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Strategies to Digitize Business Processes

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Abstract

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MBA, University of Liverpool, 2016

B.Eng., Ain Shams University, 2006

Doctoral Study Submitted in Partial Fulfillment

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Abstract

Information technology leaders with limited digitization strategies are less profitable than competitors in the same industry. Without digital strategies, information technology leaders suffer from manual business processes, which results in losing business opportunities. Grounded in general systems theory, the purpose of this multiple case study was to explore the strategies that 10 IT leaders used to transform business processes digitally at four different organizations in Ireland. Data were collected using semistructured face-to-face interviews. The second data source was organizational digitization documents. The 3 themes that emerged from thematic analysis were (a) strong digital leadership competencies, (b) digitally aligned with the business vision, and (c) the why of the digital transformation. A recommendation for information technology leaders includes the development of a strategic digital transformation plan that proactively provides technological solutions to digitize business processes. The social implications include potentially increasing economic opportunities, generating more jobs in the local communities, and encouraging the development of individuals' technological skills.

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Section 1: Foundation of the Study

Background of the Problem

Digital solutions often fail to achieve business digitization objectives (Hsu, Tsaih, & Yen, 2018). Some IT leaders focus on technology adoption rather than the strategic transformation of the business and struggle to shift their mindset from technically driven to business focused (Westerman, 2018). The most common problem is that some IT leaders do not develop digital strategies to help their organizations to digitally transform and modernize business processes (Hsu, Tsaih, & Yen, 2018). Additionally, some IT leaders seem to adopt a tactical and ad hoc technology approach rather than a strategic and integrated approach to achieve the digitization goals (Heavin & Power, 2018). Some IT leaders consider digitization goals as a technology evaluation exercise where they try to find the best available technology instead of trying to foresee the full picture and develop a digital strategy to support the digitization objectives. Lack of digital strategy and insufficient digitization of business processes in organizations negatively impact business performance (Westerman, 2018).

Some IT leaders lack digital strategies to digitize business processes, which results in fewer profits and revenue, reduced competitive advantage, and lower efficiency. IT leaders who fail to deliver digital solutions such as mobile, analytics, digital platforms, and cloud computing put their organizations in a situation to be 26% less profitable than others (Kane, Palmer, Phillips, & Kiron, 2015). Additionally, IT leaders who lack digital strategies expose their organizations to missed opportunities to personalize the customer experience, increase efficiency, improve innovation, empower

decision-making with digital data, and transform the business model to be more dynamic and agile (Schwertner, 2017). Organizations that are not digitally transformed suffer from a complex set of business processes that result in a fragmented, labor-intensive, and frustrating customer experience and are often made worse by the product silos within the organizations (Weill & Woerner, 2018). IT leaders without digital strategies encounter fierce competition, and their digitally transformed competitors outperform them (Schwertner, 2017).

Problem Statement

The success rate of digital solutions that support strategic business objectives to achieve digitization is approximately 29% (Renaud, Walsh, & Kalika, 2016). The IT leaders worldwide spent $3.8 trillion on digital solutions without validated digital strategies on achieving digitization goals (Ali, Green, & Robb, 2015). The general business problem was that some IT leaders fail to align digital strategy with business digitization goals. The specific business problem was that some IT leaders lack digital strategies to digitize business processes.

Purpose Statement

The purpose of this multiple case study was to explore digital strategies IT leaders implement to digitize business processes. The target population was 10 IT leaders at four organizations in Ireland who successfully implemented a digital strategy to digitize operational business processes. The implications for positive social change include improving social conditions by increasing economic opportunities, generating more jobs

in local communities, and encouraging the development of individuals' technological skills.

Nature of the Study

Researchers use a qualitative method to explore a management-related phenomenon and to understand the participants' experiences and perspectives by identifying participants' actions and exploring complexities in individual behaviors from the participants' viewpoints (Yin, 2017). The quantitative method is an application of statistical measurements of problems to explain the relationship between and among variables (Janczarek & Sosnowski, 2015). The collection of numerical data for analytical testing the validity of theories about variables' relationships or groups' differences was not the purpose of the current study. Researchers use mixed methods to examine information to solve complex problems and to test hypotheses by integrating quantitative and qualitative methods (Röing & Sanner, 2015). Quantitative and mixed-methods approaches were inappropriate for the current study because I did not require quantitative data to answer the research question. Therefore, I used the qualitative method.

Researchers use the qualitative case study design to explore a phenomenon in its current and real-life state by answering what and how questions (Yin, 2017). The single-case study design is suitable when researchers focus on a single organization or single units within organizations (Yin, 2017). I had more than one organization to interview where the IT managers had successfully developed digital strategies and managed to digitize business processes, which disqualified the single case study design. I used the multiple-case study design with semistructured interview data and document review to

answer the what question for this study. Researchers use the ethnographic design to study people in groups who interact with one another and share the same space, which disqualified the ethnography design for this study (Yin, 2017). Researchers use the phenomenological design to focus on participants' perspectives experiencing a phenomenon instead of exploring strategies, which made the phenomenological design inappropriate for this study (Yin, 2017). Researchers use the narrative design to preserve serial connections and the sequencing of events as participants explain their experiences through personal stories that connect events and actions (Yin, 2017). Therefore, the narrative design was inappropriate for this study.

Research Question

What are the digital strategies IT leaders successfully implemented to digitize business processes?

Interview Questions

1. How did you align the digital strategies with the digitization of business processes?
2. How did you develop digital strategies to digitize business processes?
3. How did you determine which digital technologies would support the digitization?
4. How did you implement digital technologies to digitize business processes?
5. How did the digitization of business processes change the business operations?
6. How did you measure the success of the digitized business processes?

7. What additional information would you like to add that I did not ask?

Conceptual Framework

The conceptual framework for this study was the general systems theory (von Bertalanffy, 1972). Von Bertalanffy (1972) discussed that the other realm of general systems theory is systems technology, which focuses on the problems occurring in emerging technology such as digitization. Researchers could use the general systems theory to understand and interpret the implications of digital solutions that include several types of systems (people, processes, and technologies) to achieve business goals (Loosemore & Cheung, 2015). The conceptual framework in the current study supported the exploration of digital strategies for the successful digitization of business processes.

Loosemore and Cheung (2015) discussed how different implementations of technologies and the complications of manual processes could no longer support strategic business objectives. Furthermore, developing and deploying different digital strategies to manage digital solutions to achieve organizational goals has become necessary (Drack, 2015). According to Leonardi, Bailey, Diniz, Sholler, and Nardi (2016), the general systems theory focuses on the organizational systems with individuals, social interactions, and technologies that are working altogether in alignment to ensure successful implementation of organizational goals. The purpose of the current study was to explore digital strategies to digitize business processes, and the general systems theory was appropriate for understanding the findings of this study because it focused on studying emerging technologies and society as a holistic system and technological strategies to achieve organizational goals (see Ceric, 2015).

Operational Definitions

Artificial intelligence (AI): Artificial intelligence is the capability of different programming algorithms that allow devices to access, combine, and use data to learn, explain, and forecast actions, processes, and trends (Segars, 2018).

Cloud computing: Cloud computing is the digital solution that provides flexible computing capabilities to expand and scale up and down quickly by enabling on-demand network access to a shared pool of configurable computing capabilities such as infrastructure, software, applications, and platforms that can be rapidly provisioned and released with minimal management effort or cloud provider interaction (Califf, Sarker, Sarker, & Skilton, 2016).

Digital masters: Digital masters refers to organizations that successfully develop their digital capabilities and digital leadership, and successfully transform their businesses to be 26% more profitable than organizations that are not digitally transformed (Schwertner, 2017).

Digital platforms: Digital platforms refers to the environments that provide foundations for subsequent connections and interactions between different parties to innovate new applications through no-code or low-code capabilities (Sia, Soh, & Weill, 2016).

Digital solutions: Digital solutions refer to social media, mobile technologies, analytics, cloud computing, and the internet of things (Sebastian et al., 2017).

Digital strategy: Digital strategy is the tactics and vision of doing the business differently by renovating business processes and business models, which are enabled by

digital technologies such as artificial intelligence and the internet of things (Westerman, 2018).

Digital transformation: Digital transformation is the organizational change in customer experience, operational business processes, and business models enabled by digital solutions (Schwertner, 2017).

Internet of things (IoT): IoT is the process of internetworking devices, vehicles which are known as connected devices or smart devices, and products with various types of input and output devices such as radio-frequency identification, sensors, and network connectivity to enable real-time data acquisition and control (Kotarba, 2018).

Assumptions, Limitations, and Delimitations

Assumptions

Research assumptions are statements that researchers suppose to be true without verification (Brinkmann, 2016). Identifying assumptions is a critical component of practical research (Brinkmann, 2016). I identified four assumptions to guide the analysis and data collection for this qualitative study. First, I assumed that participants would respond to the interview questions in an unbiased and truthful manner and would confirm the possession of knowledge and experience required to answer the research question. Second, I assumed that the interview questions would be adequate and consistent. Third, I assumed that I would be able to control, reduce, or eliminate personal bias. The fourth assumption was that I would be capable of conducting compelling interviews and collecting authentic responses from the participants.

Limitations

Limitations of a study are insufficiencies, areas of potential weakness, and elements that may influence the interpretation of the results but that are beyond the researcher's control (Singh, 2015). The current study had three limitations. The first limitation was the restriction of the sample size and geographical setting. The generalizability of results was limited due to the small sample size, which means the results may not reflect the experiences of other organizations and geographical locations (see Kharuddin, Foong, & Senik, 2015). The second limitation was a possible bias in participants' responses. The third limitation was that the data may not have been accurate because participants' knowledge of the research topic and their ability to recall past digitization may not have been accurate.

The sample size of 10 IT leaders was a limitation that future researchers could address by increasing the sample size to 30 IT leaders. Future researchers could also address the geographical limitation by extending the scope of the study to more than one location. To address research bias and data collection limitations, future researchers could use different research methods and designs. Future researchers could address the delimitations of this study by investigating different roles other than IT leaders, such as chief digital officers, chief data officers, innovation strategists, and digitization strategists.

Delimitations

Delimitations are boundaries that researchers enforce to narrow and restrict the scope of a study. Researchers should establish delimitations before conducting a study to

help readers understand the factors intentionally excluded from the study (Ganapathy, 2016). The delimitations of a qualitative case study research include (a) sensitivity of the information, (b) interviewing setting, (c) sample size, (d) geographical location, and (e) business size (Semenova & Hassel, 2015).

I identified four delimitations for the current study. The first delimitation was the location of the population, which was limited to Dublin, Ireland, which meant the results of this study may not be transferable to other cities or countries. The second delimitation was the sample, which included 10 IT leaders to understand their digital strategies to digitize business processes in their business. The third delimitation was the population, which included IT leaders who succeeded in digitizing business processes for at least 3 years. The fourth delimitation was excluding executives and IT leaders who did not have information about digital strategies to digitize business processes.

Significance of the Study

The advancement of digital technology introduced several services, such as processes automation, machine learning, and artificial intelligence, which led to new challenges for IT leaders (Majstorović, 2016). Additionally, business executives demand digital solutions to achieve the digitization of business processes (Belalcázar & Díaz, 2016). Digitized business processes address the challenges of manual and broken processes that impede the strategic business objectives (Sia et al., 2016). Digitization of business processes integrates different lines of businesses into a single digital platform to manage and improve the flow of information throughout organizations and to help leaders make informed decisions, renovate business processes, and introduce new

operating models (Schwertner, 2017). IT leaders use the digitization of business processes to improve customer stratification and enhance customer experiences, which leads to more profits and revenues.

Contribution to Business Practice

Some IT leaders lack digital strategies that would help them to develop, deploy, and manage digital technologies to achieve strategic business objectives (Majstorović, 2016). Moreover, some IT leaders fail to articulate digital strategies to digitize business processes (Majstorović, 2016). Findings from the current study may help IT leaders to develop digital strategies that could support the digitization of business processes.

Implications for Social Change

The implications for positive social change include streamlining the user experience when requesting a service from a service provider by digitizing the end-to-end process, which would lead to a digitized community with increased employment and economic opportunities (Chan & Holosko, 2016). The introduction of digital services and applications may expand opportunities and provide sustainable living within the digital market and generate more jobs in the local communities. Kane, Palmer, Phillips, and Kiron (2017) argued that digitally enabled organizations tend to cultivate human and social conditions and encourage the development of individuals, communities, and society.

A Review of the Professional and Academic Literature

The purpose of this qualitative multiple case study was to explore digital strategies IT leaders successfully implemented to digitize business processes. In the first

part of the literature review, which addresses the general systems theory, I discuss the foundation of the conceptual framework for this study. I describe how the general systems theory was applied to this study and explain why the general systems theory was appropriate. I conclude this part by explaining and discussing the supporting and contrasting theories that could have been used to address the digital strategies that IT leaders successfully implemented to digitize business processes.

In the second part, I review the current literature related to digital strategies IT leaders use to digitize business processes. I provide a comprehensive synthesis and analysis of the digitization and digital transformation and how IT leaders successfully transformed their organizations to be more profitable, efficient, and competitive (see Betz, 2018). The second part also includes the critical elements of digital strategies that deliver business value in the form of digital processes and business models. The essential elements are (a) digital leadership, (b) digital alignment, (c) digital culture, and (d) digital maturity. I include a detailed analysis of the current literature addressing the space of digitization, digital strategies, and business transformation.

I reviewed peer-reviewed sources when collecting information regarding digital strategies IT leaders successfully implemented to digitize business processes. The search engines, databases, and sources used to find relevant literature were Google Scholar, Emerald Insight, Applied Sciences Complete, Business Source Complete, SAGE Journal, ProQuest, ScienceDirect, MIT Sloan Management Review, Business Market Research, EBSCOhost's Computers, Business Dissertations, and books that supported the development of the literature review. The keywords used to search the databases included

but were not limited to *digitization, digital strategies, digital solutions, digital transformation, business process digitization, digital experience, digital culture, digital leadership, digital maturity,* and *general systems theory*.

I examined 248 sources in this study. Of the 248 sources, 219 were published within 5 years of the anticipated graduation year and 223 were peer reviewed. Table 1 contains information regarding the literature sources and statistics including the (a) total number of literature sources, (b) total number of peer-reviewed literature sources, (c) and total number of the literature sources published within 5 years of the anticipated graduation year of 2019. I filtered the literature search results to include articles published no earlier than 2015, but sometimes I used articles published before 2015 because there was a limited number of articles published after 2015 to address specific topics such as the general systems theory.

Table 1

Overview of the Literature Review

	Total literature	Peer-reviewed literature (1972-2019)	Literature within five years (2015-2019)
Total literature	232	215	212
Percentage	100%	92.6%	91.3%

In Section 2, I provide a comprehensive and detailed review of the literature regarding the digital strategies IT leaders successfully implemented to digitize business

processes. The literature review includes a solid foundation for the current study, facilitating theory development and helping to bridge the gaps in the literature. The literature review contains two main parts. First, I provide a detailed discussion of (a) general systems theory and digitization, (b) supporting theories, and (c) contrasting theories. Second, I provide a comprehensive synthesis and analysis of literature related to (a) digitization overview, (b) digital leadership, (c) digital alignment, (d) digital culture, and (e) digital maturity.

The purpose of this qualitative multiple case study was to explore the digital strategies IT leaders successfully implemented to digitize business processes. I used the general systems theory as the conceptual framework to study the business problem. A researcher uses the general systems theory to examine and understand the systems, which requires the analysis of activities within individual functions and the examination of the organizational effectiveness through the coordination of individual activities (von Bertalanffy, 1972).

General Systems Theory

The conceptual framework for this study was the general systems theory, which I used to explore the digital strategies IT leaders successfully implemented to digitize business processes. Researchers use the general systems theory to address complex business problems and organizational issues (von Bertalanffy, 1972). The fundamental principle of the general systems theory is that organizations function as a complete system, which has different single or complex elements and interrelated components to achieve the organizational objectives, and the scope of the general systems theory is the

whole system rather than its components (Caws, 2015). Researchers use the general systems theory to provide a logical structure to understand the interactions and relationships between different elements and components of a system or an organization (von Bertalanffy, 1972).

Researchers use the lens of the general systems theory to gain an understanding of systems across a variety of areas and explore phenomena and problems across different disciplines (Morgeson, Mitchell, & Liu, 2015). The critical pillar of the general systems theory is that business operations and processes within organizations are integrated components of subsystems, and the other components of the whole system function together to achieve organizational objectives (Suter et al., 2013). Moreover, researchers use the general systems theory to investigate a wide range of systems because the theory is not limited to specific fields of science (von Bertalanffy, 1972). Suter et al. (2013) argued that the general systems theory has essential characteristics, which are (a) holistic, (b) the interrelationship between objects in a system, (c) systems have components, (d) the existence of a system within an environment, and (e) goal seeking.

According to the general systems theory, a system can be open, closed, or isolated to the environment regarding its interaction (Barile, Lusch, Reynoso, Saviano, & Spohrer, 2016). The functions or subsystems of a system operate as an open system because they are interdependent on other functions or subsystems (Hughes, Anund, & Falkmer, 2015). Moreover, the functions or subsystems of systems interrelate with other functions or subsystems and with their environments (Hughes et al., 2015).

Complex business organizations have a vast number of relationships and interactions between subsystems, which affects the changes in business operations. Researchers view most business organizations as open systems when they use the general systems theory (Terra & Passador, 2015). According to Arnold and Wade (2015), researchers could use the general systems theory to explore a system to discover a mechanism through which organizations and societies, people, and machines operate.

Established organizations often have many complementarities among their existing functions and practices, which enable the business to evolve to a stable and coherent state (McAfee & Brynjolfsson, 2017). The purpose of the general systems theory is to examine the organizational complementarities in complex structures of functions and practices. Researchers who study complementarities within organizations such as functions and practices use the general systems theory lens to examine the mutual interaction between complementarities (Araujo, Bucher-Maluschke, & Pedroso, 2016). Researchers take advantage of the general systems theory to explore elements and structures within organizations to investigate their business problems. Researchers also use general systems theory to address complex business problems (Montgomery & Oladapo, 2014). Valentinov and Chatalova (2016) argued that researchers who need to explore the operational business processes in unpredictable and evolving environments apply the general systems theory.

