership theory*, and *global leaders*. In this study, I used 159 total references, which included five seminal books and one government website. Of the 159 references, 140 references (or 88%) are peer reviewed, and 135 references (or 85%) were published within five or less years of my anticipated graduation year of 2019. 97 resources are included in the literature review. Of those 97 resources, three are seminal books, and 89 (or 92%) are peer reviewed were published within five or less years of my anticipated graduation year of 2019.

Incorporating virtual teams into organizations has increased because of an increase in cost savings and the need for diversifying the talent pool (En-lin, 2014; Snellman, 2014). Organizational leaders want to maximize when taking a global position, and ICT leaders continue to maximize functions across the globe where there is a growing demand for GVTs (Derven, 2016). Although organizations are taking advantage of GVTs, the leaders face complexities because of different circumstance (Zander, Mockaitis, & Butler, 2012). GVTs continue to evolve in different global markets because there are existing and new challenges leaders continue to face.

Leaders of virtual teams encounter different challenges, including boundary differences; time zones; political, cultural, and relationship conflicts, and trust (Bartelt, Dennis, Yuan, & Barlow, 2013; Tseng & Yeh, 2013; Zander et al., 2012). Team members who work across different boundaries are limited to ICT, which could make it difficult to coordinate activities (Zander et al., 2012). Restricted face-to-face interaction creates new challenges for cultural differences and conflict resolution (De Paoli & Ropo, 2015). GVT leaders face different challenges than of those leaders domestically in traditional teams (Bartelt et al., 2013). Good leadership is ideal for an organization to maximize the potential of employees (Choudhary, Akhtar, & Zaheer, 2013). Limited research exists concerning the integration of ICT to support GVTs; therefore, I conducted this study to fill this gap in the literature.

Conceptual Framework Theory: History and Key Characteristics

Burns introduced the transformational leadership theory in 1978 (Avolio, Bass, & Jung, 1999). The concept of transformational leadership theory is for the leaders and followers to help each other to grow and advance the level of morality and motivation (Burns, 1979). Transactional-transformational leadership originated in the United States (Bass, 1997). Bass (1997) expanded on the ideas of transformational leadership by including the influence of trust, respect and admiration from the followers.

Transformational leadership is a management style that influences followers through motivational speeches and actions (Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, & Rezazadeh, 2013). The transformational leader inspires followers to be motivated and considers individual culture and needs (Noruzy et al., 2013).

Burns (1979) believed that each leader has the power to control, but those who possess the power may not be leaders. Bass's (1997) expansion on transformational leadership led to the development of four transformational leadership components: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. These components of transformational leadership have evolved to enable leaders to engage in uplifting the morals, motivations, and understanding of followers as well as helping to remove self-interests and move towards the interest of the team (Bass, 1997).

Followers believe they can trust their leaders and tend to mimic their actions to attain the goal (Bass & Avolio, 1994). In organizations, the focus has shifted toward implementing leadership styles to contribute to solving challenges in the organizations (Choudhary et al., 2013). Allowing team members to make decisions without consulting the leaders gives the team member a sense of ownership of projects and the ability to deliver results and develop trust (Derven, 2016).

Idealized influence or charisma. Being a charismatic leader is important to achieve transformational leadership status because when this occurs, the employee believes he or she can trust their leader and is confident the leader will provide guidance on how to accomplish organizational goals (Bass, 1990). When followers feel inspired, they gain a sense of respect and trust for their leader (Coward, Gilley, Avery, Barber, & Gilley, 2014). Followers idealize the leaders in hopes of becoming the leader from the relationship established through guidance and support (Kempster & Parry, 2014).

Transformational leaders engage followers in obtaining the shared vision of the organization (Choudhary et al., 2013). Followers feel influenced to do what is considered morally and ethically right (Joo, & Nimon, 2014; Kelloway et al., 2012). The focus of idealized influence is to bring forth the best qualities and effort out of the follower by setting an example to influence the employees to engage in the same actions as the leader (Bass, 1999). Individual contributors have the desire to emulate actions of the leader and engage other contributors to work together (Nguyen et al., 2016).

Inspirational motivation. Leaders inspire and uplift the employee to motivate the follower (Bass, 1990). The leaders promote empowerment to their followers, so the members take responsibility for their contribution to the team (Cha, Kim, Lee, & Bachrach, 2015). Researchers have stated that transformational leaders' qualities inspire followers to want to employ those same qualities (Dai, Dai, Chen, & Wu, 2013). A leader plays an integral role in an organization working collectively to goal attainment (Dartey-Baah & Yaw Ampofo, 2015). Transformational leadership encourages the follower through inspiration (Choudhary et al., 2013). Inspiration through leader action encourages the followers to emulate those same actions to achieve goals. Implementing an inspirational role model encourages others to set aside their own needs to meet the needs of the team (Nguyen et al., 2016).

Intellectual stimulation. Transformational leaders identify and help develop the potential of the followers through promoting the idea of intellectual consideration (Dartey-Baah & Yaw Ampofo, 2015). Intellectually stimulating and empowering an employee gives them the confidence to create new ways of thinking when resolving old

problems (Bass, 1990). Leaders encourage individuals who can recognize the need for innovation as well as to enhance their creativity (Afsar, Badir, & Bin Saeed, 2014). This management style encourages the follower to take control of the situation and express ideas and resolutions (Rodoplu, Çubuk, & Uslu, 2014). The follower works at higher levels to achieve organizational goals when they exhibit confidence (Bass, Waldman, Avolio, & Bebb, 1987). Followers challenge decisions and are empowered to take on difficult tasks to complete goals when led by this management style (Afsar et al., 2014).

Individualized consideration. Transformational leaders encourage subordinates to move past self-interests and do more than what the leader gives them to do (Bass, 1997). Management style affects employees' work habits (Rodoplu et al., 2014). Leadership teams provide support and guidance while promoting the shared vision (Kelloway et al., 2012).

Leaders care about the person by considering personal needs and development (Zacher, Pearce, Rooney, & McKenna, 2014). A manager gives personalized attention to the follower (Rodoplu et al., 2014). Authority distributed to the followers gives the employee the confidence and control to make sound business decisions (Rodoplu et al., 2014). Leaders who focus on individualized considerations emphasize the personal growth and recognition at the individual level (Bass, 1997). Transformational leaders are attentive and can identify the difference in the individual (Bass, 1990). Consistency in coaching and guidance helps direct the follower to meet the organizations missions (Afsar et al., 2014).

Transformational leadership style. Management styles have evolved; however,

the transformational leadership theory has continued to be one of the most researched theories for leadership (Yammarino, 2013). Transformational leaders engage followers by displaying energy that improves the relationship with the follower (Choudhary et al., 2013). This style of leadership creates loyalty, trust and commitment from the followers (Muthuveloo, Kathamuthu, & Ping, 2014). A transformational leader presents the characteristics of integrity and respect and acts as a role model and mentor to the employee (Muthuveloo et al., 2014).

Leadership is a difficult task when guiding virtual teams, which makes it important to have the right leader in a position to guide the virtual team (Pinar, Zehir, Kitapaci, & Tanriverdi, 2014). Transformational leaders make their followers feel empowered by giving them the tools and resources needed to attain the organizational goals (Muthuveloo et al., 2014). When applied by the leader, this leadership style is evidence of a commitment to the followers because the leader will motivate and encourage them to be dedicated and work together to achieve the organizational goals (Kelloway et al., 2012). Muthuveloo et al. (2014) compared leadership styles including transformational leadership using a sample size of 104 participants and concluded that a transformational leadership style influences the level of performance from employees. The authors found that the employees' experiences contributed to their well-being and trust with the leader. Previous researchers have also suggested the success of an organization depends on the leadership of the team (Snellman, 2014). By knowing and understanding the dynamics of the external environment, a leader can articulate achievable goals (Antonakis & House, 2014).

Transformational leaders identify strengths and weaknesses on their team and align team members to develop skills and exceed expectations (Bass, 1999). The leadership style changes the organization (Bass, 1997). Researchers have found a positive relationship between transformational leadership and organizational learning that resulted in innovation from a study including 280 participants from 106 companies (Noruzy et al., 2013). In a study of 155 participants in Pakistan using a 5-point Likert scale, Choudhary et al. (2013) concluded that transformational leadership has a positive effect on organizational learning. Some transformational leaders want the follower to advance their leadership skills to become a leader (Bass & Steidlmeier, 1999). Successful leaders have the power to influence followers to do what is best for goal attainment (Nguyen et al., 2016).

In a field experiment in transformational leadership at an infantry training establishment, Arthur and Hardy (2014) determined the characteristics of a transformational leader were teachable. The authors conducted the study to explore the development of strategies that were beneficial to organizations. Although Bass and Avolio (1999), focused on the positive effects on performance in organization, Arthur and Hardy wanted to know if, and if so, how transformational leadership contributed to performance. They performed a quasi-experimental study in a controlled environment with a sample of 3,973 participants. Arthur and Hardy provided training using interactive workshops to teach transformational leadership, vision, support and challenge, motivation, and coaching skills. As a result of this study, transformational leadership would be highly effective for organizations.

