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Digital Strategies to Manage and Transform Maritime Business Operation in Lagos, Nigeria

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Walden University
2022

Abstract

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Nigeria

by

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MBA, University of Wales, Cardiff, UK, 2012

BS, University of Lagos, Nigeria, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

Studies have shown that the maritime sector creates socioeconomic opportunities and contributes significantly to the gross domestic product of Lagos state and Nigeria, but it misses digital opportunities for transformation. A literature gap existed on digital strategies to manage and transform maritime business operations in Lagos. The purpose of this qualitative exploratory multiple case study was to explore digital strategies that business leaders and managers may use to transform maritime business operations in Lagos. The digital business transformation (DBT) concept by Wade and an integrated DBT process concept framed this study. Data from purposefully sampled business leaders and managers in semi-structured interviews, with document review and reflective field notes, were analyzed through content analysis to answer the research question. The findings included the themes of (a) purpose and values of digital strategy inclusion, (b) why integrating digital objectives in the business process, (c) digital strategy as a business management tool, (d) as a transformational tool, (e) digital strategy implementation success factors, (f) DBT barriers, (g) supportive intervention measures, (h) the use of an integrated DBT process, (i) the horizon of digital strategy compliance, and (j) government and stakeholders' involvement in Lagos' maritime DBT. Digital strategies in Lagos' maritime business operations as recommended in this study may influence change in process and management practice for business sustainability in Lagos and better living standards for positive social change.

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Dedication

  I dedicate this study to God Almighty, the giver of knowledge and strength to persevere and to my children, Prince Charles, Lesley, and Kamsi, who gave me many distractions when I needed them and unsolicited reasons to get up for a break which was good for my health.

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Chapter 1: Introduction to the Study

The digital era is revolutionizing the ways businesses operate, widely affecting various industries, disrupting businesses in various ways, breaking down barriers between people, technology, businesses, and things, and peddling businesses to the forefront of transformation (Schwertner, 2017). By breaking the barriers, business leaders can make new adoptions and find more efficient business approaches to enhance business functions. Though literature shows various research interests in business digitalization for transformation journeys, many studies revealed a digital skill gap among some business leaders in Lagos (World Bank Group, 2019; Zubairu et al., 2020). For instance, Maritime business in Lagos comprises activities in the shipping, import and export, freight forwarders, cargo (dry and wet product) transportation and logistics, and other related maritime business activities within Lagos (Arogundade & Nwani, 2018), but digital strategy inclusion in the business process is below expectation (Onwuegbuchunam et al., 2021). The maritime sector contributes significantly to the gross domestic product (GDP) of Lagos, socioeconomic opportunities, and economic progression of Lagos (Office of the Lagos State Government, n.d.), but the manual processes in the maritime business operation in Lagos, logistics flaws, and the resultant gridlock on Lagos roads have become a matter of serious concern to Lagos residents and the business community.

Studies on digital transformation in Lagos' businesses are deficient in digital strategies to manage and transform Lagos' maritime businesses (LMBs). Existing studies focus on technology adoption in Nigerian ports terminal operations, the influence of work automation on port performance, financial institutions, and the impact on businesses

(Okundaye et al., 2019; Onwuegbuchunam et al., 2021; Oyewole & Olufemi, 2020) without lead to how to manage, transform and sustain maritime businesses in Lagos using digital strategies. Though some business leaders in Lagos seem to be keeping up with their digital transformation agendas, many are not. Instead, struggle with unchanging business culture, digital skill gap, limited information, and inability to adapt and respond to a technology-led business strategy relevant for business survival in Lagos (World Bank Group, 2019; Zubairu et al., 2020). For the efficiency and success of maritime activities in Lagos, technological innovation and strategies are essential, given that most ports in developing economies like Nigeria still struggle with challenges associated with manual terminal operations (Onwuegbuchunam et al., 2021). The use of digital strategies to transform businesses provides value-producing opportunities, competitive advantage, and sustainability in the marketplace (Napitupulu et al., 2018; Nwaiwu, 2018). With this study, I make a step to close a gap in the literature by advancing discussion on technology adoption and digital strategy inclusion in maritime business operations in Lagos. The potential positive social changes that may emerge from this study are business transformation and sustainability to foster a better living standard in Lagos.

I discuss in this chapter the background of the problem, the problem and purpose statement, research question, conceptual framework, and nature of the study. Other inclusions are definitions of terms, assumptions, scope and limitations, and the significance of the study. The chapter ends with a summary and overview of the next chapter.

Background of the Study

With Nigeria gradually losing the base of oil proceeds for economic sustainability (Campbell & Page, 2018), projections by the Businessday Research and Intelligence Unit revealed that the Nigerian economy would grow by $8.79 billion by 2023 if businesses could focus on innovative products and services leveraging digital tools to reskill and upskill the national workforce (elev8 and BusinessDay Research and Intelligence Unit, 2020). Lagos is the home for business activities in Nigeria, and seaport and maritime businesses are over 70.61% of international traffic, and 70% of total National cargo freight pass through Lagos (Office of the Lagos State Government, n.d.; Olajide et al., 2018). Consequent to the gridlock on Lagos roads motivated by maritime activities in Lagos, business stakeholders are unable to access offices. The insight gained from the Organized Private Sector (OPS) Nigeria survey revealed that Nigeria, on an annual basis, loses about N6 trillion to the intractable gridlock in Apapa Lagos (Bassey, 2019) and may lose more if no solution ensues. Despite the efforts to curb the gridlock situation in Lagos, the problem persists, and "approximately 40% of businesses located around the seaports communities have either relocated to other areas, scaled-down operations or completely closed down" (Arogundade & Nwani, 2018, p. 4; TVC News Nigeria, 2020).

The cause of the congestion and increasing detrimental effects on business is associated to failed regulatory and environmental policies, logistics flaws, and non-inclusion of technological tools (TTs) and strategies in the business process of maritime business in Lagos (Arogundade & Nwani, 2018). Other studies associated the cause of business closure in Lagos to a lack of strategic and technology-led approaches in the

business process of most shipping companies and other maritime-related activities in

Lagos as most business leaders and managers in the maritime sector do not include digital

strategies to manage and transform their business operation in Lagos (Chilaka, 2019;

Onwuegbuchunam et al., 2021). For example, manual documentation processes and

container examination procedures, delays in cargo clearance, and in-person activities are

prevalent at the Lagos ports (Onwuegbuchunam et al., 2021). Consequently, container

trucks and tankers face delays in accessing the ports, gridlock on Lagos roads, business

stakeholders' inability to access offices for active business without recourse, and business

closure (TVC News Nigeria, 2020). In a series of forums and publications (see Appendix

A), Lagos residents and business stakeholders continued to call for a solution to the

problem of road congestion, lack of digital strategies in the business process, and

business closure in Lagos (Lagos Business School, 2018; TVC News Nigeria, 2020).

Existing studies on how to improve the efficient operation of maritime business in

Lagos focused on technology adoption to improve revenue generation, safety, increasing

capacity, and expansion initiatives (Fagbe et al., 2020; Oyewole & Olufemi, 2020;

Onwuegbuchunam et al., 2021) rather than strategic digital intervention measures to

manage and transform maritime business operation in Lagos. The literature revealed that

a significant number of business leaders in Lagos maritime business focus mainly on

exploring business opportunities and the scale of serving the large population of Lagos

with a low interest for technology adoption and less attention to the realities and values in

business digitization (Chilaka, 2019; Fagbe et al., 2020; Onwuegbuchunam et al., 2021).

Some business leaders and managers in the maritime industry in Lagos, however, have

included digital strategies to manage and transform their business operation in Lagos (Onwuegbuchunam et al., 2021), but a significant number is yet to make such inclusion. An increasing number of business leaders and managers in Lagos are giving to digital adoptions while a significant number of them are still looking up to the ability and strategy to accelerate digital adoption to manage and transform their businesses to drive business growth and achieve sustainability goals (Ajayi, 2020).

Digital strategy is vital in restructuring and re-shaping business activities and addressing the challenges of using traditional-based and manual data management systems to process and manage information (Onwuegbuchunam et al., 2021). The inclusion of digital strategy in business stimulates innovative activities, business transformation, efficiency, and business sustainability (Agboola et al., 2019; Agwu & Murray, 2018; Goerzig & Bauernhansl, 2018). Digital strategies could facilitate seamless and timely shipping and cargo documents processing, customs clearance, booking instructions, and logistics procedures to ensure efficient service delivery in LMB operations (Chilaka, 2019; Onwuegbuchunam et al., 2021). Despite the enhancing operational efficiency in the inclusion of digital strategies in the business process of maritime businesses, LMBs still experience a low adoption rate of digital strategies by leaders and managers. Slow documentation processes, delays in cargo clearance and container examination procedures, and the resultant congestion on Lagos roads still characterized maritime business activities in Lagos (Arogundade & Nwani, 2018; Onwuegbuchunam et al., 2021). The struggle for operational efficiency and the risk of business closure in Lagos remains inevitable.

Achieving success in business management lies in the skills and ability of the business leaders to understand and activate a dynamic approach to business processes (Hess et al., 2016). Given the strategic imperativeness of digital strategies in the business transformation agenda, scholars (Hess et al., 2016; Singh & Hess, 2017; Vial, 2021) emphasized the need for business leaders to explore digital strategies to drive business transformation, success, and sustainability goals. Seeking integrated strategies to extract value from evolving technologies, to cover business operation and the entire cargo handling process in maritime businesses in Lagos becomes essential (Onwuegbuchunam et al., 2021). Thus, this study was imperative to explore digital strategies to manage and transform maritime business operations in Lagos and help fill the gap in the literature on digital strategies that could help manage and transform maritime business operations in Lagos. Business leaders, managers, policymakers, and practitioners might benefit from this research by deploying the findings to retool their skills, strategies and redesign their leadership styles for optimal business performance and business sustainability in Lagos.

Problem Statement

There is continuous business closure, job loss, and environmental and social inadequacies in Lagos. About 40% of businesses in Lagos closed operation as of 2018, and 12,000 jobs were lost, with a projected 6,500 jobs and $844 million in business revenue lost by 2025 due to failed regulatory policies, logistics flaws, and non-inclusion of digital strategies in the maritime business operation in Lagos (Arogundade & Nwani, 2018; Iroham et al., 2019; The Guardian Nigeria, 2018). Data on technology adoption in Nigeria's business revealed a low level of digital literacy and a digital skill gap among

some business leaders and managers in Nigeria (Oke et al., 2020; Zubairu et al., 2020). Although various studies exist on technology adoption in maritime businesses in Lagos, no study explored the inclusion of strategic digital intervention measures to manage and transform maritime businesses in Lagos. Existing studies focused on technology adoption to improve revenue generation, safety, and operational capacity (Fagbe et al., 2020; Oyewole & Olufemi, 2020). The general problem is that maritime businesses in Lagos lack digital strategies, which contribute to a marked trend of business closure, loss of jobs, and other environmental and social inadequacies in Lagos. The specific research problem is that business leaders and managers in the maritime sector in Lagos do not include digital strategies to manage and transform maritime business operations in Lagos.

Purpose of the Study

The purpose of this qualitative exploratory multiple case study was to explore digital strategies that business leaders and managers in the maritime sector in Lagos may include to manage and transform maritime business operations in Lagos. A significant number of business leaders and managers in the maritime industry do not include digital strategies in their business operation, whereas some have successfully included digital strategies to manage and transform their businesses in Lagos (Onwuegbuchunam et al., 2021). Achieving the purpose of this study may provide information that could help improve the inclusion of digital strategies to manage and transform maritime business operations in Lagos. I chose Lagos because Lagos is the home for maritime activities in Nigeria and significantly impacted by the effects of maritime activities in Nigeria.

Research Question

What digital strategies may business leaders and managers in the maritime sector in Lagos include to manage and transform maritime business operations in Lagos?

Conceptual Framework

The conceptual framework for this study includes Wade's (2015) digital business transformation (DBT) concept of change in the framework of why, what, and how to transform business and realize the value in digital technologies. Wade discussed that the DBT concept has been extensively resourceful in the business management profession to address business transformation. Wade conceptualized DBT as the "digital piano" and resourceful in the transformation journey of businesses. The concept of DBT is insightful to how business leaders may approach digital transformation and implement a well-defined digital strategy in their businesses (Udovita, 2020). A framework that supports digital transformation in business using an integrated process helps organizations minimize their risk of failure (Butt, 2020). This applied to this study on digital strategies that business leaders and managers in Lagos' maritime sector may include to manage and transform maritime business operations in Lagos. For the conceptual framework of this study, I proposed an integrated DBT process (IDBTP) concept rooted in Wade's DBT concept integrating the why, what, and how of DBT concept to guide the study. This highlighted the interaction and focal points of the necessities for maritime business transformation in Lagos, digital strategies that work in business transformation, and how maritime business leaders and managers in Lagos may leverage digital strategies for business management and transformation in Lagos.

Nature of the Study

The research approach for this study is a qualitative method with an exploratory multiple case study design. Many researchers have used a qualitative approach to explore business management-related problems in current and real-world situations by answering *why*, *what*, and *how* questions (Yin, 2018). A qualitative approach was resourceful in research to explore the concept of digitalization, DBT, and technology effects in business (Nwaiwu, 2018). Quantitative and mixed methods were inappropriate for this study because quantitative data would not respond to the *why*, *what*, and *how* questions. Additionally, the quantitative approach lacks flexibility in interview questions (Frels & Onwuegbuzie, 2013), and testing and analysis of numeric data are not the purposes of this study.

A phenomenological approach or grounded theory could have been other study design options to consider, but they were not appropriate. A phenomenological design focuses on participants' perspectives instead of exploring strategies and revealing experiences to understand study participants' experiences (Yin, 2018). Given that this study is a deductive study, grounded theory was not appropriate for this study (Makri & Neely, 2021; Yin, 2018). An exploratory multiple case study is used to explore a specific bounded system with multiple sources of data (Houghton, 2020). A case study approach explains the how, what, and why of a situation supports convergence and divergence of participants' experiences and focuses on the contemporary phenomenon (Ravitch & Carl, 2016; Stake, 2015; Yin, 2018). I considered the case study approach appropriate because it presents DBT issues within the framework of human capacity development and

business operation to provide information that may help solve business and social problems in Lagos.

A sample of 20 participants were engaged to respond to semi-structured interview questions until data saturation. Given the adaptability of a semi-structured interview to refine data collection and support two-way communication (McIntosh & Morse, 2015), semi-structured interviews were appropriate for the study's quality data generation. Document review can also provide data on the context within which research participants operate. Insight from documents provides valuable additions to a knowledge base (Yin, 2018). The interview transcript, document review, and field notes were sources for data triangulation to corroborate, refute, or expand findings (Frey, 2018). I returned the transcribed interviews to each participant for member checking to ensure that the transcribed interview responses were accurate.

Definitions

Artificial intelligence: Artificial intelligence refers to different programming algorithms with the capability to allow devices to access and use data as required (Segars, 2018)

Business model: A business model refers to the description of how businesses create and commercialize value (Peric et al., 2017).

Cloud computing: Cloud computing is the dynamic delivery of hosted digital services over the internet (Califf et al., 2018).

Digital: This refers to the embedment of electronics and computerization (Çapraz, 2020).

Digital strategy: Refers to tactics and vision of doing the business differently through technology adoption (Sebastian et al., 2017).

Digital platforms: Digital platforms denote the environments or stages that provide the connections and interactions for a different person to innovate and implement technology tools and capabilities (Sia et al., 2016).

Digital transformation: Digital transformation refers to a change in operational business processes, customer experience, and business models enabled by digital capabilities (Schwertner, 2017).

Job loss: Job loss is a downward trend in an organization where employees lose their jobs involuntarily (Burdett et al., 2020).

Maritime sector: Maritime Sector is a compendium of business entities undertaking business activities within the maritime space (Arogundade & Nwani 2018).

Orchestration: Coordination of digital systems (Çapraz, 2020).

Sustainability: This refers to the process of keeping up well over a long time to meet the needs of the present without compromising the needs of the future from an economic, environmental, and social standpoint (Garg, 2017).

Technology adoption: Technology adoption refers to accepting new technologies—both software and hardware—for process improvement and architectural built, and other new digital methods to enhance the quality of goods and services delivery (Ugur & Mitra, 2017).

Assumptions

Identifying assumptions is a critical factor in research (Brinkmann, 2016). Assumptions are unconfirmed facts considered correct (Marshall & Rossman, 2016). There are four assumptions that guided this study's data collection and analysis. The primary assumption was that a qualitative study with multiple case study design would be appropriate for this study based on the anticipated benefits of utilizing multiple data collection forms (Houghton, 2020) by exploring five organizations and 20 business leaders' experiences. Multiple case studies are resourceful in data collection and analysis with enhanced credibility (Stake, 2015). The following assumption was that a sample of 20 business leaders would represent the population of business leaders in Lagos. I also assumed that participants would agree to participate in this study and respond to the interview questions without bias. Again, I would obtain rich information for this study through interviews of participants, document review, and field notes. Fourth, I assumed that I would conduct this research without any personal bias.

Scope and Delimitations

The scope of a study explains the confines and inclusion criteria chosen by the researcher to base a study (Marshall & Rossman, 2016). This study addressed strategic digital intervention measures to manage and transform LMB operations. The scope of this study was limited to maritime businesses in Lagos, Nigeria. The population included five maritime companies in Lagos Island and Apapa areas of Lagos, Nigeria, not less than 3 years in operation to ensure currency of information, that have successfully included digital strategies in their business processes. The interview participants were 20 business

leaders and managers from the selected maritime companies in Lagos. The choice of

Lagos for this study was because Lagos is the home for maritime activities in Nigeria.

The data sources comprised semi-structured interviews, a review of digital process

supporting documents from the selected companies, and field notes. Wade's (2015) DBT

concept and the IDBTP concept proposed are the conceptual frameworks for the study.

Delimitations are the confines of research set by a researcher. Researchers usually

establish delimitations before researching to aid the audience in understanding the

exclusions from a study (Ganapathy, 2016). The delimitations of a qualitative case study

research include (a) the setting of the interview, (b) the size sampled, (c) the sensitivity of

the information, and (d) location (Semenova & Hassel, 2015). The delimitations in this

study included the limitation of the population within Lagos Island and Apapa and

confines of the study to business leaders and managers who have worked for at least 3

years and successfully included digital strategies in their business processes. Another

delimitation noted was the limitation of the participants to five maritime companies and

interviews of 20 business leaders and managers of the selected companies. The study did

not include junior employees of the selected companies and other stakeholders in

maritime business because they are not directly involved in leading changes and digital

transformation agendas; instead, executing the transformational drives of the business

leaders and managers.

The listed delimitations are to support the objective and credibility of the study.

The exploratory approach was used to explore digital strategy in business, utilizing

multiple data collection forms to systemically gather credible information on systems'

processes (Houghton, 2020). The exploratory process provided detailed, rich, and credible information and findings that other researchers could transfer to other scopes and populations and make the data and findings of this study transferable and applicable in subsequent studies on digital strategy for business management and transformation in LMBs.