Use of the general systems theory includes studies related to the fields of business administration and management. Researchers who are interested in understanding phenomena related to operations management apply the general systems theory

(Rousseau, 2015). Additionally, researchers use the general systems theory to study and explore vital disciplines in the business field (Ceric, 2015). The general systems theory applications include technology, management, and organizational design (Rousseau, 2015). Many researchers applied the general systems theory to examines the business value of the digitization of the operational business processes created (Ceric, 2015). Additionally, many researchers used the general systems theory to explore the fundamentals of the analysis and structural design in information technology and computing systems (Ceric, 2015). There are other applications of the general systems theory that researchers implemented, such as supply chains and the effect on organizational performance (Fantazy, Tipu, & Kumar, 2016).

IT leaders adopt system thinking to modernize the organizational functions and components using emerging digital technologies, which digitizes the business processes (Betz, 2018). The general system theory is an essential influence on digital management because a digital system is complex and comprises technologies, processes, and people (Betz, 2018). The lens I used in the current study was the general systems theory because of the complications and interdependencies of the complex business processes and components of an organization (see Betz, 2018). The interdependencies and complications mean that any change in one subsystem creates different events that affect another subsystem and might impact the functioning of the overall system (see Betz, 2018). Researchers who use the general system theory perceive an organization as one system, which is why I chose this lens to investigate how IT leaders successfully implemented digital strategies to digitize business processes.

Supporting Theories

There are other theoretical lenses I could have used to explore how managers successfully implemented digital strategies to digitize business processes. For example, researchers use the sociotechnical systems theory to explore an organization as two interdependent systems, which are technical and social (Carayon et al., 2015). Sociotechnical systems theory relates to the general systems theory, and researchers use the sociotechnical systems theory in the study of complex systems (von Bertalanffy, 1972). Researchers explore the technical system from a perspective of hardware, software, and processes and investigate the social system's people and activities (Carayon et al., 2015). Moreover, researchers consider the sociotechnical systems theory when people, technology, and organizations have interdependencies and relationships (Dalpiaz, Giorgini, & Mylopoulos, 2013). Additionally, researchers use the sociotechnical systems theory when the two subsystems have a correlative relationship and one subsystem depends on the other subsystem. The interdependencies and correlative relationships between the subsystems transform the inputs to the outputs that define the work organization. Researchers study a phenomenon from the sociotechnical systems theory perspective when exploring the implications of new technologies on social behavior (Kull, Ellis, & Narasimhan, 2013). From the sociotechnical systems theory lens, the digitization of the business process is the technical system, and the digital strategies are the social system.

Another theoretical lens researchers could use to explore the phenomenon of business processes digitization is the unified theory of acceptance and use of technology.

Researchers could use the unified theory of acceptance and use of technology to explore the phenomenon of technology acceptance and implementation in organizations (Lescevica, Ginters, & Mazza, 2013). According to Kull et al. (2013), the critical characteristics of the unified theory of acceptance and use of technology are (a) facilitating conditions, (b) social influence, (c) performance expectancy, and (d) effort expectancy. Performance expectancy refers to how technology provides benefits to organizations to achieve strategic objectives, and effort expectancy refers to how technology is accessible for organizations to adopt and leverage (Lescevica et al., 2013). Facilitating conditions refers to the availability of resources and support to achieve the organizational goals, and social influence refers to the organization's perspective on how to use technology (Lescevica et al., 2013).

Researchers could use another theoretical lens to explore the phenomenon of business processes digitization and the related digital strategies, which is the technology acceptance model. The foundation of the technology acceptance model is the information systems theory, which presumes the acceptance of technology is a function of two elements. The first element of the technology acceptance model is the perceived usefulness, and the second element is the perceived ease of use (Huang & Martin-Taylor, 2013). Researchers use the technology acceptance model to explore the phenomenon of adopting technologies by individuals.

Researchers could use another theoretical lens to explore the phenomenon of business processes digitization, which is the technology evolution theory. The core principle of the technology evolution theory is that IT leaders should view digital

technologies as a dynamic system or a platform that comprises several interconnected technologies (Adomavicius, Bockstedt, Gupta, & Kauffman, 2007). The essential elements of the technology platform are (a) products, services, and applications; (b) critical components; and (b) the support of the infrastructure the technologies operate and evolve (Huang & Martin-Taylor, 2013). Researchers could consider the opportunities the evolution of technologies would provide, such as the digital solutions that provide the digitization of the business processes. The evolution of digital solutions and the digitization of the business processes is the phenomenon the researchers could use the technology evolution theory to explore.

There is another theoretical lens the researchers could use to explore the phenomenon of business processes digitization, which is the contingency theory of management. The core principle of the contingency theory of management is that leaders define the organizational processes and structure reacting to the changing demands of the business environment (Burton, Obel, & Hakonsson, 2015). IT leaders could develop managerial strategies and actions about internal and external gaps (Herbert, 2017). Business performance correlates to the relationship between the business, the management, and the key performance indicators (Cullen & Parker, 2015). Researchers could use another theoretical lens use to explore the phenomenon of business processes digitization, which is the theory of constraints. Researchers use the theory of constraints as a management philosophy to manage the operational business processes and support achieving the strategic objectives (Cullen & Parker, 2015).

Contrasting Theories

Researchers use the theory of planned behavior to understand and assess behavior from different perspectives (Wang & Wang, 2015). Researchers could use the theory of planned behavior as the foundation to examine the users' adoption of digital technologies. Additionally, a researcher could describe the intention of behaviors, which correlate to attitude and perceived behavioral control, using the theoretical lens of the theory of planned behavior (Hasking & Schofield, 2015). The purpose of the current study was to explore the digital strategies IT leaders successfully implemented to digitize business processes, not the behaviors of users adopting the digitized business processes.

Another theoretical lens researchers use to examine human behaviors is the theory of reasoned action (Mishra, Akman, & Mishra, 2014). Researchers investigate the relationship between attitude and behavior according to two factors, which are the principles of compatibility and behavioral intention. The scope of this study was to explore what digital strategies IT leaders successfully implemented to digitize the business processes, not the users' attitude towards adopting digitized business processes. Researchers use the theoretical lens of the constructivism theory to investigate the world through experiences and individuals constructed concepts (Enonbun, 2010). The core foundation of the constructivism theory in that the knowledge is created socially by communication, and the knowledge is not absolute but occurs in conditions specific to its environment (Naidu & Patel, 2013). Researchers argue that the constructivism theory contrasts with the general systems theory because of the constructivism's concept of

internal tension, which conflicts with the general systems theory concept that components are interrelated and work together to form a relationship.

E. M. Rogers (1962) developed the diffusion of innovation theory to explain how a strategy or service could gain momentum over time and could diffuse through an organization or system (Rogers, 1962). I did not select the diffusion of innovation theory as the theoretical framework for this study because it does not explore how managers successfully implement digital strategies to digitize the business processes (Cua, 2012). Researchers use the theoretical lens of the resource-based view theory to explore sustained organizational competitiveness (Barney, 1991). The scope of this study was to explore what digital strategies IT leaders successfully implemented to digitize business processes, not organizational competitiveness, which disqualified the resource-based view theory for this study. Another theoretical lens the researchers argue that it contrasts with the general systems theory is the disruptive innovation theory (Barney, 1991).

Researchers use the theoretical lens of the disruptive innovation theory to assess the practicality of technological innovations in the process of adopting innovative solutions in the organization (Cua, 2012). The scope of this study was to explore what digital strategies IT leaders successfully implemented to digitize the business processes not to define the marketplace. Julong Deng developed the grey systems theory in 1982 to study systems that have incomplete information available and partial information unavailable (Liu, Yang, Xie, & Forrest, 2016). Researchers use the grey systems theory as an emerging multiple attribute decision-making tool. Additionally, researchers who leverage the fault-free analysis depend on the grey systems theory results as a risk

assessment tool (Manouchehr, Seyyed Morteza, & Hossein, 2016). The scope of this study was to explore what digital strategies IT leaders successfully implemented to digitize the business processes, and complete and adequate information is required, which disqualifies the grey systems theory.

Digitization Overview

IT leaders who successfully implemented digital strategies to digitize the business process have improved organizational performance to be twice more profitable and productive (Betz, 2018). Digitization of business processes is not about implementing a new technical solution or purchasing a modern technology, but it is about how IT leaders set directions to the organization to be more adaptive to change itself (Betz, 2018). Digitization of business process enables innovation, improved designs, and new business models, and shapes how organizations create value to cusotmers (Nadeem, Abedin, Cerpa, & Chew, 2018). Additionally, digitization supports IT leaders in tackling managerial issues such as business efficiency and business process redesign (Nadeem et al., 2018). However, Nguyen, Newby, and Macaulay (2015) argued that some IT leaders lack digital strategies to digitize business process and struggle to utilize the emerging technologies to drive the organizational transformations, which results in a disconnection between the corporate strategic vision and the execution.

Digitization definition. Digitization of the business process does not mean getting an organization to leverage a specific set of new technological solutions. However, digitization of the business process means developing digital strategies to react and utilize emerging digital solutions such as artificial intelligence, blockchain, and

Internet of Things (IoT) to improve, enhance, or create new procedures and processes (Betz, 2018). Some IT leaders struggle to put together digital strategies to implement new ways of working that ensure a continuous improvement using emerging digital solutions (Kane, Palmer, Phillips, Kiron, & Buckley, 2015c). Additionally, digitization of the business process includes the intensive orchestration of new products, processes, services, platforms, or business models in each use case (Hinings, Gegenhuber, & Greenwood, 2018). IT leaders who successfully implemented digital strategies to digitize business processes delivered a digitally enabled arrangement of practices, and structures, which added value to the organization.

The implementation of digital strategies supports a wide range of innovations and business modernization, and it is no longer the implementation of technological tools (Goerzig & Bauernhansl, 2018). Digitization of business processes is an essential part of the value creation, and it is a critical source of competitive advantage (Goerzig & Bauernhansl, 2018). Some IT leaders do not have enough digital background to digitize processes and services. Some IT leaders suffer from incomplete adequate models, methods, and tools to successfully articulate digital strategies. Goerzig and Bauernhansl (2018) argued that the first step to digitizing the business process is to articulate digital strategies and a holistic roadmap of the digital transformation. IT leaders who failed to articulate digital strategies and planed the digital transformation struggled with unrealistic expectations, poor communication, lack of digital culture, and underdeveloped digital talents, which delayed the value realization of the digitization initiatives.

Digital strategies play a critical enabling role in promoting business model innovations in different sectors (Li, 2017).. Digitally transformed organizations are 26% more profitable than their average competitors within the same industry (Westerman, Bonnet, & McAfee, 2014). Additionally, digitally transformed organizations generate 9% more revenue with their existing physical assets and resources and drives more efficiency in their existing processes and products (Westerman et al., 2014). Some IT leaders formulate digital strategies to keep making digital solutions work for them even though the digital solutions themselves keep changing. Additionally, IT leaders articulate digital strategies to build digital capabilities that did not exist before by rethinking and renovating the business processes, customer experience, and engagement, and business models (Westerman et al., 2014). Sebastian et al. (2017) argued that new digital technologies such as social, mobile, analytics, cloud, and Internet of Things (IoT) technologies present both game-changing opportunities and existential threats to any organization.

Digitization elements. There are three essential elements for IT leaders to implement digital strategies to digitize business strategies successfully. These elements are (a) define the digital solutions and emerging technologies, (b) build an operational backbone that facilitates operational excellence, and (c) adopt digital services platform that enables rapid innovation and responsiveness to new market opportunities (Sebastian et al., 2017).

IT leaders should embrace new organizational structures and processes to empower their people to collaboratively experiment with technologies and deliver

integrated products and services to their customers. IT leaders should change how IT services are invented, developed, deployed, scaled, updated, maintained, and paid (Califf et al., 2016). Goerzig and Bauernhansl (2018) argued that IT leaders who fail to adopt new technologies and struggle to articulate digital strategies are likely to be left straggling behind.

IT leaders should realize that the adoption of new technologies and digital solutions needs to create a business value and develop valuable new products and services (Anand, Sharma, & Coltman, 2016). However, some IT leaders fail to articulate digital strategies to capture the business value from digital solutions and focus on replacing old technologies with new ones. IT leaders should adopt a structured sequence to articulate digital strategies to capture business value (Anand et al., 2016). The four steps sequence includes (a) top management engages with IT leaders to explore and evaluate digital strategies, (b) IT leaders engage with the digital solutions vendors to understand the business value, (c) IT leaders should invest in building mature communication and collaboration styles, and (d) develop the resource allocation process to be agile. Kostić (2018) argued that IT leaders who fail to articulate digital strategies to capture the business value and digitize the business process could lead to 75% of existing organizations would disappear by 2027.

Digitization implementations. The intensive application of digital technologies leads to the digital transition, and the speed of digital transformation significantly influences the market position of organizations. The digital innovation shifts the demand curve because of consumers prefer digital products and shifts the supply curve because

the digital products are cheaper, efficient, and innovative (Kostić, 2018). Additionally, rapid innovations in digital technologies forced organizations to change the way they operate (Seo, 2017). IT leaders should transition and evolve to be able to cope with the digital disruption. Seo (2017) recommended that IT leaders should investigate and analyze the phenomenon of digital disruption and formulate digital strategies to digitize business processes and transform the operating models. Additionally, IT leaders should see digital technologies are a protocol to change the method they do business, get closer to customers, empower the employees, and transform internal business processes.

Innovative digital solutions such as Blockchain, AI, IoT, and cloud computing change how organizations operate and the ways they engage with employees and customers. Alizadeh (2017) argued that a growing number of IT leaders realized the need to capitalize on the rapidly growing digital economy. IT leaders started to develop digital strategies to move their digital planning and policy-making approach from ad-hoc to a strategic approach that utilizes different capabilities of digital opportunities.

IT leaders should integrate and align digital strategies with broader strategic thinking to deliver business value. IT leaders should ensure alignment between digital strategies and broader strategic thinking to focus on solving specific business problems. Fusko, Rakyta, Dulina, Sulirova, and Edl (2018) argued that digitization of business processes and models started to change how organizations communicate, and IT leaders need to have reliable digital strategies, or they risk losing access to large segments of the market.

IT leaders would be able to digitally transform their organizations and mitigate the risk of losing access to significant opportunities when they put together the foundations for digital solutions and emerging technologies (Fusko et al., 2018). The foundations for digital solutions and emerging technologies are (a) foresee the horizon, (b) data-driven decision making, and (c) rapid and agile implementation. For example, digital solutions and emerging technologies would support IT leaders to transform how business to business (B2B) manage their interactions and transactions (Pagani & Pardo, 2017). Furthermore, digitally enabled organizations would have new opportunities to manage the business to customer (B2C) business model more efficiently and effectively. Pagani and Pardo (2017) anticipated that digital solutions and emerging technologies such as Blockchain would introduce new business models such as customer to customer (C2C) or customer to business (C2B).

Digital technologies brought some critical business opportunities, but many process-oriented and asset-intensive organizations have not thoroughly evaluated and exploited the potential of digital solutions and digitalization (Stoffels, & Ziemer, 2017).IT leaders could face the challenge of market readiness and demands, which is the primary barrier to implement digital solutions (Stoffels, & Ziemer, 2017). IT leaders could create value and benefit from digital solutions by conducting value assessment workshops, creating business cases, and building performance indicators to monitor benefits.IT leaders should prepare to respond to digital threats and opportunities to compete in the increasingly digital marketplace.

Digital threats and opportunities could have many examples. With the rapid adoption of the Internet and smartphones, consumers are increasingly turning to computers and smartphones to interact and transact with service providers is great (Sia et al., 2016). Additionally, digital banking services in Asia would rise from 670 million in 2016 to 1.7 billion by 2020 (Sia et al., 2016). However, digitization of business processes require strategic initiatives and proactive effort. The strategic initiatives and proactive effort are (a) digital leadership, (b) agile and scalable digital operations, (c) digitally-enabled customer experiences, and (d) incubate and accelerate emerging digital innovations (Sia et al., 2016). IT leaders need to develop agile and scalable digital operations to respond to the dynamism of the digital era, which is called the digital capabilities along with digital leadership.

Digital Leadership

Digitization of business processes starts at the top of the organization, and IT leaders share a vision of achieving a digitally enabled organization. Digital leadership should do the right things for the strategic success of digitizing the enterprise and its business processes (El Sawy, Kræmmergaard, Amsinck, & Vinther, 2016). Digital leadership does not mean leading technological implementation, but it means thinking differently about business strategies, models, and processes. Moreover, digital leadership connects strategy, culture and talent development, and digital solutions altogether to create business value (Gupta, 2018). IT leaders who successfully implemented digital strategies adopted six digital leadership foundational building blocks (El Sawy et al., 2016). The six digital leadership foundational building blocks are (a) digital strategy, (b)

digital business models, (c) enterprise platform integration, (d) people mindset and skills, (e) corporate digital function, and (f) digital workplace.

Digital leadership definition. Digital leadership is different from classical leadership because digital leadership means digital innovation management (Nambisan, Lyytinen, Majchrzak, & Song, 2017). Digital innovation management is the implementation of digital solutions during the process of innovation to digitize business processes. Digital innovation management includes a range of innovation outcomes such as new processes, products, and business models, which achieved when IT leaders implement digital strategies to digitize business processes (Nambisan et al., 2017). IT leaders could innovate faster and quicker using digital solutions because digital technologies enable ideas to be quickly formed, enacted, modified, and reenacted through repeated cycles of experimentation and implementation. Therefore, IT leaders who had digital leadership skills were able to digitize business processes, which resulted in sustainable operations, competitive advantage, and agile organization.

Digital leadership is concerned with the changes the digital solutions could bring and benefit the organization (Hess, Matt, Benlian, & Wiesböck, 2016). IT leaders who do not have digital leadership skills often lack clarity about the different options and elements they need to consider in their digital transformation endeavors (Hess et al., 2016). IT leaders should mitigate the risk of missing any digital transformation endeavors by developing digital leadership skills. Additionally, IT leaders need to formulate their organizations' digital transformation strategies by identifying the different options and elements they need to consider. Hess et al. (2016) suggested digital transformation

framework (DTF), which should help IT leaders developing their digital leadership skills and understand how to formulate and implement a digital transformation strategy.