Common goals. A transformational leader includes all team players to participate in attaining the common goal; this style of leadership promotes an environment of inclusiveness and innovation regardless of the location (Maranga & Sampayo, 2015). Virtual team leaders tackle internal and external environments associated with reaching the desired outcome by facilitating resources through ICT (Bull Schaefer & Erskine, 2012). Leaders align followers to specific projects based on skill levels and problem-solving abilities for facilitating the transition to virtual teams and collaboration (Pinar et al., 2014). However, virtual teams are challenging to establish because it is difficult to determine which followers' have the proper skills to perform a specific job function from a remote location (Zander et al., 2012). The transformational leader has to treat each member as a unique person and determine what the person is capable of contributing. Failure to meet targets promptly can result in the failure of organizational commitments (Wu, Li, Chu, & Sculli, 2013).

The transitioning state of a virtual team requires transparency from the leader to build a level of trust among all the players. Teams disseminate information to each other through resources using ICT to reach the common goals (Bull Schaefer & Erskine, 2012). Establishing the continuous sharing of information among team members enhances workplace activities moving steadily toward the common goal (Maranga & Sampayo, 2015). Transformational leaders encourage the ongoing support of team members working toward developing a relationship between team spirit and trustworthiness.

Assuring teams are cohesively working helps to avoid conflict and the separation of the teams. Leaders appoint roles and responsibilities to everyone to minimize team

members' miscommunication and to avoid conflict (Tseng & Yeh, 2013). Tseng and Yeh (2013) found that relationship conflict, failure to communicate and lack of accountability resulted in the failure of working collaboratively. In a virtual team, it is critical for the leader to convey the importance of communicating business strategies in completing tasks to their other team members. A transformational leader will create an open dialogue to promote best practices, innovation and new ways of working that can benefit the team from prolonging projects. A blended working environment helps to reduce internal and external conflicts (Walumbwa, Hartnell, & Misati, 2017).

Information and communication technology (ICT). Adapting to technology changes can influence leaders to modify their problem-solving strategies in the growing field of ICT. The shift to ICT has created a growing demand to conduct business globally, which could expand the sizes of organizations workforce (Bull Schaefer & Erskine, 2012). Technology plays an essential role in GVTs because team members interact through forms of ICT (Militaru, Niculescu, Simion, & Alexe, 2014). ICT has become a necessity in any organization, more so for supporting GVTs (Pinjani & Palvia, 2013). Advancement of tools available in ICT has given organizations the flexibility to transition to a virtual environment (Verburg et al., 2013). Draghici, Aldea, and Draghici (2013) found that teams learn to adapt to the concept of virtual teams and use ICT to gain a competitive advantage. Using the right tools is vital to the success of virtual teams (DellaNeve, Gladys, & Wilson, 2015). The use of technology could create efficiencies of global teams (Pinjani & Palvia 2013). Addressing the need to maintain competitive advantage, organizations seek innovation to improve on network performance and high-

speed technology connecting people anytime and anywhere (Kyoseva et al., 2014). As part of cost savings, the talent workforce can extend into the virtual environment (DellaNeve et al., 2015). Through the growing demand for virtual teams, ICT connects people worldwide.

Leaders face challenges with daily global operations. Contributing to these challenges are the channels used to share and communicate information (Maranga & Sampayo, 2015). Organization leaders coordinate and interact by using ICT. For organizations to be successful, they need to adapt to the challenges of ICT (Orhan, 2014). If the leader wants to manage to stay informed of new technologies to learn new ways to communicate it is crucial to keep up with changes. Use of ICT tools engages teams to bring them together. Verburg et al. (2013) research focused on collaborating teams to engage using ICT tools effectively. Using the right tools leaders incorporate ICT in virtual teams so the teams do not have a misunderstanding of what has to be accomplished (Verburg et al., 2013).

The continuous development in ICT serves as a platform for leaders to change organizational settings (Snellman, 2014). ICT options have increased for virtual teams, which gives the organization the option to communicate through different methods (Bull Schaefer & Erskine, 2012). Although several communication options are available, Bull Schaefer and Erskine (2012) mentioned leaders choose the best method for the organization. Leaders have experienced some virtually constructed division because of the increased methods of using ICT (Orhan, 2014). Adapting to ICT in virtual teams can make the GVT successful (Snellman, 2014). Increased use of ICT in GVTs establishes

resources of communications and employees could provide status on project updates, team updates, and individual updates (Ziek & Smulowitz, 2014). Snellman (2014) stated that leaders see opportunities as well as challenges with global ICT enhancements.

Leaders need skills to interpret and understand the meanings of different communication opportunities (Maranga & Sampayo, 2015). Maranga and Sampayo (2015) mentioned possessing skills to interpret communication, the leaders define details and expectations of projects to GVT members through ICT channels. With computerized interaction and limited face-to-face interaction the information communicated has the potential to be misinterpreted (Morgan et al., 2014). By scheduling regular virtual team meetings, ICT can bridge the gap between team members feeling separated or distant from their team members and leader (Bull Schaefer & Erskine, 2012). Virtual team meetings serve as an organization platform to actualize purpose (Allen et al., 2014). Bull Schaefer and Erskine (2012) mentioned that opening the communication channels individuals on the team achieve a sense of unity.

Communications-Related Challenges to Virtual Teams' Performance

Misunderstandings. One example of a challenge experienced by GVTs is misunderstandings. In fact, team members may avoid specific topics because of misunderstandings and may be unsure of how to clarify information. There are some instances when the listener or observer finds understanding team members difficult because of differences in terminology (Lockwood, 2013). Another example of a challenge experienced is relevant to leaders; sometimes the leadership team does not provide clear role directives which results in GVT members being uncertain of their roles

in goal attainment. Virtual teams should understand their roles and communicate responsibilities to achieve goals (Ellwart, Happ, Gurtner, & Rack, 2015).

Misunderstanding also originates from the tones and lack of body language. Not directly working with individuals in the same environment may result in communication misunderstandings (Gluyas, 2015). The limitations of face-to-face interaction minimize the cues from body language and raise an issue when communicating (Darics, 2014). Lockwood (2013) found that global teams struggle with communication and language barriers when English is not the primary language. Lockwood suggested leaders use the best communication practices for the teams based on the location to minimize communication barriers.

The qualitative study conducted by Lockwood (2013) was a result of an IT US industry sourcing work to 25 countries in engineering. Primary work included troubleshooting and knowledge building (Lockwood, 2013). Data obtained retrieved through interviews and focus groups within a 2-day timeframe. Language and communication barriers become a focal point when English is no longer the primary language. Recruiters often overlook language barriers when the primary communication tool is to have computer skills (Lockwood, 2013). Lockwood (2013) mentioned an individual would avoid a topic if the individual were not familiar with the topic.

Security challenges. As ICT continues to expand in developed and underdeveloped countries, security becomes a challenge. Sending confidential information over different forms of ICT becomes difficult to control when shared by team members. Managing the source of shared information is difficult at virtual locations,

more so than sharing information with collocated teams that have face-to-face interaction (Klitmøller & Luring, 2013).

Security challenges are a concern for organizations. ICT security is the information transmitted or stored on a common system protecting the integrity of the information (von Solms & van Niekerk, 2013). Safeguarding the information electronically is critical because the information is private and personal to the organization and employees of the organization. Cyber security protects individuals, organizations, and the nation (von Solms & van Niekerk, 2013). Another challenge is putting the customer at risk and exposing their information electronically.

Team dynamic challenges. Some of the challenges virtual teams face are coordination and completion of different workplace activities that may affect the timeliness of other workplace activities (Halvorsen & Sarangi, 2015). Delayed response times over e-mail contribute to team challenges (Darics, 2014). Workplace activities could be challenging to coordinate the shared responsibilities and without the physical presence of a leadership authoritative figure the virtual team members may not collaborate and neglect to work together. Mugurusi and de Boer (2013) noted that developing relationships and sharing platforms are effective for success. Lack of communication could fail in meeting organization expectations. GVTs rely on ICT and if tools are not available because outages or down time of ICT the virtual team is limited to performing workplace activities. The malfunction of ICT systems and tools could be catastrophic to daily operations (Tijani & Mohammed, 2013).

Team members need an understanding of the positions in the organization as well as other team members' roles. Each function performed and allocated to someone on the team needs to deliver positive results no matter how big or small the impact the function of the project. Internal and external conflict could derive without proper delegation of roles and responsibilities (Nancarrow et al., 2013). Nancarrow et al. (2013) conducted a study with more than 250 staff members and 11 community rehabilitation and intermediate care in the United Kingdom on effective interdisciplinary teamwork identified positive leadership relationships and management attributes of decision making and coordination. The results included leadership establishing clear roles and responsibilities as part of challenges that could potentially affect the common goal. Some disadvantages discussed by the authors are the commitment to the goal, behavior control, teamwork, work satisfaction and trust that could potentially affect the performance of a virtual team (Hoch & Kozlowski, 2014).