Limitations

Limitations are procedural constraints in a study that may impact a study's results (Marshall & Rossman, 2016). A barrier during primary data collection included accessibility issues related to participants' availability for interviews and their consent. Given that document review was part of the data collection source, the limitation included restrictions from organizations granting access to their private and confidential documents for analysis. The short period of the study was another limitation and may have influence the extent of data collection for the study. Only the participants who signed the informed consent were included, which was another limitation to the expanse of perspective and data obtainable from experienced participants who did not wish to consent to the terms of the study. The study's findings depended significantly on the sampled participants' responses to the research questions and documents reviewed and possible bias from the participants was another limitation. The participants may have had concerns about the safety of information and trade secrets, and could be economical about some vital information. To ensure unbiased, rich, and credible information for the study, I used document review and reflective field notes to triangulate the data obtained.

I also made a conscious effort to avoid any misinterpretation of interviews and viewed the research findings through the lens of reality without bias. To ascertain similarities, credibility, and data adequacy, I compared the data sources (data triangulation)—interview responses, document review reports, and field notes. The scope of the study was another limitation. The study was limited to organizations within Lagos Island and the Apapa area of Lagos, Nigeria. Businesses operating outside Lagos Island and Apapa were not part of this study. The exploratory multiple case study method adopted in the study provided detailed, rich, and credible information and findings (Houghton, 2020) that other researchers may transfer to other areas outside Apapa and Lagos Island areas of Lagos.

Significance of the Study

The purpose of this qualitative exploratory multiple case study was to explore digital strategies that business leaders and managers in the maritime sector in Lagos may include to manage and transform maritime business operations in Lagos. This study may help improve scholars' and business leaders' understanding of how digital strategies can enhance business performance and transform maritime business operations in Lagos to minimize the increasingly detrimental effects of maritime activities in Lagos. The knowledge gained from this study of how digital technologies paired with capabilities to transform business may impact both theory and practice of business management.

Significance to Theory

The maritime sector contributes significantly to the GDP of Lagos, socioeconomic opportunities, and economic progression of Lagos state and Nigeria

(Office of the Lagos State Government, n.d.; Osho & Adishi, 2019), but I found no study on digital strategies to manage and transform maritime business operation in Lagos. Studies have revealed limited information on the digital strategies that may contribute to transform maritime businesses operation in Lagos, Nigeria, especially in terms of case studies (Ivančić et al., 2019). Achieving the purpose of this study could contribute to the knowledge web of digital transformation in maritime businesses. Exploring business transformation from a digital strategy standpoint may contribute valuable insights to the academic literature and address the gap in the literature on digital strategies to lead, manage, and transform maritime business operations for a sustainable business operation in Lagos. The strategies explored in this study may assist the theorists, and scholar-practitioners in understanding how businesses in Lagos may be sustainable, seek solutions that may change the narrative of business closure in Lagos, and provide a foundation for further studies about the topic.

Significance to Practice

This study may significantly contribute to the management profession by providing data analysis on digital strategies business leaders may implement to influence change in the business process in a technology-driven way for better business practices. The study's findings may help organizational leaders in Lagos address business and societal challenges posed by business closures in Lagos for social and economic progression. This study may also provide insight into understanding the factors that impede business survival in Lagos and improve the digital readiness of business leaders in Lagos. Organizational leaders, managers, policymakers, and practitioners might

benefit from this research by deploying the findings to bridge the digital skill gaps

identified, redesign their business process, retool their skills, strategies, and leadership

styles for optimal business performance.

Significance to Social Change

This study's potential implication for positive social change lies in its potential to

advise Lagos' business community on how technology adoption in business may help

sustain business in Lagos and provide social change. The implications for positive social

change include reducing traffic congestion in Lagos, developing technological abilities,

increasing social and economic opportunities (i.e., job creation) to reduce the

unemployment rate, and improving household income to achieve a better living standard

in Lagos. Digitalization brings major transformations in socioeconomic processes

(Vasilescu et al., 2020). Business sustainability in Lagos and a possible increase in

business income and government revenue through tax generation for socioeconomic

progression are other potential positive changes that may emerge. With the underlying

premises of technological innovations specifically to technology adoption and digital

strategies in business operation, the findings of this study may foster business

sustainability in Lagos and impact positively on social (hunger, hardship, social vices)

and economic (business closure, unemployment rate, revenue lost) equilibrium of Lagos

metropolitan.

Summary and Transition

A significant number of business leaders and managers in the maritime sector in

Lagos do not include digital strategies to manage and transform their business operations

in Lagos. Further, existing studies focus on technology adoption to improve revenue

generation, safety, and capacity increase in the maritime sector. This study provides

information that may help improve the inclusion of digital strategies to manage and

transform maritime business operations in Lagos. In this chapter, I presented the

introduction to the research and the groundwork for understanding the research, including

the background of the problem, problem and purpose statement, and the research

question. Other things discussed were the conceptual framework, nature of the study,

definitions of terms, assumptions, limitations, scope and delimitations, the significance of

the study related to theory, practice, and social change. Chapter 2 comprises a review of

professional and academic literature relevant to the study and the conceptual framework

underpinning the study in exploring the digital strategies to manage and transform

maritime businesses in Lagos, Nigeria.

Chapter 2: Literature Review

Business leaders and managers in the maritime sector in Lagos do not include digital strategies to manage and transform maritime business operations in Lagos. Consequently, there is an increase in business closure, job loss, and social inadequacies in Lagos (Arogundade & Nwani, 2018; Chilaka, 2019; Iroham et al., 2019). Data on technology adoption and the use of digital strategies in Nigeria business revealed a low level of digital literacy and a digital skill gap among some business leaders in Lagos to transform and sustain businesses in Lagos (Oke et al., 2020; World Bank Group, 2019; Zubairu et al., 2020). Though a significant number of business leaders and managers in the maritime industry are yet to include digital strategies in the business operation, some have included digital strategies to manage and transform their businesses in Lagos (Onwuegbuchunam et al., 2021). The purpose of this qualitative exploratory multiple case study was to explore digital strategies that business leaders and managers in the maritime sector in Lagos may include to manage and transform maritime business operations in Lagos. Implementing digital strategies promotes a wide range of innovative practices and business modernization, efficiency, and sustainability (Agboola et al., 2019; Agwu & Murray, 2018; Goerzig & Bauernhansl, 2018). Adopting digital solutions resonates with creating value in the business and achieving a sustainable competitive advantage (Abbosh et al., 2018; Schneider & Imai, 2019).

The literature review in this chapter comprises a review of peer-reviewed professional and academic literature on different aspects of digital strategies and other components related to achieving digital transformation and business sustainability goals.

I discuss the foundation of the conceptual framework for this study with a description of the application. There is a synthesis and analysis of why, what, and how of DBT in the maritime industry. Other discussions in this chapter include the components of digital strategies that deliver business value in digitization processes such as digital leadership, skills, culture, drivers, impeding factors, and digital readiness of businesses and leaders. Chapter 2 concludes with a summary that presents the insight gained from the literature review and a transition overview to the succeeding chapter.

Literature Search Strategy

A scholarly literature search was necessary to retrieve relevant and credible peer-reviewed and academic research articles for this study's literature review development. A thorough literature searches and review provided insight into the works of other researchers in the field of study to understand the knowledge or information from others in a broader perspective and leverage that to position a current work (Nadeem et al., 2018; Patton, 2015). I searched for recent literature related to current issues on the study—factors that drive digital strategies for the maritime sector's business transformation and sustainability in Lagos.

I used multiple sources for the literature search to access relevant data related to the study problem. I accessed various databases through the Walden University library and the internet for peer-reviewed articles and reports. The databases searched were *Scopus, EBSCO, Google Scholar, ProQuest, Emerald Management, Science Direct, Management Reviews, Government database and the National Bureau of Statistics in Nigeria, SAGE Publications* and books that supported the development of the literature

review. The selection of search keywords was helpful in the search activity. The keywords used were *digital strategy, digital transformation in business, digitization, business digitalization, technology adoption in business, business activities in Lagos, business sustainability,* and *digital leadership*.

I set parameters for the literature search to ensure the currency of the literature and relevance to the study. The parameter set included articles within three years (2018–2021) for the background and problem statement of the study. The articles from 2017 and below used were to frame the study's theories, concepts, and methodology. The search returned about 310 works of literature, but not all were relevant to the study. I filtered those not contributing meaningfully to the study and selected those relevant. Given that Lagos is the focal point of the study, inclusive in the literature selected and reviewed are works of researchers on business activities, digital strategies, transformation, and technology adoption in Lagos business. Literature outside the bound of Lagos business and transformational activities were equally part of the review to understand theories and concepts that frame the study and to have a comparative and balanced view of the phenomenon of study.

The literature review included about 214 peer-reviewed academic journals, 24 business and management reviews, publications of reputable institutions, and centers of studies. Other inclusions are 21 books from renowned authors and scholars and 6 Government publications and gazettes. About 65% of the articles reviewed are publication between the year 2018 to 2021, 25% are between the year 2015 to 2017, and 10% are below 2015. Literature within 3 years (2018 to 2021) provided the literature

review for the background and problem statement of the study to ensure the currency of the problem of study. Other literature beyond 3 years guided understanding the theories and concepts that framed this study and the historical downward trend. I analyzed the articles retrieved to extract similar traits and patterns that shape the construction of the study's phenomenon.

Methods of Analyzing the Literature

I grouped the literature into categories as related to the research themes. The main categories were the study background information, literature related to the problem and purpose statement, the framework, and study methodology and design. First, I analyzed the literature related to the relevance of theories and concepts in exploring digital strategies for managing and transforming maritime business operations in Lagos. Second, I analyzed the literature related to the historical overview and the components that drive digital strategy in transforming and sustaining businesses. I explored digital strategies and what it entails in the following themes:

1. Digital strategy roles in business management and transformation

2. Business digitization

3. Digital transformation

4. Why digital transformation and what to transform

5. Perceived challenges in transforming maritime businesses in Lagos

6. How to manage and transform maritime business in Lagos.

Conceptual Framework

The conceptual framework for this study included Wade's (2015) DBT concept of change to understand why, what, and how to transform business and realize the value in digital technologies. Based on Wade's DBT concept, I proposed an integrated digital business transformation process (IDBTP) concept. The IDBTP integrates the why, what, and how of the DBT concept to explore digital strategies business leaders in the maritime sector included to manage and transform their businesses in Lagos to guide the study in answering the research question.

Other conceptual and theoretical lenses could be relevant to exploring how business leaders digitally manage and transform their business in the business transformation construct. For example, researchers use the general system theory (GST) by von Bertalanffy (1972) to explore organizational systems with leaders, social interactions, and technologies working together in alignment to ensure the achievement of business transformation goals (Leonardi et al., 2016; Loosemore & Cheung, 2015). GST highlights the need to understand how to develop, adapt, and integrate different digital technology capabilities to promote effective systems (Caws, 2015). The GST is purposeful for studying complex structures and systems (von Bertalanffy, 1972), which is not the case in this study.

Researchers also use the technology acceptance model (TAM) developed by Davis in 1989, which focuses on the use and acceptance of information systems and technology by individual users to explore an individual's acceptance of an information system. TAM focuses on technology acceptance by individual users, whereas this study

focused on digital strategy adoption by many business organizations and leaders in Lagos. There is a need to look at business transformation processes more holistically beyond the narrow prism of technology acceptance (Nwaiwu, 2018). Researchers equally use the sociotechnical systems theory to explore organizations as two interdependent parts of complex systems: technical and social aspects (Carayon et al., 2015). The sociotechnical systems theory is synonymous with von Bertalanffy's GST with its complex structure and systems. The focus of this study was not to explore businesses in Lagos as two independent parts of complex systems or structures.

Other contrasting theories but fundamental to technology adoption and business transformation exist. Inclusive in the theories is the theory of planned behavior, which assesses behavior from different perspectives and could also be resourceful in adopting digital technologies (Ajzen, n.d; Seyal et al., 2017). Technology evolution theory (TET) focuses on advancing a complex system of artifacts driven by interactions with sub-systems and other technological systems (Coccia, 2019). The theory of reasoned action is used to investigate the link between attitude and behavior in the construct of compatibility and behavioral intention and is resourceful to access behaviors in response to digital technologies adoption (Mishra et al., 2014). The purpose of this study was to explore digital strategies that business leaders and managers in the maritime sector in Lagos may include and not technology adoption only or the users' attitude toward business digitization, making the DBT concept appropriate for this study.

Digital Business Transformation Concept

Wade (2015) defined the DBT concept as a "change through the use of digital technologies and business models to improve performance" (p. 3). DBT concept focuses on change to transform business and to realize the value in digital technologies using *why*, *what*, and *how* questions to frame its process to transform businesses (Wade, 2015). Researchers use the lens of the DBT to explore change issues in the business process to understand factors responsible for business transformation and the fundamental changes required to achieve a successful transformation in the business ecosystem (Nwaiwu, 2018).

This study benefited from the DBT concept because the DBT concept anchors on using digital technologies to transform businesses and improve business performance (Wade, 2015). DBT explains how business leaders may approach digital transformation and implement a well-defined digital strategy through process improvement and technology adoptions to positively impact business survival (Nwaiwu, 2018; Udovita, 2020). The DBT framework helps organizations access where they are in their DBT journey and foster the opportunities through technology adoption to create new business models (Buřita et al., 2018; Nwaiwu, 2018). The combined benefit of a transformational business model innovation via the DBT process and digital adoption contributes to business value and strategic importance of the DBT framework in the business transformation agenda (Schneider & Imai, 2019). However, some scholars have acknowledged some inherent risks associated with the DBT concept. Achieving a successful DBT project entails considering the DBT process beyond technology adoption

(Nwaiwu, 2018). But technology alone does not provide value without strategic

integration of other components to drive digital transformation goals (Kane et al., 2015),

hence the proposal of IDBTP concept to frame this study by integrating the DBT concept

with other component factors that characterized maritime business operation in Lagos,

transformation, and business survival in Lagos.

Integrated Digital Business Transformation Process

The IDBTP is rooted in Wade's (2015) DBT concept, integrating the why, what,

and how of DBT and other components to drive digital transformation goals. Other

components included DBT driver, impediments, leadership style, business culture,

perceptions, and operating business environment. A framework that supports digital

transformation in business using an integrated process (as the case is in the proposed

IDBTP) helps organizations minimize their risk of failure (Butt, 2020). The IDBTP

supported the exploration of digital strategies that successfully engendered the

transformation of maritime businesses in Lagos and sustainability of Lagos businesses by

answering why, what, and how to transform business in Lagos.

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Literature Review

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Historical Overview of Lagos and its Business Activities

Lagos is the business capital of Nigeria and a fast-growing state in Nigeria with a

rapid population growth of about 24 million people and accounting for about 10% of

Nigeria's population (Office of the Lagos State Government, n.d.; Olajide et al., 2018;

Olurode et al., 2018). Over the years, Lagos grew into Nigeria's central commercial and

financial hub, a host to the headquarters of most of the companies in Nigeria, and it

remains the focal point for business activities (Osho & Adishi, 2019). Business activities

in Lagos form a significant part of Nigeria's economic landscape as Lagos accounts for

about 90% of Nigeria's overall trade flows, over 53% of manufacturing employment in

Nigeria, and significantly contributing to the economic progression of Nigeria (National

Bureau of Statistics in Nigeria, 2019; Osho & Adishi, 2019). Although Lagos is one of

the smallest states in Nigeria, it is arguable that Lagos is economically the most

significant state in Nigeria.

Lagos Endowments

Current trend analysis as contained in Lagos State Government official profile

page (National Bureau of Statistics. 2020; Office of the Lagos State Government, n.d)

revealed Lagos, among other things, as:

- The central business district of Nigeria

- The largest market in sub-Saharan Africa

- Home of the Nigerian Capital and Money Market [Financial Hub]

- Hub of Nigeria/West Africa aviation, ports, and maritime activities as over
  70.61% of international traffic and 70% of total National cargo freight pass
  through Lagos.

- ICT hub of West Africa and potentially the most significant ICT market in the
  African continent

- Home to 70% of the country's total industrial investment and 65% of its
  commercial activities

- Highest vehicular density (see Appendix A)

- Has internally generated revenue (IGR) accounting for over 70% of the state's annual budget as of 2020.

- The nation's economic and financial nerve

- Home to about 65% of Nigeria's businesses with over 2,000 manufacturing companies, 200 financial institutions, and the most extensive collection of small and medium enterprises in Africa.

- Home for over 50% of Nigeria's non-oil industrial capacity and a significant contributor to Nigeria's GDP growth.

Lagos's Role in Economic Development

Lagos plays a pivotal role in the Nigerian economy as a commercial city, accounting for about 26.7% of Nigeria's total GDP (National Bureau of Statistics in Nigeria, 2019; Office of the Lagos State Government, n.d; Olajide et al., 2018). Various business sources: commerce, manufacturing, maritime, construction, food, and agriculture, make up Lagos' business ecosystem. Maritime sector businesses in Lagos contributed significantly to the GDP of Lagos, socioeconomic opportunities—job creation, and economic progression of Lagos state and Nigeria at large (Office of the Lagos State Government, n.d.; Osho & Adishi, 2019). Lagos features relatively more infrastructure than other states in Nigeria and is strategically on land, air, and sea connections which place the city at an advantage to ease the flow of business activities (Osho & Adishi, 2019). Local success stories build Lagos' reputation as a tech hub with valuable investments in the city (Adetunji et al., 2017). For example, Andela, a global technology start-up based in Lagos, attracted $24 million in funding from the Chan

Zuckerberg Initiative and Lidya raised $1.25 million for its Fintech solutions, which are a good drive for the future of the Lagos business ecosystem if properly harnessed (Adetunji et al., 2017).

Business Operation in Lagos

Although the economic variables of Lagos have traction for business, the challenges in doing business in Lagos are not unclear. Congestion and the inability of some organizations to digitally strategize their business continue to overwhelm the ease of doing business in Lagos and contribute to inevitable business closure in Lagos (Arogundade & Nwani, 2018; Chilaka, 2019; Zubairu et al., 2020). The cause of business closure in Lagos is associated to lack of digital strategies in the business process of maritime companies in Lagos, given the effect of manual and in-person processes in the maritime activities in Lagos that gave rise to gridlock on Lagos roads and the inability of business stakeholder in Lagos to access offices for active business (Arogundade & Nwani, 2018; Chilaka, 2019; Onwuegbuchunam et al., 2021). Many other studies associated crime rate increase, safety, hostile business environment, logistics flaws, and the consequent adverse effect on Foreign Direct Investment (FDI) attraction as also related to reasons for unsuccessful business ventures in Lagos. In a related opinion, Bassey (2019), Chilaka (2019), Lagos Business School (2018), and Zubairu et al. (2020) acknowledged that logistics flaws and lack of digital strategies among business leaders and technology adoptions in the business process of many organizations in Lagos have been instrumental to unsuccessful business operation in Lagos.