Digital leadership is critical to allow employees to collaborate and share ideas, create a safe environment to experiment with the digital solutions, encourage employees to think differently and provide a digital vision (Gupta, 2018). It is critical to explain what a digital vision means because many IT leaders would assume that a digital vision is replacing an old technology or tool with a new modern one, which is not the case (Kane, Palmer, Phillips, Kiron, & Buckley, 2015d). The digital vision is about revisioning the business processes, reimagining the customer experience, and reinventing the business models (Gupta, 2018). IT leaders often fail to formulate digital strategies to digitize the business process because they could not create a digital vision. Kane et al. (2015c) added that IT leaders to succeed in creating a digital vision, they need to identify their strategic assets, which are valuable, rare, perfect, and no substitutable to be able to digitize the business process.

Digital leadership encourages and drives the digitization of business processes (Kostić, 2018). Strong digital leadership enabled IT leaders to suggest new digital opportunities and encourage businesspeople to engage. Gbangou and Rusu (2016) added that digital leadership enabled a shared understating between IT leaders and businesspeople, which supported IT leaders to articulate digital strategies to digitize business processes. Digital leadership allowed IT leaders to execute faster, acquire new digital knowledge, promote cross-sectional training, and hire more digitally enabled experts to drive digital transformation initiatives. IT leaders who had digital leadership

skills remained up to date with their organizations' infrastructure and technological innovation, which allowed them to explore opportunities to digitize business processes (Gbangou & Rusu, 2016). Digital leadership helped IT leaders to create dual-speed IT whereby supports business as usual IT functions and introduces digital solutions.

Digital leadership allowed IT leaders to understand the digital ecosystem of the organization, communicate effectively through the organizations, define precise specifications, expand the digital operations and agree on a mutual commitment and support from the business leaders (Alaceva, & Rusu, 2015). IT leaders need digital leadership to provide a vision and direction, create conditions for people to innovate and experiment with the emerging solutions, and empower people to think differently (Kane, 2018). Digitization of business processes required an inspirational leadership, building digital talents, and influence, which are core components of the digital leadership. Kane (2018) added that IT leaders should have digital leadership skills to be able to work with other business leaders and develop digital strategies to digitize business processes. IT leaders should enable collaboration across different boundaries and break the soils between business units as digital leaders.

Digital leadership skills. IT leaders who develop digital leadership skills successfully managed to break through the soils between business units, reduce the operation costs, build agile business models, and increased productivity (Luftman et al., 2015). Luftman et al. (2015) argued that IT leaders who had digital leadership skills were able to put together an organizational change program to digitize business processes. Ali et al. (2015) added that the governance of digital investments promoted the digitization of

the business and enabled IT leaders to be successful. Additionally, Dent (2015) discussed the vital role of the strategic planning and management that IT leaders should execute to develop digital strategies and digitize business processes (Al Qassimi, & Rusu, 2015). Therefore, digital leaders need digital governance, strategic planning, and organizational change management programs to digitize the business.

Digital leadership is not limited to digital governance, through the soils, and organizational change management but includes becoming digitally mindful and partnering with digital colleagues (Tarafdar, 2016). IT leaders need to partner with their digital colleagues to get a consensus about the digital directions and use the right technological tools to achieve the digitization (Zhang, Zhao, & Kumar, 2016). Additionally, IT leaders should become digitally mindful to prioritize the right projects, drive the teams with a reliable and clear roadmap, and establish transformation metrics (Tarafdar, 2016). IT leaders who successfully implemented digital strategies to digitize business processes managed to develop a digital mindset, which enabled them to see from the digital-first lens and think about the opportunities that digital solutions could benefit their organizations.

Digital leadership increased the impact of the digitization of business processes and support the modernization of the organizations (Iden, & Eikebrokk, 2015). Digital leadership enabled the IT leaders to be the digital evangelists in the organizations and worked as digital entrepreneurs to facilitate enterprise-wide digital transformations (Tumbas, Berente, & vom Brocke, 2017). IT leaders who developed digital leadership would drive the business value from emerging technologies, build new capabilities such

as data analytics, and drive digital customer engagement. Tumbas et al. (2017) argued that IT leaders are digital accelerators, digital harmonizers, and digital marketers. The digital accelerators leverage their digital leadership skills to establish digital innovation and experimentation capability. The digital harmonizers focus on digital customer engagement, and digital marketers take advantage of the data analytics and advanced algorithms such as AI.

Digital leadership is not only about digital accelerators, digital harmonizers, and digital marketers, but digital leadership includes the capabilities to handle digital transformation interdependencies and manage any complexity that might happens (Bathallath, Smedberg, & Kjellin, 2016). Therefore, IT leaders should be able to adhere to frameworks by which they could manage the interdependencies of the digitization of the business process. Bathallath et al. (2016) suggested that critical systems thinking and the Viable System Model are viable tools that IT leaders could use to interpret and expose the interrelations between different components of the digital transformation interdependencies. Ajjan, Kumar, and Subramaniam (2016) argued that handling the digital transformation interdependencies and managing the complexity need changes in business processes and organizational structure. Therefore, IT leaders should run the transformation initiatives and digitization of the business process in parallel to control interdependencies and manage organizational changes.

IT leaders orchestrate the information and communicate the value of digital solutions to get the commitment and the buy-in from the business leaders (Sanchez, 2018). IT leaders should develop digital communication channels by which the IT leaders

could enable employees to experience online learning space to get the enablement they need to adopt the new digital solutions. Sanchez (2018) argued that digital collaboration and communication platforms should be the tools that IT leaders use to harness peer-to-peer communication and build momentum. Singh and Hess (2017) added that IT leaders should embrace technologies like social media and mobile applications to enable digital communications. Digital communication is a critical component of digital leadership, and IT leaders should communicate across all levels digitally. The importance of digital communication is enhancing communication efficiency and improving existing communication channels.

Digital leadership has an additional role in enabling IT leaders to implement digital strategies to digitize the business process, which is the integration between the coordination, prioritization, and technical implementation of the digital solutions in the organizations (Matt, Hess, & Benlian, 2015). IT leaders need to adopt a business-centric perspective to transform the organizational process and coordinate with the business leaders to prioritize which processes create most business value. Ross (2018) argued that IT leaders need to engage with customers facing processes to gain deep insights where digitization adds business value to ensure successful implementation of the digital strategies. IT leaders need to engage with customers to design new digital experiences and solutions. Therefore, IT leaders should expand their scope and work with the organizational business leaders and external customers to ensure successful digitization of business processes.

Customers and business partner engagement should be the core of the digitization because they are a critical source of value generation (Legner et al., 2017). Digital leadership requires proactive collaboration with customers and partners to optimize their digital experience and ensure the modernization of their interactions with the organization. IT leaders should build a close relationship with customers and business partners to capture their expectations (Hess et al., 2016). Legner et al. (2017) argued that for IT leaders to build a close relationship with customers and business partners, they need to undergo changes that comprise capabilities such as co-location, the cross-functional digital canter of excellence, digital innovation programs, and shift their focus to a user-oriented approach. IT leaders should adopt the innovation to develop new processes, design user-centric experience, and transform the interactions with the customers.

There are four dimensions that IT leaders need to understand to successfully implement digital strategies to digitize the business process, which are the use of the digital solutions, the changes in value creations, the structural changes, and the financial management (Matt et al., 2015). The use of digital solutions means that IT leaders could explore and take advantage of emerging technological applications such as AI and IoT (Legner et al., 2017). The changes in value creations mean that IT leaders could inference the digitization of the business process initiatives to create business value. Hess et al. (2016) argued that the structural changes are the IT leaders' capabilities to drive the modifications in the organizational structures, business processes, and the digital skills needed to cope with the exploration of the technological applications. Finally, financial

management refers to the IT leaders' ability to build a financial business case for the digitization programs and finance the transformation endeavor.

Digital leadership role and responsibilities. Digital leadership has more responsibilities and roles, and IT leaders should embrace digital leadership skills, responsibilities, and roles to implement digital strategies. Singh and Hess (2017) argued that IT leaders should play the role of the entrepreneur, the digital evangelist, and the coordinator to inspire all stakeholders and business leaders. Milovich Jr (2015) added that IT leaders should have business acumen and the capability to transform the culture within the IT department. IT leaders should be the digital innovator, thought digital leaders, and consultants for the senior executives. Singh and Hess (2017) discussed the critical skills that IT leaders should develop, which are the digital technologies competency, organizational change management, and digital transformation skills, inspirational and negotiation skills, pioneering digital skills, and resilience.

IT leaders who successfully implemented digital strategies understood the difference between information management and digitization (Riedl, Benlian, Hess, Stelzer, & Sikora, 2017). Information management is about data processing, personal computing, internet computing, automation, and IT infrastructure. Riedl et al. (2017) argued that digitization is about renovating processes, business models, and customer and employee experiences using digital solutions. Riedl et al. (2017) argued that digitization means the transformation of the legacy business processes and models into entirely digitized business processes and models. Dery, Sebastian, and van der Meulen (2017) explained the digitization of business processes and models as the digital workplace,

which focuses on employee's connectedness and digital leadership. The connectedness is about employees' engagements with each other and with different business partners and customers using a common digital platform (Dery et al., 2017). The digital leadership in a digitized workplace means the management of digitization priorities and focuses on developing digital employee experiences.

Information technology leaders need to consider tactics and recommendations to implement digital strategies to digitize the business process successfully. Dery et al. (2017) recommended that IT leaders should ensure that the organizations appoint a digital workplace champion who is responsible for the employee experience. Employee and customer experiences should be the starting point to enable a digitized workplace. Westerman and Bonnet (2015) advised that IT leaders should introduce elements such as self-service, digital standardization, and virtual agents to enable the digital workplace. Furthermore, Dery et al. (2017) argued that IT leaders should distinguish between the enhancement and improvement of IT systems and digital employee experience because the digital employee experience is the core of the digitization of the business process. IT leaders need to develop a roadmap to create a successful digital workplace that enables innovation, creates business value, and drives efficiency.

It is essential that IT leaders who are the digital leaders for their organizations to improve the digital intelligence within their organization (Bughin, Catlin, Hall, & van Zeebroeck, 2017). The digital intelligence is a component of the digital leadership whereby digital leaders know where they stand relative to their competitors and peers in the same industry and identify what they should do to improve their digital and financial

performance (Bughin et al., 2017). IT leaders could improve their digital intelligence by evaluating potential business processes and use cases where digitization add business value and create opportunities to innovate and embed digital solutions. Kane, Palmer, Phillips, and Kiron (2017) argued that digital intelligence is about hiring digital talents to coordinate innovation and digitization activities. Digital leaders and IT leaders should be able to improve their digital intelligence to be able to implement strategies successfully to digitize business processes.

Digitizing business processes and incorporating digital solutions requires IT leaders to operate in different and new ways (Kane et al., 2015b). IT leaders should develop investment capacity, innovation roadmap, and organizational synergy (Abbosh, Nunes, & Savic, 2018). IT leadersneed to build investment capacity to reduce the cost of the legacy IT ecosystems and replace them with digital solutions, divest underperforming applications and tools, and consolidate business processes (Abbosh et al., 2018). IT leaders should play the role of entrepreneurs to find cross-selling opportunities with their organizations to create valuable organizational synergies. Kane et al. (2015d) argued that IT leaders should be able to integrate digital strategies with the organizational objectives and goals to digitize the business process. Moreover, IT leaders should challenge the status quo to create opportunities, which could lead to the digitization of the business process.

The status quo of the traditional IT organizations is a complex application landscape, which comprises many legacy applications, rigid managerial decision-making structures, inflexible and broken processes, and not fit for purpose tools (Kobus, Westner,

Strahringer, Strahringer, & Strode, 2018). IT leaders should challenge the status quo of the traditional IT organizations and adopt a new philosophy, principle, and mindset, which is lean IT management (Kobus et al., 2018). Lean IT management describes the difference between waste and value in IT organizations where waste is the activities that consume resources without creating business value (Majchrzak, Markus, & Wareham, 2016). IT leaders who progressed digitization of business processes adopted the lean IT management concept to cut out wasteful activities in business as usual operations and free up resources to work on driving digitization of business processes. lean IT management is a vital principle that empowers IT leaders to digitize business processes.

The IT leaders should engage in non-technical and value-driven conversations with business leaders to challenge the status quo and promote the digitization of business processes (Whelan, Anderson, van den Hooff, & Donnellan, 2015). Digitization of business processes needs IT leaders to not only converse in business language but adopt dynamic problem solution design pairing, socio-cognitive sensemaking, and differentiate between digital strategies and IT strategies (Nambisan et al., 2017). IT leaders should concentrate on specific business outcomes instead of implementing technical solutions. IT leaders should appreciate the time to market, whereby they digitize the business process to ensure the value realization and achieve a competitive advantage. Digitization is a critical transformation initiative that delivers efficiency and effectiveness, and IT leaders should master many digital leadership skills to digitize business processes and deliver efficiency and effectiveness.

Digital Alignment

The alignment between digital and business strategies was a goal, which IT leaders have been trying to achieve since the introduction of digital solutions and emerging technological innovation (Coltman, Tallon, Sharma, & Queiroz, 2015). The misalignment between digital and business strategies affects IT and business leaders. IT leaders struggle to deliver digital solutions by which the business leaders achieve more business goals and objectives. Business leaders, on the other hand, are reluctant to trust IT leaders because some digital solutions failed to deliver what IT leaders promised to deliver (Coltman et al., 2015). Business leaders perceive introducing disruptive and innovative digital solutions into business as insecure and risky. Some business leaders consider AI and IoT as a security threat because IT leaders failed to implement the security countermeasures and defense perimeters to protect the business.

IT leaders should ensure the alignment between the digital strategies and the organization's strategies by not creating an independent unit like launching a speedboat to turn around a large ship (Gupta, 2018). Some IT leaders struggle to achieve alignment as contemporary organizations change the operational and strategic models (Yeow, Soh, & Hansen, 2018). The alignment between digital strategies and organizations' strategies is no longer a matter of alignment between digital strategies with the organizations' strategies, but it is blurring of the distinction between business and digital strategies, which leads to a fusion between them in the form of a digitally enabled organization (Yeow et al., 2018). IT leaders should align business processes at the organizational level and answer the question of how the aligning processes unfold through organizational

actions to digitize business. IT leaders need to align the strategies at the organizational level while aligning digitization at the processes level.

The alignment between the digital strategies and organizational strategies is crucial for successfully implementing digital strategies and digitizing the business process (Goepp, & Avila, 2015). IT leaders should have a structured approach to formulate digital strategies and ensure alignment with organizational strategies. Belalcázar and Díaz (2016) proposed a framework to align the digital strategies with the organizational strategies to achieve a value chain structure and identify the responsibilities of various stakeholders into digital governance and their roles. The digital alignment and the integration between digital strategies and organizational strategies supported IT leaders to digitize business processes.

The digital alignment between the digital strategies and the organizational strategies is the fit between all other business strategies (Cataldo & McQueen, 2015). IT leaders articulate digital strategies to digitize the business process not because it is fashionable, but because of the real impact on business performance and profitably. The digital alignment supports the IT leaders to show to the organization how the digitization of the business process benefits the entire business functions and units (Schlesinger, & Rahman, 2016). IT leaders achieved digital alignment when they aligned the strategic business goals with the operational business processes across the whole organization. Cataldo and McQueen (2015) argued that it is equally essential to ensure the digital alignment between the digital strategies and the organizational strategies and the

operational business processes. IT leaders should realize that digital solutions are not the starting point to the digital alignment, but they are the enabling tools.

Digital alignment is the extent to which distinct and interdependent business components rapidly and adequately respond and adapt to each other while pursuing common organizational strategies (Ricciardi, Zardini, & Rossignoli, 2017). The digital alignment is an essential factor to ensure operational coordination, innovation, and strategic effectiveness. Ricciardi et al. (2017) addressed critical elements to ensure the digital alignment, which is the alignment between (a) the IT leaders and top management, (b) customers' expectations and the digital strategies, (c) the digital strategies and other business units' strategies, and (d) the external suppliers and IT providers. Cao, Duan, Gadden, and Minocha (2015) proposed another approach to ensure digital alignment by introducing the concept of systemic capabilities and developing a systemic conceptual framework for value-driven digital solutions. The value-driven approach would enable IT leaders to understand the interrelations between digital strategies and other organizational strategies at the value level to explore opportunities to digitize the business process.

Role of the digital alignment. The value-driven or digital solutions business value is the link between the digitization investment and organizational performance (Daulatkar, & Sangle, 2016). The value-driven approach helps IT leaders to focus on financial and tangible outcomes to monitor the digital alignment. However, the digital alignment ensures other non-financial and tangible outcomes where IT leaders need to monitor as well (Daulatkar, & Sangle, 2016). IT leaders need to quantify the tangible and intangible value of digital solutions to demonstrate the digital alignment and present

value of digitization to the business in the form of efficiency and organizational transformation regarding innovative products and services. The digital alignment ensures that the digitization is fit for purpose to deliver business value (Sun, Liu, Jambari, & Michell, 2016). The service-oriented considerations enable IT leaders to focus on the business value of digital solutions and digitization, which means IT leaders would achieve digital alignment instead of delivering technical IT products.

The digital alignment is critical for any organization to digitize their business processes and successfully transform their operations (Kumar Basu, 2015). The alignment between digital strategies and organizational strategies is a necessity to influence organizations to be more innovative and agile and adapt external digital changes. IT leaders play a vital role in achieving digital alignment by managing the digital changes associated with both people and processes (Kumar Basu, 2015). IT leaders have an essential part developing digital strategies that include a comprehensive long-term roadmap, which allows for setting strategic goals and estimating the potential of new technologies, products, and services (Vishnevskiy, Karasev, & Meissner, 2016). Therefore, IT leaders should integrate digital strategies with the organizational strategies, manage people and processes, and propose potential digital solutions. Vishnevskiy et al. (2016) proposed a five steps model to support IT leaders.