Global Virtual Teams (GVTs)

The stakeholders are investing in GVT because of globalization to sustain a global advantage (Barnwell et al., 2014). Virtualization is necessary for organizations to provide alternatives for business solutions (Hamersly & Land, 2014). Hamersly and Land (2014) conducted an interview using conceptual framework von Bertalanffy's general system theory. In this study, 22 senior managers with 5 or more years' experience participated in phone interviews regarding managing virtual projects in three categories. The results for best practices for integrating virtual teams were relevant in the study. The following 10 themes had a significant presence: management is the primary component of successful

virtual project teams, environments are diverse for virtual project teams, collaboration is mandatory for the success of virtuality, understanding the elements of virtual project management provides clarity to the environment, structure of virtual project teams is essential, efficiency is the key to prolonged virtual project team success, skills are requirements to integrate team members into virtual project teams, diversity is inherent in geographically dispersed virtual teams, governance is a significant part of business and project management structure and technology is a requirement for virtual team collaboration. The categories structure are skills and technology for virtual team success, governance leading to efficient virtual project team management and collaboration practices across diverse environments.

Traditional ways of structuring an organization are no longer the new norm. Leadership directives in virtual teams using traditional leadership team styles are not useful (Hoch & Kozlowski, 2014). GVT has changed the ways of working creating different risks (Morgan et al., 2014). To address some of the complexities in organizations, GVTs benefit from the knowledge gained from diversification (Killingsworth, Xue, & Liu, 2016). Pangil and Moi Chan (2014) stated that knowledge is critical for competitive advantage. These changes transform the environment in which the leaders and teams work (Snellman, 2014). Establishing and understanding rules and defining the purpose of the GVTs helps the teams to be successful (Derven, 2016).

The process of organizations adapting to GVTs in structures is becoming the new norm (Fan, Chen, Wang, & Chen, 2014). Leadership structures align with the needs of virtual teams as the virtual work environment expands (Hoch & Kozlowski, 2014). GVT

success is partly because of the technological factors (Darics, 2014). Darics (2014) described communication changes require new ways of thinking and communicating. Communication differs from traditional teams because the deliverance of communication is through ICT (Snellman, 2014). Constructing a GVT is difficult because the ways of working in each environment may not coincide causing a clash of differences (Pinjani & Palvia, 2013). GVTs create new obstacles for leaders to overcome (Orhan, 2014). Transformational leadership style influenced the adaptability and performance (Muthuveloo et al., 2014).

Virtual teams are shifting toward new working structures using different channels of ICT (Fan et al., 2014; Snellman, 2014). Morley, Cormican, and Folan (2015) mentioned the leaders have put structures in place when deploying virtual teams to develop a cohesive team. GVT produces virtual collaborations through the form of ICT (Snellman, 2014). ICT is a way to communicate their collaborations to meet their given tasks (Militaru et al., 2014). Militaru et al. (2014) mentioned that leaders establish virtual teams by skills and not by geographical location.

The process of constructing a GVT the leadership team has to establish the elements of which they think will provide the most benefit to the organization. The leadership teams communicate through various resources. This process is challenging to do from remote locations (Klitmøller & Luring, 2013). Charlier, Stewart, Greco, and Reeves (2016) described leadership in virtual teams difficult and could affect organizational outcomes.

Because teams are globally distributed, virtual teams are difficult to form and decipher who will succeed in their new roles. Resources used in the virtual team are a direct reflection of how ICT contributes to how efficient teams work. The leaders organize tasks through virtual communication, and with many advances through ICT, organizations are able to collaborate and communicate across boundaries (Alsharo, Gregg, & Ramirez, 2017). Virtual team members acknowledge and understand their new duties and have the talent to perform those duties (Klitmøller & Luring, 2013).

Global virtual teamwork. Although the GVT members are working in collaboration to meet the vision, team members need to function independently (Militaru et al., 2014). The leader of the virtual team decides what the teams need to do (Verburg et al., 2013); however, some decisions need to involve the influence of the teams (Rokou & Kirytopoulos, 2013). For GVT to be successful, the team members need to communicate openly and share critical information to reach the team's full potential (Cha et al., 2015). In Cha et al.'s (2015) study, the sample size of the participants consisted of 388 teams, varying in team size. Transformational leadership measurable items consisted of a list of 23-scales from the transformational leadership inventory. Researchers used the structural equation model to conclude that transformational leadership resulted in higher teamwork in inter-team collaborated teams along with teamwork quality (Cha et al., 2015).

Researchers of a study using the Means-End Chain method found three strong links with 30 project managers with an average of 7.9 years in dispersed teams (Verburg et al., 2013). The links consisted of communication, technical support and reputations with emphasis on providing transparent and open communications to support the projects.

Combining the expertise of each team member leads to better attainment and activities, which will inspire teamwork (Rokou & Kirytopoulos, 2013). A leader provides clear visions, directions, goals, and objectives to be useful as a virtual team (Morgan et al., 2014; Zander et al., 2012).

Team members are contributing their efforts to meet their needs, and member needs to increase the potential for reaching the shared vision (Tseng & Yeh, 2013). The virtual team members need to feel valued and respected to work jointly on projects (Maranga & Sampayo, 2015). Maranga and Sampayo (2015) mentioned if the virtual team members think they are treated unfairly, this could threaten the success of the GVT. Not all individuals are suitable to work in a virtual environment. Those who work in a virtual environment must adapt quickly to changes, ways of working, and change to structural alignment (DellaNeve et al., 2015).

GVT members go through a series of different events and conflict during the initialization of forming the virtual teams (Ayoko, Konrad, & Boyle, 2012). The conflict stems from the differences in the way the team members interact with each other on different communication platforms (Ayoko et al., 2012). Interpretation from ICT platforms can easily be misconstrued and cause tension among team members (DellaNeve et al., 2015).

Teams dispersed geographically are limited to electronic expressions (Ayoko et al., 2012). Ayoko et al. (2012) conducted a study with eight virtual teams that were at the beginning stages of working in a virtual environment. Each team size varied between four-six members, 61% were women, 80% employed part-time, and 95% were newly

introduced to virtual team work and were tasked to develop a package to help manage everyday workplace conflict through the means of electronic communications. The virtual team that spent more time in the performance stage of the development had the highest level of performance. The performance stage described teams that engage and pull together to complete the project.

Supporting GVT provides the advantage of having skilled people and problem solvers readily to exchange information almost immediately (Pinjani & Palvia, 2013). The dimensions of a GVT has shifted from physical to intellectual making ICT essential to perform workplace activities (Verburg et al., 2013). Pinjani and Palvia (2013) found learning to adapt to GVT expands on the benefits to learning from the leader and global team to expand and share knowledge. Verburg et al. (2013) found leaders of virtual teams provide clear communication about the projects using ICT.

Establishing a relationship of trust between virtual team members is a critical component to be successful. Short (2014) attributed trust to affecting the work environment and managing employees in a virtual team. Transparency from the team the leader helps to create unity and trust with the teams (Ford, Piccolo, & Ford, 2017). The leadership team influence opens communication through ICT to support the needs of workplace activities. Each team member has to contribute to developing different strategies and be responsible for their actions. Managers that provide a support system using ICT and communication channels build trust with the virtual teams (Hoch & Kozlowski, 2014). Ford et al. (2017) also stated that virtual teams needed appropriate technology to develop trust.

The working environment has shifted to remote work. This change saves the company a hefty number of fees in leasing arrangements. To work in a global virtual team, individuals have structure their work habits and adapt to the new cultures of working remotely. Many employees can share the same locations, be in different locations, and work from home. Leaders find shifting work to different people on the team in different work areas is not a difficult task. Employees interact with one another through the means of ICT.

Leaders appoint team leaders with the hopes of promoting positive change with their peers (Schaubroeck, Lam, & Peng, 2016). Because transformational leadership is a style of leadership, the peer team leader acts as a motivator for their teammates. This study took place in Hong Kong in a large multinational bank with 124 participants. Four leaders at each branch participated to become peer leaders. Allocating peer leaders increased the level of service quality and achieved a positive association with performance. Schaubroeck et al. (2016) found an indication of transformational leadership influenced positive results in teamwork. Coworkers can influence behavior through leadership characteristics.

Morale. Restructuring organizations could decrease morale and cause workplace activity challenges as a team (Nancarrow et al., 2013). Leaders face challenges with morale when changes happen in the workplace; however, with all team members participating and working with each other it increases the team morale and boosts the performance of the team (Dube & Marnewick, 2016). Managers seek to engage employees in tackling the decrease in morale by increasing the level of effort to create

working relationships. Creating a workplace for employees to feel at ease and involved in the teams' daily activities increases morale. Employees determine right from wrong when making organizational decisions. If followers have input in the team's vision then this increases morale (Giltinane, 2013).