Technology Adoption in Lagos Business

Technology adoption in business and integration of digital strategies provides the mechanism by which business leaders improve their business process efficiency and effectiveness and transform existing business models in a technology-led way for values creation (Warner & Wäger, 2019). Zubairu et al. (2020) assessed the e-readiness of Nigeria for a digital economy and revealed that technology adoption in Nigeria with Lagos businesses in focus as the ICT hub of Nigeria lacks sufficient effectiveness. OSAC (2019) and Zubairu et al. (2020) noted that factors affecting business success and economic progression in some cities in Nigeria, such as Lagos, are correlated to social ills, hostile business environment, and non-inclusion of digital strategies and evolving technologies in the business process.

While Lagos is an ICT hub of West Africa with plans for a Digital Switch Over (DSO) across the state to foster job opportunities and business growth (Office of the Lagos State Government, n.d), the technology adoption in Lagos lacks sufficiency, and the ICT services cluster, still in its infancy (Adetunji et al., 2017). The city of Lagos is yet to achieve its goal of providing a technology-led business environment fully. Lagos is yet to achieve its objective of providing adequate infrastructure, safety, and a technology-enabled environment to foster a technology-led business operation that cuts across all sectors (Olajide et al., 2018). Although some business leaders in Lagos and Nigeria at large are adopting technologies to manage, transform and sustain their businesses, a significant number of business leaders are yet to make such transition for their business

survival given the limited capabilities that characterized technology adoption in Lagos

businesses Zubairu et al. 2020)

Inhibitions to Technology Adoption in Lagos Businesses

The study of Nigeria's digital economy (World Bank Group, 2019) and ICT

services cluster in Lagos (Adetunji et al., 2017) identified some macroeconomic and

microeconomic issues inhibiting technology adoption in Lagos businesses. Adetunji et al.

(2017) highlighted low human capacity development, weak public institutions and

infrastructures, and a less-than-an ideal business environment as the microeconomic

issues in Lagos. Conversely, the success stories like ICT Incubator - Co-creation Hub

(CcHub), the pan-African ICT consulting network Andela in Lagos, the Digital Switch

Over (DSO) project by the Lagos State Government, Microsoft customer support center

in Lagos, and Lagos as the ICT hub of West Africa seem evidence of good prospect.

Nigeria at large and Lagos, in particular, is still trying to bridge the ICT infrastructure

deficit and technology adoption gap (Nigerian Communication Commission, 2021;

Zubairu et al., 2020). Although the progress in the ICT sector in Lagos is spurring an

effort to improve education and digital skill development in Lagos, facts are lacking as at

the time of this literature review to support the availability of sufficiently strong

government-owned institutions to support IT skill development drive and to train a

sufficient number of people to be digitally skilled.

The deficiency of technology-enabled business environment and digital skills

impede the implementation of digital strategies and digital leadership foundational

building blocks (El Sawy et al., 2016; Mihardjo et al., 2019). The failure of business

leaders to articulate digital strategies, digitize the business process and capture the business value for business progression and sustainability adversely impacts business existence and may lead to the extinction of about 75% of business organizations by 2027 (Kostić, 2018). Rogers (2016) argued that DBT rounded on strategy, not technology, and posited that business leaders should explore strategies to leverage technology and innovations to transform business. A technology-led business environment and the ability of business leaders to adopt digital strategies as a critical factor in business management, transformation, and sustainability plans are fundamental to present-day business survival (Ivančić et al., 2019). Implementing a well-defined digital strategy by business leaders through technology adoption for process improvement can positively impact business survival efforts (Nwaiwu, 2018; Udovita, 2020).

Digital Strategy

Some scholars view Digital Strategy as a business plan inspired by the power of high-performance and easily accessible technologies in providing unique and integrated business functions in a way that can adapt to changing business conditions to achieve business objectives (Becker & Schmid, 2020; Warner & Wäger, 2019). Sebastian et al. (2017) defined digital strategy as the vision of doing business differently through technology adoption in providing an integrated business function that can adapt to ever-changing business and market conditions. Bharadwaj et al. (2013) described digital strategy as a fusion between IT strategy and business strategy and the combination, herein termed as Digital Business Strategy. Digital strategy is, therefore, a combination

of technological tools and well-developed business plans to tactically drive business success.

Digital strategy is a common factor in present-day business operation, given technological evolutions and innovations. Lack of digital strategy in business negatively impacts business performance and sustainability effort (Westerman, 2018). Adopting digital strategies and technologies in business is resourceful to gain a competitive advantage in the global marketplace, transform and sustain businesses (Lagos Business School; 2018; Napitupulu et al., 2018; Okundaye et al., 2019; Zubairu et al., 2020). Digital strategy pivots positive change in service delivery, the achievement of the economies of scale, and performance efficiency to foster business sustainability (Agboola et al., 2019; World Bank Group, 2019). The insight gained from Arogundade and Nwani (2018), World Bank Group (2019), and Zubairu et al. (2020) studies revealed that the lack of digital strategies among some business leaders in Lagos contributes to increasing business closure in Lagos. Lagos Business School (2018) and Okundaye et al. (2019) also discussed that the lack of Digital strategy and technology adoption in some Lagos businesses has been instrumental to unsustainable business ventures in Lagos and making sense of a study to explore digital strategies that could help change the narrative - transform maritime business operational processes in Lagos to help sustain businesses in Lagos.

The Role of Digital Strategy in Business Management and Transformation

Digital strategy is the primary point of DBT (Adner et al., 2019; Wade, 2015) and stretches beyond the conventional IT strategy of adopting technological tools for business

process improvement and remodeling business for value creation (Warner & Wäger, 2019). Digital Strategy plays a vital role in the DBT process and sustainability agenda (Abodunde, 2020; Becker & Schmid, 2020; Binuyo et al., 2019; Udovita, 2020). Digital strategy is vital in restructuring and managing business activities and addressing the challenges of using traditional-based and manual data management systems to process and manage business operation (Onwuegbuchunam et al., 2021). Digital strategy provides a framework for an inclusive corporate governance (Tijan et al. 2021).

A digital strategy with its disruptive strands has thrown many businesses into unprecedented change, and the magnitude of change, still increasing (Goerzig & Bauernhansl, 2018). Adopting digital strategies in business promotes a wide range of innovative practices and business modernization (Goerzig & Bauernhansl, 2018). Digital strategy is resourceful in the promotion of business model innovations in various sectors. Digital strategy pivots positive change in service delivery, the achievement of the economies of scale, and performance efficiency to foster business transformation, sustainability, and economic progression (Agboola et al., 2019; Agwu & Murray, 2018; World Bank Group, 2019). Digital strategy creates value in the business by applying digital resources in business operations (Warner & Wäger, 2019).

Given the strategic imperativeness of digital strategies in the business management and transformation agenda, scholars emphasized the need for business leaders to explore digital strategies to transform businesses, manage, and drive business success and sustainability (Hess et al., 2016; Singh & Hess, 2017; Vial, 2021). Business leaders can leverage digital strategies to transform their businesses, build digital

capabilities, rethink and renew their business processes, customer experience, and business models (Becker & Schmid, 2020; Wade, 2015; Vaska, 2021; Westerman et al., 2014). Business leaders who included digital strategies in the business processes provided a digitally enabled platform and practices that improved business performance (World Bank Group, 2019; Zubairu et al., 2020). Lack of digital strategy in business negatively impacts business performance and sustainability effort (Westerman, 2018). Business leaders who exclude digital strategies in the business process expose their businesses to miss value-producing opportunities to increase efficiency and transform the business model (Schneider & Imai, 2019). Digital strategies innovate rapidly, helps products and services gain market share, and scale faster (Wade, 2015). A striking case of rapid digital innovation in the marketplace is Zoom App.

Zoom's overwhelming impact and transformation in the digital world remains remarkable. Birthed by innovation, Zoom gradually replaces in-person contacts for meetings, conferences, classes, and work patterns through telecommuting (Ajayi, 2020). Digital strategy potentially reshapes markets and product offerings faster through technology adoption and disruption and places business models on a current value proposition. Business leaders who fail to adopt new technologies to articulate digital strategies lag in the digital transformation journey (Goerzig & Bauernhansl, 2018). Adopting digital solutions resonates with creating value in the business and achieving a sustainable competitive advantage (Schneider & Imai, 2019; Abbosh et al., 2018). Heavin and Power (2018) noted that some business leaders prioritize adopting technology instead of a strategic and integrated approach to achieve business digitization and transformation

goals. Nwaiwu (2018) also noted that some business leaders fail to articulate digital strategies to capture the business value from digital solutions. Instead, they focus only on technology adoption, replacing old technologies with new ones without strategic application of the tools to achieve set objectives (Nwaiwu, 2018).

Westerman's (2018) and Hilali et al.'s (2020) studies supported the view that technology alone does not provide value to a business. Westerman and Hilali et al. emphasized the need for business leaders to look at business transformation processes more holistically beyond technology adoption to apply the needful digital strategies to digitize business processes. Arogundade and Nwani (2018) and Chilaka (2019) noted many business leaders in the maritime sector in Lagos do not have the adequate digital background to digitize business processes and services, which contributed to the increasing business closure in Lagos. Some do not use digital tools and models to articulate digital strategies for business purposes. Adequate digital background drives business modernization, digitization, and transformation (Kostić, 2018). Inadequate digitization of business processes negatively impacts business transformation objectives (Westerman, 2018).

Digitizing the Business Process

Business process digitization is an essential part of business transformation. Since the era of technology evolution, business digitization has become increasingly important and gaining research interest (Becker & Schmid, 2020). Business digitization has become conventional in business, presenting to organizations the opportunity to work with technological tools and business leaders leading digitally. The use of digital technologies

drives the digital transition and helps a business shift from its existing fit to a new and improved fit (Wade, 2015). Business process digitization enhances competitive advantage and value creation in business (Goerzig & Bauernhansl, 2018). Goerzig and Bauernhansl (2018) discussed that the foremost thing to digitize the business process is to be digitally ready: acquire the digital skill, articulate digital strategies, and have a holistic digital transformation roadmap. In the view of Capraz (2020), the priority to business leaders in the business digitization process should be to know (a) "what digitization means for organizations," (b) "the needs for digitization," (c) digitization strategies, and (d) "the capabilities of organizations for digitization" (p. 4). The alignment of digitization strategies with business strategies to deliver business value is another factor that frames the success of a business digitization effort (Warner & Wäger, 2019).

Digitization Defined

There is a consistent misunderstanding about the distinction between digitization and digitalization of the business process, as both are often used interchangeably within the business and academic environments (Nwaiwu, 2018). A definition of both terms may help reduce the misunderstanding created by diverse views held on them. Scholars explained digitization and digitalization with the following definitions. Nwaiwu (2018) defined *digitization* as the "conversion of analog information into digital information" and digitalization as the "use of digital technologies to change a business model" to provide new revenue and value-producing opportunities (p. 87). In Riedl et al.'s (2017) opinion, digitization transforms business processes and models such as analog processes

into digitized business processes and models. In the view of Gobble (2018), digitization automates manual processes from analog artifacts to a digital format.

Hinings et al. (2018) discussed that the intensive orchestration of new products, processes, services, platforms, or business models are inclusions in business digitization. Other scholars (Betz, 2018; Oke et al., 2020; Phillip & Ndirpaya, 2020) argued that digitizing the business process entails developing digital strategies responsive to emerging digital solutions such as machine learning and the Internet of Things (IoT) to improve business processes. Digitization of business processes does not mean adopting or acquiring new technologies or changing individual processes (Nwaiwu, 2018). It rounds on how business leaders set digital directions for the organization to be more adaptive and responsive to change using evolving digital solutions such as artificial intelligence and the Internet of Things to create new business procedures (Betz, 2018).

Relevance of Business Digitization

Digital solutions are constantly changing the world and the way of work. A growing number of studies point to a common ground that Automation with Artificial Intelligence is the future of work, given that technological solutions are fostering work efficiency (Loebbecke, 2019; Tunç & Aslan, 2020). Integrating technologies in the work process makes it easier to create self-sustaining working environments (Capraz, 2020). Business digitization presents opportunities for a business operation to achieve sustainability goals (Tunc & Aslan, 2020; Wade, 2015). Digitization of business processes creates an advantage in cost, time-saving, and value creation (Çapraz, 2020; Loebbecke, 2019; Oyewole & Olufemi, 2020; Rachinger et al., 2019). Business

digitization presents new ways of thinking, diversity and multicultural team building to drive better business results (Loebbecke, 2019).

Digitization of business process enables innovation in business, fosters new business models, supports business leaders in attending to managerial concerns, and helped shape how business leaders manage and create values in organizations (Binuyo et al., 2019; Nadeem et al., 2018). Business leaders used the digitization of business processes to improve customer experience and satisfaction, leading to revenue increase, profit, and attainment of sustainability objectives (Becker & Schmid, 2020). Business leaders who successfully digitized their businesses to enhance business processes improved business performance and created values for their organizations (Agboola et al., 2019; Betz, 2018). Inadequate digitization of business processes in a digitally-led business environment negatively impacts business performance and competitiveness in the marketplace (Westerman, 2018).

Digitization creates an enabling environment for forming ideas around innovations that help accomplish a task and business transformation objectives. For example, in preparation for technological disruptions and response to the potential market opportunities, organizations need to enhance their capabilities and adapt to trajectories that will make business digitization and continuous businesses existence successful and sustainable. Digitization creates new procedures and processes in business, renews business processes and models to improve revenues, business profit, and facilitate the achievement of sustainability objectives (Betz, 2018; Schwertner, 2017).

Digitization Strategies

Digitization strategy integrates the components of the business into a digital platform (digitalization) to advance the flow of information in the business process and help business leaders make informed decisions (Schwertner, 2017). In the view of Kostić (2018), the strategy for digitization of business processes entails business leaders having a change in the way of thought, the way of interaction with customers, partners, and suppliers, leadership style, and business culture to accelerate the emerging digital innovation, and business operating model inclined to digitally enabled systems. Critical thought by the business leaders to envisage how to digitalize the business process, redesign the business structure, and operate businesses in a technological-led way to ascertain (a) where the digital value lies, (b) what structure and systems would deliver the maximum value, and (c) what frictions in the business that the latest technology adoptions may help to eliminate is essential in the business process digitization (Kosic, 2018). The changing customer's need is also critical to consider in any business digitization effort. Customers increasingly expect new and unique experiences in the business digitization or digitalization process (Becker & Schmid, 2020).

Business Digitalization

The concept of digitalization has become the watchword in the business ecosystem and rapidly transforming the ways of doing business. Nwaiwu (2018) explained that digitalization used digital technologies to change a business model to provide value-producing opportunities. Digitization - the process of converting analog data into digital data sets (Nwaiwu, 2018; Rachinger et al., 2019) is the framework for

digitalization. Many studies support the view that the digitalization of a business is a process of remodeling the existing business to evolve in a new way and take advantage of doing business in a technology-led way. In the view of Becker et al. (2018), digitalization does not only mean the adoption of technology for a change of individual or business processes; it includes the fundamental transformation of the entire business areas or the entire business model. Digitalization entails using digital technologies to develop a new business process for value creation (Berghaus & Black, 2017; Gobble, 2018). It may be logical to reason that the concept of digitalization responds to the evolutions and dynamics of the business world.

Evolutions in the global economy imbedded new dynamics, concepts, and implications for business digitalization and adoptions (Tunc & Aslan, 2020). The first digital revolution birthed the development of the first computers and the associated entry of new electronics, information and communication technology (ICT) in businesses to automate production processes (Becker et al., 2018). Capraz (2020) revealed that the first step of digitalization, such as automation, resonates with technologies in production and other business functions. For example, with emerging technologies, businesses today manage enormous quantities of data in the present-day Big data construct. Business leaders are well-informed of the complex view of their business information and the developments in the digital landscape (Westerman et al., 2014). Business leaders now consider accepting the "new normal" in business by plowing to digital strategies and adoptions to digitalize the business process (Tunc & Aslan, 2020).

With emerging technologies, the significance of business process digitalization continues to grow, cutting across all sectors (Becker & Schmid, 2020), and became fundamental to the formation of digital strategies in the organization (Gartner, 2017). For example, digitalization of business processes forces organizations to redefine their strategies and make their choices from various digitalization strategies (Çapraz, 2020; Tunç & Aslan, 2020). Digitalization obligates IT leaders to converse and interpret technology terms in the business language to properly understand and adopt a dynamic problem solution design (Nambisan et al., 2017). Nambisan et al. further discussed that business process digitization obligates digital leaders to converse in business language and adopt solution-oriented designs to offer digital strategies and solutions to business digitization problems.

Although digital technologies have birthed some critical business opportunities and solutions, many organizations are yet to evaluate and exploit digital solutions' potentials thoroughly and digitalization strategies to create values for businesses (Stoffels & Ziemer, 2017). Nwaiwu (2018) on the other hand noted that not all businesses can go through digitalization. It is essential that business leaders carefully define what output they expect to achieve in the context of digitalization before engaging in the business digitalization process (Nwaiwu, 2018; Rachinger et al., 2019). It is also essential for business leaders to have reliable business digitalization strategies and competencies to digitalize business processes or risk losing access to large segments of the market and sustainability goals (Çapraz, 2020).

Business Digitalization Strategies. According to Becker and Schmid (2020), business leaders need a clearly defined strategy to implement digital business models to tap into the full value-creation potential in business digitalization. Business leaders need to develop a digitalization strategy that affects all business areas and enables the business to attain a holistic digital transformation fit (Becker & Schmid, 2020). Capraz (2020) discussed that adopting digital strategies and infrastructures aids the formation of a digitalization strategy. Capraz argued that there are factors affecting digitalization within the IT infrastructure related to not having the required infrastructure, a good architecture, and structure for business digitalization.

Not having a good architecture and structure for business digitalization could hamper realizing business digitalization goals (Goerzig & Bauernhansl, 2018). For a strategic business digitalization, business leaders need to (a) adapt their business infrastructure to the new digital age, (b) the value chain to the new technologies and digital requirements, and (c) use information technology (IT) strategies to ensure a successful digitalization, survival, and sustainability of businesses (Becker & Schmid, 2020; Becker et al. 2018). Becker and Schmid noted that in the business digitization or digitalization process, the business leaders need to develop agile and scalable digital capabilities and technological architects to respond to the dynamism of the digital era. Such capabilities and architects, according to Becker and Schmid included digital leadership skills, digital team, digital culture, the right attitude, digital infrastructures, and digitally-enabled systems.

Capabilities and Architectures for Business Digitization

Business leaders leverage digital strategies to build capabilities and architecture, rethink, renew their business processes, customer experience, and business models (Vaska, 2021; Westerman et al., 2016). Digital capabilities define the business digitization or digitalization process (Tunç & Aslan, 2020). The business architecture is the blueprint of the enterprise that provides a common understanding of the organization to align tactical business demands with the organization's strategic objectives (Schinder & Imail, 2019). Sia et al. (2016) discussed that business leaders need to develop the right digital capabilities and architecture to respond to the dynamism of the digital era to incubate and accelerate emerging digital innovations to deliver business values. Business leaders need to build dynamic digital capabilities to deliver business digital transformation value (Warner & Wäger, 2019).