The integrated five steps model includes (a) pre-road mapping, (b) desk research, (c) expert procedures, (d) creative analysis, and (e) interactive discussion. Vishnevskiy et al. (2016) argued that IT leaders could use the integrated five steps model as a tool for external positioning, consolidation of efforts for the development of priority areas, and

articulating digital strategies while maintaining the digital alignment with the organizational strategies. IT leaders should measure the performance of the digital solutions, define the roles and responsibilities, allocate the resources for digital conational improvements, and adopting the digital-first mindset once achieving the digital alignment, which leads to the digitation of the business process (Jäntti, & Hotti, 2016). Roses, Brito, and Lucena Filho (2015) argued that the intellectual and social dimensions investigate the roles within organizations, values, and communication, which will help the IT leaders to align the digital strategies and the business strategies.

The developments in digital solutions pushed IT leaders to focus on leveraging the emerging technological solutions to reduce expenses and increase revenue (Luftman et al., 2015). IT leaders should achieve the digital alignment to leverage the emerging technological solutions, which leads to the digitization of business processes and transforming the organizations. Digital alignment is a critical factor in enabling IT leaders to develop digital strategies to successfully digitize the business process (Roses et al., 2015).

Yang (2016) added that IT leaders should manage resource utilizations accurately and develop the digital capabilities of the employees simultaneously to ensure digital alignment. IT leaders should build digital indicators to measure resource utilization and digital capabilities to mitigate any risk of not having the right resources or capabilities. Malta and Sousa (2016) concluded that it is useful to use a process-oriented approach to enable IT leaders to know how to build digital indicators to ensure digital alignment. IT leaders need to include a digital enterprise architecture to successfully reduce

organizational complexity, improve communication, align digital and organizational strategies, and drive organizational change (Alwadain, Fielt, Korthaus, & Rosemann, 2016). The digital enterprise architectures would help the IT leaders to deliver business values and realize the business vision through the digitization of business processes.

Digital enterprise architectures play a vital role in modernizing organizations, enabling digital transformation, and realizing the full potential of digital investments (Olsen, & Trelsgård, 2016). IT leaders who used enterprise architecture models to ensure the alignment between digital and organizational strategies successfully implemented digital strategies and digitized business processes. Malta and Sousa (2016) argued that IT leaders should understand IT management practices to contribute to the alignment between the digital and organization strategies and to implement digital strategies successfully to digitize the business process.

IT leaders should react to continuous and unexpected digital changes, which is an essential quality of digital organizations (Hinkelmann et al., 2016). IT leaders who successfully implemented digital strategies to digitize business processes adopted an agile approach to establishing the digital alignment between the digital and organizational strategies. Hinkelmann et al. (2016) proposed a new model for the nextgeneration digital enterprise, which shifts the development approach of model-driven engineering to the continuous alignment of digital and organizational strategies for the agile enterprise.

The next generation digital enterprise model comprises four stages. The first stage is about establishing strategic and operative goals (Hinkelmann et al., 2016). The second step is to re-engineer the enterprise, which means modeling the business services,

application, and technology architectures, and their relationships (Hinkelmann et al., 2016). The third phase is to implement the digital enterprise architecture and run the enterprise, and finally, to monitor the running of the organization and recognize digitization progress (Hinkelmann et al., 2016).

The next generation digital enterprise model helps IT leaders to continue to be an integral digital enabler and driver of efficiency and effectiveness throughout leveraging digital solutions for revenue-generating initiatives (Luftman et al., 2015). IT leaders should be able to utilize the right digital leadership tools to undergo digital transformations and digitize business processes. IT leaders play a critical part in digitizing the business process, and digital leadership is the skill they need to be able to drive the digitization initiatives (Luftman et al., 2015). El Mekawy, Rusu, and Perjons (2015) argued that IT leaders should choose suitable digital leadership tools to provide guidelines and support the decision-making process in selecting the appropriate digital solutions. Molnar and De Smet (2015) argued that IT leaders should master organizational communication as a digital leadership tool to influence other business leaders and communicate the value of digital solutions.

The alignment between digital and business strategies occurs when IT leaders shift from a business-unit focus to a process focus, consolidate IT ecosystems, and adopt digital solutions rather than building and customize in-house tools (Tamm, Seddon, Shanks, Reynolds, & Frampton, 2015). Svahn, Mathiassen, Lindgren, and Kane (2017) explained that the alignment between digital and business strategies happens when IT leaders establish innovation capabilities, balance process, and product focus, and

harmonize the external and internal collaboration. Digitization of business processes provides opportunities to create new types of business models.

IT leaders should ensure the alignment between digital and business strategies to realize the value of process digitization. Therefore, IT leaders should ensure effective and efficient digital decision-making processes to deliver business value and align digital strategies with business strategies. IT leaders should adopt a service mindset whereby they focus on delivering digital solutions that promote business services and processes.

Digital Culture

IT leaders to successfully implement digital strategies and digitize business processes need a unique value proposition that incorporates digital solutions in a way that is difficult for competitors to replicate. IT leaders should first make sure that their organizations have a digital culture (Ross, Beath, & Sebastian, 2017). The digital culture provides direction, enables IT leaders to lead digital initiatives, gauges their progress, and then redirects those efforts as needed. Kane (2017) argued that IT leaders drive digital transformation by cultivating a robust digital culture that strives for risk-taking, collaboration, agility, and continuous learning. The focus of the digital culture is either a set of digitized, integrated offerings or a relationship that engages customers in ways that competitors cannot match. Dery et al. (2017) added that successful digitization of business processes depends on how IT leaders transform operations to create digital workplaces and improve the employee and customer experience.

Designing a digital workplace requires IT leaders to address two dimensions of employee connectedness and active digital leadership (Dery et al., 2017). Digital

workplaces drive success and how IT leaders play a critical role in the digital transformation and digitization of the business process (Dery et al., 2017). IT leaders need to recognize the need to transform the workplace for the digital era and cultivate a digital culture. Charki, Boukef, and Harrison (2018) argued that IT leaders need to consider enterprise social media platforms to leverage tools such as social media, digital omnichannel, and integrated collaboration to successfully cultivate digital culture, ensure employee connectedness and active digital leadership. IT leaders could take advantage of enterprise social media platforms to conduct asynchronous brainstorming sessions with groups of geographically dispersed employees, which prompts the digital culture and supports the digitization of business processes. IT leaders need to think about enterprise social media as the hub of the organization's digital culture.

Digital Maturity

Digitization of business processes and leveraging the emerging disruptive digital business models require a level of digital maturity (Sousa & Rocha, 2018). Digital maturity means the degree to which organizations and IT leaders have adapted themselves to a digital environment (Kane, Palmer, Phillips, Kiron, & Buckley, 2018). Digital maturity has a vital role in enabling IT leaders to create a new disruptive digital business and managing the emerging digital solutions to digitize the business process. Experimentation with digital solutions and adopting a fail-fast mindset is at the heart of digital maturity, which should empower IT leaders to digitize and modernize the business process (Kane, 2018). Digital maturity is a critical skill that IT leaders and their organizations should develop to articulate digital strategies. Sousa and Rocha (2018)

argued that there is a significant relationship between perceived skills development and the manager's job level, which means any IT leader should develop digital maturity skills. IT leaders could standardize the skills development process and mature their digital awareness and skill by following digital maturity models. González-Rojas, Correal, and Camargo (2016) proposed DigiCoMM, which is a defined maturity model to assess the collaboration capabilities of enterprises in the digital era. IT leaders could use DigiCoMM to formalize their content development processes and develop their digital maturity.

IT leaders would benefit from digital maturity models because they would articulate better digital strategies and deliver value to their organizations (Teece, & Linden, 2017). IT leaders and their organizations should invest in areas such as transformation management, vision, governance, and engagement to develop their digital maturity (Kane, 2018). Digital governance is about rules and coordination mechanisms to improve efficiency and ensure digital efforts are moving in the right direction.

Advanced reporting and analytics tools help IT leaders to ensure digital efforts are moving in the right direction (Schlesinger & Rahman, 2016). The implementation of advanced reporting and analytics tools expands IT leaders' knowledge about business problems through improving data mining and analysis, which helps IT leaders to make a data-driven decision when developing their digital strategies. IT leaders could use advanced reporting and analytics for gathering, storing, accessing, and analyzing data to make better data-driven decisions, which promotes the digital maturity of the organization.

Schlesinger and Rahman (2016) argued that quality communication and data-driven decisions among IT leaders is a critical factor in achieving digital maturity with the organization. IT leaders need to equip themselves with the right reporting and analytics tools to be able to have a holistic view across all business areas to develop digital strategies that meet the digitization requirements of those areas.

Transition

In section 1: Foundation of the Study, there was a discussion and explanation of the business phenomenon, which is some IT leaders lack digital strategies to digitize business processes. Furthermore, there was an introduction to the background of the problem and the problem statement, which had general and specific business problems.

Additionally, I introduced the purpose statement, the research question, the interview questions, and the implications of the study for business impact and social impact. In section 1: Foundation of the Study, I introduced the nature of the study, the conceptual framework to explore the business phenomenon, and concluded section 1 with the literature review section. The literature review was the analysis of the information related to the business phenomenon and the problem statement in complete detail.

In section 2: The Project, I discussed the research method and design. I included only the qualitative research addressing the digital strategies IT leaders successfully implemented to digitize the business process. I discussed and explained the purpose statement, the role of the researcher, the participants of the study, discuss in detail the research method and design, the population and sampling strategies, and ethical research. Additionally, I provided comprehensive discussions to explain the data collection

instruments, the data collection techniques, the data organization technique, the data analysis, and the reliability and validity of the study.

In section 3: Application to Professional Practice and Implication for Change, I presented the findings, which included a summary of the purpose of the study the purpose statement, the research question and the evidence that would confirm or disconfirm the findings related to the peer reviewed studies from the literature review. I finished section 3: Application to Professional Practice and Implication for Change with a dissection about the implications for social change followed by the recommendations for action and the recommendations for future research along with the reflections and conclusion.

Section 2: The Project

Purpose Statement

The purpose of this multiple case study was to explore the digital strategies IT leaders implemented to digitalize business processes. The sample population was 10 IT leaders at four organizations in Ireland who had successfully implemented a digital strategy to digitize operational business processes. The implications for positive social change include cultivating human and social conditions by introducing digitally enabled solutions such as Uber to improve local communities' conditions (Kane et al., 2017). Positive social change may also include expanding opportunities and providing sustainable living in the digital market and generating more jobs in local communities (Nguyen et al., 2015).

Role of the Researcher

The primary role of the researcher in a qualitative multiple case study is to collect and interpret data from the research participants, analyze the results, and present the conclusion (Unkovic, Sen, & Quinn, 2016). Additionally, the researcher is the research instrument and the primary individual interacting with the participants to explore the how and why of the phenomenon of the study (Berger, 2015; Roulston & Shelton, 2015). The researcher is responsible for being concise and objective when interpreting the data (Turner, Cardinal, & Burton, 2017). Marshall and Rossman (2016) argued that data quality is the researcher's responsibility. I was the primary instrument for the current study. I explored the participants' experiences related to the study to provide an in-depth understanding of the phenomenon by (a) identifying the participants and (b) collecting

the data by conducting open-ended semistructured face-to-face interviews. I (a) transcribed the recorded interview data, (b) conducted follow-up interviews for clarification purposes, (c) performed data analysis, and (d) presented the research conclusions and recommendations.

The researcher should understand the fundamental elements of the research phenomenon and have worked in the field of study (McDermid, Peters, Jackson, & Daly, 2014). I have more than 10 years of experience in different consultancy roles. My primary role has been to help IT leaders digitize their operational business processes and adopt digital technologies such as platforms and cloud-based services. Therefore, I have hands-on experience and knowledge of the topic.

A researcher should exercise care and respect all participants by applying the Belmont Report's ethical guidelines (McLaughlin & Alfaro-Velcamp, 2015). The Belmont Report is an analytical framework designed to ensure the protection of the interests of participants in a research study (Musoba, Jacob, & Robinson, 2014). The ethical protocols in the Belmont Report are justice, beneficence, and respect for all participants in the study (Van Praag & Sanchez, 2015). Unkovic et al. (2016) argued that data collected should be appropriate for the study per the Belmont Report. I ensured that the participants were aware of (a) the research subject and participation, (b) information and disclosure agreement, and (c) consent of voluntary participation in the study. I sent a consent form to each participant that included the (a) purpose of the study, (b) research and interview protocols, and (c) protection methods to ensure confidentiality.

Researchers should maintain a bias-free study and avoid personal or professional colleagues as participants by focusing on the interview and the research questions (Judkins-Cohn, Kielwasser-Withrow, Owen, & Ward, 2014). Researchers should reduce bias using bracketing and member checking and following the interview protocol (Chen, 2015). I used a personal journal to mitigate any bias, I did not invite any colleague to participate in the study, and I did not suggest an opinion or other biased view during the interviews. I used member checking to ensure the accuracy and credibility of the collected data after reviewing and interpreting the interview transcripts.

The researcher should use an interview protocol to structure the interview process and ensure the data collected answers the research questions (Yin, 2017). The interview questions provide researchers with a framework to maintain the consistency of the data collection and improve the research quality (Yin, 2017). A semistructured interview protocol with open-ended questions was the data collection method I used to explore the digital strategies that IT leaders implemented to digitize business processes. Researchers should use semistructured interview protocols to encourage participants to discuss their experiences with a phenomenon and capture rich information by probing their experiences (Hohl, Gonzalez, Carosso, Ibarra, & Thompson, 2014). My interview protocol included (a) introducing the research topic, (b) starting the recording equipment, (c) asking semistructured interview questions, (d) asking clarification questions as needed, (e) noting observations during the interview and verifying them with participants, and (f) if needed, conducting a follow-up session.

Participants

The researcher should define and articulate the selection criteria for the participants to allow other researchers to determine the transferability of the study's results (Draper, 2015). The researcher should select the participants based on the research question (Marshall & Rossman, 2016). A researcher should create a list of selection criteria to identify the right participants (Draper, 2015). The eligibility requirements for the IT leaders in the current study were (a) successfully implemented digital strategies to digitize the business processes; (b) 10 years of work experience in business process digitization; (c) based in Dublin, Ireland; and (d) knowledge and awareness of digitization and transformations strategies.

Researchers should implement a strategy to gain access to the participants (Maramwidze-Merrison, 2016). Researchers should obtain approval from the institutional review board (IRB) to execute the strategy of gaining access to the participants (Maramwidze-Merrison, 2016). Researchers gain access to the prospective participants using a professional networking platform, which I used to recruit the prospective participants who met the selection criteria (see Patton, 2015). The professional networking platform I used to search for voluntary participants is LinkedIn. I started the process by asking for permission to make the first introduction, followed by the invitation email and the consent form (see Unkovic et al., 2016). The invitation email included (a) the purpose of the study, (b) the benefit of the study, (c) confidentiality and privacy assurance, (d) request for permission to execute the interview protocol (see Appendix B),

and (e) request for participant to sign the consent form. I reached out to the participants by telephone to arrange the interview (a) location, (b) date, and (c) time.

Researchers must establish a working relationship with the participants because it is an essential element to capture quality data and execute the interview protocol (Van Praag & Sanchez, 2015). The strategy to build a working relationship with participants to earn their trust is to develop rapport, maintain high-quality communication, answer their questions honestly, and ensure their confidentiality and privacy (Nadal et al., 2015). I established a mutual professional interest, ensured data integrity, interacted and communicated professionally, and avoided bias and judgmental opinions (see Yin, 2017). Open communication with participants and a convenient location and schedules were essential to make the participants comfortable.

Researchers must ensure that the participants' characteristics align with the research question (Yin, 2017). The essential characteristics in the current study were (a) successfully implemented digital strategies to digitize the business processes; (b) 10 years of work experience in business process digitization; (c) based in Dublin, Ireland; and (d) knowledge of digital transformation strategies. The ideal participants had (a) digital strategies knowledge, (b) successfully implemented digital strategies, (c) digitally transformed business processes, (d) answered the interview questions, and (e) accessed the organizational documentation. I selected participants who had the characteristics that aligned with the research question.

Research Method and Design

Researchers should describe the research method and the research design used for the study with justifications for the chosen method and design. The main research methods are qualitative, quantitative, and mixed methods (Patton, 2015). Researchers should choose the research method that supports the research question (Patton, 2015). I selected the qualitative method to explore the digital strategies IT leaders successfully implemented to digitize business processes.

A researcher who conducts qualitative research could choose a research design from the following: (a) case study, (b) narrative design, (c) phenomenology, and (d) ethnography (Lewis, 2015). Researchers could choose between a single case study or a multiple case study design. Researchers should select the research design after the selection of the research method to ensure the alignment between the problem statement and the research question (Mayoh & Onwuegbuzie, 2015). I used the multiple case study design to explore the digital strategies IT leaders successfully implemented to digitize business processes.

Research Method

A researcher uses a qualitative method to collect and interpret data based on patterns and experiences of the participants (Dasgupta, 2015). Additionally, a qualitative researcher uses interviews to capture data from the participants by asking open-ended questions to understand the phenomenon and answer the research question (Patton, 2015). A qualitative researcher explores a business phenomenon to understand the perceptions and interpret the themes the participants assign to their experiences (Berger,

2015). A qualitative researcher requires the participants to describe their experiences of the business phenomenon in their words (Ray, 2015).

Moreover, a qualitative researcher explores processes, experiences, strategies, procedures, and culture or themes (Marshall & Rossman, 2016). A qualitative researcher uses multiple data sources to enable a better understanding of the business phenomenon and analysis of the business problem (Hays, Wood, Dahl, & Kirk-Jenkins, 2016). I explored a complex business phenomenon and patterns to create meaningful results, which made the qualitative method appropriate for this study. The qualitative method was appropriate when interviewing participants to capture and collect data to explore digital strategies IT leaders successfully implemented to digitize business processes. Researchers use a quantitative method to test a hypothesis by using variables and examining the relationships between those variables (Park & Park, 2016).