Morale in an organization relies on developing an understanding of what is happening with internal processes and how external factors affect employees. A decrease in morale happens when employees are uncertain about where their responsibilities fall when changes are happening. Leaders who are openly communicating information through transition gives followers a sense of security.

Trust. Leaders gain the trust of their virtual team members to create an atmosphere to share information (DellaNeve et al., 2015). Gaining followers' trust leads to the willingness of what they will do for the leader (Braun, Peus, Weisweiler, & Frey, 2013). Findings by a team of researchers from a sample of 360 employees from 39 academic teams suggested transformational leadership has a positive relation to objective team performance mediated by trust with the leader and trust with the team (Braun et al., 2013). In another study of 243 undergraduates assigned to in 71 virtual teams using the virtual team competency inventory model GVT leaders' actions maintained communication, managed conflict and formed relationships to build trust and promote teamwork (Zander, 2012).

Trust is one challenge faced in the GVT setting and is critical to attaining goals and effective communication (Germain & McGuire, 2014). Germain and McGuire (2014) mentioned that transparency from leaders and followers is required to attain trust from

virtual teams. Trust and technology are critical factors when integrating virtual teams (DellaNeve et al., 2015). DellaNeve et al. (2015) found that individuals not familiar with each other are reluctant to share information because of the uncertainty of their position. Team trust is important to facilitate information between members (Peñarroja, Orengo, Zornoza, Sánchez, & Ripoll, 2015). Breuer, Hüffmeier, and Hertel (2016) found team trust significantly related to knowledge sharing and team learning.

The limitation of personal interactions between leaders and team members, and between team members and team members decreases the GVT effectiveness and trust among them (Tseng & Yeh, 2013). Trust between employee and leader are established when promises are kept (Snellman, 2014). Tseng and Yeh (2013) indicated those who trust each other are comfortable with sharing ideas and knowledge to promote success in teamwork. Virtual teams faced with lack of trust are partly because of the separation of geographical locations (Militaru et al., 2014). When a team leader demonstrates the ability to communicate with the followers the leader begins to establish trust (Dartey-Baah & Ampofo, 2015). A study conducted using the *Modified Multifactor Leadership Questionnaire 5X* comparing the relationship between the transformation leader and the well-being of the employee identified positive association to establishing trust (Kelloway et al., 2012).

The lack of interaction in a virtual setting decreases the opportunity to trust other members of the virtual team (Tseng & Yeh, 2013). Trustworthiness of individual team members is important for goal attainment (Germain & McGuire, 2014). Developing trust on the team will encourage the team members to work together and provide support for

each other (Germain & McGuire, 2014). Being a part of a virtual team can make an individual feel isolated, the need for ICT to connect the team is important to make the teams coexists (DellaNeve et al., 2015). Individual team members build trust with their teams when they think that teammates are in harmony to complete goals (Dube & Marnewick, 2016). ICT is the tool that engages virtual teams to connect with the GVT members and leader (Ziek & Smulowitz, 2014).

Cultural differences. Leadership plays a significant role in the culture of an organization. Tying in transformational leadership to culture is important to influence individuals to work with each other without regard to spatial boundaries (Armstrong & Muenjohn, 2014). Lockwood (2015) discussed culture differences as a contributing factor that affects virtual teams. Cultural difference acknowledgment is a factor while aligning individuals with specific goal assignments. Sensitivity to the cultural and individual involvement could be risky if the leader is not aware of cultural barriers. The leadership team has to possess people skills to work across each demographic to coordinate meeting the goal.

Limited face-to-face communication is difficult to do within a culture and even more difficult when communication is on a global scale (Maranga & Sampayo, 2015). The dynamics change in virtual teams when cultural boundaries exist (Militaru et al., 2014). Differences occur in beliefs and thought processes from one culture to the next (Bass, 1997). Virtual leaders learn to be sensitive to the virtual team's cultural values and beliefs (Pinar et al., 2014). To adapt to cultural differences learning sensitivity training is available (Chang, Hung, & Hsieh, 2014). GVT leaders need to engage and be sensitive to

the differences in cultural diversity (Zander et al., 2012). Team members should become aware of what the cultural norms are for the different members (Barnwell et al., 2014).

Specific methods of technology may not be suitable for the organization culture (Bull Schaefer & Erskine, 2012). Language barriers and cultural difference challenge teams (Klitmøller & Luring, 2013). Klitmøller and Luring (2013) indicated that face-to-face interaction is the preferred method to communicate. Leaders learn the differences in mindsets across cultures (Maranga & Sampayo, 2015).

Because GVTs are in different time zones and cultural backgrounds, this adds to the complexities of leading the teams (Zander et al., 2012). Although the leaders of GVT use ICT to process and identify functions, the technique in which they communicate should be effective for the individual personal dynamics (Bartelt et al., 2013). During the study of 14 global virtual teams and 61 members, those teams with cultural difference should result in using rich media because it was more effective to share information immediately (Klitmøller & Luring, 2013).

The effects of culturally diverse virtual teams take on a significant role when teams have shared responsibilities. The leadership team strategically aligns the integration of virtual teams to meet organizational needs. A leader should consider the virtual team's concerns and differences and process them differently through ICT (Bartelt et al., 2013). Interpreting information from virtual teams through ICT is difficult, based on personal beliefs, which is why leaders should consider members' backgrounds, and incorporate that into the interpretation (Bartelt, 2013).

The leader of the GVT engages teams to work together and take into consideration the ways of working blending cultures to influence shared values (Verburg et al., 2013). Transformational and inspirational leadership has a positive effect on GVTs and multicultural collocated teams (Zander et al., 2012). Zander et al. (2012) also linked this to team effectiveness. They compared the knowledge of differences between team members and team leadership and the expectations of understanding what the preferences were among them. Zander et al. (2012) mentioned that understanding the differences in cultures will help with knowledge sharing within the teams.

Time zones. Some of the negative impacts for GVTs dispersed globally often results in some employees living in different time zones (De Paoli & Ropo, 2015). The virtual teams connect electronically by using ICT. The authors mentioned working in different times zones create conflict and difficulties in communication. De Paoli and Robo (2015) also mentioned that virtual team members have difficulties prioritizing work activities making it difficult for leaders to coordinate projects. The differences in priorities can create challenges for the virtual team (Morgan et al., 2014).

The difference in times zones affects the availability of each team member and makes it difficult to engage them in changes that could affect goal attainment (Halvorsen & Sarangi, 2015). Different time zones affect how dispersed teams interact (Espinosa, Nan, & Carmel, 2015). If the virtual team or team members have different days off, it could add to the complexities of schedule work commitments (Barnwell et al., 2014).

ICT connects anyone regardless of spatial and time zones providing around the clock operations. Different time zones offer virtual availability and serve as a method of

performing jobs across the globe. Working across different time zones using ICT creates a sustainable work environment providing accessibility to deliver cost-effective results (Klitmøller & Luring, 2013). Creating a flexible work schedule based on the availability of employees in different time zones benefits the leader.

Workplace Activities

Workplace activities differ from organizations, industries, countries, teams, and individuals. The workplace activities consist of different job functions and responsibilities. The traditional methods of workplace activities changed when new ways of working included GVT. Global teams had to adapt to the changes and develop their skills to meet the growing demand for virtual teams (Hetzner, Heid, & Gruber, 2015). With the constant changes in the work environment, adjusting to rapid changes can be difficult. These changes are driving leaders to make structural changes to stay competitive. Dixon (2017) cautioned if you do not adapt to changes you would not benefit the organization. Hetzner et al. (2015) said people had to acquire new skills and knowledge to support their peers and leadership. These authors conducted a study of 84 participants affected by workplace changes and positive relationship exists between taking the initiative and improved workplace practices.

In a virtual workplace, it can be challenging to make immediate or on the spot decisions without a present leadership team. Working in a different time zone may result in employees having to make quick decisions while facing challenges (Billett & Choy, 2013). Workplace activities consist of diversifying working teams to boost morale. Sharing resources and workloads create a healthy working environment. Employees are

empowered when participating in workplace activities. They gain the knowledge to perform their duties to contribute to optimal results. In turn, Billett and Choy (2013) stated the individual contribution makes the employee feel a sense of belonging. Engaging in workplace activities contributes to problem-solving.

Sharing workplace activities helps to acknowledge what work needs to take place to meet the goal. Main objectives may not come to fruition if teams are operating as separate units. Failure to complete shared goals could cause a trickle-down effect in different departments causing those teams to fall behind with their planned workloads. Risk assessments are essential for examining the risks of software developments or project specific risks that could potentially harm the business outcome (Ahmed, Raza, Sandhu, & Capretz, 2014). Working in remote workplaces, an employee may have the freedom to make decisions.

Leaders are creating a virtual learning experience for virtual teams. In hopes that teams could learn to adapt to rapid workforce changes. In the process of delivering results, leaders develop strategies to handle global virtual teams and their needs. As GVT continues to expand, leaders are training groups of teams to deliver results in an ICT environment. Changes in ICT force the leaders to rethink workplace activity strategies to produce results.