Digital Capabilities for Business Digitization

The development of digital capabilities is significant in the business digitization or digitalization process. Digital capabilities can improve an organization's performance and digital transformation readiness (Ravesteijn & Ongena, 2019). Various definitions exist on what digital capability means and point to digital capability as the ability to organize and deploy IT-based resources combined with other resources to create business values (Drnevich & Croson, 2013; Ravesteijn & Ongena, 2019). In the view of Tunç and Aslan (2020), digital capabilities in the business context referred to digital congruence. Digital congruence Tunç and Aslan explained are people, culture, structure, systems, tasks, and processes. Business leaders need to have reliable digital congruence and

strategies or risk losing access to potential market opportunities (Fusko et al., 2018; Tunç & Aslan, 2020). Business leaders need to develop core digitization capabilities and strategies that affect all business areas, enabling the business to achieve a holistic digital transformation that fosters business survival (Wade, 2015).

The lack of digital capabilities and architectures adversely impacts the value realization of digitization initiatives (Abodunde, 2020; Binuyo & Binuyo, 2019; Sanchez & Zuntini, 2018). Business leaders who lack digital capabilities and strategies in the digital transformation plan face challenges in realizing their expectations, experience underdeveloped digital abilities, and struggle to realize business digitization objectives (Agboola et al., 2019; Binuyo & Binuyo, 2019; Mihardjo et al., 2019; Sanchez & Zuntini, 2018). Digital capability fosters digital business agility and enables organizational leaders to be hyperaware of the future digital trend, make an informed decision, and promptly execute the necessary changes (Wade, 2015), but some business leaders in Lagos are yet to digitalize their business process, implement new ways of doing business, and realize their business digitization objectives due to a lack of digital capabilities (World Bank Group, 2019; Zubairu et al., 2020).

Realizing business digitization objectives requires strategic initiatives, digital capability, and proactive measures to deliver business values (Kostić, 2018; Warner & Wäger, 2019). Kostić discussed that the essential components of digital capabilities and architects that deliver business value in business digitization or digitalization process includes among other things; (a) having the exemplary digital leadership, (b) the right

digital team, (c) the right attitude, (d) the right digital culture, (e) the right technology and infrastructure, and (f) digitally enabled systems.

Digital Leadership. Leadership middles on the capabilities to lead and engage followers in achieving desired goals (Bolman & Deal, 2017; Osland, 2017; Latham, 2014). Mihardjo et al. (2019) asserted that leaders are essential in driving transformation and propelling business changes. Many researchers agreed that the digital leadership style is essential in any business digitalization or transformation agenda. Scholars defined *digital leadership* as a combination of the digital team, culture, and digital competence to leverage opportunities of digital technology to drive change in organizations (Mihardjo et al., 2019), the use of digital solutions to lead and effect changes in process and models to create value for organizations (Gupta, 2018), and a collaboration between leaders and employees using various digital means (Busse & Weidner, 2020). In Tarafdar's (2016) view, digital leadership includes becoming digitally mindful and teaming with digital colleagues.

Gupta (2018) asserted that digital leadership extends to the intersection of strategy, skills, culture, and digital solutions to create business value. In a related opinion, Nambisan et al. (2017) added that digital leadership entails digital innovation management. *Digital leadership* is a culture that enables an organization to digitally transform (Kane et al., 2015; Ravesteijn & Ongena, 2019). Digital leadership encourages teams to experiment with digital solutions, reimagine processes, think critically, and have a digital vision (Gupta, 2018). The literature revealed a digital divide and a lack of digital leadership in some business organizations in developing cities like Lagos (Okunola et al.,

2017; World Bank Group, 2019; Zubairu et al., 2020). The absence of digital leadership in organizations stalls business digitalization and transformation endeavors (Hess et al., 2016). The insight gained from various scholars' thought points to a common ground that digital leadership is not limited to acquisition and leading with new technologies, digital supremacy, or organizational change management but includes becoming digitally mindful, developing the required digital leadership skills, culture, and teaming with digital colleagues.

Digital Leadership Skills. Digital skill is essential for business planning to transit to a digital economy. As the case is in Lagos, some business leaders have a limited digital background to digitize business processes and services (World Bank Group, 2019; Zubairu et al., 2020). Studies revealed that a shortage of digital skills is a significant impediment for organizations willing to implement digital transformation. Having the required digital leadership skill to lead businesses through business digitalization is essential in any DBT initiative (Hess et al., 2016). Becker & Schmid (2020) noted that for businesses to tap into the full value-creation potential of business digitization, leaders with a clearly defined strategic orientation and capabilities to implement digital business models are needed.

To implement digital business models and drive digital transformation goals, business leaders in corroboration with the IT leaders need to develop responsive digital leadership skills. Such skills Hess et al. (2016) suggested should include digital transformation backgrounds helpful to understand how to formulate and implement effective strategies for the digital transformation of businesses. With technology evolving

faster than the rate at which digital skills are, Gupta (2018) asserted that digital leaders

should align digital skills and vision that revolutionized with technology evolutions to

reimagine the customer experience and reinvent the business models to keep pace with

technology evolutions.

Business leaders who lack digital leadership skills are often unclear about which

option and element to consider in their business digitalization process and digital

transformation effort (Hess et al., 2016). Conversely, business leaders who had digital

leadership skills kept track of their organizations' infrastructures and technological

advancement trends and promoted digital culture and collective understanding among

teams to articulate digital strategies for digit business processes (Gbangou & Rusu,

2016). Digital leaders should have improved digital intelligence to implement strategies

successfully to digitize business processes (Phillips & Kiron, 2017). A digital leader in

the organization should have a rounded knowledge of the business digitalization process

and be aware of the factors that impact digital business.

Digital Leaders' Responsibilities. Digital leadership supports the modernization

of organizations and fosters responsibilities on digital leaders in realizing business

digitalization objectives (Iden & Eikebrokk, 2015; Nambisan et al., 2017). Nambisan et

al. explained that business digitalization obligates digital leaders to converse and interpret

technology terms in the business language for proper understanding and adoption of a

dynamic problem solution design. Tumbas et al. (2017) added that digital leadership role

entails the digital leaders in business to be digital catalysts in organizations to facilitate

digital transformation. The ability to handle business digitalization and manage the

complexity that characterized the drive for business digitalization are inclusions in the digital leadership functions (Bathallath et al., 2016).

Northouse (2016) asserted that a crucial task in leadership is to provide vision, inspiration and develop a good fit among teams. Relating to the opinion of Northouse, skillful digital leaders should be a source of inspiration to teams, visionaries, catalysts, and head-on persons to lead teams to think innovatively in achieving digital transformation objectives. Digital leaders provide vision and purpose, empower teams to think differently, and enable collaborations across boundaries to navigate digital trends (Kane, 2018; Ravesteijn & Ongena, 2019). Digital leaders should be innovators and resilient in pioneering change management and digital transformation of the business process. Digital Leaders are responsible for integrating digital strategies with the organizational objectives in digitizing the business process (Kane et al., 2015). Digital leaders should ensure connection among teams. Such connection Sebastian et al. (2017) stated includes using a common digital platform for employees' engagements with each other, customers, and partners. Digital leaders should be digitally mindful of their priorities and drive teams with a reliable and clear roadmap (Tarafdar, 2016).

Kobus et al. (2018) emphasized that digital leaders should challenge the status quo (existing reality) and adopt new strategies and mindsets to rethink and renew the business process. Kobus et al. (2018) recommended the Lean IT Management (LIM) process for remodeling the business process to eliminate wasteful activities, which they described as discerning between waste and value in the IT framework. Kobus et al. explained waste in the context of LIM as the activities that consume resources in the

organization without creating value. Digital leaders that adopted the LIM concept to eliminate wasteful activities made remarkable progress in their business digitization process (Kobus et al., 2018; Majchrzak et al., 2016). El Sawy et al. (2016) discussed that business leaders who effectively implemented digital strategies adopted some fundamental digital leadership building blocks, which include (a) skillful and digitally minded team, (b) digital culture, (c) digitally integrated and enabling platform, and (d) shared digital objectives.

     Digital Team. The human element is essential in the goal of business digitization and transformation. Hiring or developing a skillful team helps propel businesses progressively (Northouse, 2016; Warner & Wäger, 2019). A digitally experienced team is critical in digitizing the business process (Sebastian et al., 2017). Organizations require digitally inclined teams and leaders who lead digitally in the digital business process given that leading a digital team is one of the challenges in a contemporary organization (Asatiani & Penttinen, 2018). To meet the challenges related to digital leadership in business digitization and transformation agenda, teams need digital skills to navigate through the trend of digital transformation (Ravesteijn & Ongena, 2019). Bughin et al. 2017) recommended that digital leaders improve their organization's digital intelligence and make teams digital savvies by hiring digital talents to innovate and digitize business activities. For effective digitization of business processes, digital leaders need to hire and retain a digitally ready team to drive digital transformation initiatives, given that good team composition is vital in every business (Northouse, 2016). Awareness of and

sensitivity to digital cultures is also essential in building a digital team and business digitization.

Digital Culture. The strategy for digitizing business processes entails inclusive strategic initiatives and measures inclined to change in business model and approach (Kostić, 2018). Such measures Kostic stated include business leaders, changing the way of thought, interaction with customers, partners, suppliers, leadership style, and business culture. Business leaders who decline to adapt to changing business culture birthed by new technologies and struggle to articulate digital strategies are likely left behind (Goerzig and Bauernhansl, 2018). Business leaders should adapt to a culture that accelerates emerging digital innovation (Kostić, 2018). Business leaders need to see digital technologies as a protocol to change the existing business culture and method of doing business, renew customer experience, empower the employees, and transform business processes (Vaska, 2021; Westerman et al., 2014). With the right culture, attitude, and practice, digital leaders can maximize the productivity of teams they lead to turn investments in technologies and digital transformation into a competitive advantage (Ravesteijn & Ongena, 2019).

Right Attitude. Attitude is critical to adaptive functioning, and one of the critical factors to success is the mindset of the people within the success pursuit construct (Bolman & Deal, 2017). A positive mindset beseeches positive results. The attitude to the use of technology and the ability to conceptualize a digital approach to business processes is critical in any business digitalization objectives (Vasilescu et al., 2020). Business leaders who successfully applied digital strategies to digitize their business

processes develop a digital mindset to see from the digital lenses on digital solutions that could benefit their organizations (Tarafdar, 2016). Digital maturity is resourceful in enabling business leaders to create a new disruptive digital business process (Kane et al., 2018). There should be a digital maturity among business leaders and teams related to having an appetite for experimentation and willingness to adapt to digitally-enabled systems (Kane et al., 2018; Sousa & Rocha, 2019).

To be digitally optimistic, resilient, willing, and regardless of the risk and cost to face the digitalization process and address the difficulties inherent in the process help in any business digitalization agenda (Çapraz, 2020; Loebbecke, 2019). Digital leaders and teams need to embrace change in attitude and build the infrastructures of the mind and architects committed to achieving digital transformation goals regardless of the complexities. A shift in attitude is needful to drive change in process and practice. Olsen and Trelsgård (2016) recommended a solid commitment to investment in digital architects, infrastructures, and re-skilling the teams as essential in the business digitalization agenda.

Digital Architecture for Business Digitization

Digital architectures, inclusive of software and hardware solutions are the vital tools needful for organizations' modernization and realization of the potential of digital investments (Olsen and Trelsgård, 2016). Business leaders who had exemplary digital architecture were adaptive to digital strategies for their business transformation (Hazra & Unhelkar, 2020; Olsen & Trelsgård, 2016). Digital architectures are the enablers of digital transformation in organizations. Business leaders must integrate and align digital

strategies and architectures with critical strategic thoughts to solve business problems and deliver value. Digital architectures pivot a suitable structure that supports the alignment of the technology landscape with business models and strategies (Goerzig & Bauernhansl, 2018). Warner and Wäger (2019) asserted that business leaders with dynamic digital architectures and capabilities delivered business digital transformation values. Sebastian et al. (2017) stated that such architecture entails defining the right digital solutions and emerging technologies, building technical support and infrastructures to facilitate operational excellence, and adopting digital platforms and architects that enable rapid innovation and responsiveness to new market opportunities.

Digital Solutions. Digital solutions are emerging technologies or innovative software and implements that support business leaders to digitalize business processes, manage interactions and transactions in the business process (Betz, 2018; Coccia & Watts, 2020; Pagani & Pardo, 2017). Such technologies include Artificial Intelligence (AI), IoT, Blockchain, and cloud computing (Betz, 2018; Oke et al., 2020). Pagani and Pardo (2017) explained that the foundations for digital solutions and emerging technologies included (a) the ability of business leaders to foresee the horizon of business digitization, (b) decision making driven by data, and (c) rapidity and agility in implementation. A good foundation and integration of the right digital solutions in the business process fosters new business models and promotes customers' satisfaction (Pagani & Pardo, 2017; Stoffels & Ziemer, 2017). Work efficiency, improved performance, and organizational sustainability are in the business process's value chain of digital solutions (Loebbecke, 2019; Tunç & Aslan, 2020).

Digital solutions create business values and enable business transformation (Pagani & Pardo, 2017; Schneider & Imai, 2019; Stoffels, & Ziemer, 2017). Business leaders can digitally transform their organizations and mitigate the risk of losing access to significant opportunities leveraging digital solutions and emerging technologies (Fusko et al., 2018), but some business leaders and managers in the maritime sector businesses in Lagos lack digital strategies to capture the business value from digital solutions. Given that digital solutions enable the rapid formation of ideas, modifications, and reenactment through repeated cycles of experimentation and implementation (Abbosh et al., 2018), digital leaders could innovate faster and quicker using digital solutions. To benefit from the full potentials of digital solutions, business leaders need to make investment decisions inclined to adopt digital solutions and infrastructures required to replace old and underperforming digital implements with new and innovative ones.

Digital Infrastructure. Digital infrastructures are state of the art in the framework of business digitization and transformation (Nambisan et al., 2017). They are inclusions in digital business strategies (Çapraz, 2020) and are in the categories of human, social, institutional, and technical infrastructures (Adetunji et al., 2017). The human infrastructure is the human element (leaders, teams, and other stakeholders) in the business digitization process. The social infrastructures are the social media linkages (business websites, LinkedIn, Instagram, and others) inclined to enhance customer experiences and business values. Institutional infrastructures are organizations or government mechanisms (adequate power supply, intermediary organizations supporting the ICT services, broadband networks, and others) for digital business operations. The

ICT infrastructures are the systems architectures (computers, smartphones, organized repositories, and other devices) that can enhance digital interactions and interconnectivity in the business process. Organized repositories include the Web Server, relational database, data storage points, and backup facilities (Adetunji et al., 2017). To benefit from the potency of digital infrastructures, business leaders need to make investment decisions inclined to implement digital infrastructures and enabling-digital platforms to capture business value.

Digital Platforms. Business execution in a technology-led way requires collaborative network architecture with a specific set of digital tools (Busse & Weidner, 2020). Busse and Weidner stated that such tools include e-mail, discussion boards, chat rooms, and other telecommuting platforms. Telecommuting platforms integrate various digital tools for interaction or remotely working from a distance (Ajayi, 2020). More recent innovations like Zoom, Google Meet, GoToMeeting, Microsoft Office 365, Facetime, Adobe Connect, Amazon Chime, Digi-Tell, and others as at the time of this study offer digital collaborative networks and platforms for business operation and facilitation of the digital business process. Although a growing number of studies argued that digital tools and platforms present both valuable opportunities for business transformation and threats to the safety of business operation and existence (Sebastian et al., 2017), business leaders need to embrace innovative technologies and platforms to articulate digital strategies to capture business value, remain sustainable and competitive in the global market.

Digitally Enabled Systems. Many studies point to a common ground that having a digitally enabled system is pivotal for businesses to navigate the digitalization process and achieve their transformation objectives. Adopting a structured system by digital leaders to articulate digital strategies to capture business value is essential in the business digitization process (Anand et al., 2016). Business leaders need to implement structures and processes that enable teams to experiment collectively with technologies to deliver business values in the business digitization process (Goerzig & Bauernhansl, 2018). Business leaders need to make investment decisions intended to have digitally enabling systems aligned with the business's digital objectives to foster DBT.

Digital Strategy Alignment. The alignment of digital strategies with business objectives is significant in any business digitization initiative. The alignment between digital and business strategies happens when digital leaders establish innovation capabilities to shift from a business-unit focus to a digital process focus using digital solutions (Majstorović, 2016; Svahn et al., 2017). Some business leaders struggle to align business objectives, emerging technologies, and digital strategies in the business digitization effort (Jia et al., 2018; Luftman et al., 2013). As organizations shift towards a digital strategy, misalignment between the emerging strategies and business strategy cause worries on how to achieve digital transformation of businesses (Yeow et al., 2018). Arguably, misalignment of the business objectives with digital strategies may affect business leaders in achieving set business goals. Digital leaders need to align the digital strategies and the organization's strategies and objectives (Yeow et al., 2018).

While business leaders align strategies at the organizational level, it is also essential to align digitization strategies at the processes level. Aligning the business strategies to business activities is essential for successfully implementing digital strategies and digitizing the business process (Goepp, & Avila, 2015). It is essential to have a structured digital strategy formation and alignment with organizational strategies, business to business (B2B) alignment, and business to customer (B2C) alignment in business digitization or digitalization process (Yoew et al., 2018). Digital leaders need to align digital strategies and business capability with the business objectives. Digitalizing business processes and aligning them with a business strategy may enhance business transformation, performance, and competitiveness in the marketplace.

Business Transformation

The business world constantly changes and evolves with new opportunities, needs, and challenges to capture business values. The advent of information and digital technologies presents transformation agendas in business operations. Scholars defined business transformation (BT) as a change in business model and process to improve performance (Wade, 2015) or a fundamental change that pivots reinvention of things in business (Freudenreich et al., 2019). From the change management perspective, the term "business transformation" refers to the extent of strategic change in the paradigms of doing business (Goerzig & Bauernhansl, 2018). The definitions of BT pointed to it as an inclusive change that exposes businesses to reinvention and transition. The reinvention can be in the ways of operation and process, manually, digitally, or both (Freudenreich et al., 2019). The emphasis of this study however, is on DBT.

Digital Business Transformation

The evolution of digital technologies presents alterations in business conduct and interactions, broadened the scope of business changes, and placed businesses on the radar of digital transformation (DT) for business success (Tunç & Aslan, 2020; Wade, 2015). Business leaders now adapt to digital tools such as AL and IoT to transform business operations and processes and capture business values. Scholars use the term DT and DBT interchangeably. The term DBT is inclined to change in business aspect while DT is inclined to technology evolution in various aspects of life (Wade, 2015). DBT, which used technologies to improve business processes and systems, business performance, competitive advantage, and corporate outcome (Schwertner, 2017) has continued to gain research interest in academic practice.