A quantitative researcher examines hypotheses by implementing measurements to (a) establish relationships, (b) present statistical data, (c) quantify a phenomenon to test a theory, and (d) evaluate statistical significance (McCusker & Gunaydin, 2015). Researchers use a quantitative method to ask closed-ended questions, measure statistical or numeric data to test hypotheses, and examine whether a relationship exists between variables (Röing & Sanner, 2015). A quantitative method is appropriate when researchers rely on statistical procedures rather than exploring a phenomenon (Michaelson, McKerron, & Davison, 2015). The research question in the current study did not require any mathematical models, which made the quantitative method inappropriate. Additionally, there were no variables, test correlations, hypotheses, or existing theories

that were tested using statistical analysis. Moreover, the quantitative method was not appropriate for the study because it did not support exploring the digital strategies IT leaders successfully implemented to digitize business processes and did not allow exploring participants' experiences.

The mixed-methods approach includes qualitative and quantitative methods, in which the researcher examines and explores a business phenomenon (Archibald, 2016). Additionally, the researcher uses mixed methods when either the quantitative or qualitative method cannot provide enough data to answer the research question (Abro, Khurshid, & Aamir, 2015). The researcher includes the breadth and depth of understanding of the business phenomenon when using mixed methods to mask the weaknesses of a single research method (Mayoh & Onwuegbuzie, 2015).

The mixed-methods approach involves the sequential or parallel collection of qualitative and quantitative data (Turner et al., 2017). The researcher assumes that different types of data would provide a better understanding of the business phenomenon (Percy, Kostere, & Kostere, 2015). I did not choose the mixed-methods approach because my research question did not require statistical tests of hypotheses. Additionally, the mixed-methods approach was not appropriate for the study because it did not support exploring the digital strategies IT leaders successfully implemented to digitize business processes and did not support exploring participants' experiences.

Research Design

A researcher uses the case study design to understand a business phenomenon, collect data from different data sources, engage in a real-world situation, and explore the

business phenomenon within a current context. Additionally, the researcher uses the case study design to provide a more holistic view of the business phenomenon and the organizational processes (Henry & Foss, 2015). Moreover, researchers use a case study design to study organizational strategies and how to improve business performance (Thomas, 2017). Researchers prefer the case study design to explore a business phenomenon using a detailed descriptive approach to uncover significant characteristics of the phenomenon (Marshall & Rossman, 2016). The case study design was the appropriate design for the current study to explore digital strategies IT leaders successfully implemented to digitize business processes (see Runfola, Perna, Baraldi, & Gregori, 2017). I used a multiple case study design because of the anticipated benefits of including more than one case by exploring four organizations and 10 IT leaders' experiences.

Researchers use the phenomenological design to explore and understand the meaning of lived experiences of a group of people and their engagement with a business phenomenon with a focus on cognitive dimensions, such as opinions and beliefs, and perceptions of the event (Percy et al., 2015). The phenomenological design involves the exploration of lived experiences and perceptions (Cibangu & Hepworth, 2016). The phenomenological researcher explores personal experience or interactions with a situation and explores a process from the perception of one or more persons (Bjørkløf, Kirkevold, Engedal, Selbæk, & Helvik, 2015). The purpose of the current study was to explore digital strategies IT leaders successfully implemented to digitize business processes, and the phenomenological design is not appropriate when the researcher

explores strategies. I did not collect data about the participants' lived experiences or personal experiences and actions; rather, I explored the digital strategies used by IT leaders, which made the phenomenological design inappropriate for this study.

A researcher uses the ethnographic design to explore cultures or social groups (Marion, Eddleston, Friar, & Deeds, 2015). The ethnographic researcher focuses on understanding the culture and people and exploring the behaviors and interactions of a social group (Percy et al., 2015). The ethnographic design is a time-consuming approach because the researcher should spend time understanding the framework and dynamics of cultures or social groups (Barnham, 2015).

Ethnographic researchers produce the characteristics of groups or cultures to understand the framework and the behavioral dynamics (Wall, 2015). The purpose of this study was to explore what digital strategies IT leaders successfully implemented to digitize the business processes, but not to explore behaviors, beliefs, cultures, and experiences of a group, which disqualified the ethnographic design (Eika, Dale, Espnes, & Hvalvik, 2015). I did not use the ethnographic design because the scope of this study was not to explore the social behaviors of participants.

Researchers use the narrative design to explore the experiences of individuals and how they see themselves (Wang & Geale, 2015). The narrative design comprises a collection of individual stories rather than organizational strategies (Barnham, 2015). Researchers use the narrative design to explore past experiences over a time frame and to capture the story of participants' lives in a narrative format (Rooney, Lawlor, & Rohan, 2016).

A narrative researcher organizes the research data to meaningful compilations of the consequences (Seal & Mattimoe, 2016). A narrative researcher uses the research data to understand the world through the investigation of stories (Wall, 2015). In this study, there was no compilation of the stories about the experiences or lives of IT leaders, but there was an exploration of what digital strategies IT leaders successfully implemented to digitize business processes. I did not use narrative design because there is no exploration of the business phenomenon through the life stories of participants.

Researchers should reach data saturation to ensure that adequate and quality data are collected to support the study (Kornbluh, 2015). There are many factors whereby a researcher reaches data saturation, such as the size and scope of the study (Fusch & Ness, 2015). Researchers determine the saturation of the data when adding more participants does not result in new perspectives, the data collection process does not generate new information, and the themes are similar (Marshall & Rossman, 2016). The researcher confirms the data saturation where there is no new coding, and any additional sampling will not change the information to answer the researcher's question (Kornbluh, 2015).

Researchers should address data saturation by conducting enough number of interviews to collect the data from an adequate sample size, ensuring the depth of the data, constructing a saturation grid, and implementing adequate data collection techniques (Morse, 2015). I interviewed ten IT leaders from four different organizations to ensure data saturation and engaged with participants after the interviews to conduct member checking and transcript validation (Marshall & Rossman, 2016). There was another method to get data saturation, which was data triangulation.

Population and Sampling

The target population for the study included ten IT leaders from four different organizations in Dublin, Ireland, who successfully implemented digital strategies to digitize business processes. Researchers should ensure there are enough participants to achieve data saturation, and sample size between six and twelve participants is appropriate for a qualitative case study (Boddy, 2016). Ten participants are an adequate sample size whereby researchers conduct a qualitative case study and reach data saturation (Gentles, Charles, Ploeg, & McKibbon, 2015). Marshall and Rossman (2016) argued that a sample size between seven and ten participants is suitable for a qualitative case study. I ensured that the ten participants meet the inclusion criteria, which were (a) successfully implemented digital strategies to digitize the business processes, (b) ten years of working experience in business process digitization, (c) based in Dublin, Ireland, and (d) knowledge and awareness of digitization and transformations strategies.

Researchers should identify and justify the sampling method for the study. Researchers should use an adequate sampling method to ensure information richness and quality data (Guetterman, 2015). A purposeful sampling method is appropriate for identifying and selecting participants based on their knowledge and experience with the business phenomenon (Awiagah, Kang, & Lim, 2016). A researcher uses a purposeful sampling method to control the scope of the targeted population and narrow down the participants (Coleman, 2018). A researcher uses a purposeful sampling technique to find the participants who are willing to participate in the study and discuss their experiences (Palinkas et al., 2015).

Researchers should use another method to achieve data saturation (Coleman, 2018). Data triangulation helps researchers to ensure data saturation (Fusch & Ness, 2015). Researchers use data triangulation and interviews to get data saturation. I used the documentation review to ensure the validity of the study and achieve data triangulation, which ensures data saturation. I reviewed organizational documentation to mitigate biases and ensure data saturation.

Researchers use the selection criteria to target the study's participants to increase the opportunity of gaining significant and relevant information related to the research question (Yazan, 2015). The selection criteria for this study comprised (a) knowledgeable about digital strategies, (b) successfully implemented digital strategies, and (c) digitally transformed business processes. I selected 10 IT leaders from 4 different organizations in Dublin, Ireland, who successfully implemented digital strategies to digitize business processes. Researchers should create a homogenous group of participants who meet the selection criteria to increase the opportunity of gaining relevant information, improve data quality, and achieve data saturation (Tavor & Spiegel, 2016). I conducted the interviews in a setting, which was distraction-free, comfortable to the participants, and allowed participants to choose the time and date, and the location to conduct the interviews to ensure participants are comfortable (Caetano, 2015). I facilitated the interview process in a relaxed setting to allow the participants to answer the interview question freely.

Ethical Research

Researchers should allow the participants to decide whether they would choose to be a part of the research study or not (McKinney et al., 2015). Researchers should follow a confidentiality agreement to establish a trustworthy relationship between a researcher and participants and to protect participants' privacy and confidentiality (Yin, 2017). Researchers should ask the participant's permission before participating in the study, and upon the participant's approval to participate in the study, researchers send the informed consent form to the participant.

The consent form included (a) introduction to the study and some background, (b) processes and steps to conduct the study, (c) the potential outcome and value from the results, (d) withdrawal from the study, and (e) participation is voluntary. A participant who agrees to participate would sign the consent form by replying with the words "I Consent." Additionally, the researchers should provide the participants with the governance processes of the study to protect and anonymize their identity (Bromley, Mikesell, Jones, & Khodyakov, 2015).

Participation in this study is entirely voluntary, and participants have no obligations or commitments to participate. Participants can decide whether to be part of the study or not, have the full right to decide to withdraw before or at any time during the study verbally, by email, text message, or phone with no explanation required (Coleman, 2018). Researchers should communicate clearly to participants that they could freely withdraw from the study whenever they need to cancel the process. Researchers should not include any data collected from a participant who decided to withdraw from the

study. A researcher should not offer any incentives to the participants (Harris, 2016). The participants in this study did not receive any compensation or incentive, and I communicated clearly to the participants that they will not receive any compensation nor incentive for their participation.

Researchers should protect participants by obtaining the university's permission to conduct the study and to adhere to the ethical research protocols in the Belmont Report (Walker et al., 2016). Walden University Institutional Review Board (IRB) and Belmont Report protocols govern the ethical guidelines to protect the participants. Researchers should ensure that no damage would happen to any participant and should maintain the confidentiality of the participants. Researchers should request permission from the Walden University Institutional Review Board (IRB) for the ethical protection of participants. Once I received Walden University Institutional Review Board (IRB) approval, I sent an invitation email to each participant with the consent form identifying myself as a Walden University Doctor of Business Administration (DBA) candidate, including IRB approval number 09-13-19-0663905.

Researchers should use anonymous names for participants and organizations and only use the formal names of participants to schedule interviews (Nichols, 2015). I ensured the anonymity of the participants' names by replacing their real names with labels and identification codes and ensure that participants' names will not appear in any section of the study. Researchers should assign a pseudonym such as P1 and P2 for participants and a pseudonym for organizations such as O1 and O2.

I had an identification code of P1O1. A researcher should store the research data in a secure cabinet for short-term benefits to current researchers and long-term benefits to future studies (Harris, 2016). A researcher should restrict access to the research data to protect participants' confidentiality and privacy (Check, Wolf, Dame, & Beskow, 2014). I stored all data securely for five years by keeping all electronic data password-protected and paper data in a locked cabinet. After five years, I will destroy any data and materials associated with the study, which includes any transcripts, interview recordings, documents, and informed consent forms.

Data Collection Instruments

A researcher's role in qualitative studies is to act and execute as a primary data collection instrument (Lewis, 2015). I was the primary instrument for data collection. A researcher is responsible for collecting data from multiple sources, identifying the organizations, interviewing the participants, and ensuring the validity and quality of the study (Sarma, 2015). A researcher should collect data from at least two different sources such as (a) interviews, (b) documentation, (c) archival records, (d) observations, and (e) artifacts (Adamczewski, 2016). Researchers should ensure the reliability of the study and will use data triangulation to collect the data. The first source to collect data from the participants was semistructured interviews.

Semistructured interviews comprise open-ended questions to allow participants to explain and share their experience and gain an in-depth understanding and comprehensive data collection of what digital strategies IT leaders successfully implemented to digitize the business processes (Tran, Porcher, Falissard, & Ravaud,

2016). Researchers should use an interview protocol (see Appendix B) to ask the interview questions and allow participants to explain their experience and understand their strategies. I reviewed the organizational documentation that describes the digital strategies, digitization of the business processes plans, and the strategic roadmaps of the digital transformation.

Semistructured Interviews

Researchers use semistructured interviews to gather data in a qualitative study because of the adaptability to refine the interviews and the support of two-way communication (McIntosh & Morse, 2015). A researcher uses semistructured interviews to ask the participants follow-up questions to ensure collecting quality data (Pandey & Chawla, 2016). Researchers conduct semistructured interviews for participates explaining their experiences and strategies and seek specific information to answer the research question (Olson, 2016). Researchers should review the interview processes with the participants to ensure that everything is clear and make them aware of what would happen during the study. Researchers should inform participants that they will digitally record the interviews, and participants will get the transcript for validation and verification. I invited participants to an interview using the phone to build trust with them (Fjellström & Guttormsen, 2016). I sent invitation emails with the consent form to participants and explained to them that the interview would be in person at the location they prefer or via Zoom based on their availability.

Researchers should conduct unbiased interviews and eliminate any personal stereotypes and prejudices, beliefs, and experiences during interviews (Berger, 2015). A

researcher should use open-ended questions to allow participants to answer the interview questions reflecting on their experiences (Pandey & Chawla, 2016). The open-ended questions approach is suitable for this study because participants will expand their responses and provide insights to help to answer the research question (O'Keeffe, Buytaert, Mijic, Brozovic, & Sinha, 2015). Researchers should ask the same questions in the same order and sequence to each participant to identify themes and ensure efficient data analysis and comparison (Pacho, 2015). Additionally, researchers should ask participants probing questions to gain a different spectrum of answers and participation to achieve data saturation. I interviewed each participant, which took between 45 to 60 minutes because this timeframe was suitable to explore a business phenomenon. I used interview questions (see Appendix A) to answer the research question and used the documentation review for data triangulation.

Documentation Review

Documentation review is a systematic process to review organizational documents, which could be physical or electronic. Researchers analyze organizational documents to elicit meaning, develop knowledge, and gain an understanding of the business phenomenon (Badewi, 2016). A documentation review process has three main steps. The first step is to examine documents, the second step to read and thoroughly examine documents, and the final step is to interpret documents. Researchers review organizational documents iteratively to combine elements of content and themes analysis. Bowen (2009) argued that the content analysis process is to organize information into

categories related to the research question, and the analysis of the theme is to recognize patterns within the data with emerging themes to become categories.

A researcher should leverage the data collection instruments to obtain quality information and data from the participates in supporting the study (Fusch & Ness, 2015). A researcher uses the documentation review, which is a structured review of organizations' documents, as an additional data instrument along with semistructured interviews (Badewi, 2016). Additionally, a researcher uses the documentation review to strengthen the validity of the study and achieve data triangulation (Rostami, 2016). The organizations' documents include digital strategies, technology roadmap, digitization programs, and digital transformation milestones and objectives.

Documents included emails, formal plans, managerial documentation, the company's vision, and corporate strategies. I asked participants to provide organizational documentation that supports digital strategies, digitization of the business processes, digital transformation objectives, and technology roadmap, and any other relevant documents that support the research question. I analyzed the documents and extract information that supports the study and compare the analysis to the interviews' transcripts to enhance the validity and the credibility of the study.

Member Checking

Researcher use the member checking to enhance the reliability and validity of the study, increase the data accuracy, and minimize errors (Harvey, 2015). The member checking process requires researchers to share the interpretation of the interviews with the participants (Fusch & Ness, 2015). The researcher uses the member checking to

reduce the risk of any misinterpretation of the data, eliminate prejudices, elicit what the participants meant to say, not what the words say, and accurately report the participants' messages (Hays et al., 2016).

I started the member checking process by sharing a digital copy of the initial interpretations of interviews with participants to verify the accuracy of summaries. After I analyzed the data, I included participants in the process of reviewing the initial findings and interpretations of the data analysis. I asked participants to provide their feedback and reflect on the interpretations, whether that accurately summarized their responses or not.

I contacted participants after three working days by phone to follow-up to ask for feedback and then revise interpretations within one working day in case participants add any comments. I sent revised interpretations to participants for confirmation, and after that, I imported all revised interpretations into NVivo 12 Plus for student software to perform categorization, coding, and create themes along with organizational documentation to conduct data analysis.

Data Collection Technique

Researchers should use multiple data collection techniques to ensure data quality and validity (Pacho, 2015). A researcher could use organizational documentation reviews, observations, interviews to collect data (Egbe, 2015). A researcher should use multiple data collection techniques to ensure the reliability and validation of emerging information and themes (Marshall & Rossman, 2016). I used semistructured interviews, data triangulation, organizational documentation review to collect data and explore the business phenomenon in-depth.

Researchers ask participants open-ended questions, record interviews, and transcribe participants' answers (Tideman & Svensson, 2015). I included the interview protocol, the interview questions, and the research question in Appendix B. I used organizational documentation review as a secondary technique to collect data and explore the business phenomenon and member checking to verify the data collected to improve the credibility validity of the study.

I worked with the IRB team to obtain Walden University IRB approval to conduct the study. First, I submitted Form A application, which was the first step toward obtaining ethics approval. Then I completed the Form C application, which was an ethics self-check to confirm how I met Walden University's ethical standards. Furthermore, there were other documents I submitted, which were (a) a copy of the interview questions, (b) a blank copy of the consent form, (c) a draft of the invitation email, (d) a draft of the LinkedIn message to ask for permission, and (e) a copy of the completion certificate of CITI human subjects protection training. After I got the IRB approval, I started the recruitment process.

A recruitment process started with sending a LinkedIn message to potential participants asking for their permission to send an invitation email to participate in the study. Participants who granted permission to participate received an invitation email (see Appendix C), which included a consent form (see Appendix D). I called participants after sending the invitation email and consent form to explain the consent form. Participants who signed the consent form got another call to agree on the interview location, date, and time. Participants granted permission to access their organizations when they wanted

interviews to be onsite. I obtained onsite permissions for participants who wished to have face-to-face interviews. Otherwise, I interviewed participants using Zoom.