Learning. Changes in the workplace affect the dynamics of learning opportunities (Hetzner et al., 2015). Hetzner et al. (2015) described the learning process of workplace activities depends on the individual. The process of developing new skills and reprogramming to adapt to new processes is difficult. Learning and developing skills

on a GVT presents new challenges (Billett & Choy, 2013). In a quantitative study conducted in the service sectors, including telecommunication a survey sample of 155 participants resulted in the positive effect transformational leadership has on organizational learning (Choudhary et al., 2013). A need exists for personal learning development involving taking the initiative to tackle change and actively take on new challenges (Hetzner et al., 2015). Hetzner et al. (2015) found a positive relationship between the influences of personal initiative that is likely to improve work practices. Offering solutions to problems encountered during work increase the level of team learning (Pinar et al., 2014).

Although virtual work increases the opportunity for organizations there are learning challenges when resources are not available for immediate use in the workplace (Billett & Choy, 2013). Different challenges exist for members of the team. Virtual team development varies depending on the previous experiences and knowledge sharing. Team members can be reluctant to share information with other team members because of jeopardizing their position within the organization.

Training. Training on new systems and tools at the workplace is complex to implement at remote locations. Some of the learning is absorbed through daily activities and practical work experience (Billett & Choy, 2013). Language and terminology can be problematic when explaining how to do tasks and troubleshoot across boundaries (Saafein & Shaykhian, 2014). Negative effectiveness in knowledge sharing because language barriers using ICT media platforms and differences in accents (Klitmøller & Lauring, 2013).

Departmentalized training across different disciplines also makes it difficult for virtual teams. Leaders allocate employees to different projects based on the talent at an individual level. Cross training is important to share knowledge across different disciplines to make transitioning of roles from one location to the other with minimal effects on workplace activities; however, cross training in the different country, boundaries add to the difficulties of integrating GVT. Cross training in organizations refers to sharing general knowledge and skills between individuals' so they could perform those job functions (Paul & MacDonald, 2014).

Meetings. Virtual team collaboration is critical for teams to interact with one another. Incorporating meetings into virtual teams establishes a connection through technology-based resources. Because boundaries separate GVTs, the leader is responsible for establishing a means to communicate to keep the employees informed on a team level and an individual level (Klitmøller & Luring, 2013). A face-to-face meeting of GVTs is costly, so managers use different means of communicating to engage their employees. Klitmøller and Luring (2013) identified leaders schedule regular meetings through media or teleconferencing to decrease the communication gap between virtual teams. Media or teleconferences help to minimize misinterpretation through emails, texting or messaging (Darics, 2014). Leaders controlling the different aspects of the team projects from a remote location is difficult and rely heavily on using ICT to communicate. The team meeting through ICT gives the opportunity for each to provide feedback and receive information that is relevant to the shared mission.

Allen, Beck, Scott, and Rogelberg (2014) suggested that 11.6% of ongoing projects and 10.8% discussed the routine business. The authors mentioned that scheduled and unscheduled meetings did not offer any additional insight into their analysis. Information least discussed pertained to brainstorming, productivity, and efficiencies. Different media channels such as Skype and video conferencing can demonstrate how body language and tones can play a contributory role in delivering a message at meetings. Using meetings serves as a platform for team members to contribute to decisions or attempt to resolve issues (Halvorsen & Sarangi, 2015).

Different types of meetings serve different purposes. At the time of the meeting, a manager can provide information to the team to accomplish their tasks (Allen et al., 2014). This time gives team members the opportunity to exhibit their attributes and contributions to the team. These meetings can also serve as a platform to address current issues and engages the leader and peers to provide support if needed (Allen et al., 2014).

Lack of integrity in a meeting could devalue the employee's contribution to organization goals (Allen & Rogelberg, 2013). The meeting should serve as a valid source of information that is relevant to carry out employee responsibilities. Allen and Rogelberg (2013) surveyed 319 participants with an average of 9.5 years and the average tenure of 3.7 years working with a supervisor in a variety of organizations using a 5-point scale. The results indicated that the use of group meetings promoted the psychological condition of an engaged workforce during meetings. Allen and Rogelberg (2013) argued time management in meetings were not statistically significant to engagement through physiological availability.

Transition

Section 1 contained the problem statement, purpose statement, and nature of study, the overarching research question and the interview questions. I also included definitions, and assumptions limitations and delimitations. The literature review originated from synthesized analysis of previous research from researchers with shared interest concerning global virtual teams. Throughout the literature review, the conceptual framework of transformational leadership established the groundwork for a thorough analysis of the literature.

In Section 2, I describe the role of the researcher, participants and the method and design for addressing the research question. I identify the population and sampling method along with the process for ethically assuring the participants' protection. I explain the data collection techniques and tools to complete analysis. I also explain the processes and tools for assuring the reliability and validity of my study's results.

Section 2: The Project

. This section includes the purpose statement, role of the researcher and participants. I then explain why I chose the research method and design and the rationale for the population and sampling scheme. I describe how I obtained consent from the participants. I also define the data collection instruments, data collection technique, data analysis, and methods for assuring the study's reliability and validity.

Purpose Statement

The purpose of this qualitative multiple case study was to explore the strategies some GVT managers used to integrate ICT to support the success of GVTs. The targeted population comprised managers of a virtual team in the ICT industry who had developed and used successful ICT strategies to integrate ICT to support the success of GVTs. I selected senior GVT managers in two organizations in the telecommunication field in New York City, New York with a minimum of 3 years work experience with GVTs to share their successful strategies to integrate ICT to increase GVTs success rates. The implications for positive social change are the efficacious strategies enable GVT managers to improve communication and trust with employees and increase the work-life balance to benefit employees' families and communities.

Role of the Researcher

I was the primary data collection instrument for my study. My role as the researcher was to mitigate any bias in the study on the topic of strategies used to integrate ICT to support the success of GVT's. As posited by Stake (2010), as the principal researcher, my obligation was to protect the information and the participants. More than 7

years ago, I worked in an organization that had a working knowledge of virtual teams. The organization for which I work now includes virtual teams and is what provoked my interest in strategies for managing virtual teams in other organizations.

Using the guidelines provided by the *Belmont Report*, I had an ethical obligation to participants. I was aware of the potential personal bias of preconceived notions of the topic, and I lessened this bias by using open-ended interview questions with the participants. I respected and kept information concerning each participant. Protecting the participants' identity and other essential organizations' information is the responsibility of the researcher (Bradbury-Jones, Taylor, & Herber, 2014).

My use of an interview protocol (see Appendix) guided the interview. I developed the interview protocol so that I could ask the same questions in the same order using the same tone for consistency. Using a face-to-face interview questioning process, I had the chance to observe the participants' tone and body language. Each interviewee answered questions from his or her experiences for my doctoral study.

Triangulation is vital to assure the validity of case studies (Yin, 2014). Researchers use methodological triangulation for gathering information to assess the validity of the participants' responses to the researcher's questions (Heale & Forbes, 2013). I used face-to-face, open-ended semistructured interview questions, observations, related documents and notes to methodologically triangulate the findings from my study.

Participants

The participants consisted of senior GVT managers in two organizations in the telecommunication field. These managers had a minimum of 3 years strategically

managing GVTs and had demonstrated success in developing and implementing strategies for using ICT to support GVT's success. The location of the organizations was in New York City, New York area. I communicated with both CEO's of the organizations to obtain a letter of cooperation to gain a list of viable participants. I contacted the CEO's and participants primarily through e-mail and followed up with telephone calls. I explained to each participant the scope of the study. The information that each participant provided from his or her experiences with managing GVT contributed to existing knowledge implementing strategies for using ICT to support GVT's success. I sought in-depth knowledge of the particular phenomenon of using ICT strategies for enhancing GVTs' success rates.

I sought to gain the trust of participants by ensuring them that all the information and data will be under lock and key for 5 years. Afterward, I will destroy the information using a shredder and by permanently deleting the information stored on a laptop, to ensure all identities will remain confidential. Researchers use different strategies to select participants and obtain relevant information (Song, Liu, Wu, Ma, & Wang, 2014). I scheduled face-to-face meetings to conduct interviews with the participants. To gain professional strategic insight into the organization, I asked the participants to answer the overarching research question.

Research Method and Design

Research Method

I used a qualitative research method to explore the experiences of those managers who had developed and implemented strategies to integrate ICT to support the success of

GVTs. The qualitative research method is used to identify the data and ideas to explore phenomena that address the research question (Bernard, 2013). Using qualitative inquiry is appropriate to draw on primary data from the participants' perspective (Gringeri, Barusch, & Cambron, 2013). A qualitative research method is an approach to reach a better understanding from the point of view of the participants (Marshall & Rossman, 2014). In qualitative research, the researchers use *what*, *how*, and *why* questions to explore different experiences people have (Fetters, Curry, & Creswell, 2013) and were appropriate for addressing the research question in this study.