While existing literature demonstrated great research interest on DBT, there is evidence of a lack of shared understanding of the meaning of DBT. Both research and practice exhibited diverse views on the meaning of DBT. Some scholars described DBT as a continuous and revolutionary undertaking that goes beyond business borders (Hess et al. 2016; Ismail et al., 2018), while some described it as a process of reinventing a business to digitize operations (Freudenreich et al., 2019; Schallmo et al., 2017). Schwertner (2017) described DBT as applying technology to build new business models, processes, systems that result in more profitable revenue, more significant competitive advantage, and higher efficiency. Microsoft (2020) described DBT as the use of technologies to enable business improvements. In the opinion of Singh and Hess (2017), DBT stretches beyond an increase in revenue generation, functional thinking but includes

the comprehensiveness of actions taken to exploit the opportunities that stem from digital technologies.

Wade (2015) acknowledged diverse views held on the meaning of DBT and based the definition of DBT on the practical needs of business leaders to drive performance benefits from their investments in digital tools and technologies. Wade described the DBT as a "change through the use of digital technologies and business models to improve performance" (p. 3). The diverse views on DBT point to it as an integration of digital technologies into all aspects of business, leading to a fundamental change in business operation and process. A business transformation is digital when it is on a foundation of digital technology (Wade, 2015), given that DBT pivots on the use of information and digital technologies to impact various facets of the business operation. DBT is an inevitable part of today's business process to drive business success and sustainability (Warner & Wäger, 2019). Given the conceptual framework of this study, IDBTP rooted in Wade's (2015) DBT concept of Why, What, and How, discussion on DBT would be in the framework of what drives DBT and why DBT in maritime business in Lagos, what to transform, what challenges DBT in Lagos maritime businesses, and how to transform Lagos maritime business operation.

Digital Business Transformation Drivers. DBT drivers are attributes that enable digital transformation and could be internal or external triggers of organizations' engagement in DBT (Wade, 2015; Westerman et al., 2014). Technology drives DBT and, to some extent, by industry, sector, and geography (Freudenreich et al., 2019; Wade, 2015). Existing studies (Kane et al., 2015; Schwertner, 2017) identified digital strategies,

technologies, capabilities, business models, digitally savvy teams, and a culture of

change, among other things, as drivers of DBT in organizations. Ezeokoli et al. (2016)

attributed DBT drivers to the need for profitability and revenue growth, customer

satisfaction, increased operational efficiency, increased business agility, and increased

employee productivity and competitive advantage. Wade (2015) noted that using

analytics tools and applications such as big data artificial intelligence, mobile tools and

digital platforms like cloud solutions, and social media tools to build shareable digital

capabilities, the IoT, and culture of change is essential in DBT drive and business

sustainability in the present-day digital era.

Business Sustainability

One of the overriding strategic goals of most businesses is to continue active

business and remain sustainable, but that seems not happening among most businesses, as

the Global State of Small Business Report indicates that the business closure rate is still

increasing globally (World Bank et al., 2020). Sustainability is the process of keeping up

well over a long time to meet current needs without compromising the future needs from

an economic, environmental, business, and social standpoint (Garg, 2017: Melinda et al.,

2018). Meflinda et al. (2018) explained sustainability in the business context as the

capacity of a business organization to have perpetual existence and be resistant to factors

that can impede its growth, performance, and survival. Digital strategy enhances

productivity, business performance, transformation, and sustainability (El Hilali et al.,

2020). Business transformation supports the endeavors of organizations to develop in a

resilient and sustainable way (Esses et al., 2021; Oskam et al., 2021). A technology-led

business environment and the ability of business leaders to adopt digital strategies as a critical factor in business sustainability plans are fundamental to present-day business survival (Ivančić et al., 2019).

Review of Studies on Digital Strategy for Business Transformation

Strategy plays a crucial role in the digital transformation processes (Udovita, 2020). Lack of strategy in business adversely affects business function and attainment of sustainability goals (Westerman, 2018). Digital strategy is a common factor in present-day business operation, given technological evolutions and innovations. Several studies support that organizations and industries across different sectors have adopted digital strategies for business transformation. Ajayi (2020) and Zubairu et al. (2020) revealed that an increasing number of business leaders and managers in Lagos are giving to digital strategies to manage and transform their business while a significant number of them are still looking up to the ability to accelerate digital strategies to manage and transform their businesses to achieve business sustainability goals.

Adopting digital strategies and technologies in business is resourceful to gain a competitive advantage in the global marketplace, transform and sustain businesses (Lagos Business School; 2018; Napitupulu et al., 2018; Okundaye et al., 2019; Zubairu et al., 2020). DBT is a significant factor to consider in any business operation intended to move in a progressive direction. The evolution of digital technologies presents new opportunities and unique solutions to business problems, broadens the scope of business transformation, and places businesses on the radar of sustainability (Esses et al., 2021; Tunç & Aslan, 2020; Wade, 2015). According to Wade (2015), a business transformation

is digital when it is on the foundation of digital technology, given that DBT formation pivots on the use of information and digital technologies to impact various facets of the business operation.

Warner and Wäger (2019) explored how companies in traditional industries build dynamic digital transformation capabilities in their business and found that digital transformation is a continuous process of using new digital technologies in everyday organizational life. Through core mechanisms, digital transformation strategically renews the organization's business model. Schneider and Imai (2019) evaluated the Digital Transformation of Business Models (DTBM) in the framework of innovation driven by digital technology. Schneider and Imai found that achieving a renewed business model and sustainable competitive advantage requires business leaders to exploit emerging technologies' disruptive potential to transform business models, value chains, and presence in the market environment. To understand the impact of digital technologies on a business model, Vaska et al. (2021) reviewed the transformation impact of business models focusing on the impact of digital technologies on a business model. Vaska et al. established that digital transformation positively impacted value creation and emphasized the need for business leaders to deploy digital technologies to find growth opportunities to remain competitive and sustainable.

Binuyo et al. (2019), on the other hand, evaluated the effects of innovative strategies on the transformation, growth, and sustainability agenda of some firms in Lagos, focusing on fast-moving consumer goods. Binuyo et al. found that innovative strategies through technology adoptions significantly affected the transformation, growth,

and sustainability of fast-moving consumer goods firms in Lagos. The authors did not

extend the study to other sectors. Agboola et al. (2019) expanded the study of

understanding digital transformation effect to the banking sector and investigated the

digitalization process in commercial banks in Nigeria to understand how digitalization

can enhance the performance of commercial banks in Nigeria. Agboola et al. found that

digital technology inclusion in service provision helped transform banking operations in

Nigeria- fostered a drastic reduction in illiteracy related to technology use, and pivoted a

better service delivery and sustainable business operation.

Accordingly, Onwuegbuchunam et al. (2021) tried to understand the level of

inclusion of digital strategies in the maritime sector, focusing on Nigerian Ports Terminal

Operations. Onwuegbuchunam et al. (2021) concentrated their study on evaluating the

level of ICT application in Nigerian Ports Terminal operations. Onwuegbuchunam et al.

found that the application of ICT strategies in the business operation of maritime

companies in Nigeria will be resourceful in transforming maritime business operations in

Nigeria. They highlighted some constraining factors responsible for the non-inclusion of

ICT in Nigerian port terminal operation. Such factors, Onwuegbuchunam et al., explained

to be low ICT investment budgetary allocation, lack of e-skilled workforce, poor

infrastructure, lack of integrated ICT facilities operated by other port stakeholders, and

absence of Port Community Systems network (PCS) linking all other relevant interests

connected to terminal operations within and outside the shores of Nigeria. The study did

not extend to using ICT and integrating other digital implements – digital team, culture,

attitude, and digitally-enabled system to support business leaders in the maritime sector to digitalize the business processes and transform maritime business operation in Lagos.

Sanchez and Zuntini (2018) tried to understand the capabilities to aid organizations' readiness for a digital switch-over. Sanchez and Zuntini reviewed organizations' readiness for the digital transformation in the changing business environment to formulate a framework that explains the capabilities necessary to respond to the dynamism of the digital era in businesses. Relatedly to the findings of Onwuegbuchunam et al. (2021), Sanchez and Zuntini found that some external and internal conditions influence the path to digital transformation in business. Sanchez and Zuntini pointed out that relevant digital skills, platforms, and digitally-enabled systems are drivers of DBT.

Zubairu et al. (2020) assessed the readiness of Nigerians to transit to a digitalized economy. Zubairu et al. study collaborated the findings of the World Bank Group (2019) that some organizational leaders in Lagos are already implementing digital strategies to manage and transform their businesses in Lagos while some are not. Conversely, Oke et al. (2020) assessed the challenges associated with the inclusion of digital strategies -the IoT in the construction business in Nigeria to increase the awareness and usage level of the Internet in Nigerian businesses. Oke et al. confirmed business leaders and managers in Lagos' awareness of the use of the IoT and the effect on business, but the principles not effectively utilized, to support their business transformation and help bridge the digital skill gap identified and minimize business closure in Lagos.

Conceptually, Nwaiwu (2018) studied the frameworks on DBT by comparing conceptual frameworks on DBT. Nwaiwu identified the why, what, and how to transform (DBT) concept by Wade (2015) as vital components for a successful DBT. Nwaiwu did not extend the study to answer the why, what, and how to transform questions in Lagos businesses. Arogundade and Nwani's (2019) study acknowledged a marked trend of job and revenue lost in Lagos and increased business closure rate. "Approximately 40% of businesses located around the ports communities in Lagos have either relocated to other areas, scaled-down operations, or completely closed down" Arogundade & Nwani, 2018, p. 4; TVC News Nigeria, 2020), and the cause, not unrelated to failed regulatory and environmental policies, logistics flaws, digital skill gap, and non-inclusion of Technological Tools and strategies in the business process.

The related studies on digital transformation left a gap in the literature on articulating digital strategies to address the digital skill gap among Lagos business leaders and managers in transforming Lagos businesses and minimizing the increasing rate of business closure in Lagos. No study explored strategic digital intervention measures to manage and transform maritime businesses in Lagos to minimize the increasingly detrimental effects of maritime activities in Lagos. Microsoft (2020), in their examination of digital transformation as a means for social, business, and economic progression in Nigeria, emphasized the need to digitalize businesses in Lagos. Microsoft revealed that without efforts to improve national digital awareness, readiness, and inclusion of digital strategies in all business sectors, the digital transformation of businesses in Nigeria and its benefits might remain limited.

Digital Strategies in the Maritime Businesses Operations in Lagos

Although literature revealed digital transformation in the Nigerian business ecosystem (World Bank Group Diagnostic Report, 2019) and Lagos with plans for a Digital Switch Over across the state (Office of the Lagos State Government, n.d), the inclusion of digital strategies in the business process of many businesses in Lagos remains limited (Zubairu et al., 2020). Adopting new technologies and the inclusion of digital strategies in the business processes are impactful in driving business to a progressive direction and sustainable fit in the marketplace (Kostić, 2018). Rachinger et al. (2019) revealed that implementing digital technologies and strategies pivot business success related to experiencing optimized resource utilization, reduced costs, increased employee productivity, and work efficiency. Business digitalization fosters the effective use of technology tools to reduce transaction costs in the business value chain.

The lack of digital strategies in a business process negatively impacts business performance and competitiveness in the marketplace (Buřita et al., 2018; Nwaiwu, 2018; Wade, 2015). The lack of digital strategies places the maritime businesses in Lagos at a competitive disadvantage among their digitized counterparts, with an attendant adverse effect on the leader's and a manager's ability to leverage digital strategies to capture business values. It causes slow documentation processes, delays in cargo clearance and container examination procedures, and congestion on Lagos roads (Arogundade & Nwani, 2018; Onwuegbuchunam et al., 2021). Given the effects identified in the business operation of LMBs, the inclusion of digital strategy in the maritime business operation in Lagos is essential to reshape all aspects of maritime business operation in Lagos.

Digitizing the business process can reshape every aspect of modern business (Olanrewaju & Willmott, 2013). The maritime sector in Lagos may need the digitization of the business processes to reshape every aspect of the business operation. Digitalizing maritime business operations in Lagos may help reduce Lagos' operational and logistics flaws and business success limiting factors in Lagos. As illustrated in the graphic from Expert interviews; McKinsey analysis (see Figure 1), digitizing maritime business operations in Lagos can reshape the customer experience, product and service innovation, distribution, marketing, sales, risk optimization, corporate control, and digital fulfillment.

Figure 1

How Digital Process Can Reshape Every Aspect of Modern Enterprise
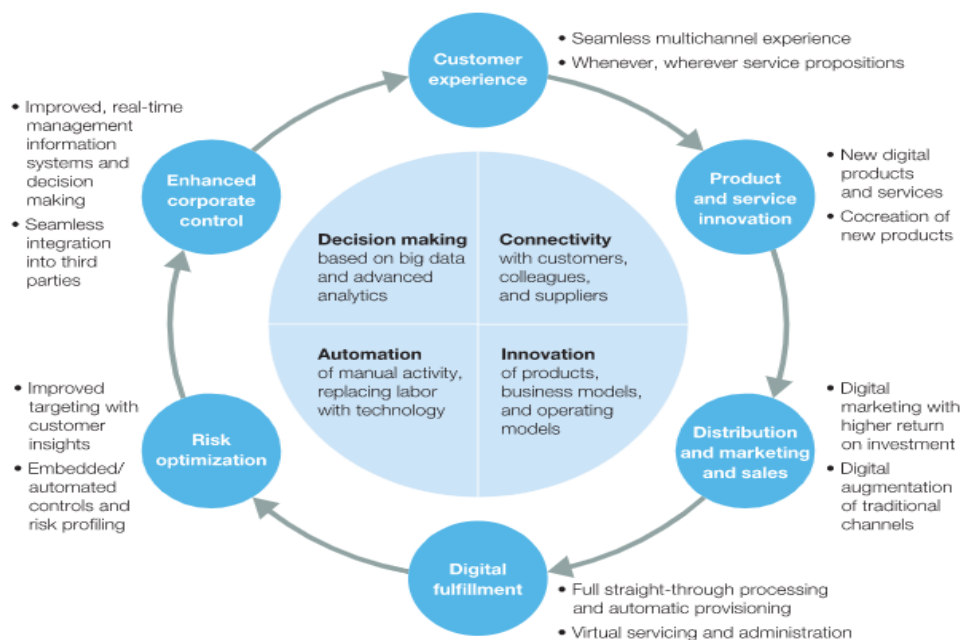
Note. This diagram was adapted from expert interviews of McKinsey analysis as cited by Olanrewaju and Willmott (2013). McKinsey & Company used the model to understand how business digitalization can reshape every aspect of modern enterprise from customer experience, product and service innovation, distribution, marketing, sales, digital fulfillment risk optimization, and corporate control.

Business leaders digitize business processes to enhance customer experience and satisfaction, which in effect may lead to an increase in revenue, profit, and chances of business sustainability (Becker & Schmid, 2020). As shown in Figure 1, the maritime sector in Lagos needs business digitization to enhance the customers' experience for seamless and multichannel access to business transactions in the service propositions through the digitalization of products and services. It shows from the diagram that digitalizing can enhance distribution and market-oriented services. Digitalizing the maritime sector in Lagos could enhance distribution, market-oriented services, and higher return on investment by replacing the traditional (delayed and in-person) operating method with a digital (virtual servicing) approach leveraging digital tools and platforms.

As depicted in Figure 1, the digitization of the maritime sector in Lagos could enable risk optimization. The maritime sector in Lagos will embed automated control and risk profiling to enable risk optimization in business. Digitization of the maritime sector in Lagos may help to improve time management and information system, given that the automation of information flow systems in a digitalized business process, as shown in Figure 1, can enhance the decision-making process and corporate control of business operation (Olanrewaju & Willmott, 2013; Schwertner, 2017).

Digital Transformation in Maritime Businesses in Lagos

The *why transform* question is the primary point of DBT as the answer justifies transformation (Adner et al., 2019; Wade, 2015). Digital transformation presents game-changing opportunities for businesses (Sebastian et al., 2017), and if a business must remain competitive and sustainable in the present-day business economy, the leaders

must be responsive to digital transformational strategies pertinent for business survival

(Schwertner, 2017). Among other things, limited digital skills, strategies, and inadequate

digitally-enabled systems, slow documentation processes, delays in cargo clearance and

container examination procedures, and the resultant congestion on Lagos roads and

business closure in Lagos (Arogundade & Nwani, 2018; Onwuegbuchunam et al., 2021).

Concerned about the business sustainability in Lagos, the need for the digital

transformation of maritime business operations becomes inevitable. World Bank Group's

(2019) and Zubairu et al.'s (2020) studies on Nigeria's digital outlook affirmed the lack

of DBT among most businesses in Lagos. From the insight gained on "Why Inclusion of

Digital Strategies in the Maritime Businesses Operation in Lagos," the essentiality of

DBT in maritime business operation in Lagos is apparent. The maritime business sector

in Lagos may need digital transformation to:

Keep pace with the changing business world. Berghaus and Back (2017)

emphasized the need for businesses to keep up with digital shifts and changes in the

competitive landscape. The maritime business sector needs digital transformation to keep

up with the digital shifts and changes in the competitive landscape. Digital transformation

drives the digital transition of businesses and helps businesses shift from their existing fit

to a new and improved fit (Wade, 2015). The maritime business sector needs to keep

pace with the changing business world to capture business values and remain competitive

in the marketplace.

Reposition businesses for growth. Alizadeh (2017) emphasized the need for

business leaders to capitalize on the rapidly growing digital economy to reposition

businesses for growth. Digitally transformed organizations are more profitable than their

non-transformed competitors within the same industry (Westerman et al., 2014).

Westerman et al. discussed that business leaders leverage digital transformation to build

capabilities to remodel their business models, drive efficiency in their existing processes

and business growth. Ezeokoli et al. (2016) also attributed DBT to the need for

profitability and revenue growth, customer satisfaction, increased operational efficiency,

increased business agility, and increased employee productivity and competitive

advantage. Lagos' maritime business sector needs digital transformation to enhance

profitability and revenue growth, customer satisfaction, increased operational efficiency,

business agility, productivity, and competitive advantage. The maritime business sector

needs DBT for business growth.

Mitigate the risk of losing access to significant opportunities. The maritime

business sector needs digital transformation to mitigate the risk of losing access to

significant opportunities accrued to the digital transformation of businesses. Businesses

that lack digital transformation suffer exposure to missed value-producing opportunities

to increase efficiency and capture business values (Nwaiwu, 2018; Schneider & Imai,

2019). The maritime business sector needs to transform to a technology-led way or risk

losing access to potential market opportunities (Fusko et al., 2018; Tunç & Aslan, 2020).

Adequately manage business interactions and transactions. Pagani and Pardo

(2017) noted the importance of digital solutions in managing business interactions and

transactions. It is essential to equip the maritime business sector with digital solutions and

emerging technologies to transform the business processes - interactions and transactions

to enhance operational efficiency. Transforming the maritime business sector with digital solutions may improve service provision, transaction volume, and customers' satisfaction, enhance operational efficiency, and minimize the detrimental effects of maritime activities in Lagos to achieve the sustainability goals of Lagos businesses.