Semistructured Interview

A semistructured interview was the data collection technique I used to explore what digital strategies IT leaders successfully implemented to digitize business processes. Researchers follow an interview protocol described in Appendix B to execute the semistructured interviews. A researcher uses an interview protocol to avoid misassumptions during the research processes, to increase the credibility and reliability of the study, and to orchestrate the interviews between an interviewer and interviewees (Lewis, 2015). I obtained IRB approval for the study before contacting the participants.

A researcher needs to receive a signed consent form from each participant before executing an interview protocol. A researcher sends an invitation letter to each participant with an informed consent form. Participants who would accept to participate in the interview need respond to the invitation email, acknowledging their consent by signing the consent form with "I Consent." I contacted participants by phone to agree on the location, date, and time for interviews. I used Zoom teleconference software to run the interview protocol (see Appendix A) and recorded interviews when participants were not able to conduct face-to-face interviews, or I did not get site permission.

Researchers should allow participants to decide where they are comfortable conducting interviews because that will provide a sense of empowerment and build trust between researchers and participants (Caetano, 2015). I contacted participants one day before the scheduled interview by calling them to confirm they still available and to

explain the interview protocol. A semistructured interview included two main stages, which are (a) execute an interview protocol (see Appendix B), and (b) conduct member checking.

An interview protocol (see Appendix B) included three key stages, which were (a) an introduction to the study and the interview, (b) asking interview questions (see Appendix A), (c) concluding the interview and thanking participants, and (d) arranging a follow-up to conduct a member checking review. A researcher should write down notes, comments, observations, and other points during interviews to maintain a field journal and to avoid potential biases and personal influences (Chen, 2015). I used field journals to increase the trustworthiness and confirmability of the study (Patton, 2015).

Organizational Documentation Review

Researchers collect data from a second source, which is organizational documents, to help augment interviews' findings and explore more information (Rostami, 2016). A researcher should review organizational documents for data triangulation, which helps to mitigate biases and increase the credibility and reliability of the study (Coombs, 2015). I asked participants to provide any organizational documents that relate to the research question.

Researchers review organizational documents to crosscheck interviews to ensure data integrity and consistency (Harrison, Banks, Pollack, O'Boyle, & Short, 2017). Organizational documents include digital strategies, technology roadmap, digitization programs, and digital transformation milestones and objectives. Additionally, documents could include emails, formal plans, managerial documentation, and corporate strategies. I

asked participants to provide documents that support digital strategies, digitization of the business processes, digital transformation objectives, and technology roadmap, and any other relevant documents that support the research question.

Advantages and Disadvantages

Each data collection technique has advantages and disadvantages. The advantage of the semistructured interview was that it helped to target the research question. A researcher will be able to collect detailed information and quality data to code and analyze (Olson, 2016). Another advantage of the semistructured interview was that it helped to engage in person with participants and to build a robust and trustworthy relationship and increased awareness of the business phenomenon (Brown, Thomas, & Bosselman, 2015).

Researchers will be able to explore participants' experiences, capture the participants' perspectives, and reduce personal biases (Chin, Evans, & Choo, 2015). Another advantage of the semistructured interview was that researchers would collect quality data, explore new themes emerging during the interviews, and allow participants to explain or clarify responses (Wall, 2015). The disadvantage of the semistructured interview was that an interview was a time-consuming process to conduct (Olson, 2016). Additionally, scheduling interviews and aligning with participants' locations and calendars were disadvantages of the semistructured interview (Egbe, 2015). Other disadvantages of semistructured interviews were (a) cost involved to visit participants onsite, (b) personal bias, (c) participants might withdraw from the study, (d)

misrepresentation of information because human errors, and (e) participants might deviate from questions (Brown et al., 2015).

An organizational documentation review had advantages and disadvantages. The advantage of an organizational documentation review was that it helped to have a deep understanding of organizations, background information about the business phenomenon, and explore additional problems, which searchers might not discover during semistructured interviews (Coombs, 2015). Researchers would be able to review the history of successfully implemented digital strategies within organizations.

An organizational documentation review was a structured review of organizational documents, which was another advantage (Rostami, 2016). Another advantage of organizational documentation review was that it helped to avoid ambiguity, validate the data, and correlate the results (Egbe, 2015). A disadvantage of an organizational documentation review was that organizational documents could be outdated, incomplete, inaccessible, or biased (Coombs, 2015).

Organizational documents could be subjective or inaccurate or unavailable during the study's timeframe (Rostami, 2016). Researchers should spend time and effort to review organizational documents and coordinate with document owners to provide details about their documents (Rostami, 2016). Researchers implement member checking to improve data accuracy and increase the validity and credibility of the study.

Member Checking

A researcher improves the validity, reliability, and credibility of the data by executing the member checking process (Morse, 2015). The member checking process is

to double-check with the participants and ensure interpretations of interviews are what participants meant to say. Researchers reduce the risk of misunderstanding participants and increase the accuracy of themes by using the member checking process (Coleman, 2018). I started the member checking process by sharing a digital copy of the initial interpretations of interviews with participants to verify the accuracy of summaries. Then, after I analyzed the data, I included participants in the process of reviewing the initial findings and interpretations of the data analysis. Then, I asked participants to provide their feedback and reflect on the interpretations, whether that accurately summarized their responses or not.

I contacted participants after three working days by phone to follow-up and ask for feedback. I revised the interviews' interpretation within one day in case participants added any comments and sent the revised interpretations to participants for confirmation. I imported all revised interviews interpretations into NVivo 12 Plus for student software to perform categorization, coding, and create themes of the collected data along with the organizational documentation to conduct data analysis.

Data Organization Technique

A researcher could leverage multiple techniques in the data organization process to identify the data collected in the study (Soares & de Oliveira, 2016). Research data sources could include interviews, company documents, and observations. A data organization process includes techniques to manage research data, which comprises notes, participants' interviews, codes for participants, themes, audio recording, and audit trail and journals (Lancaster, 2015).

Participants' privacy and their confidentiality are paramount, which requires researchers to implement a generic alphanumeric coding strategy to hide participants' identity and protect their privacy (Soares & de Oliveira, 2016). I replaced participants' names with an alphanumeric code and map codes to data. I managed research data using Microsoft Office 365, which includes Microsoft Word, Microsoft Excel, Microsoft OneDrive, and Microsoft OneNote. Microsoft Word is the primary tool to manage research data and to keep track of notes and audit trail.

I used Microsoft Excel to track the progress of interviews, interview status, and member checking, and Microsoft OneDrive as a single cloud-based repository to store and keep all research data because of its security, availability, and reliability. I kept tracking the data electronically by taking quick notes, capturing ideas, logging activities, and other data management using Microsoft OneNote.

NVivo 12 Plus for student software was the primary tool to track interviews' data, understand emerging themes, store research logs, analyze journals, and label data. NVivo 12 Plus for student software had a competitive price point for students and provided all capabilities and features a researcher needs to conduct data organization such as importing and analyzing text, images, audio, video, emails, web data and information from external tools (Woods, Paulus, Atkins, & Macklin, 2016).

NVivo 12 Plus for students helps researchers to ensure any findings discussed in the results are not an individual's perception, but participants opinions (Hays et al., 2016). I did not use other tools such as ATLAS.ti and MAXQDA software because they did not integrate search inquiries for coding data and higher cost. I recorded participant

interviews using Dragon Anywhere 1.5 software to dictate documents of any length, easily edit, and quickly share them on OneDrive cloud-based storage and import prescribed documents to NVivo 12 Plus for student software. I stored the electronic data collected during the study on a password protected and encrypted external hard drive for five years from the date of publication. I saved the hard drive in a locked cabinet in a home office, and any documentation collected during the study and permanently destroy and shred the documentation five years after completion of the study.

Data Analysis

Researchers conduct data analysis to identify themes that address the research question, which is a critical process in capturing and collecting revenant information, data coding, and developing themes (Davis, 2016). A qualitative researcher uses data triangulation to improve data quality, increase results integrity, and enhance the trustworthiness of the study (Paulus, Woods, Atkins, & Macklin, 2017). Triangulation types are (a) methodological, (b) data, (c) investigator, and (d) a theoretical triangulation (Davis, 2016). The researcher uses methodological triangulation to collect data from more than one source. A theoretical triangulation is suitable when researchers plan to use more than a theoretical framework in data interpretation (Unkovic et al., 2016).

Data triangulation is appropriate when researchers aim to combine different sampling strategies to collect data (Mayer, 2015). A researcher uses investigator triangulation when more than one researcher will collect and interpret data. I collected data from three different sources, which were (a) interviews, (b) organizational documentation review, and (c) audit trail and field notes, which was a methodological

triangulation to improve the validity of the study, remove any bias and enhance the quality of the study.

Researchers analyze data following the five steps process introduced by Yin (2017). The five steps process includes (a) assembling data and compiling, (b) separating data and disassembling, (c) data reassembling, (d) data interpretation, and (e) conclusion and results. Researchers ensure high-quality analysis by breaking down and regrouping the data through the five steps process (Davis, 2016).

Compiling and Assembling the Data

I collected the data from semistructured interviews, organizational documentation review, and audit trail and notes. I imported the data using Microsoft Word, Microsoft Excel, Microsoft OneNote, and Dragon Anywhere 1.5 software into NVivo 12 Plus for student software. I read the interviews' transcriptions, reviewed the organizational documentation, and examined audit trail and notes, which helped to have a detailed understanding of the data and identify themes, ideas, and phrases related to the research question (Yazan, 2015). The next step in the five steps process was the disassembling and separating data.

Separating the Data and Disassembling

Researchers disassemble and separate the collected data to identify themes and phrases, which will lead to data coding and labeling (Yin, 2017). I coded the data by segmenting, fragmenting, and labeling the data into categories, which identified in the literature review (Davis, 2016). I coded the data to create an abstract representation of experience, which helped to generate themes or patterns, and I grouped the data

accordingly (Unkovic et al., 2016). I used axial coding to link and classify the data, create categories, and uncover any potential relationship between categories.

Data Reassembling

Researchers reassemble data and categorize labels into themes. A researcher could use computer-assisted qualitative data analysis (CAQDAS) to cluster and categorize the data into groups (Emmel, 2015). A researcher could use CAQDAS to code data, categorize themes, compare patterns, and categorize data using symbols. A researcher is responsible for identifying and selecting themes during the data analysis process (Morse & Coulehan, 2015). I identified and selected themes using NVivo 12 Plus for student software and used functions such as auto coding to identify emerging themes. I focused on words that frequently used by participants, develop a relationship between themes, and correlated themes with the conceptual framework and the research question.

Data Interpretation

Researchers conduct data interpretation to understand the meaning of the data and correlate emerging themes with the research question and the conceptual framework. I used NVivo 12 Plus for student software to link themes with the literature review and the conceptual frame and developed an essential understanding of what digital strategies IT leaders successfully implemented to digitize the business processes. A researcher interprets data to ensure alignment between the conceptual framework, the literature review, and the research methodology (Thomas, 2017).

Conclusion and Results

Researchers conclude the five steps process and the data analysis by describing themes and reporting results. A researcher asks participants to review the interpretations to provide any additional comments, which increases the accuracy and credibility of the results (Harvey, 2015). A researcher correlates interpretation of themes to the research question, links interpretations to the literature review, and the conceptual framework for data triangulation (Ganapathy, 2016). I used NVivo 12 Plus for student software to report the results based only on the data collected and create a cluster analysis to generate the final report.

I used NVivo 12 Plus for student software for advanced data analysis, visualize data, determine common themes, organize information, code data, and export results (Woods et al., 2016). NVivo 12 Plus for student software integrated with different data points to create a consolidated database for all data analysis activities (Rodik & Primorac, 2015). The conceptual framework in this study was the general systems theory. Researchers use the general systems theory to focus on organizations as a single system, and all business functions are working cohesively to achieve organizational goals and objectives (von Bertalanffy, 1972). The general systems theory is applicable when researchers explore strategies to improve business processes. I aligned the results with the general systems theory to explore what digital strategies IT leaders successfully implemented to digitize business processes.

Study Validity

Researchers should develop two criteria for qualitative research, which are reliability and validity (Fusch & Ness, 2015). A researcher develops the reliability to address the dependability of the research, consistency of findings, and credibility to signify the results, which increases the quality of the study (Chen, 2015). A researcher ensures validity to address the credibility, transferability, and confirmability of the study (Marshall & Rossman, 2016). A researcher builds the required trustworthiness through developing confidence in the study's findings through credibility, transferability, and confirmability (McNeil et al., 2015). A researcher should establish consistency and accuracy within the study to increase results in trustworthiness and integrity (Hays et al., 2016). I explained the strategies to make sure the study meets the reliability and validity criteria.

Reliability

Researchers should adhere to the reliability to ensure the study's consistency and accuracy of the research design and method and confirm that results are replicable and transferable (Noble & Smith, 2015). Member checking is the process whereby the researchers ensure they appropriately interpreted participants' statements (Harvey, 2015). Researchers deploy the member checking to verify the interview interpretations and increase data reliability (Kornbluh, 2015).

Researchers eliminate the bias by following the member checking process (Birt, Scott, Cavers, Campbell, & Walter, 2016). Audit trails approach is another process whereby researchers follow to protect all data collected and any material related to the

collection and analysis of the data (Noble & Smith, 2015). The strategy I implemented to maintain reliability was to follow transcription review and member checking by sending a copy of interviews' transcripts to participants to review and arrange another review for feedback

Dependability

Dependability is data integrity, coherency, and consistency over time while deploying different scenarios (Kelly, Fitzsimons, & Baker, 2016). A researcher should be able to maintain the replicability of the results to deliver a dependable study (Marshall & Rossman, 2016). A researcher should adhere to strategies that show the metadata of the study, such as design, methods, transcripts, and procedures (Thomas, 2017).

Researchers should use objectivity to ensure dependability (Kelly et al., 2016). The researcher should implement strategies to ensure dependability, such as member checking and audit trail (Noble & Smith, 2015). Member checking is sending interpretations of interviews to participants to reflect on the accuracy of the summaries and whether the researcher presented their responses correctly (Harvey, 2015). The audit trail is another strategy that the researcher implements to document a detailed description of the study's metadata, such as data collection procedures, data analysis, and data organization, to ensure dependability (Kelly et al., 2016). I conducted member checking to validate interpretations of interviews are accurately reflecting participants' responses and will document the study's details and processes.

Validity

Researchers conduct a qualitative study should ensure the accuracy and truthfulness of results through the development of validity (Noble & Smith, 2015). Researchers should enhance the validity of the results through verification and validation of data. Researchers should have sufficiently descriptive data and a detailed description of participants and interview settings to ensure validity (McCusker & Gunaydin, 2015). Researchers should develop the conclusion of the study through member checking and data triangulation. The essential validity principles are (a) credibility, (b) transferability, (c) confirmability, and (d) data saturation.

Credibility

Researchers should adhere to the credibility to ensure the study's validity (Noble & Smith, 2015). Building credibility starts with ensuring that participants understand the study, and the interview questions are in line with the research question (Hill & Bundy, 2014). Additionally, building credibility includes validation of participants' answers and avoidance of any misinterpretation of interviews.

Researchers should ensure creditably using member checking and data triangulation (Maree, Parker, Kaplan, & Oosthuizen, 2016). Member checking is the engagement of participants to validate and verify the interview transcripts to confirm the adequately of the interpretations (Becher & Wieling, 2015). A researcher uses member checking to capture what participants meant to say and interpret the message correctly. Data triangulation is the incorporation and consolidation of different data sources to confirm integrity and data completeness (Power & Gendron, 2015).

There are other strategies to ensure the credibility of the study, such as prolonged engagement and peer debriefing (Becher & Wieling, 2015). Researchers would use peer debriefing where external colleagues or professionals are available to support the creditability of the results, which did not align with this study. A prolonged engagement requires researchers to have full-time access to participants to gain a deeper understanding of the phenomenon until the data saturation point, which was not part of this study. I used (a) member checking and (b) data triangulation to ensure the credibility of the study are.

I provided participants with the interview transcripts, which included their responses and interview conversations, and interpretations of the conversations. Then, I asked the participants to review interview transcripts to confirm whether transcripts accurately reflected the conversations. I probed if participants could provide any additional information or feedback. I implemented data triangulation by collecting data from organizations' digital strategy documents and digitization standard procedures.

Transferability

Transferability enables researchers to extend the study and develop a further theoretical framework (Maree et al., 2016). Transferability is the applicability of a study's results to be transferable to another study or other similar setting and context (Hays et al., 2016). Researchers should provide a detailed description of the research design, method, and procedures, including the study's metadata to ensure the study's transferability (Marshall & Rossman, 2016)

Researchers should describe the participants' criteria to allow researchers to determine the transferability of the results (Maree et al., 2016). Researchers should use evidence, record observation, and document the study's assumptions, limitations, and delimitation to adhere to transferability (Barnes, 2015). I documented participants' criteria, research design, research method, and study's producers to ensure transferability.

Confirmability

The confirmability of the study is that results represent only participants' responses without any external influence of bias or the researcher's interests (Chen, 2015). Confirmability is the neutrality of the study's results, which shaped by participants without the researcher's intervention, such as bias, experiences, perspectives, motivation, or philosophical views (Noble & Smith, 2015). A researcher should ensure confirmability to allow researchers to reuse results and mitigate any personal opinions (Marshall & Rossman, 2016). I used the member checking and asked open-ended questions to allow participants to deeply describe the phenomenon, which ensured confirmability (Harvey, 2015).

Researchers adhere to confirmability through accurate documentation of the study throughout all phases (Noble & Smith, 2015). A researcher should follow additional strategies to ensure confirmability by ensuring that participants match the required criteria. I used the audit trail approach to include a detailed description of the procedures and activities throughout the study, which ensured confirmability.

Data Saturation

Researchers should follow data saturation strategies to make sure that data is complete and to reach a point where no more extensive data collection adds new information (Kelly et al., 2016). Date saturation is a process whereby researchers reflect the completeness of the data to support the results. Researchers should ask the same interview questions for all participants and structure the interview questions to ensure data saturation (Palinkas et al., 2015). Data triangulation is another strategy whereby researchers reach data depth by using multiple data sources (Fusch & Ness, 2015). I collected data through semistructured interviews until I got no new codes, no new themes, and no new information.