The quantitative research method did not meet my needs in this study because this approach involves comparative analysis using different tools to determine positive or negative relationships through correlational, quasi-experimental, and experimental means (Cokley & Awad, 2013). The mixed method approach was not appropriate because the qualitative and quantitative methods are combined to support more than one worldview concurrently or sequentially (Venkatesh, Brown, & Bala, 2013). I explored the strategies used to integrate ICT to support the success of GVTs through a personal lens of the participants; therefore, qualitative research was the most appropriate method for my study.

Research Design

I used a multiple case study design in this study. The case study design is an exploratory approach to understanding a phenomenon by obtaining a holistic view (Almutairi, Gardner, & McCarthy, 2014). Using a case study design enables the researcher to describe a situation at a point in time that an organization is experiencing

(Stake, 2010). Employing a case study design enabled me to capture data through enriched interview questions from a real-life situation consisting of *what*, *how* and *why* questions that the participants could answer without feeling restricted (see Boblin, Ireland, Kirkpatrick, & Robertson, 2013).

The focus for narrative design is on storytelling to understand life stories through a history of personal feelings and experiences (O'Shaughnessy, Dallos, & Gough, 2013), and storytelling did not align in this study. Ethnography was not applicable for this study because it requires long periods of field work in conjunction with observations of cultural behaviors (Cruz & Higginbottom, 2013; Yin, 2014). Phenomenological researchers focus on obtaining personal knowledge and reflective interpretation of phenomena (Nankunda, 2015). The phenomenological design did not align with the inquiry of strategies used to integrate ICT to support GVTs' success.

Data saturation should be reached by conducting interviews, revisiting the participants, and reviewing the data to verify that no new themes or coding could develop (Fusch & Ness, 2015; Stake, 2010). The case study design allowed me to gather the personal experiences of participants and interpret those experiences (see Stake, 2010). Using a case study design permitted me to continue to review the participants' responses, in addition to noting observations and continuously revisiting data until no new information developed.

Population and Sampling

As recommended by Kieft, de Brouwer, Francke, and Delnoij (2014), I selected participants for this multiple case study using set criteria and a purposeful sample. I

selected participants based on the relevance of their position and years of experience to expose their unique and essential perspective in the case study (see Robinson, 2014; van der Velden & El Emam, 2013). I communicated with the CEOs of both organizations using e-mail for the initial contact. Interview participants were managers with a minimum of 3 years of service in the organization and experience successfully integrating strategies in ICT to support GVTs. The length of 3 years in GVTs provided time for the study participants to become involved in strategic decision-making. The location of the two organizations was in New York City, New York.

I used NVivo 11 to code each participant's interview responses to ensure no new themes or coding emerge producing any additional developments from the data collection (see Robinson, 2014). After examining the data, I paraphrased the participants' responses to each interview question, then asked the participants to review the interpretation and information to confirm accuracy. I reevaluated the data and checked for any new findings from the themes and coding. Pursuing and understanding the findings is fundamental to interpret the data (Fusch & Ness, 2015).

I received approval from the Walden University Institutional Research Board (IRB; Approval Number 10-02-18-0496514) before beginning to collect data. I contacted the participants through e-mail. Each manager possessed strategic responsibility of integrating strategies and processes for using ICT to support GVTs. The semistructured interviews took place in a face-to-face setting in which the participants were comfortable. During face-to-face interviews, I observed each participant and made notes of their body

language and facial expressions to input the data into a document so I could analyze the different themes.

Ethical Research

Potential participants received an informed consent form via email before data collection. I asked the potential participants to reply to the e-mail with the words, “I consent,” if the individual wanted to participate in the study. The consent form is a document that identified my responsibility as the researcher and defined the level of risk to the participant from voluntarily participating in the study. This form served as an agreement to participate in the study. I earned a certificate for Protecting Human Research Participants from the National Institute of Health. If a participant wished to withdraw from the study, they could do so at any time verbally or electronically without any repercussions. I did not offer incentives to participants. No participants withdrew from the study.

I protected the participants by keeping their identities confidential. All the confirmed participants could refer to their informed consent forms via e-mail to review the terms of participating in the study. To assure confidentiality of the participants I coded the names of the participants and their organization. Once I received IRB approval, I began the data collection process. I stored the consent forms and interview responses along with the documents obtained during and after the study in a digital safe for which only I have the passcode. I will keep the data and documents there for 5 years. After 5 years, I will destroy the data and shred the documents.

Data Collection Instruments

I was the primary data collection instrument in this study. In qualitative research, the researcher is the main instrument interpreting the interviews, conducting observations, and exploring information (Stake, 2010). I asked open-ended, semistructured interview questions to allow the participants to express their strategies. I asked each interview question in the same order and way to each of the respondents. Observing the participants' behaviors and tone in response to each interview question can strengthen the interpretation of the data (Stake, 2010; Yin, 2014). Each interview was audio recorded with the approval from the participant.

The use of semistructured interview questions can extract experiences from a personal situation (Kallio, Pietilä, Johnson, & Kangasniemi, 2016). Open-ended questions give the participants an opportunity to elaborate on their responses (Yin, 2014). Furthermore, the ability to observe participants during the interview process to interpret the data brings forth a different perspective to data inquiry (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014).

To ensure reliability and credibility of the data in this study, I used member checking and methodological triangulation. Methodological triangulation is the use of multiple resources to review any differences characterizing the same phenomenon (Burau & Anderson, 2014). I used an audio recorder to capture verbatim the participants' responses, then transcribed each interview and provided a copy of the transcript for each participant to review. After conducting initial interviews and interpreting the resulting data, I sent the interpretation to each participant to validate the accuracy of my

interpretation and ask if they had anything to add to the seven open-ended interview questions as part of member checking (see Harvey, 2015). When the participants confirmed the information and no new information was received, I reached data saturation.

Data Collection Technique

In this study, I used a combination of techniques to collect data: semistructured interview questions, observation, notes, and audio recordings. When scheduling, I asked the participants to identify dates, times, and locations that were convenient to begin the interview process. If the participants' situation changed, I adjusted the schedule based on their availability. I attempted to make the participants comfortable by allowing each of them to choose a location for the interview. Once we met, I briefly reiterate what the study was about and began the interview following the interview protocol (see Appendix). Using the interview protocol kept my line of questions in common order. In qualitative research, a researcher can use semistructured interview questions to provide an opportunity for the participant to elaborate on the responses (Doody & Noonan, 2013). I informed the participant that the interview time could take approximately 20 minutes based on the information they provide. During the face-to-face interviews or Skype interviews, I took notes and observed the participants' body language after asking each question.

The advantage of using semistructured interview questions is the data collection can be in a natural setting for participants (Malagon-Maldonado, 2014). Observing the participant while collecting data gives the researcher the advantage to witness the body

language and tone used during the interview (Stake, 2010). Audio recording the interviews provide an opportunity to play back interviews and compare the note taking, and provide verbatim transcripts (Herrman, 2013). The participants granted consent and I audio recorded the interviews using a tape recorder and used a cell phone device as a backup device. A disadvantage of semistructured interview questions is that they are time consuming (Mamah, Owoso, Scheffield, & Bayer, 2014). Observing participants has a disadvantage of having difficulty interpreting or understand the motive beyond the observation (Osang, Udoimuk, Etta, Ushie, & Offong, 2013). Another potential disadvantage that could occur during the audio recording is malfunctioning of the device because it might affect the clarity of the participants' responses to the researcher (Osang et al., 2013). Fortunately, there was no malfunctioning of the audio device.

Qualitative researchers rely on member checking to ensure the trustworthiness of data obtained from the participant (Morse, 2015). After I transcribed the interviews, I asked the participants if the information accurately reflected their responses to the interview questions. I used member checking to validate the data and information received from the interviews as part of triangulation.

Data Organization Technique

I stored the data collected on a password-protected laptop to which only I have the password. The data collected has an encrypted secure password on each document collected. I maintained a binder with printed journals. Journal categories are peer reviewed and nonpeer reviewed separated by themes. I transcribed the recordings and filed the transcriptions electronically in my secured, password-protected laptop. I have

the audio recordings and journals in a safe and protected with a password on the laptop for 5 years. After 5 years, I will destroy all information by shredding the documents and deleting the information from all electronic devices.

Data Analysis

I asked the participants interview questions in face-to-face sessions. As noted by Yin (2014), transcribing the interviews could help to observe patterns and developments of insights. I analyzed the interviews through mind mapping, obtained mission statement related company documentation and interpreted the observations of participants' mannerisms. By observing the participants during the interviews, I tried to establish a connection to the responses. I coded the data to crosscheck for emerging or similar patterns with the use of data and methodological triangulation to verify themes (Yin, 2014).

I used NVivo 11 software to organize the data and information from the transcriptions. I used a mind mapping technique to categorize the information for input to NVivo 11. Mind mapping is a graphic way to branch or extend a thought visually (Rosciano, 2015). Using electronic software and mind mapping, I identified themes and coded the information. After identifying themes, I returned to the literature to identify any connections to themes identified from previous research.