What to Transform in Lagos Maritime Businesses

Studies identified different areas that need transformation during the digital transformation process. Westerman et al. (2014) recommended digital transformation in customer experience, operational processes, and business models, given that business mostly feel the inclusiveness effects of digital transformation in these three key areas. In answering the "What" to transform question, Wade (2015) recommended tools like the Digitization Piano to take businesses to decide what to transform. Wade's Digitization Piano recommended digital transformation in the business model, structure, process, people, capability, and business offerings. Given the insight gained from the literature review, the maritime sector may need digital transformation in the aspects of:

Business Models

The business model referred to the description of how businesses create and commercialize value (Peric, et al., 2017). Zubairu et al. (2020) identified that some businesses in Lagos suffer inadequate business models. The DBT concept helps organizations access where they are and foster opportunities through technology adoption to create new business models to enhance competitiveness in the marketplace (Buřita et al., 2018; Nwaiwu, 2018; Wade, 2015). Business model innovations facilitated by technologies' disruptive potential or digital strategies enable businesses to transform and

interact in new ways to create value (Schneider & Imai, 2019). The maritime business sector in Lagos needs transformation of the business models to fit into the present-day digital business ecosystem.

Leadership Style

A significant number of business leaders and managers in Lagos focus on cost reduction with a low appetite for technology adoption and strategically transforming their businesses in a technology-driven way (Arogundade & Nwani, 2018; Chilaka, 2019). To excel in the present-day business operation, Becker and Schmid (2020) recommended the need for agile and scalable digital capabilities to respond to the dynamism of the digital era. The essential components of digital capabilities that deliver business value in the business transformation process include, among other things, having exemplary digital leadership (Kostić, 2018). The leadership style adopted for business management influences the organization's performance (Bolman & Deal, 2017; Noerthouse, 2016). A transformational leadership style inspires optimal performance and organizational efficiency (Northouse, 2016). In the maritime sector, there is a need for business leaders with digital capabilities to change the way of thought related to the business model and process change, interaction with the team, customers, partners, suppliers, and leadership style to leverage emerging technologies to capture business values. The need for business leaders with the competencies to key into the global vision and the ability to provide direction for businesses not to miss opportunities presented by digital technologies is essential in the leadership frame of maritime businesses in Lagos.

Business Process and Operation

Studies (Chilaka, 2019; Zubairu et al., 2020) identified a lack of digital transformation in some Lagos businesses' processes and operations. Business leaders leverage digital strategies to build digital capabilities, rethink and renew their business processes, customer experience, and business models (Vaska, 2021; Westerman et al., 2014). Inadequate digitization and transformation of the business processes negatively impact business success and survival (Westerman, 2018). The studies of Arogundade & Nwani (2018) and Onwuegbuchunam et al. (2021) identified slow documentation processes, delays in cargo clearance, container examination procedures, and the resultant congestion on Lagos roads still characterized maritime business activities in Lagos. The maritime business sector in Lagos needs to transform the business processes, products, and services into a digitally oriented way. The maritime business sector in Lagos needs emerging technologies designed to obtain high performance and competitive advantage to reduce waiting time and logistics flaws in the business process and adapt to the business process that can foster efficiency and value creation.

The Workforce

In the view of Danis (2015), employees should be inclusive in the digital transformation journey. The insight gained from this study's literature review and problem statement revealed the digital skill gap in many businesses in Lagos. Relatedly, during the conference on Enabling Digital Nigeria, Microsoft (2020) noted inadequate digital skills as a significant impediment for businesses willing to transform digitally in

Nigeria. To upskill, the digital skill of the workforce is pertinent in the maritime sector's

business operation.

Business Practices

The redefinition of the B2B and B2C relationship leveraging digital technology is

essential in the business transformation drive. Yoew et al. (2018) emphasized the

importance of having a structured digital formation and alignment among businesses and

customers to ensure customer satisfaction and deliver business value. Business leaders

digitize business processes to enhance customer experience and satisfaction, which in

effect may lead to an increase in revenue, profit, and chances business sustainability

(Becker & Schmid, 2020). A more customer-centric approach by providing end-to-end

customer experience, personalized solutions, and multifaceted services to individualized

preferences is essential in the business transformation drive (Becker & Schmid, 2020).

Lagos businesses still face barriers in achieving transformation goals beyond

transforming business models, process and operation, customer's experience, upskilling

the workforce skillset, and adapting to best business practice (Adetunji et al., 2017).

Businesses in Lagos can achieve digital transformation and sustainability objectives

given the endowments and progress of ICT presence in the city of Lagos, but

macroeconomic and microeconomic issues impede the effort to digitally transform Lagos

businesses (Adetunji et al., 2017).

Perceived Challenges in Digital Transformation of Maritime Business Operations in Lagos

Although Lagos is considerably an ICT hub of West Africa with plans for a Digital Switch Over (DSO) across the state, daunting challenges impeding the digital transformation of businesses in Lagos are evident. Barriers to effective digital transformation vary from individual, organizational or institutional perspectives (Microsoft, 2020). The problem statement noted a digital skill gap as one of the primary key factors impeding DBT in Lagos (Zubairu, 2020). Literature also revealed that other barriers are responsible for the decline in DBT in Lagos (Adetunji et al., 2017). Perceived critical barriers to the digital transformation of maritime business operation as revealed by related literature review included digital divide, infrastructural deficit, perception, and digital readiness.

Digital Divide

Many studies point to a common ground that numerous developing nations, including Nigeria, lag in driving digital transformation given the poor internet availability, digital skills, and other implements to access resources and computing facilities. Based on the literature reviewed, it is acknowledgeable that a digital divide exists among developing countries, cities, and individuals and has been instrumental to the consistency in the inability of individuals and businesses to access digital resources, use the Internet and computing facilities to transform businesses (Oke et al., 2020; Okunola et al., 2017; Vasilescu et al., 2020). The digital divide could arguably be

instrumental to the challenges business leaders and managers face in Lagos's maritime business DBT drive.

Infrastructural Deficit

Although Lagos features relatively more infrastructure compared to other states in Nigeria (Osho & Adishi, 2019), a growing number of studies affirmed inadequate digital infrastructures for effective business operation in Lagos. Most businesses in Lagos face the challenge of digital infrastructural deficiency in their business operations (Adetunji et al., 2017; Osho & Adishi, 2019). A report from the Nigerian Communication Commission (2021) on the challenges of technology penetration in Nigeria noted infrastructural deficit as one of the challenges impeding technology penetration in Nigeria. Capraz (2020) argued that other infrastructural factors affect digitalization and business transformation aside from digital infrastructures. Such factors include power supply, digital architects, structure, and enabling systems for business digitalization (Olurode et al., 2018).

Olurode et al.'s (2018) study affirmed inadequate power (electricity) supply, as other infrastructural factors affecting Lagos businesses' digital transformation agendas, given the poor electricity supply to power businesses for digital connections. As of the year, 2018 Lagos state accounts for only 40% of the total electric supply for industrial, commercial, and domestic demands, highlighting the state's electricity problem (Olurode et al., 2018). No verified succeeding data was available at the time of this study literature review. Lagos has yet to fully achieve its objective of providing adequate electricity supply, technology-enabled environment to foster a technology-led business operation

that cuts across all sectors. Chakravorti et al. (2021) noted that the poor state of digital

infrastructure and the regulatory framework increases the fear of data insecurity and feeds

people's perception negatively about digital strategy adoption in businesses. The

infrastructural deficit has been instrumental to the slow adoption of technologies and

digital transformation of maritime businesses in Lagos.

Perception

Often, some business leaders are reluctant to trust some digital strategies arguing

that digital solutions or strategies could fail to deliver as presumed (Coltman et al., 2015).

Some researchers (Awiagah et al., 2016; Schaper, 2015) associated the increase in

cybercrime and other dangers related to Internet-based technologies with increased

vulnerability to fraud and damages on business function as a barrier to people's eagerness

to make a switch to digital strategies. Relatedly, Okundaye et al. (2019) perceived

introducing disruptive and innovative digital solutions such as the IoT into business as

insecure and a security threat to the business given the history of failed defense

perimeters in protecting business activities. In the view of Chakravorti et al. (2021),

perception and skepticism avert some business leaders from engaging in business

digitalization. Negative perceptions avert a significant number of business leaders in the

maritime sector from digitalizing their business activities to achieve 'the blue economy

dream' in the Nigerian maritime sector and the consequent decline of DBT in the Lagos

maritime business sector (Igbozurike, 2020).

Digital Readiness

Attitude is critical to adaptive functioning, and one of the critical factors to success is the mindset of the people within the success pursuit construct (Bolman & Deal, 2017). Zubairu et al. (2020) assessed the e-readiness of Nigeria for a digital economy with Lagos businesses in focus as the ICT hub of Nigeria. The study revealed the unwillingness of some businesses to adapt to a technology-led business operation. Zubairu noted that although some business leaders in Lagos and Nigeria are adopting digital strategies to manage and transform their businesses, some are not ready to make such a transition. The insight gained from the barriers to DBT in Lagos attests that maritime sector business in Lagos struggles with some factors inhibiting its DBT and consequently, business sustainability in Lagos.

How to Digitally Transform Maritime Business Operations in Lagos

The question of how to transform is essential in any business transformation initiative (Wade, 2015). In the DBT journey, it is essential to have a clear idea of where transformation is required and what needs to be transformed (Wade, 2015). Wade noted that the justification of why transformation in business motivates the inquiry of what to transform. What to transform provides a roadmap of how to transform. Understanding how to transform given the peculiarity of business operations places business leaders and organizations on the verge of DBT. Understanding the necessity to transform, what to transform, and how to transform is essential, but the key to success lies in implementation, thus: how to transform businesses (Wade, 2015).

Rogers (2016) argues that DBT rounded on strategy, not technology, and posited that business leaders should explore strategies to leverage technology and innovations to transform business. Ivančić et al. (2019) highlighted the approach for digital strategy adoption to include business leaders' engagement in exploring and assessing digital strategies, business leaders understanding of the value of digital strategy in business, digitizing and digitalizing the business process, and investing in skills and the relevant architectures for the digital transformation of their businesses. The answer to the research question, data analysis, and study's findings may capture in details, "the how" of DBT in Lagos maritime businesses to enhance business sustainability in Lagos.

The insight gained from the literature showed that many business leaders and managers are yet to include digital strategies to transform businesses in Lagos in a digitally-driven way. Current studies are deficient in digital strategies pertinent to managing and transforming maritime business operations in Lagos. At the time of the literature review, no known study to the researcher explored digital strategies to manage and transform maritime business operations in Lagos using the why, what, and how to transform questions of DBT. In the view of Ivančić et al. (2019), there are also limited case study examples that may enrich practice' and scholarly understanding of digital transformation in business. A study is pertinent using the why, what, and how concept to explore digital strategies successfully used to manage and transform maritime business operation in Lagos and to provide information that may help improve the inclusion of digital strategies to manage and transform maritime business operation in Lagos to enhance business sustainability in Lagos. This study is unique as it may contribute

valuable insights to the academic literature and address the current gap in the literature on digital strategies to lead, manage, and transform maritime business operations in Legos.

Review of Studies Related to the Research Questions and Methodology

The research methodology for this study is a qualitative exploratory multiple case study approach to answer the research question of *What digital strategies may business leaders and managers in the maritime sector in Lagos include to manage and transform maritime business operations in Lagos?* Qualitative research is a form of research method devoid of statistical data analysis. Since the conferment of the qualitative research approach by the American Psychological Association (APA) as an acceptable research approach, qualitative research has been providing value in the conduct of both scholarly and professional research (Bailey, 2014). Many researchers used a qualitative approach to explore and understand the participants' perspectives on the research problem (Patton, 2015; Thomas, 2011).

Although qualitative research gained broader acceptance at the beginning of the 20th century, the origin of a qualitative research approach is traceable to 1945, when Lazarsfeld offered a new perspective (motivational form) in research (Bailey, 2014). Bailey (2014) explained that Lazarsfeld suggested group discussion methods, advised on the importance of using expert practitioners, the why and what question, and how ideas from psychology could provide an interpretative model in research. Bailey discussed that qualitative research has been significant to the use of in-depth interview and group-moderation techniques by researchers who offer expertise to the procedures used and the interpretations derived from answering why, what, and how questions in research.

A qualitative approach explores business management-related problems in current and real-world situations by answering why, what, and how questions (Yin, 2018). According to Nwaiwu (2018), researchers used a qualitative approach through an extensive review of relevant business and academic literature to explore 'Digitalization,' Digital Business Transformation, and technology use behaviors. A qualitative approach was helpful in Okundaye et al.'s (2019) study to explore the impacts of ICT in Nigerian SMEs, and the study was successful in revealing the effects of the adoption of ICT-based tools in Nigerian SMEs. Plotnikov and Vertakova (2014) also attested that a qualitative research method is appropriate for studying strategies based on human interaction, meanings, and processes for improvement.

Qualitative research aids participants' in-depth responses within parameters that the quantitative method might not offer (Frels & Onwuegbuzie, 2013). A qualitative approach was also resourceful in studying the relationship between phenomena, as manifested in Hilali et al.'s (2020) study. Hilali et al. provided details in the use of qualitative study in studying the relationship between digital transformation and business sustainability. Qualitative research provides an in-depth and elaborate study opportunity using an exploratory process (Thomas, 2011). Qualitative research has achieved respectability in the academic sphere (Bailey, 2014).

The historical perspective of exploratory study depicts that an exploratory process attempts to discover something new by working through a research topic (Swedberg, 2020). According to Swedberg, the logic of exploratory research rounds on making a tentative first analysis of a new topic or proposing new ideas on an old topic. Houghton

(2020) discussed that the exploratory process provides detailed, rich, and credible information and findings on systems' operations and functions that other researchers could transfer to other scopes and populations. Exploratory research is appropriate when there is a need for an in-depth understanding of a topic or study phenomena. It is essential in exploratory research for the researcher to be willing to change direction in line with the revelation of data or insight gained (Yin, 2018). Ravitch and Carl (2016) noted that explorative research is often inconclusive, and a case study approach is often suitable for an exploratory study.

A case study approach explains the How, What, and Why of a situation supports convergence and divergence of participants' experiences and focuses on the contemporary phenomenon (Ravitch & Carl, 2016; Stake, 2015; Yin, 2018). A case study approach helps understand the phenomenon in a study and describes how understanding it could improve a process (Mohlameane & Ruxwana, 2014; Sangster-Gormley, 2013). Apulu and Latham (2011) used a qualitative case study approach to explore the adoption of (ICT) in the Nigerian business community for cost reduction and improved business process and performance. The case study approach was resourceful in identifying how ICT adoption could improve the business process. Case studies are usually time and space-bound, covering multiple cases of contemporary real-life events to gain rich and in-depth information on the study phenomena (Ravitch & Carl, 2016).

A multiple-case study utilizes multiple data collection forms (Houghton, 2020) to obtain rich information through interviews of participants, document reviews, and field notes. An exploratory multiple case study approach enables the researcher to explore the

reality of a phenomenon in more than one case to gain a shared perspective on the

participants' differences and similarities (Bloomberg & Volpe, 2019). An exploratory

multiple-case study explores a specific bounded system, utilizing multiple data collection

forms to systemically gather information on systems' operations and functions

(Houghton, 2020). Several researchers use exploratory multiple case-study approaches

because it helps provide in-depth answers to the why, what, and how questions of a study

while considering the effect of the context within a studied phenomenon (Yin, 2018). The

qualitative exploratory multiple case studies enable an in-depth understanding of study

phenomena through qualitative techniques which include interviews, document review,

filed notes to ensure rich data collection, support two-way communication, provide

valuable additions to a knowledge base and data on the context within which research

participants operate (McIntosh & Morse, 2015; Stake, 2015; Yin, 2018).

Summary and Conclusions

The literature review was insightful to the works of other researchers in the field of study

and provided a framework for relating previous studies to this research. In this chapter 2,

I explained the literature search and review strategy, the study's conceptual framework

based on Wade's (2015) DBT concept and an IDBTP concept that framed the study. I

justified the selection rationale. I reviewed and described studies related to this study's

phenomena of interest, the key concepts, the problem of study, research question, and

ways researchers approached the problem. I reviewed concepts and theories, including

contrasting theories relevant to the study, relevant digital strategies, and business

digitization, transformation, and sustainability, to understand the tenet of business

digitization in transforming and sustaining businesses. There was also a review of the historical overview of Lagos and its business activities. Other things discussed were the drivers of DBT, the perceived barriers, and why, what, and how to transform to understand the need for and approach for the digital transformation of maritime business operation in Lagos. Finally, I highlighted the gap in the literature and reviewed studies related to the research question and methodology. Chapter 3 contains in detail, the research method and rationale, and in the subsequent chapters are the data presentation and analysis.

Chapter 3: Research Method

The purpose of this qualitative exploratory multiple case study was to explore digital strategies of business leaders and managers in the maritime sector in Lagos to manage and transform maritime business operations in Lagos. Data on technology adoption and the use of digital strategies in Nigeria business revealed a low level of digital literacy and a digital skill gap among some business leaders in Lagos to manage and transform businesses in Lagos (Oke et al., 2020; Zubairu et al., 2020). This study may fill the gap in the literature on digital strategies to lead, manage, and transform maritime business operations in Lagos to enhance business sustainability in Lagos.

This chapter consists of the research question, research design and the rationale, the role of the researcher, research methodology, participant selection logic, and instrumentation. Other discussions include the participant recruitment procedures, data collection, analysis strategy, ethical procedures, trustworthiness, credibility, transferability, dependability, and confirmability. The conclusion of the chapter is a summary and a transition to the succeeding chapter.

Research Design and Rationale

I developed one central research question: "What digital strategies may business leaders and managers in the maritime sector in Lagos include to manage and transform maritime business operations in Lagos?" To answer the research question, I employed the qualitative research method with an exploratory multiple case study design. Researchers use a qualitative approach to understand the participants' perspectives to the research

problem, elaborate better, and enhance the audience's understanding of a study (Thomas, 2011). The choice of the qualitative method anchors on the work of many researchers in using a qualitative approach to explore business management-related problems in the current and real-world situation by answering the *why*, *what*, and *how* questions (Yin, 2018). Researchers have similarly used a qualitative approach on relevant business subjects such as digital business (Nwaiwu, 2018), the impacts of ICT in Nigerian SMEs (Okundaye et al., 2019), and the relationship between digital transformation and business sustainability (Hilali et al., 2020). Quantitative and mixed methods were inappropriate for this study because the quantitative approach lacked flexibility in interview questions (Frels & Onwuegbuzie, 2013). The study also did not require quantitative analysis of numerical data for testing variables' relationships or differences. The qualitative method presented the opportunity to explore participants' experiences, views, and understanding of the study problem (Patton, 2015).