Transition and Summary

In section 2: The Project, I addressed the components of the project in detail. Section 2: The Project started with the purpose statement, followed by the role of the researcher and the participants. In this section, I discussed the research method and design, the use of multiple case study design, and the reason why multiple case study design was suitable for this study.

I discussed strategies to collect the data, processes to analyze the data, and the procedures to establish reliability and validity of the research. In section 3: Application for Professional Practice and Implications for Social Change, I discussed the results of this study followed by the implications for social change and recommendations for action along with recommendations for future research finishing with the conclusion.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this multiple case study was to explore digital strategies IT leaders implemented to digitize business processes. The sample population was 10 IT leaders at four organizations in Ireland who implemented a digital strategy to digitize operational business processes successfully. The data collection and analysis process resulted in three emergent themes, and each theme had three subthemes. The three themes were (a) strong digital leadership competencies, (b) digitally aligned with the business vision, and (c) the why of the digital transformation. The robust digital leadership competencies theme had three subthemes, which were (a) articulate a digital vision and road map, (b) develop a governance framework, and (c) concise engagement and collaboration. The digitally aligned with the business vision had three subthemes, which were (a) strategic IT and business relationship, (b) digital maturity and culture, and (c) fit for purpose digital technologies. Finally, the why of the digital transformation had three subthemes, which were (a) customer experience and engagement, (b) process reengineering and modernization, and (c) operations optimization to be agile and flexible.

Presentation of the Findings

The overarching research question was the following: What are the digital strategies IT leaders successfully implemented to digitize the business processes?

Theme 1: Digital Leadership Skills

Digitization of the business process requires different leadership skills and attributes to be successful. Digital leadership is leading the digital innovation and

adopting emerging technologies to replace legacy solutions. Participants reported that digital leadership involves three main skills: (a) articulate a digital vision and road map, (b) develop a governance framework, and (c) concise engagement and collaboration. Participants confirmed that IT leaders should articulate a digital vision for their organizations and create a road map to digitize business processes. P1O3 discussed that the leadership team started to form business requirements to articulate a digital vision and aligned that vision with all other senior leaders to create a digitization road map. P2O3 said "digital leadership was essential to digitizing the business process successfully." Table 2 includes the digital leadership skills, number of participants, and corresponding percentage for each subtheme based on the participants' interviews.

Table 2

Digital Leadership Skills

Skills	Participants (n)	Percentage (%)
Articulate a digital vision and roadmap	12	100%
Develop a governance framework	8	66.7%
Concise engagement and collaboration	10	83.3%

Participants agreed that the governance of digital investment ensures successful digitization for business processes and supports IT leaders in developing digital strategies. P1O2 explained that they were not great in a lot of the governance, including technical architecture, technology landscape, and security. However, P1O2 added that the leadership team developed policies to control the implementation of new digital

technologies, which was a critical element to digitize the business process successfully. P1O3 said “the governance of digitization was the core of their digital leadership.” Moreover, P1O4 added that the leadership needed to oversee all digital transformation, which was the fundamental reason to develop a digital governance framework. P2O1 and P1O1 invented a governance framework called SIAM, which means simplify, improve, automate, and measure to control all digitization initiatives.

IT leaders should put together an organizational change program to digitize business processes. P2O2 and P1O3 agreed that IT leaders need a robust governance framework around the digitization of the business process. Additionally, IT leaders need to be working on making strategic decisions about how to use governance to mitigate bureaucracy. P1O3 added that governance frameworks are important to develop digital strategies and digitize the business process successfully. Additionally, IT leaders should implement the digitization of the business process as one cohesive program with a single governance model. Digital strategies would be incomplete if IT leaders did not include a digital governance framework.

IT leaders who leveraged concise communication across their organization managed to explain the business value of the digitization clearly and successfully and obtained buy-in from other business leaders. P2O1 explained that communication with different stakeholders was a critical element in delivering the right digital strategies. P1O4 added that clear communication was critical to the success of the digital transformation initiative. Additionally, P2O1 emphasized that there were massive

communication efforts between the IT leaders and business stakeholders to understand the core digitization requirements, which helped to deliver the desired outcomes.

IT leaders should adopt a strategic vision to transform their organizations and coordinate with the business leaders to prioritize processes that create the most business value. P1O1 discussed that collaboration, partnership with business leaders, and strategic engagement were the key elements to determine which processes create the most business value. P2O2 explained the role of leadership as effective stakeholder engagement, understanding business objectives, and having a clear idea of where their organizations need to be. P1O2 emphasized that communication was essential to ensure the buy-in of business executives. Additionally, collaboration and engagement helped to break down the barriers between people and allowed a dynamic environment in which different teams could share their ideas freely. Concise collaboration and engagement helped IT leaders understand the business vision and develop digital strategies in alignment with the vision.

Stakeholder management is a tool that IT leaders should leverage to digitize the business process (Gupta, 2018). P1O2 reported that stakeholder management resulted in successful digitization of the business process. P1O1 said “the regular communication with the business stakeholders enabled IT leaders to develop a fit for purpose digital strategies.” P2O4 and P2O3 said that the involvement of the executives ensured successful implementations of digital processes. P2O2 stated that “stakeholder management helped to remove any obstacles and provided strategic guidance, which led to successful digitization of the business process.” Participants concluded that stakeholder management ensured successful digital transformation.

Theme 2: Digitally Aligned With the Business Vision

Digital alignment with the business vision has three main requirements: (a) strategic IT and business relationship, (b) digital maturity and culture, and (c) adequate selection of the emerging technologies. Participants agreed that IT leaders successfully digitize the business process when they adopt a value-driven approach to align the digitization investment and business vision. Additionally, IT leaders need to align the digital transformation's financial outcomes with business goals (Daulatkar & Sangle, 2016). Digital alignment ensures that IT leaders develop strategies to transform their organizations and deliver value to their business. P1O1 noted that digital alignment was critical to achieve the strategic business objectives and increase the revenue after successfully digitizing the business process. P1O3 added that digital alignment was the key element in building a strategic relationship with the business leaders, which helped the digital transformation program. Table 3 includes the subthemes for digital alignment, the number of participants, and the corresponding percentage for each subtheme based on the participants' interviews.

Table 3

Core Requirements of Digital Alignment

Requirements	Participants (n)	Percentage (%)
Strategic IT and business relationship	8	66.7%
Digital maturity and culture	7	58.3%
Fit for purpose digital technologies	10	83.3%

The strategic relationship between IT and business leaders enables IT leaders to negotiate their digital strategies with business leaders to reach an agreement on what the business values most (Olsen & Trelsgård, 2016). Participants confirmed that IT leaders who adopted a service-driven mindset focused on the business value of digitization, which helped them to digitize the business process. P1O2 noted that the relationship between IT and business leaders was a critical aspect of successfully digitizing the business process. P1O4 said "a service-driven mindset helped them to develop digital strategies, which were value driven rather than technology driven." P2O2 described the relationship between IT and business leaders as a good working relationship in which they could negotiate and argue alternatives to digitize the business process. P1O3 and P1O1 reported that IT leaders' capability to establish a strategic partnership with business leaders was a crucial factor to digitize the business process successfully.

Digital alignment requires a strategic relationship between IT and business leaders, which happens when IT leaders incorporate a digital architecture for their organizations (Gupta, 2018). P1O1 said "digital architecture helps IT leaders to visualize the digital road map and present it back to business leaders, which develops a strategic relationship between business and IT leaders." P2O2 noted that a digital enterprise architecture helped their organization to reduce the complexity of the business process and enabled IT and business leaders to work collaboratively to digitize the business processes. P1O1 added that a digital enterprise architecture improved the communication between IT and business leaders, which helped them to establish a strategic and visionary relationship to digitize the business process.

The participants concluded that a digital enterprise architecture helped their IT leaders to understand the management practices and enabled them to build a strategic relationship with other business leaders. The participants agreed that a digital enterprise architecture included strategic goals, redesign of the organizational processes, adherence to the digital governance framework, and continuous measurement and improvement. P1O1 said "the digital enterprise architecture was important as a competitive advantage and as a critical enabler for digital transformation programs." P1O4 stated "without the digital enterprise architecture, the digital transformation would have been difficult to achieve and might have failed." IT leaders successfully digitize business processes when they develop a digital culture in their organizations.

Digital culture is about thinking about how emerging solutions could benefit and influence business outcomes. IT leaders should embrace the changes in the business model's landscape and understand how emerging technologies are transforming them (Kane, 2017). P1O2 said "IT leaders should adopt a digital-first mindset to rethink emerging technologies and how to leverage them to digitize the business processes." P1O1 noted that cultivating digital culture helped their organization to transform legacy technologies and digitize business processes. Additionally, P1O2 and P1O3 agreed on the vital role of nurturing the digital culture within their organizations to overcome any cultural obstacles due to the drastic cultural changes when embarking on digital transformation.

Participants concluded that they started the digitization of the business process with a solid understanding of the digital culture's role, and they developed tools and

capabilities to enable the digital culture. Furthermore, P2O1 said “the digital culture helped them to remove the bureaucratic culture and replace it with agile and dynamic methodologies where their organization adopted a fail-fast approach to digitizing the business process.” Moreover, P2O1 noted that digital culture and maturity played a vital role in enabling the organizational changes and the digital transformation of the business process. P2O2 stated “the digital culture and maturity is the heart of the digitization initiatives because, without the digital culture and maturity, it is difficult for executives to understand the value of digital business processes.” Digital maturity is the foundation that IT leaders need to establish before embarking on any digitization activities.

Digital maturity helped IT leaders to determine what digital solutions they needed to digitize the business process by focusing on what value such technologies would add to the business. P2O1 highlighted that “digital maturity played a vital role in enabling different teams to collaborate and work together towards a common goal.” For example, digital maturity created an understanding of the criticality of digitizing the business process. Moreover, P1O3 said “digital maturity helped IT leaders to establish a digital benchmark whereby they measured the success of the digital transformation in line with the business objectives.” P2O2 explained digital maturity as the capability of the organization whereby they could have a clear enterprise road map for the emerging technologies that support the digital transformation.

IT leaders should ensure the selection of fit for purpose technologies whereby they digitize the business process (Gupta, 2018). IT leaders should work closely with business leaders to determine the technologies that would be suitable to achieve the

organizational goals. P1O1 said “IT leaders considered only the technologies that showed their capabilities to digitize the business process.” Additionally, P2O1 explained that they did not select a technology because it was modern, but because of its ability to achieve the business objectives. P1O3 added that they did not have the skills to determine the techniques they needed, which required an external consultancy organization to develop a road map to support the digitization initiative.

Participants agreed that the fit for purpose technologies needed different technological road maps and a clear vision of the outcome. Participants agreed that it would have been challenging to digitize business processes without having a reference architecture of digital footprints and a technical capability map. P2O3 said “the process of selecting emerging technologies to support digitization is a compass, whereby we determined what we needed.” Additionally, participants discussed the importance of partnering with consultancy organizations to provide the skills and advisory services regarding what technological solutions would be beneficial for digitization initiatives. Moreover, P1O1 emphasized the critical role of digital officers in working with different vendors and suppliers to understand the depth and breadth of their solutions and map them to the business goals.

Theme 3: The Why of the Digital Transformation

Digital transformation is the capability of organizational leaders to reshape business processes and introduce profitable business models (Li, 2017). Additionally, digitization of the business process requires new technologies such as AI and IoT to drive innovative solutions that modernize operations and customer experience (Goerzig &

Bauernhansl, 2018). Digital transformation requires an in-depth analysis and understanding of the main reasons behind the initiatives. For example, Kostić (2018) argued that organizational leaders who fail to digitize their businesses face the risk of their companies being extinct by 2027. Participants in the current study confirmed that digital transformation should add value to the business; otherwise, it would be challenging to get the buy-in from senior executives. Participants agreed that the whys of the digital transformation are (a) customer experience, (b) process reengineering, and (c) operations optimizations. Table 4 includes the subthemes for digital transformation, the number of participants, and the corresponding percentage for each subtheme based on the participants' interviews.

Table 4

Reasons for the Digital Transformation

Reasons	Participants (n)	Percentage (%)
Customer experience and engagement	9	75%
Process reengineering and modernization	11	91.6%
Operations optimization and efficiencies	10	83.3%

Digital customer experience plays a vital role in the digitization of the business process to improve customer engagement. P2O2 explained how omnichannel provided their customers with a seamless experience, whether they used their computers or mobile

devices. P1O1 started with the end in mind before any investment in the omnichannel to determine what digital experience they need to provide to their customers. P1O3 explained the customer experience as any touchpoint their organization had to engage with customers. P1O3 described many touchpoints where their organization enraged with customers, such as before sales, i.e., marketing, and after-sales, i.e., customer service and surveys.

Participants empathized that it was essential to implement a connected customer experience where the customer enjoys the engagement and recommends the business because of the experience to other customers. P1O4 added that they put their customers first and developed the digital experience around their customers to give them seamless and modern engagements. P2O1 discussed the vital role of customer satisfaction and net promoter score, which are critical metrics measuring the overall customer experience. Participants concluded that digital customer experience improved their organization's customer satisfaction and net promoter score, which resulted in generating more revenue and increasing their market share.

Participants agreed on how the digitization of the business processes changed the ways their organizations communicate with customers and enabled access to large segments of the market. Participants added that digital customer experience enabled their organizations to explore business to customer, business to business, and business to business to customer business models. Digital customer experience eliminated broken processes, standardized customer engagement across different channels, increased the rate of successful transactions, and grow the profitability of the organizations.

Participants confirmed that business process re-engineering and modernization is a critical reason why IT leaders initiate a digital transformation program. P1O2 discussed that they looked at internal processes such as service desk, new hire onboarding or joiner, mover, and leaver processes and security operations and identified that gaps in those processes before initiating the digitization program. Additionally, P1O4 said "they started the digitization of the business process to consolidate and streamline the disconnected processes." P1O4 described the procedure of digitizing the outsourced processes to ensure integrated processes across different business functions.

Participants emphasized on how the digitization of the business process provided lean operations and agile execution of business functions. P2O1 discussed how the simplify, improve, automate, and measure approach helped to re-engineer and modernize processes and ultimately supported the digitization programs. P2O1 concluded that digitization of the business process eliminated the legacy nature and the bureaucratic piece of how their organization used to operate. Participants discussed that process digitization included robotic process automation and chatbots, where they orchestrated manual and repeatable processes.

AI technology added intelligence to chatbots to improve conversations with customers and employees. P1O3 discussed how the digitization of business processes enabled their organization to reduce the average time to handle a service request from a few days to a few hours, which was a significant optimization of operations. Participants added that digitization of the business process and incorporating emerging technologies such as artificial intelligence, Internet of Things, blockchain, virtual reality, and

integrated platforms would make their organizations ready for the fourth industrial revolution.

The fourth industrial revolution is about connected customers, devices, and organizations, and without digital processes, businesses would not be able to compete in the future. Participants agreed that digitization of the business process eliminated legacy processes, applications, and tools, which improved their organizations' performance and efficiency, and resulted in increasing the revenue. Finally, digital processes allowed participants to change their organizations to be more agile and introduced new innovative ideas to increase profitability.

Digitization of business processes helped IT leaders to achieve lean IT operations, which increased the efficiency of utilizing resources and creating business value. IT leaders initiated digital transformation programs to optimize business operations and efficiencies (Nambisan et al., 2017). IT leaders digitized the business process to reduce operating expenses and improved the integrity and quality of business operations. P1O4 discussed that the critical driver of the digitization program was a cost reduction of business operations. P1O2 said "they did not trade quality over cost, but they balanced price and quality to ensure successful digitization of the business process." P1O2 explained that cost optimization was not only around operations, but it was around customer experience as well, which means eliminating any obstacles customers might encounter to reach out to the business.

Participants explained the criticality of eliminating any obstacles might encounter as the time to handle a service request, the average wait time to connect to a service

agent, time to process an order, and available channels to communicate with a service agent. Participants discussed reducing the operational cost as removing any issue that might hinder a customer from reaching out to the business. Participants added that reducing the operational costs helped their organizations to invest in innovation and new services. P2O4 explained how the digitization of the business process supported the reduction in the number of service requests by 20%. Finally, participants agreed that digitization of the business process helped to reduce time generating reports from server hours to a few minutes.

Findings Related to the Conceptual Framework

The conceptual framework for this study was von Bertalanffy's (1972) general systems theory. Researchers use general systems theory to address complex business problems and organizational issues (von Bertalanffy, 1972). Furthermore, the fundamental of the general systems theory is that organizations function as a complete system, which has different single or complex elements and interrelated components to achieve the organizational objectives and the scope of the general systems theory is the whole system rather than its components (Caws, 2015). The application of the general systems theory to explore what digital strategies IT leaders successfully implemented to digitize the business process ties to the findings of this study.

The findings from this study supported the application of the general systems theory to digitization strategies research because researchers use the general systems theory lens to explore complex systems that work together to achieve organizational goals. Digitization strategies are complex systems because of the complicated

requirements and coordination needed to operate business processes. Participants identified how the digitization of business processes was more complicated than other IT implementations because it needed digital leadership skills, alignment between the business and IT leaders, and frequent communication and collaboration.

The successful digitization of business processes spans multiple complex elements of an organization while it requires active collaboration efforts throughout those elements. I applied the lens of general systems theory to explore what digital strategies IT leaders successfully implemented to digitize the business process. The findings of this study supported the application of the general systems theory. Terra and Passador (2015) argued that those business processes are complicated because of the interrelated activities and dependencies required to execute business functions. Participants confirmed that it is critically important to ensure effective alignment between IT and business organizations to digitize the business process successfully.

Findings Related to Existing Literature

The findings of this study added to the existing digital transformation strategies literature to improve the digitization of the business process. Researchers confirmed the vital role of developing digital strategies to successfully digitize the business process (Kobus et al., 2018; Nambisan et al., 2017). Digital strategies in this study support the existing literature on successfully digitizing the business process. The role of digital leadership, digital alignment, and the purpose of digital transformation are critical to successfully digitize the business process, which is consistent with the digital

transformation literature. Participants confirmed that digital leadership, digital alignment, and the purpose of the transformation were the core elements of their digital strategies.