Reliability and Validity

Reliability

Using member checking enables researches to assure the reliability and validity of their data, findings and conclusions (Harvey, 2015). After reviewing transcripts, Harvey

(2015) mentioned the participant could determine if the transcripts accurately reflect their experiences. The participant and the researcher agree that the data transcribed are accurate (Burda, van den Akker, van der Horst, Lemmens, & Knottnerus, 2016). Yin (2014) has stated using evidence from multiple sources can increase the accuracy of events'. Harvey (2015) mentioned that reviewing the transcripts with the participants provides a sense of trustworthiness and reliability of the consistency within the data. Harvey (2015) also stated that reviewing the information with the participants also gives the researcher an opportunity to ask additional questions that derived from reviewing the initial data. Thoroughly reviewing the data and using comprehensive analysis for identifying key themes that provide interpretation can assure the reliability of the sources and findings (Yin, 2014).

Validity

Researchers must assure the validity and accuracy of qualitative data (Koelsch, 2013). Reviewing the data from more than one aspect is vital while interpreting the data (Stake, 2010). Triangulation and member checking are feasible means to ensure the validity of data (Burda et al., 2016). Concerns for assuring data validity and trustworthiness require the researcher to ensure the data are interpreted with credibility, transferability, dependability and confirmability (Reilly, 2013).

By using the interview protocol (see Appendix), I asked each interview question in the same sequence and manner for all participants to ensure credibility. Once the data were gathered, I transcribed and interpreted the data. After I interpreted the data, I asked the participant to review the transcripts to ensure that I have accurately reflected the

reality of the participant's experiences. Employing methodological triangulation should increase the findings' credibility by using and comparing the results from direct observations, notes and interview questions (Heale & Forbes, 2013). While conducting the interviews, direct observation is another way to strengthen the credibility of the research (Yin, 2013). I used open-ended interview questions during the interview. The focus was on strategically integrating ICT to support GVTs success.

I kept notes throughout the research process to enable the confirmability of data (Houghton, Casey, Shaw, & Murphy, 2013). In my notes, I included information gathered through reviewing literature, documentation, observation, themes and other developments through the journey of my research. To facilitate reaching data saturation I used a purposeful sample to select the participants. Using a purposeful sample grouped candidates for the study together who had similar experiences with the research topic. I transcribed, I coded, and validated the interview data through member checking and triangulation. Once no new themes emerged, I concluded that I had reached data saturation.

Transition and Summary

Section 2 included information about my role as the researcher with details about the participants and the data collection process. The research method and design are the foundation of the study. I included justification for the use of the data collection instruments, data collection technique, the data organization technique and data analysis. I then discussed the processes and tools for ensuring the reliability and validity of the study findings. In Section 3, I present the findings of my study and I include the potential

benefits of the findings for affecting social change. I conclude with discussions of recommendations for future research and by providing my overall conclusions.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple case study was to explore the strategies some GVT managers used to integrate ICT to support the success of GVTs. GVT managers provided insightful information on strategies they used to integrate ICT to support the success of GVTs by responding to seven semistructured interview questions. I obtained data from four managers concerning two organizations in the New York City, New York area. I reviewed notes, archival documentation and the mission statements of each organization to triangulate the findings from multiple data sources and types. I used NVivo 11 software to code the data and for an in-depth analysis. After analyzing the data, five themes emerged describing the strategies the participating GVT managers used to integrate ICT to support the success of GVTs: forms of communication, redundancy, inclusion, accessibility, and infrastructure. The participants specified the importance of determining the forms of communication, having redundancy, GVTs feeling included in the workplace, having accessibility to virtual teams, as well as the proper infrastructure to integrate ICT for the success of GVTs. Results indicated that these themes linked to the strategies the managers used to integrate ICT to the success of GVTs. My analysis of the participants' responses confirmed their alignment with both existing literature and the selected conceptual framework.

Presentation of the Findings

The overarching research question of this study was: What ICT strategies do some GVT managers use to integrate ICT to support the success of GVTs? I conducted

Figure 1. Frequency word cloud developed with NVivo 11.

Table 1

Frequency of Themes

| Themes | Frequency | Percent |
|------------------------|-----------|---------|
| Forms of communication | 30 | 34.48 |
| Redundancy | 17 | 19.54 |
| Inclusion | 10 | 11.49 |
| Accessibility | 18 | 20.69 |
| Infrastructure | 12 | 13.79 |
| Total | 87 | 100.00 |

Table 2

Frequency of Subcategories

| Subcategories | Frequency | Percent |
|------------------------------|-----------|---------|
| Less effective communication | 4 | 16.67 |
| ICTs networking strategies | 8 | 33.33 |
| Language barriers | 8 | 33.33 |
| Training | 4 | 16.67 |
| Total | 24 | 100.00 |

Theme 1: Forms of Communication

The most frequently mentioned strategy was the managers employing varying forms of communication to integrate ICT to support the success of GVTs. Four (100%) of the participants stated that communications are crucial to operating in a global environment. All participants mentioned the best form of ICT they used to enhance the communication in GVT is conferencing. Collaborating on virtual teams has increased with the availability of a variety of ICT platforms to use to complete projects (Benefield, Shen, & Leavitt, 2016). Forms of communication revealed in the transcriptions were teleconferencing, video conferencing, e-mail, GoTo Meeting, and Skype to share valuable information among virtual team members.

Less Effective Communications' Technologies

All of the participants had differences in which forms of ICT were least effective in their GVTs. For Company X, P1 mentioned cameras in remote offices. Company X P1 stated, "We found this [cameras in remote offices] to be least effective because the people did not like it and didn't provide any benefits for us." Company X P2 mentioned the least effective are certain tools used. Company X P2 stated, "We should have supportive tools to support them [GVTs] to produce results. We had to do away with those tools provided to them that were not producing results and replace with more stringent processes to get more efficient results." Company X P3 mentioned email is the least effective technology. Company X P3 stated, "E-mail is less effective because the response is not instantaneous and we have no way to measure the person's effectiveness."

Company Y P1 mentioned fax as being the least effective form of ICT. Company Y P1 stated, “Fax is the worst way to communicate.”

Theme 2: Redundancy

The results indicated that a key strategy all of the managers used is redundancy. Redundancy is imperative to integrating ICT in GVTs. A key element for supporting the success of GVT is having a backup. Manager Y P1 stated, “Redundancy is key.” The participants similarly responded that redundancy to different aspects of an organization is required when working in GVTs. All Company X participants stated that redundancy in their network was required. In both organizations, all participants mentioned that they backup virtual communications with follow-up e-mails and additional meetings for clarification. At Company Y P1 stated, “Review and clarification are key. Making sure everyone is on the same page. Following up with a written overview of what was said on conferences or discussions. Always over-viewing everything and follow up with a written overview.”

Theme 3: Inclusion

Keeping an open forum of communication is essential in GVTs. It is difficult to make teams feel a part of the organization when they are in other countries. All four participants noted the value of inclusion in the workplace and the importance of employees feeling included. At Company X, P1 stated, “We want to make our international employees feel like they are sitting here in the U.S. office.” Also at Company X, P1, P2 and P3 mentioned that they try to give their international employees a feeling of belonging by blending people with different languages and cultures in

different markets together to create unity. Participants in both Companies X and Y mentioned including their GVT members' input into organizational decisions and getting people involved in different projects. At Company X, participants responded that a portion of the internal mantra of their global operations team is to include people, processes, and tools.

Language Barriers

A challenge three participants (75%) experienced but achieved success in integrating ICT to support their GVTs despite was language barriers. Language barriers are an issue; however, GVT members feel comfortable with other forms of communication besides verbal. At Company X, P2 commented that a language barrier could be a challenge to get to know and understand your employees, but they created a system that blended the markets together to make remote employees feel included. Correspondingly, at Company Y, P1 mentioned he always sends follow-up e-mails to be sure that everyone understands the main objectives. Following up gives the GVT member the opportunity to respond to the e-mail for clarification.

Training

At Company X, P1 and P2 mentioned that training can be difficult to do from remote locations. For Company X, P2 pointed out that training remote employees was an ancillary challenge. Sharing knowledge with team members at remote locations was a learning experience for both local and virtual teams. To overcome such challenges, the participants used the different virtual means of communication to train and share processes and data with the GVTs. The companies used video conferencing and Skype

for training and meetings as well as company processes shared access locations that allowed employees to feel included as a team member.

Theme 4: Accessibility

All participants from both organizations indicated that access to the virtual network and people are essential to achieving GVT success. The strategy for both companies was to have 24-hour remote access to information to keep both local and remote teams functioning. Company information is accessible on servers for employees to access from anywhere at any time. At Company X, P3 commented that accessibility to different platforms, and new technologies made it easier to connect with GVTs.

Participants indicated they piloted differences with employee working hours to improve accessibility. The managers used the time differential to support a 24-hour working environment. This strategy of aligning business hours made employees accessible to clients for full days. Information received included real-time updates to share with all team members. Accessing information from live data helped to coordinate activities in the workplace. At Company X P1 stated, “We always have some way of communicating and working with our remote teams.”