An exploratory multiple case study design is the research design for this study. A phenomenological approach was not chosen because it focuses on participants' perspectives instead of exploring strategies and revealing experiences to understand study participants' experiences (Yin, 2018). Given that this study is a deductive study, grounded theory was also not appropriate for this study. Grounded theory is best suited for inductive studies with data collected from observation to develop theoretical explanations (Makri & Neely, 2021; Yin, 2018). I considered the case study approach appropriate because it is used to explore a specific bounded system with multiple data collection forms to gather information on systems' operations and functions (Houghton,

2020). A case study helped examine DBT issues within the framework of human capacity development and business operation to provide information that may help solve business and social problems in Lagos. Other researchers have also used a case study approach to explore business in Nigeria (Apulu & Latham, 2011). Based on the research questions, the phenomenon of this study, and the desire to obtain an in-depth view and robust data for independent analytical conclusions (Ravitch & Carl, 2016), I adopted the exploratory multiple case study design to explore the in-depth experience of business leaders on digital strategies implemented that contribute to business transformation.

Role of the Researcher

The role of the researcher in a qualitative study is fundamental to the success of the research as the researcher is a component of the research methodology and an instrument of the research (Ravitch & Carl, 2016; Twining et al., 2017). In a research process, the researcher functions as a "researcher" (participant) and as a "learner" (Rubin & Rubin, 2012). In this study, I was the researcher exploring the digital strategies included by business leaders and managers in the maritime sector in Lagos and a learner learning digital strategies for business transformation and sustainability in Lagos. I was the primary source for data collection by conducting interviews, reviewing documents, taking field notes, and analyzing and interpreting the data. I audio-recorded the interviews, transcribed the interviews, coded, categorized, and developed themes.

The role of the researcher also includes the positionality of the researcher. Positionality is the researcher's behavior to the content of the research and the interpretation (Coghlan et al., 2014). A qualitative researcher must listen to participants'

views and convey them appropriately (Janesick, 2011; Rubin & Rubin, 2012). As the

researcher, I was responsible for ensuring appropriate communication of the views and

knowledge of the research participants. I fully ensured the study's quality while serving

as the data collector and interpreter to data analysis without bias. I bracketed my views

and put aside any knowledge I had on the subject of study to learn from the participants

(see Gonzalez et al., 2015). Making decisions without bias requires that a free-of-bias

approach characterizes the research process and outcome without the researcher

influencing the data collection process, analysis, and interpretation (Ravitch & Carl,

2016).

Reflexivity also helps gain an in-depth understanding of the study phenomenon

(Palaganas et al., 2017). I ensured the validity of the data by keeping and reflecting on the

audio-recorded interviews, field notes, and activity logbook. As the researcher, my focus

was to explore and understand the study phenomenon from the participant's viewpoints. I

did not conduct the study in any organization I belong to; thus, I had no personal

relationship, influence, or power over the participants. Ethical issues are not improbable

in the research process. Researchers can mitigate ethical bias by obtaining informed

consent, explaining the research details, and responding to any ethical concern (Fleet et

al., 2016; Gonzalez et al., 2015). I followed Walden University's Institutional Review

Board (IRB) guideline, interacted with the participants through writing to obtain their

consent, and addressed the minimal ethical concerns raised.

Methodology

Researchers should choose the research method that supports the research question (Patton, 2015). Based on the research questions, the phenomenon of this study, and the desire to obtain an in-depth view and robust data for independent analytical conclusions (Ravitch & Carl, 2016), I adopted the exploratory multiple case study design. With this approach, I explored the digital strategies used by five companies within the maritime sector in Lagos Island and Apapa that the leaders had successfully included digital strategies to transform their businesses.

Participant Selection Logic

The organization participating in this study was a (a) maritime company operating within Apapa and Lagos Island areas of Lagos in the last 3 years where digital strategies are in place to ensure that the study population provides adequate information relevant to the study's objectives (Palinkas et al., 2015) and had (b) successfully implemented digital strategies to transform and sustain their businesses in Lagos. I referred to the registered list of shipping companies, terminal operators, and clearing & forwarding companies licensed by the Nigeria Ports Authority, Nigerian Maritime Administration and Safety Agency, and Customs to engage in maritime activities in Lagos, Nigeria and the renewals to identify those in operation within the cut-off years of 2018 to 2021. I also referred to the published annual returns of the participating companies within 2018 to 2021 to review the CEO's note on strategies deployed to achieve their milestones to determine those that included digital strategies in their business process.

The study population included business leaders and managers of the maritime industry in Lagos, Nigeria, who included digital strategies to manage and transform their business operations in Lagos successfully. The criteria for participating in the interview is listed in Appendix B: (a) male or female adult of 20 years of age and above, (b) maritime business leaders and managers who have led or worked a minimum of 3 years in maritime companies that have successfully included digital strategies to transform and sustain their businesses in Apapa and Lagos Island areas of Lagos, (c) the digital strategy used must include both software and hardware technologies for process improvement and architectural built, and (d) live in Lagos to ensure the experience of business life in Lagos metropolis and uneasiness of doing business in Lagos. The participant selection was through a sampling procedure. I ensured that there were enough participants to achieve data saturation using the targeted population.

Sampling

Randomized sampling might result in too small a number and provides inexperienced participants to draw significant and credible conclusions (Zaborek, 2009). Purposeful sampling provides an opportunity for researchers to select participants per the study's objectives and information-rich cases on the study's phenomena of interest (Palinkas et al., 2015; Yin, 2018). I used purposeful sampling to explore opinions from various business leaders' experiences to obtain credible responses to the research questions to address the specific objective of this study (Patton, 2015).

Research scholars consider 14–20 interviews adequate for a doctoral dissertation in the case study approach to achieve data saturation and mitigate bias and validity threats

inherent in qualitative research (Crouch & McKenzie, 2006; Ravitch & Carl, 2016; Yin, 2018). This study was exploratory research requiring an in-depth exploration of information to attain the saturation point (see Swedberg, 2020). I interviewed 20 business leaders and managers to reach the saturation point and to establish adequate generalization. Further, research has recommended using 4–10 cases in a case study approach (Stake, 2015). I sampled five cases to ensure adequate information on the systems' operation of the maritime businesses in Apapa and Lagos Island areas of Lagos that could lead to qualitative generalizations of the study. To achieve a multiple case study perspective, I considered each of the five companies selected as a case study.

I referred to the registered list of shipping companies, terminal operators, also clearing and forwarding companies licensed to provide shipping, marine, and cargo handling services in Lagos to check the years of operation of the potential participating companies. Contacting the participants was formally through email and a follow-up with telephone calls. I sent a letters of interest to the management of the potential participating companies requesting their approval to interview their leaders and managers and to access the organization's document for research purposes. The letter requested for contact information of managers and leaders who met the inclusion criteria in Appendix B with specific interest on years of service, place of residence, and role in the organization.

Based on the contact information provided, I contacted the potential interview participants who met the listed criteria. Subsequently, I sent the invitation letter to more than the required population to realize the required population and recruited 20 participants for interviews. I used multiple data collection methods, interview, document

review, and reflective field notes that do not necessitate a larger sample size compared to a questionnaire (Mason, 2010) and maintained a small sample size. The decision for the sample size reflects practical considerations to support the depth of case-oriented analysis fundamental to multiple case study research (Vasileiou et al., 2018), the time to complete the research to ensure the currency of the problem and findings, and uncertainty about the willingness of participants to participate in the interview.

Data saturation is the attainment of completeness and sufficiency in data collection (Ravitch & Carl, 2016; Yin, 2018) and evidence of rigor in qualitative research (Constantinou, 2017). Researchers reach the data saturation point to ensure that additional data collection adds no new information (Kelly et al., 2016). Data saturation becomes evident to the researcher when the participants' responses become similar and do not produce additional new data (Ravitch & Carl, 2016; Yin, 2018). Research scholars considered a sample size of about 30 participants on a medium-size scale and 12 to 20 on a small scale adequate for a doctoral dissertation in the case study approach to achieve data saturation (Crouch & McKenzie, 2006; Ravitch & Carl, 2016; Yin, 2018). The anticipated sample size of 20 semi-structured interviews chosen was adequate to attain saturation, given that data collection was through multiple sources. I interviewed all the 20 participant till no new information from the participants. I compared all interview themes and reordered the sequence of interviews multiple times to re-check saturation. The sequence of interviews during the check, made saturation vary and reordering helped confirm saturation (Constantinou, 2017).

Instrumentation

Instrumentation is the process of explaining in detail the development of the various data collection implements (Ravitch & Carl, 2016). Data collection instruments need to align with the purpose and conceptual framework of a study (Maxwell, 2013). As this study's method and framework required, I collected the data for this study using multiple sources: semi-structured interviews, document review (organization's digital strategies and process supporting documents), and reflective field notes. Researchers transcribe recorded interviews and use the transcript for data analysis (Rubin & Rubin, 2012). Thus, recording the interview for transcription and further data analysis was necessary. I audio-recorded the interview, transcribed, developed codes, and categorized the data into common themes using qualitative data analysis (QDA) tools.

Interviews

An interview is the process of data collection in research through interaction with individuals or groups of persons (Ravitch & Carl, 2016). The interviewer and interviewee are data collection instruments in qualitative research (Ravitch & Carl, 2016; Twining et al., 2017). Both the interviewer and the interviewee provide content and meaning to the interview process (Maxwell, 2013). An interview is essential in the qualitative study because researchers use an interview to obtain information, gain in-depth knowledge about the study's phenomenon (Ravitch & Carl, 2016; Rubin & Rubin, 2012). The interviews gave an in-depth understanding of the digital strategies business leaders and managers in the maritime sector in Lagos implemented to achieve business transformation goals. I conducted semi-structured interviews through the telephone to

observe the social distancing norm amid the COVID-19 pandemic. Inclusion in the interview was participants that met the stated criteria. Source of data from interviews included responses and perspectives of business leaders, CEOs, and managers of the selected maritime companies. The interviews gave an in-depth understanding of the digital strategies implemented to achieve business transformation goals.

Developing an interview guide is essential in an interview approach; it helps develop a scope for the study problem and obtain adequate information to answer the research question (Rubin & Rubin, 2012). Given that the interview approach for this study was a semi-structured type, having an interview guide was essential to ensure relevant documentation and consistency in the interview. An interview guide (see Appendix B) served as a data collection instrument, guided the interview in answering the research question, and addressed the study's problem and purpose. An interview guide states the need for the researcher's preparation first, followed by the theoretical work (documentations), participants' selection, communication with the participants, developing the interview questions, conducting the interview, and interview transcription (Creswell, 2007). The interview protocol followed the recommendation of Jacob and Furgerson (2012) for the conduct of interviews in a qualitative study. The interview protocol included an introduction to the interview, stating the purpose of the study and aim of the interview, the means of the interview, procedures for the interview, central research question, the interview questions, and a closing statement (see Appendix B).

A telephone interview was flexible in obtaining in-depth and detailed information from research participants. The telephone interview was flexible in scheduling, takes less

time, is cost-effective, and would help in observing the social distancing norm amid the COVID-19 pandemic. The telephone interview chosen helped identify participants' thoughts, perceptions, and feelings about the topic of study (Rubin & Rubin, 2012). With face-to-face interviews, the interviewer could be distracted during note-taking than telephone interviews that enhances note-taking without distraction (Sturges & Hanrahan, 2004).

Part of the challenge also in conducting an effective interview was the ability to come up with the right interview questions; questions relevant to the topic of study, open-ended questions, clear, and unbiased Alshenqeeti (2014) emphasized that a good interview should: have straightforward and well-framed research questions aligned towards answering the research question, the explicit purpose of the interview, no bias and must maintain neutrality to facilitate the free flow of information, use of open-ended questions and not asking a leading question, no assumption of answers to the research questions, no judgmental intentions, keeping the interview short, and having a summary of the points reported and asking questions to revalidate the data.

The interview questions consist of open-ended questions to provoke an in-depth understanding of all aspects of the study's phenomenon, promote the participants' self-expression and gain an in-depth and balanced view of the study phenomenon (Patton, 2015). I used open-ended questions in semi-structured interviews to gain an in-depth understanding of the digital strategies that business leaders and managers in the maritime sector in Lagos may include in managing and transforming maritime business operations in Lagos.

Patton (2015) recommended using questions that stimulate responses about the background or demographic knowledge, opinions and values, feelings, experiences, and behaviors. It is also essential to frame the questions in a probing way, given that an effective interview needs the interviewer to draw the participant out and engage the participants (Patton, 2015). I framed the interview questions to provoke talk about the business leaders' experiences, insights, feelings, and opinions to gain an in-depth and balanced view of the study phenomenon (see Appendix B). The interview was structured to ensure precision and for data comparison. There was an audio record of the interviews upon consent from participants for reflexivity, referrals, and to ensure credibility and consistency. I used a phone voice memo for the interview recording and later transfer the audio-recorded interview to a laptop for transcription.

Transcription. Transcription is imperative for qualitative research (Davidson, 2018), and scholars consider interview transcription valuable in data collection and analysis. Halcomb and Davidson (2006) noted that interview transcription involves converting an interview recorded audio into a written format to help understand and make meanings from the data collected. Interview transcription includes a summative or verbatim method. Scholars identified verbatim transcription as resourceful in data analysis as verbatim transcription gets researchers closer to their data. The transcription was through 'First Interview Verbatim'- transforming voice messages into text messages without alteration (Halcomb & Davidson, 2006). Based on my experience using NoNote.com App for transcription; free download compared to other Apps, and with a robust set of productivity-enhancing features (speed, accuracy, and other features) for

recording and transcribing, I transcribed the interview using NoNote.com software. After the transcription, I engaged the participants to validate the data by conducting member checking and transcript validation.

Member Checking. Member-checking is the practice whereby the researcher engages the research participants to check data accuracy and validation (Birt et al., 2016: Harper & Cole, 2015). The researcher shares the interview transcript with the participants to check for data accuracy or misinterpretation. Harper and Cole (2015) also noted that member checking allows the participant to verify the accuracy of their statements. Member-checking enhances the study's reliability, validity and reduces the risk of misinterpretation of data (Harvey, 2015; Hays et al., 2016). I used member checking to ensure that the transcripts match the intended responses of the participants. I emailed the transcript to the participants and ask them to review and provide feedback. The participants had the chance to check and make corrections. Document review and field notes were other inclusions in the data collection instruments.

Document Review

Document review in research is physically or electronically reviewing documents for data collection in research (Frey, 2018; Yin, 2018). Researchers review organizational documents to understand the business phenomenon and process (Badewi, 2016). Document review aids qualitative researchers in gaining an in-depth understanding of a subject to verify data and for data triangulation (Frey, 2018). I selected document review to gain insight from documents within which participants operate, and it was a valuable addition to understanding how business leaders operate. I acknowledge that

organizations' documents could be inaccessible and outdated. Document review in this study was the organization's digital strategies and process supporting documents from 2018 to 2021 to ensure the currency of the information and available for public use or research purposes. Such documents included work process procedure documents, technology adoption and update, workforce digital upskill and maintenance plans, and digital architectures to support and foster business transformation. The rationale for only documents between 2018 and 2021 was to ensure the currency and relevance of the information in the current-day business operation in Lagos.

Field Notes

The note-taking during interviews and analytical memos help shape experience and understanding of the research, given that field notes enable researchers to make comparisons and consider different situations (Ravitch & Carl, 2016). I took field notes to describe and understand the salient information relevant for data presentation and analysis. The field note was resourceful for personal reflections. Document review with reflective field notes aids qualitative researchers in gaining an in-depth understanding of a subject, verifying data, and data triangulation (Frey, 2018). I used field notes to triangulate the data, support or refute my findings. The research question guided the notes in the reflective field notes.

Observing participants during an interview related to their responses to the questions helps gain insight into the content of the responses provided and deducing meanings that will help answer the research question (Ravitch & Carl, 2016). I noted the interviewees' emotions, cultural values, and behavior during the interviews. Because I

did not perceive any bias in their willingness to respond to the interview questions, I did not seek any experts' opinion or refer to publicly published annual returns of the selected participating companies as planned to help obtain rich, unbiased, and credible information for the study. Researchers used multiple data collection forms, interview, document review, and field notes to explore business management-related problems and achieved data sufficiency in answering the research question (Houghton, 2020; Yin, 2018). I reviewed the information obtained from interviews, document reviews, reflective field notes and related them to previous studies and reports concerning the maritime business operation in Lagos Nigeria to ensure sufficiency and credibility of data to deduce meaning and interpretations that helped answered the research question. All the data instruments applied passed through experts, the chair, dissertation committee members, and Walden University's IRB approval before use.

Content Validity

I established the content validity of the study through data triangulation. Patton (2015) described triangulation as using multiple sources in qualitative research to collect data and develop an in-depth understanding of a studied phenomenon to establish the validity and reliability of a study's outcome. Researchers commonly use the triangulation method in qualitative research to ensure accuracy, high quality of data and enhance the study's credibility (Cope, 2014). The multi-method approach adopted in the study enabled triangulation as Frey (2018) revealed that document review and field notes are resourceful for data triangulation. I used document review, field notes, and interview transcripts to triangulate the data collected.

Expert Validation. Expert validation is obtaining feedback and approval on research design from experts in the field before use. Before the dissertation chair and committee member review, I reached out to faculty members from Walden University and some outside Walden University through email and telephone calls to review my interview questions for quality and alignment. I contacted Olusimbo Olugbo Ababa, research expert of Microbiology department and senior faculty member of University of Lagos Nigeria, Emeka Osuji, a research expert of Economics department and faculty member, School of Business and Management, Pan African University (Lagos Business School) Lagos, Nigeria, and JUB Azubuike, a research expert of Accountancy department and senior faculty member School of Management Sciences, Michael Okpara University Umudike, Nigeria to discuss the interview protocol and research questions for quality and alignment.

All the people contacted responded with their expert opinion on the interview protocol and questions. Some of the feedbacks were to reframe the research questions in an exploratory and open-ended way since the study is an exploratory case-study design. Again, to avoid leading questions and connect the questions with the study's problem and purpose in reframing the research questions. The responses received helped in refining the interview questions as appended (see Appendix B). The participant recruitment for data collection started after the dissertation chair, committee members, and Walden University Institutional Review Board (IRB) approval. Upon the final approval of my interview questions by Walden University's IRB, I commenced data collection. I did not

pilot the interview questions with qualitative research methodology experts before the actual data collection.

Procedures for Recruitment, Participation, and Data Collection

Participants' recruitment started after obtaining approval from the Walden University Institutional Review Board (IRB) to conduct the study, and I commenced the recruitment process in line with the IRB guidelines. I recruited appropriate participants capable of providing information relevant to answering the research question. The data collection method for the study included semi-structured interviews, document review – organization's digital strategies and process supporting documents, and reflective field notes. Creswell (2007) suggested an interview guide stating the need for the researcher's preparation first, followed by the theoretical work (documentations), participants' selection, communication with the participants, developing the interview questions, conducting the interview, and interview transcription. I followed the suggested formats of Creswell. The interview process included conceptualization of the interview, establishment, selection, and acceptance of the participants, conducting the interview, and transcribing the data.