Digitization of the business processes means developing digital strategies to react and successfully utilize emerging digital solutions such as artificial intelligence, blockchain, and Internet of Things to innovate new practices (Betz, 2018). Participants of this study concluded that digitization of business processes requires more than introducing new technologies such as artificial intelligence or digital platforms, and it needs a digital vision and road map, governance, and stakeholders' engagement. Participants concluded that digitization of the business processes would introduce a new business model or a complete set of business processes, which matches the literature on digital transformation strategies.

Leadership in the digital era plays a vital role in driving the digitization of the business processes (Gupta, 2018). Organizational transformations need digital leadership, which means the skills to lead innovation and implement digital technologies (Nambisan et al., 2017). Participants of this study confirmed that strong digital leadership competencies were the central pivot to digitize the business processes. The literature on digital transformation strategies aligned with the participants' conclusion, where digital leadership is a critical strategy to digitize the business processes. Participants added that digital leaders should be able to build different digital aspects to transform business processes such as digital culture and maturity.

The literature included that IT leaders need to partner with stakeholders to get a consensus about directions and tools to achieve the digitization (Zhang et al., 2016).

Participants of this study confirmed that engagement with different business and non-business stakeholders was crucial to support the digital transformation. The findings of this study matched the literature when it comes to the vital role of communicating the value of digitization across different departments. Participants' conclusion matched the literature where IT leaders should become digitally mindful to prioritize digital projects, drive the teams with a reliable and clear roadmap, and establish business metrics.

The literature found that employee and customer experience should be the starting point to enable a digitized workplace (Dery et al., 2017). Westerman and Bonnet (2015) discussed that IT leaders should introduce components such as self-service capability, digital Omni-channels, and virtual agents to enable digital transformation. Participants agreed that the main business drivers of the digital transformation are (a) customer experience, (b) process reengineering, and (c) operations optimizations. Reengineering customer experience and optimizing customer services operation is core to the digitization of the business processes and match the existing literature.

Participants confirmed that digitization of business processes and incorporating technologies such as artificial intelligence, blockchain, virtual reality, and integrated platforms would make their organizations ready for the 4th industrial revolution. Literature included that digitization of the business process requires new technologies to drive innovative solutions that modernize operations and customer experience to be ready for the fourth industrial revolution (Goerzig, & Bauernhansl, 2018). Participants' conclusion matched the literature where the implementation of emerging technologies supports the digitization of the customer experience and process digitization.

Applications to Professional Practice

Digital and emerging solutions such as artificial intelligence, blockchain, Internet of Things, and analytics are increasing the challenges IT leaders should overcome (Majstorović, 2016). Some IT leaders fail to leverage digital and emerging solutions to achieve organizational transformation objectives and struggle to digitize the business processes (Westerman, 2018). Some IT leaders fail to align digital strategies with organizational transformation and digitization goals because they lack digital strategies. The purpose of this study was to explore what digital strategies IT leaders successfully implemented o digitize business processes. IT leaders may use the findings of this study to develop, deploy, and manage digital solutions effectively and efficiently.

IT leaders may understand why the success rate of transformation and digitization programs is approximately 29%, which may help to improve the success rate of those programs. IT leaders may implement the findings of this study to help their businesses to be 26% more profitable than competitors (Kane et al., 2015b). IT leaders may use this study to increase the efficiency of their businesses, improve decision-making processes, and improve innovation (Kane et al., 2015b). Furthermore, IT leaders may help their business to embark on a successful digital transformation program, which may improve customer experience and engagement and transform the business. This study may support IT leaders to digitize the business processes and transform the organization, which may help to generate more revenue than competitors.

IT leaders may implement the findings of this study to create more value for their organizations and generate 12% more market value than competitors (Westerman et al.,

2014). IT leaders may implement digital strategies to revolutionize the relationship between customers and their businesses, which may create more competitive advantages. This study may help IT leaders to create a digital transformation vision to help their executives to frame a picture of how the organization would be different in the future. This study may help IT leaders to reestablish a strong alignment and relationship with business leaders by re-defining and transforming the business processes. IT leaders may articulate and quantify digital ambition through key performance indicators and digital scorecards to measure the impact of digitization of business processes.

IT leaders may use the findings of this study to develop strategic assets to digitize the business processes, which are innovation, digital culture and maturity, partnership networks, and skills. IT leaders may be able to implement digital strategies that transform the customer experience, operational processes, and business models. This study may allow IT leaders to implement digital strategies that improve customer understanding, introduce digitally modified business models, and develop a strategic digital roadmap. IT leaders worldwide spent $3.8 trillion on digital solutions without digital strategies, which may not achieve organizational goals (Ali et al., 2015). The findings of this study may help IT leaders to optimize digital solutions return on investment and develop validated digitalization strategies.

IT leaders may use the findings of this study to integrate the different business units and functions into a single digital platform to manage the information flow throughout the organization. IT leaders may make an informed decision, renovate the business processes, and introduce new operating models because they no longer may

encounter the challenges of manual and broken processes (Schwertner, 2017). IT leaders may improve organizational performance to be twice more profitable and productive (Betz, 2018). IT leaders may use this study to articulate digital strategies and deliver business value, strategic roadmap, and accelerate the value realization of digitization initiatives.

Implications for Social Change

The findings of this study may promote a positive social change by introducing digital services and applications that may expand business opportunities and provide a sustainable economy within local communities (Chan & Holosko, 2016). The positive social change includes expanding innovation opportunities, cultivating human and social conditions, and encouraging the development of individuals, communities, and society. Digital customer experience would lead to a digitized community, which may increase the demand for creating more secure and sustainable jobs to fulfill digitization requirements. Additionally, digitally enabled organizations may reduce the implementation of paper-based business processes, which may lead to improving the recycling operation of local communities.

The findings in this study may benefit industries such as healthcare, financial services, and retails digitizing the business processes, which would provide a quality service to the local communities. Digital business processes may improve business performance and overall efficiency, which may impact local communities because organizational leaders would invest in local communities. For example, organizational leaders may invest in voluntary and charitable activities to develop local communities.

Digitally enabled organizations may enhance local communities' standard of living and introduce digital culture.

Recommendations for Action

The purpose of this qualitative multiple case study was to explore what digital strategies IT leaders successfully implemented to digitize the business processes. The findings of this study may help current and future IT leaders to address a critical challenge, which is the digital transformation of the business processes. The challenge relies on IT leaders to successfully implement digital strategies to digitize business processes. Furthermore, IT leaders may benefit from this study to define and shape new roles to take the responsibilities of digitations. For example, the chief digitization and transformation officers would be responsible for digital strategies. Additionally, IT leaders may use this study to challenge the status quo and change the business as usual processes.

The recommendations for actions:

- IT leaders should understand the business needs and drivers for digitization before developing digital strategies.
- Digital strategies should have quantifiable business metrics such as net prompter score and customer satisfaction and map those metrics to financial scores such as net revenue or profit.
- Digitization of business processes is about IT leaders envision directions to the organization to be more adaptive to challenge the status quo.

- IT leaders should proactively utilize digital solutions such as blockchain, Internet of Things, and artificial intelligence to reengineer and redesign legacy business processes, which would improve and enhance business performance.
- Chief digitization and transformation officers should be responsible for establishing a strategic relationship with business leaders and support a wide range of innovations and business modernization programs.
- IT leaders should develop digital strategies that increase value creation and act as a source of competitive advantage.
- Digital strategies should have clear and concise expectations, realistic goals and milestones, and complete resource plans.
- IT leaders should conduct a business value assessment workshop before embarking on digital transformation programs and should re-evaluate the programs by doing a business value realization workshop after 12-months of the implementation.
- Business leaders should engage with IT leaders to collaboratively develop digital strategies and evaluate the potential digital solutions that deliver business value.
- IT leaders should start developing digital leadership skills, which are digital vision, governance, collaboration, and engagement.
- Digital strategies should start with the end in mind and envision a strategic roadmap on how the organization should look like after the project.

- IT leaders should work with business leaders to develop digital culture and maturity, along with a digital-first mindset.

The results of this study are essential to IT leaders, chief digitization and transformation officers, consultants, and business leaders because they may benefit from the participants' experiences. Additionally, researchers and scholars may benefit from this study to understand digital strategies and the implications of digitization of the business processes. I published this study in ProQuest, and I shared the results with IT leaders, chief digitization and transformation officers, consultants, and business leaders. Additionally, IT leaders who participated in this study received a summary of the study to utilize it as a reference for digital transformation programs.

Recommendations for Further Research

The purpose of this qualitative multiple case study was to explore what digital strategies IT leaders successfully implemented to digitize the business process. Researchers might use the recommendations and conclusion in this study in existing or future research and close the gaps in the management of digital transformation and strategies. I recommend that future researchers need to address the limitations of this study. This study has four limitations. The first limitation of this study was a small sample size, which was ten participants. Researchers need to increase the sample size to explore what digital strategies IT leaders successfully implemented to digitize the business processes.

The second limitation is the number of organizations I explored. I narrowed down the number of organizations to four organizations, which was a small number. I

recommend that future researchers need to explore more organizations from different sectors and industries. There was another limitation, which was the geographical region. This study had a single geographic location, which was Dublin city in the Republic of Ireland. Researchers in the future want to expand the geographical area to include more cities in Ireland.

I used only the qualitative method to conduct this study, which means a probability of bias in participant's responses. I recommend using a quantitative method or mixed-method research to develop hypotheses and test relationships between different variables and success factors. Another limitation of this study is that I explored digital strategies from the IT leaders' perspective, not from the business leaders as well. Future researchers might need to incorporate business leaders as well to explore what other digital strategies could add value to the digitization.

Reflections

I used a qualitative multiple case study to explore what digital strategies IT leaders successfully implemented to digitize the business processes. The DBA program helped increase my knowledge about digital strategies, widening my perspective, and experiencing what IT leaders implemented in the real-life. Additionally, the DBA program had a significant impact on improving my communication skills, executive presence, active listening, and networking. I developed my scholarly style and developed my professional knowledge of what digital strategies IT leaders successfully implemented to digitize the business processes. The interviews were a great learning experience because it allowed me to meet IT leaders and conduct semistructured

interviews, which sharpened my negotiation and communication with executives. Moreover, I reviewed many organization documentation, strategies, implementation, and reports to complete the program, which helped to enrich my strategic analysis and thinking.

The recruitment process was not as I expected because many participants were reluctant to share any information without signing a non-disclosure agreement . Furthermore, many participants were busy, which made the process to meet them in-person difficult, and I had to reschedule the interviews more than one time. On the other hand, the participants who agreed to join the process provided lots of information. Additionally, they uncovered many facts that enriched the study and enlightened the business practice and the social impact as well. The participants agreed that the study is critical to IT leaders, and it is relevant to what IT leaders want to achieve. However, few participants refused to participate even I explained their rights and ensured them that there is no risk of joining the study. Finally, I build a professional working relationship with the recruited participants.

I worked on limiting the personal bias performing member checking with participants and data triangulation. Using the member checking process helped me because participants agreed on interviews' interpretations and confirmed that interpretations were what they wanted to say. Participants helped to correct any error found in their responses, which helped to limit the personal bias. Additionally, I worked on focusing only on the sources provided by participants, such as documentation, strategies, and implementation plans. Moreover, I used only the notes taken during the

interviews, which supported limiting personal bias. The interviews were mainly participants' time and responses, and I did not try to guide participants in any specific direction. I had to practice active listening very well to stop any action or comment that could lead participants to a different direction from their experiences.

I used many software packages to support the study. NVivo 12 Plus for student software was the primary tool generating themes and interpreting results. However, NVivo 12 Plus for student software was not easy to learn, and I spend time and effort to learn it by watching lots of videos to understand how to use it. NVivo 12 Plus for student software videos and manuals were excellent learning materials that helped to code, analyze, identify themes, and organize participants' interviews. I used other tools to conduct the study, such as Zoom, Microsoft Office 365, Dragon Anywhere 1.5 software, and an audio recording application on my smartphone. I used the MIT Sloan of Management Review website to subscribe to their issues, which was a great source of literature. Additionally, I attended many online courses to understand what digital strategies mean for business and IT executives, which helped to relate to their perspectives and views

Conclusion

In this qualitative multiple case study, I explored what digital strategies IT leaders implemented to digitize the business process successfully. I collected data from IT leaders in Ireland. The three major themes were (a) strong digital leadership competencies, (b) digitally aligned with the business vision, and (c) the why of the digital transformation. The strategies to successfully digitize the business process included (a)

articulate a digital vision and roadmap, (b) develop a governance framework, (c) concise engagement and collaboration, (d) strategic IT and business partnership, (e) digital maturity and culture, (f) fit for purpose digital technologies, (g) customer experience and engagement, (h) process reengineering and modernization, and (i) operations optimization and efficiencies. I analyzed the themes according to the existing literature and applied the general systems theory lens to address the complex and interdependent systems within organizations. The main contribution to business practice is defining what digital strategies IT leaders implemented to digitize the business process successfully.

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Appendix A: Interview Questions

1. How did your organization align the digital strategies with the digitization of business processes?
2. How did you develop digital strategies to digitize business processes?
3. How did you determine what digital technologies you need to support the digitization?
4. How did you implement digital technologies to digitize the business processes?
5. How has the digitization of the business processes changed the business operations?
6. How do you measure the success of the digitized business processes?
7. What additional information would you like to add that I did not ask?

Appendix B: Interview Protocol

Participant:

Organization Name:

Date & Time:

Introduction:

Allow me to thank you for your time and volunteering into this qualitative multiple case study. The goal of this study is to explore the digital strategies IT leaders successfully implemented to digitize the business proves. I believe that helping and supporting other organizations with successful digital strategies would have a positive business and social impact. Digitization of the business process would lead to increase efficiency, reduce cost, renovate business process, create new business models and achieve competitive advantages. Additionally, the social impact would include but not limited to streamline the user's experience, create a digitized community, expand opportunities and provide sustainable living within the digital market by generating more jobs in the local society.

The Research Question:

What are the digital strategies IT leaders successfully implement to digitize the business processes?

The Interview Questions:

1. How did your organization align the digital strategies with the digitization of business processes?
2. How did you develop and maintain digital strategies to digitize business processes?

3. How did you determine what digital technologies you need to support the digitization of business processes?
4. How did you leverage digital technologies to implement the digitization of business processes?
5. How has the digitization of the business processes changed the business operations?
6. How do you measure and monitor the success of the digitized business processes?
7. What additional information would you like to add about digital strategies that I did not ask about?

Closure:

I do appreciate your participation in this study. The next steps are I will transcribe the recording, and I share a copy with you of the transcribed interview. I will ask you to validate the transcribed interview before incorporating the data into the data analysis processes. Thank you.

Appendix C: Invitation Email

Hi [participant's name]

My name is Mohamed AbdelMoneim, and I am a doctoral candidate at Walden University. I am pursuing a doctorate in business administration (DBA) specialized in information systems management.

The research title is: "Strategies to Digitize the Business Processes." I am delighted to invite you to participate in the research to explore what digital strategies IT leaders implement to digitalize the business processes. The reason I have sent this invitation is that your expertise in the digitization of business processes and you have more than ten years of experience working on digital strategies to digitize the business processes for your organization.

The goal of this voluntary study is to obtain ten participants. I will be asking seven documented open-ended questions to explore what digital strategies IT leaders implement to digitalize the business processes. Your responses will be combined with data from other participants for analysis purposes only. This study is very low-risk, and no harm is anticipated to you for participating. Additionally, there will be no harm should you choose to not participate at any time.

The anticipated benefits of this study would be positive social change, improved efficiencies, and IT infrastructure cost reductions. I include the consent form with this invitation email that you could sign and send back confirming your willingness to participate in the study.

Regards,

Appendix D: Consent Form

Hi [participant's name],

This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

You are invited to take part in a research study of designed to explore what digital strategies IT leaders implement to digitize the business processes. The researcher is inviting IT leaders in Dublin, Ireland to be in the study. You meet the following participation criteria: (a) an IT leader, (b) ten years of experience, (c) based in Dublin, Ireland, and (d) successfully implemented digital strategies to digitize the business processes.

Background Information:

The purpose of this study is to explore what digital strategies IT leaders implement to digitalize the business processes. The study will look at the phenomenon by interviewing IT leaders in Dublin, Ireland who have knowledge and experience with digitization of business strategies.

Procedures:

If you agree to be in this study, you will be asked to:

1. Participate in a 20-30 minute semistructured interview
2. If necessary, participate in a 15 minute follow up interview arranged at time convenient for you

3. Participate in a 10-minute member checking process to review my interpretations of the information and data collected during the interview

Here are some sample questions:

1. How did your organization align the digital strategies with the digitization of business processes?
2. How did you develop and maintain digital strategies to digitize business processes?

Voluntary Nature of the Study:

Your participation is strictly voluntary, and you may withdraw at any time. Everyone will respect your decision of whether you choose to be in the study or not. If you decide to join the study now, you can still change your mind later and withdraw at any time.

Risks and Benefits of Being in the Study:

Being in this type of study has no risk of the minor discomforts that can be encountered in daily life. The study would not pose risk to your safety or wellbeing. The benefits of your participation may provide you with a sense of high self-respect knowing that you could contribute to helping improve the yourself and IT managers understanding of the necessity of implementing digital strategies to digitize the business processes.

Payment:

There will be no compensation provided for your participation in this study.

Privacy:

Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Additionally, the

researcher will not include your name, your organization's name, your title, your role, you contact or anything else that could identify you in the study reports.

Participants' identification will be an alphanumeric to ensure privacy and confidentiality. Data will be kept secure by the researcher on a password-protected storage and locked personal safe located in the researcher's personal office. Data will be kept for a period of at least five years, as required by the university.

Contacts and Questions:

You may ask any questions you have now or if you have questions later, you may contact the researcher via Mohamed.AbdelMoneim@waldenu.edu. If you want to talk privately about your rights as a participant you can call Walden University representative who can discuss this with you on +1 612-312-1210.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By signing below, I understand that I am agreeing to the terms described above. Only include the signature section below if using paper consent forms.

The researcher will give you a copy of this form to keep.

Printed Name of Participant []

Date of consent []

Participant's Signature []

Researcher's Signature []