Theme 5: Infrastructure

Two participants (50%) confirmed the importance of infrastructure. These managers strategically put in place the infrastructure to support all the operations necessary to conduct business globally. At Company X, P2 expressed the time spent identifying the best practices to incorporate a sustainable infrastructure. Integrating networks from underdeveloped countries was a challenge. The organization had to

overcome challenges with the various regulatory requirements to build a sustainable solution. At Company X, P2 stated, “Especially those countries which are not very well versed with ICT so making them understand that this kind of system is going to help their economies as well.”

ICTs Networking Strategy Success

All four participants measured the success rates of their strategies to improve ICT network performance for supporting GVTs. At Company X, P1 and P2 mentioned that they measure the success rate of projects by the performance of the network and the decrease of down time as well as the length of time to restore the network. The network affects the way GVTs communicate with each other and their customers. At Company X, P2 stated, “We have set up key performance indicators for our ICT networks. We engage mean time to repair and mean time before failure.” At Company X, P3 and at Company Y, P1 mentioned time spent on projects is a performance indicator of the projects’ success.

Strategies Relationship to Transformational Leadership

The conceptual framework for this multiple qualitative case study was the transformational leadership theory. The themes emerged from my analysis of the strategies the GVT managers used to integrate ICT to support the success of GVTs. In Theme 1, the strategy the leaders used was choosing the best form of communication to get the teams involved and through which to build a relationship with peers in completing the teams’ objectives. This communications strategy directly relates to the characteristic of idealized influence, which is that the leaders’ attitude influences followers (see

Phaneuf, Boudrias, Rousseau, & Brunelle, 2016). The second theme, redundancy, and fifth theme, infrastructure, tie into transformational leadership because these themes demonstrated how the leaders and followers strategized creative ways and decision making in developing virtual environments for catalyzing the intellectual stimulation of GVT members. In this type of leadership, followers are encouraged to think outside of the typical problem solving techniques (Robinson & Boies, 2016). Related to individualized consideration of transformational leadership is Theme 3, inclusion. Inclusion relates to key transformational leadership because the leaders addressed the employees' needs and desires to feel a part of the local team and acted upon them. Lastly, characteristics of inspirational motivation related to Theme 4, accessibility. Asrar-ul-Haq and Kuchinke (2016) stated that inspirational motivation is setting a high standard for the employees to follow. The participants aligned database information, so employees were empowered and enabled to conduct business without having to depend on virtual teams during their working hours. Transformational leaders provide support to meet individuals' needs and build relationships to empower and enable the follower to meet their full potential (Yahaya, & Ebrahim, 2016).

Strategies' Relevance to Business Practice

Findings from existing literature practices by Yaghoubi Farani, Karimi, and Motashed (2017) coincide and relate to my findings of the strategies the participating organizations used to enable effective business practices of ICT to improve GVTs performance. Zakaria (2017) mentioned the communication style has an effect on business practices from diverse backgrounds in GVTs. Global teams have challenges but

now teams have new technologies and for improving communications practices in a virtual environment (Jeske & Axtell, 2016). The managers in the organizations were able to identify effective strategies that helped to integrate ICT in GVTs to be successful. The leaders of the participating organizations were able to identify ways to communicate with virtual teams that were most effective facilitate successfully completing projects. Ford et al. (2017) concluded leaders must identify the appropriate forms of communication that are compatible for both local and virtual teams. The participating organizations assessed the challenges of both local and global teams' performance to achieve the organizations' objectives. Lack of global experiences creates challenges with business practices (Meyer & Xin, 2017). Although these teams faced challenges, they were able to adapt to new ways of working through using ICT. For virtual teams to overcome challenges, the teams should possess the knowledge and skills to communicate effectively (Schulze & Krumm, 2016). I concluded the transformational leadership approach guided and supported the organizations' commitments on a global scale.

Applications to Professional Practice

The findings of my study provided an understanding of each organization managers' successful strategies to integrate ICT in GVTs into business practices. The managers of the organizations developed these strategies to succeed in integrating ICT in their local and global operations. These strategies could improve business practices by incorporating some or all of the strategies identified in this study to support and increase GVTs' success rates. The managers' experiences with ICT and their GVTs has the

potential to assist other organizations to identify approaches that could be beneficial to support their organizational needs.

Implications for Social Change

The leadership strategies implemented to integrate ICT to support the success of GVTs could help expand business opportunities on a global scale. Strategies implemented in the GVTs were issuing shared location for documentation, effective and free use of teleconferencing and video conferencing, training in new ways of working, diversifying cultural boundaries, and redundancy for clarity to improve efficiencies by using ICT. The results of this study could help other organizations identify which ICT strategy may work for their business. Use of ICT could provide job opportunities in developed and underdeveloped countries by reviewing, incorporating, or adapting the participating organizations' thematic strategies.

Recommendations for Action

The objective of my qualitative multiple case study was to explore the strategies the leadership teams incorporated to succeed in working with ICT in GVTs. After a critical analysis of the data, I recommend that leaders and team members work together to identify effective ways to meet organizational objectives. Additionally, I recommend leaders of organizations expand their knowledge of software to enable greater accessibility to company information. Furthermore, leaders should identify cost effective solutions to communicate with virtual teams. It is essential that all GVT members have open forms of communication and can provide feedback to the leadership team to identify what may or may not work for those team members.

Another recommendation is for leaders to consider the strategies identified in this study to help other GVTs in the ICT industry and organizations outside of the ICT industry. The benefit of these strategies, shared location for documentation, effective and free use of teleconferencing and video conferencing, training in new ways of working, diversifying cultural boundaries, and redundancy for clarity, is they apply to both domestic organizations and international organizations. Since these strategies developed in multicultural environments, these strategies could aid leaders and teams in diverse markets.

The contributing CEOs and senior manager participants of the organizations will receive copies of my study. I will publish my finished study in ProQuest for future researchers. In addition, I plan to disseminate summaries of my study through LinkedIn to telecommunication organizations that are in my professional network.

Recommendations for Further Research

For future studies, I recommend researchers explore strategies leaders used for ICT in GVTs outside of the telecommunication industry. It would be interesting to explore different industries and confirm if they have similar outcomes, or if outcomes vary across industries. Future researchers could interview participants outside of the New York market or at an international location to compare results from this study. This study was a qualitative multiple case study. Future researchers can diversify the industry population to perform a quantitative or a mixed method study. Additional research opportunities are to address the limitations of this study including the limited number of

participants from each organization. Another limitation was the number of organizations willing to have employees participate.

Reflections

During this journey at Walden University, I wanted the opportunity to elevate my academic writing and research skills. There were many challenges completing my study beginning with writing my proposal. It took hard work and dedication, but mostly it took an open mind. When I began my DBA, I knew I wanted to explore GVTs and some of the intricate components to develop these teams. The complexities of integrating ICT into GVTs resonated as I read hundreds of journals and articles. I worked with GVTs, so I thought I knew all I needed to know. After a review of the literature, I quickly realized if I wanted to be a researcher, I had to have an open mind and address my personal biases so I could objectively explore the context of the literature.

After my initial interviews with the participants, they were eager to know when I will share the results with them. On different occasions, after following up on the interview responses using member checking, I came to realize the importance of transcription and accurately describing the experiences of participants. It was apparent the participants were comfortable and confident answering the interview questions.

Conclusion

The purpose of this qualitative multiple case study was to explore the strategies some managers used to integrate ICT to support the success of GVTs. Critical analysis of the data revealed five themes managers used to support the success of integrating ICT of GVTs. The associated strategies established an efficient and effective way to conduct the

participating organizations' business in a global environment. In addition, as the ICT and global environments continue to change the growing impact ICT in organizations is inevitable. Reviewing, implementing, or adapting the themes and strategies provide an opportunity for other organizations to increase the success rates of their GVTs in a competitive environment.

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Appendix: Interview Protocol

| Interview Protocol | |
|--|---|
| What you will do | What you will say |
| Make participant feel comfortable | Provide brief overview of the study |
| <ul style="list-style-type: none"> • Observe Participant • Take notes • Member Checking | <ol style="list-style-type: none"> 1. What strategies do you use to integrate ICT to support the activities and success of GVTs? 2. What were the key challenges to implementing your strategies for using ICT to improve the success rates of your GVTs? 3. What steps did your organization take to overcome the key challenges associated with managing ICT for your GVT? 4. What forms of ICT does your organization use to enhance GVTs' communications? 5. How have you assessed the effectiveness of your strategies and processes for using ICT to improve the success rates of your GVT's? 6. What forms of ICT in your GVT did you find to be less effective? 7. What additional information you would like to share about integrating ICT to support the success of GVTs? |
| End of Interview | Thank you for taking the time out of your schedule to meet with me to do this interview. After transcript review, I would like to provide you a copy of the transcript and see if you have anything you may want to add to the interview. |