Getting the appointment or working out the format did not deviate from the process initiated in the Interview Guide (Appendix B) – sent an invitation, get responses, sent a follow-up email with participants that consented to participate, and scheduled appointments for interview and document review. I wrote to Walden University's IRB requesting approval before recruiting participants and commencing with the data collection. Upon approval from Walden University's IRB, I recruited participants. I sent

a 'Letters of Expression of Interest' to targeted organizations in my sample population

that met the stated criteria (see Appendix B), requested their permission to interview their

leaders and managers and access to their documents for document review. The letter

outlined my intention to access the organization's document for research purposes. I

provided the selected participants with the Walden University IRB Informed Consent for

signing. I also provided information about the purpose of the study, the participant's role,

the use of the data, potential risk, and confidentiality guarantee.

Contacting the participants was formally through email. I sent individual

invitations (see Appendix C) to the selected interview participants that met the stated

criteria, more than the required population for the interview to realize the actual

population required. Respecting interviewees' privacy and what characterized their being

are recipes for a good interview (Rubin & Rubin, 2012) to avoid putting the participants

at the risk of any psychological or physical harm. To ensure safety, integrity, privacy, and

confidentiality in participation, I excluded information that can lead to identifying

participants with their responses during data collection, reporting of findings, analysis,

and interpretation. I used the informed Consent Forms that contained a detailed

explanation about the study and statements on the privacy and confidentiality issues to

confirm participants' acceptance and consent to participate.

Informed Consent

Informed consent is the process of getting research participants to know their role,

risks, and rights before participating in the study. Obtaining informed consent from

research participants is a mandatory ethical practice (Regmi et al., 2017). Burles and

Bally (2018) described informed consent as an integral part of ethics in research, given

that the researcher must request the consent of a data owner or clarify in writing the

utilization of the data. To obtain informed consent from participants, I sent invitations

(see Appendix C) through email to the potential interview participants with follow-up

emails to those who agreed to participate.

Ravitch and Carl (2016) emphasized the need for the researcher to inform

participants about the right of privacy of the participants, explaining to the participants all

the aspects of the research related to purpose, nature of the study, usage of information

provided, potential harm, and compensation if any. All, as emphasized, were inclusions

in the Informed Consent Form. As required, I provided all the participants with the

Walden University IRB Informed Consent containing information about the purpose of

the study, the participant's role, the use of the data, potential risk, and confidentiality

guarantee for awareness of the necessary facts concerning the study in the informed

consent for signing. After the documentation, I proceeded with plans for data collection. I

scheduled the dates and time for the interview and document review first through the

telephone conversation and a follow-up email for confirmation in writing.

Data Collection Plan

The data collection method for the study included semi-structured interviews,

document review – organization's digital strategies and process supporting documents,

and reflective field note-taking. The selected data collection techniques are to generate

data from accepted participants. Upon receipt of confirmation and signing of the

informed consent from the participants, plans for data collection and scheduling of

appointments commenced. I used the developed interview protocols (see Appendix B) to ensure consistency throughout the data collection phase and guide the participants in answering the research question to address the study's problem and purpose.

The researcher is the primary mechanism of data collection in qualitative research (Becker, 2019). I collected all the data for the study. As the researcher (interviewer), I conducted interviews with the top executive management officers (business leaders) and managers of the selected maritime companies to explore their experiences, insights, and views on the subject of study. The document review strategy consisted of documents from the selected participating companies. Such documents included digital process supporting documents, technology adoption and update, workforce digital upskill, and sustainability plans to help provide insights on the digital transformational processes. Field notes included reflective notes taken during the interview. The interviews were semi-structured with open-ended questions (see Appendix B).

An interview is ineffective when the interviewer makes a weak beginning related to the introduction, the purpose of the interview, timing, and the interview procedure (Patton, 2015). The interview process did not deviate from the process stated in the interview guide and, as recommended by Rubin and Rubin (2012) – exchange of pleasantries and familiarization talk, introduction to the interview, the interview, and closeout (see Appendix B). The interview was through the telephone conversation and audio-recording using the phone. The interview duration was about 30 minutes, and both the interview and the document review were conclusive within three weeks on average of interviewing participants from two organizations in a week to adequately accommodate

the schedules of the participants effective from the date approval was received from the Walden University's IRB.

To better understand the keywords and terms used in the interview, I first explained the keywords and terms used in the study's context to the interviewee. Rubin and Rubin (2012) also recommended that maintaining an excellent emotional level, positionality, not making suggestive statements, provoking a trusted relationship, seeking clarifications where necessary, and ensuring mutual respect characterize an interview. I did not deviate from the recommendations of Rubin and Rubin to ensure professionalism, good conduct during the interview and to obtain a deep narrative from the interviewee on the study's phenomena.

A face-to-face interview would have been a viable option to enable observation and relaxed interaction with the interviewee, but with the Covid-19 issue and the advocate for social distancing, a phone interview is the best option. Although telephone interview impeded physical observation of the interviewee's reactions and gestures that may guide the interviewer to have interpretation on the participant's level of depth on the subject, with a face-to-face interview, the interviewer could be distracted during note-taking compared to a telephone interview that can enhance note-taking without distortion (Sturges & Hanrahan, 2004). One of the data collection sources for this study was field note-taking. I had a telephone interview with the participants and undistorted note-taking during the interviews. I avoided bias and leading questions during the interview. Instead, asked probing questions, sought clarifications where necessary, and conducted the interviews and document review until data saturation point.

Data Saturation

Data saturation is the attainment of completeness and sufficiency in data collection (Ravitch & Carl, 2016; Yin, 2018). Researchers reach the data saturation point to ensure that additional data collection adds no new information (Kelly et al., 2016). Data saturation requires consistency in the use of interview questions among all study participants (Palinkas et al., 2015) and reflects the completeness of the data in a study. Researchers can reach the data saturation point by using multiple data sources for data collection until no new data from participants (Frey, 2018). I collected data from the participants- utilizing the stated data collection techniques until no new data was obtained before proceeding to data transcription.

Data analysis software aids data analysis and evaluation efficiency (Rubin & Rubin, 2012). I transcribed the interview using NoNote.com App. The transcription was through 'First Interview Verbatim' and I used member checking to certify the accuracy of the transcript (Harper & Cole, 2015; Thomas, 2017). The transcription was within 24 hours after each interview. After the transcription, I conducted the member checking process by sharing a digital copy of the initial transcript of the interviews and subsequently the interpretation with participants to verify the accuracy of data. I sent an email with the transcript to the interviewee for correction, if any. Upon certification of the accuracy of the data by the participants, data analysis followed. Inclusion in the data collection plan and the interview process was participants' appreciation as contained in the interview protocol (see appendix B). I followed up with a call after the study to debrief the participants on the outcome of study before the final exit.

Debrief

Debriefing is the process by which researchers share the study's outcome with the participants to address any misunderstanding or misconceptions that may arise between the participants' view and the study's outcome (Collins et al., 2012). The debriefing session provides the opportunity for the researcher to review the research approach, data collection, and analysis process and for the debriefed participant to comment on the research outcome (Figg et al., 2009). The debriefing session also provides the opportunity for a cordial exit of the participants from the study (Collins et al., 2012). Through debriefing, the researcher can educate the participants more on the purpose of the study and discuss the study's outcome (Roberts et al., 2001). I conducted a debrief session with the participants through telephone after the study to discuss the study's outcome, for the participants' comments on the outcome, and mutually exit from the study.

Data Analysis Plan

Data analysis is the logical process used by the researcher to review and provide meaning to the data collected to answer the research question (Ravitch & Carl, 2016). Data analysis included compiling, categorizing, reassembling the data into codes and common themes, interpreting and concluding steps (Ravitch & Carl, 2016; Yin, 2018). Coding is words or short phrases used to describe a collective set of data units in a particular language or pattern to give meaning or interpretation of data (Ravitch & Carl, 2016; Saldana, 2016). Coding reduces the different data pieces to a pattern that eases the data analysis process (Ravitch & Carl, 2016). Categories are the groups imposed on the

coded segments, and Themes are the essential concepts in the data, mostly known as a generalized feature of a data set (Ravitch & Carl, 2016).

According to Ravitch and Carl (2016), data organization and analysis start by summarizing, identifying similarities in transcribed data, coding the data, and categorizing the data into common themes. Akin to Ravitch and Carl suggested procedures. Rubin and Rubin (2012) also listed data analysis procedures to include coding, categorizing, and integrating the categories into common themes. The coding process entails studying the transcripts to identify common themes and phrases, given that understanding the best way to code for easy data retrieval is essential in the coding process (Patton, 2015). I developed and assigned codes to the text and ranked the code in order of similarity, categories, and themes. I manually organized the data and hand-code it in a Microsoft Excel worksheet. As the name goes, hand coding is the process of coding data manually in a non-electronic way (Saldaña, 2016). The hand-coding process involved reviewing the transcripts to categorize the data into common themes and thoroughly examining the transcript to avoid missing any key concepts.

There may be a loss of data in translation if not adequately coded (Miles et al., 2014). Comparatively, I also used Qualitative Data Analysis software to organize the data to enhance the reliability of the study. *Qualitative Data Analysis software* is the process of using a software to transforms and models data to ensure data relevance and credibility for informed decision-making (Saldaña, 2016). I used NVivo version12 software to organize the data. NVivo is data organization software used by researchers to organize and generate themes from transcripts and audio files (Zamawe, 2015).

The use of manual and electronic (NVivo) coding patterns to organize data enhanced the reliability of the study because NVivo has high customer support in identifying themes from the data and offers the researcher a unique advantage by integrating data indexing, categories, and nodes in data analysis (Rowley, 2012; Woods et al., 2016). Data discrepancy and inadequacy in qualitative research are always inevitable. Researchers in a qualitative multiple case-study approach use document review with reflective field notes and observation to aid an in-depth understanding of a subject, verify data, and data triangulation (Frey, 2018). Researchers commonly use the triangulation method to ensure accuracy, high quality of data and enhance the study's credibility (Cope, 2014). Again, the process of reordering the data for a check using the Comparative Method for Themes saturation in Qualitative Interviews (Constantinou, 2017) may help detect data discrepancies.

I compared all themes from all interviews and recorded interviews multiple times to help detect and correct any discrepancies. I made an effort to avoid any misinterpretation of interviews or data discrepancies and view the research findings through the lens of reality without bias. To ascertain similarities, credibility, and data adequacy, I compared the data sources (data triangulation), interview responses, document review reports, and field notes. Reporting the study's findings is a vital and final step of a research (Yin, 2018). This study's report is in a descriptive narrative form to give the audience a clear and an inclusive understanding of digital strategies to manage and transform Lagos maritime business operations to drive business sustainability in Lagos, Nigeria.

Issues of Trustworthiness

Trustworthiness is the act of ensuring and illustrating that the premise of findings in research is on the participants' views and practicality (Ravitch & Carl, 2016). Trustworthiness in research is when a study is credible, transferable, confirmable, and dependable (Shenton, 2004). For example, Babbie (2017) emphasized that credibility, dependability, transferability, and confirmability are protocols that data collected in research must meet to validate the analysis. According to Marshall and Rossman (2014), the quality of instruments utilized in qualitative research impacts the research's outcome, appropriateness, and reliability. Relatedly, Parker and Henfield (2012) discussed that chances exist that personal bias from the researcher could happen and pose the issues of trustworthiness in research, given that the researcher is the primary instrument of data collection in qualitative research (Becker, 2019). Trustworthiness in research reflects the validity of the qualitative study and the foundation for the data collected (Ravitch, Carl, 2016).

Scholars considered triangulation as establishing the validity and reliability of a study's outcome and systematic plan resourceful in ensuring the Trustworthiness of research. To achieve the Trustworthiness of research, Ravitch and Carl (2016) advised that a researcher should integrate into the research data validation procedures to ensure a study's credibility. Effectively, I ensured the attainment of Trustworthiness in the study by (a) mitigating bias and inherent validity threats in the data collection process, (b) ensuring data saturation during interview and participants' realism in data analysis, interpretation, and reporting, (c) using document review and field note for data

triangulation, (d) ensure that the significant components mentioned – credibility, dependability, transferability, and confirmability manifest in the study to certify the study's validity.

Study Validity

Questions about quality, credibility, reliability, dependability, and validity are significant considerations in qualitative research. The validity of research rests heavily on the data analysis if effectively carried out. Scholars emphasized that the inability of the researcher to mitigate bias and validity threats inherent in qualitative research could adversely affect the study's credibility (Crouch & McKenzie, 2006; Ravitch & Carl, 2016; Yin, 2018). Chen (2015) discussed that researchers ensure the reliability of a study to address a study's dependability, consistency, and credibility of findings to enhance the quality of a study.

Credibility

According to Ravitch and Carl (2016), research is credible when the researcher can link the research outcome to reality to ascertain a study's Trustworthiness. Research may lack credibility due to the researcher's preconceived knowledge about the study phenomenon (Patton, 2015). According to Hill and Bundy (2014), building credibility in a study starts with the researcher's effort to ensure that participants understand the study and align the interview questions with the research question. Researchers commonly use the triangulation method in qualitative research to ensure accuracy, high quality of data and enhance the study's credibility (Cope, 2014). To achieve credibility in this study, I connected the interview questions and data analysis to the research question. Shenton

(2004) noted that the researcher's ability to view research findings in their realism

positively impacts the research's credibility. I made a conscious effort to avoid any

misinterpretation of interviews and viewed the research findings through the lens of

reality without bias. I compared the data within the data sources (data triangulation),

interview responses, document review reports, and field notes to ascertain similarities,

credibility, adequacy of data, and interpretations.

Harper and Cole (2015) also noted that member checking allows the participant to

verify the accuracy of their responses. Member-checking enhances the study's reliability,

validity, credibility and reduces the risk of misinterpretation of data (Harvey, 2015; Hays

et al., 2016). I returned the transcribed interviews to each participant for member

checking to enhance the study's credibility to ensure that the transcribed interview

responses are accurate. The sequencing of interviews often makes saturation vary, and

reordering helps confirm saturation (Constantinou, 2017). I compared all interview

themes and reordered the sequence of interviews multiple times to re-check saturation. I

interviewed enough participants to achieve data saturation using the targeted population. I

ensured that I maintain the stated population sampling until the attainment of the data

saturation point.

Transferability

Transferability is the extent to which the information obtained or finding from a

study is applicable in other similar settings (Ravitch & Carl, 2016). Similarly, Hays et al.

(2016) described transferability as the applicability of a study's results to another study or

other similar situation. According to Draper (2015), the ability of the researcher to define

and articulate the participants' selection criteria is a determinant factor for the

transferability of a study's results. Marshall and Rossman (2016) emphasized the need for

an accurate description of the research design, methodology, and approaches adapted to

enhance the transferability of a study. Adequate description of the study's phenomenon

of interest, participants' selection approach, and the research processes fosters scholars'

intent to learn and transfer the process to other similar settings or places (Burkholder et

al., 2016). This study reflected documentation of participants' selection criteria.

In addition to the detailed analysis of the research process, participants' selection

criteria, data collection, and analysis plan as contained therein, I described and

interpreted in detail the findings of this study to provide meanings for other researchers to

learn from it and consider transferring it to other similar situations or places. I sufficiently

reported and described the utilized patterns, codes, and themes. Research components

such as the study's assumptions, limitations, and delimitation are inclusions I made to

help achieve the study's transferability. Effectively, the data used for this study may be

transferable and applicable in subsequent studies on digital strategies to manage and

transform business operations in Lagos or similar settings.

Dependability

Dependability is when data integrity, reliability, and consistency characterize the

findings of a research (Shenton, 2004; Miles et al., 2014). A study is dependable when

the data collected is utilized in a similar situation and yields similar results. The

replicability of a study result enhances the study's dependability (Marshall & Rossman,

2016). The report of the data collected reflected participants' realism and consistency in

the study approach, reporting findings and analysis without bias to enhance the study's

dependability. Noble and Smith (2015) recommended member checking and keeping

audit trail strategy as resourceful in enhancing study's dependability. Member checking

to confirm data accuracy, ensure validity, enhance reliability, and reduce the risk of data

misinterpretation were other approaches utilized to enhance data accuracy and the study's

dependability (Harvey, 2015; Hays et al., 2016). Document review and field notes also

aid qualitative researchers in gaining an in-depth understanding of a subject, verifying

data, and triangulation (Frey, 2018). I used field notes and document review for data

triangulation to enhance the study's dependability.

Confirmability

Confirmability refers to how others can confirm the study's results without the

researcher's influence or bias (Chen, 2015; Cope, 2014). Ravitch and Carl (2016)

described confirmability as the level to which participants' responses shape the findings

of a study without bias. Shenton (2004) described confirmability as the authentication of

data obtained without potential bias from the researcher. Such data, Shenton explained,

includes electronically recorded materials, transcription, written field notes, documents,

and records to make confirmations. Other scholars or researchers can establish

confirmability by conducting a review and giving feedback to research (Rubin & Rubin

2012). Accurate documentation of the study phases enhances adherence to confirmability

(Noble & Smith, 2015). All data collected were adequately documented and verifiable.

Field notes included reflexive notes taken during the interview. I appended supporting

evidence in the study; included references to all citations and links for confirmation.

Ethical Procedures

Qualitative research is not immune to ethical issues that may influence the research method, design, outcome, and credibility. Researchers follow specific processes and adhere to research norms, such as disclosure and confidentiality related to data collection (Ravitch & Carl, 2016; Wilson et al., 2018). Wilson et al. categorized ethics in research into 'procedural ethics' and 'ethics in practice. Wilson et al. explained procedural ethics as when researchers follow specific processes while ethics in practice are the day-to-day ethical issues in research such as disclosure and confidentiality related to data collection and usage. Ethical concerns are not improbable in the research process and could happen during the data collection process and reporting of findings.

Ethical concerns related to the use of data, obtaining participants' consent, confidentiality, and data privacy are critical issues in qualitative research (Ravitch & Carl, 2016). As contained in Walden University's requirements for doctoral research, certain approvals are obligatory before commencing a study's data collection and analysis. Such approvals, among others, include IRB approval form, Informed consent from participants, recruitment flyer, data collection log. To comply with the requirements applicable to this study, I sought and received IRB approval before recruiting participants and data collection. In this study, there were interviews of some business leaders and managers and the use of the organization's sensitive documents during document review, premised the need to obtain the informed consent of the participants and to ensure participants' privacy, respect, and confidentiality.

Obtaining participants' consent and the ability of the researcher to ensure participants' privacy, respect, and confidentiality are essential ethics rules in research (Babbie, 2017). Respect for participants' privacy and what characterized their being are recipes for a good interview (Rubin & Rubin, 2012) to avoid putting the participants at the risk of any psychological or physical harm. Minimizing the possibility of intrusion into the autonomy and privacy of the study participants, by all means, is essential. I minimized the possibility of intrusion into the privacy of the participants. Ravitch and Carl (2016) emphasized the need for a researcher to inform participants about the right of privacy, explaining to the participants all the aspects of the research related to purpose, nature of the study, the extent of the usage of information provided, and any potential harm. I excluded information that can trace participants' identities during data collection, reporting, and analysis to ensure participation safety, privacy, and confidentiality. The identity of the participants is not traceable to the responses. I used the informed Consent Forms that contain a detailed explanation about the study and statements on the privacy and confidentiality issues to confirm participants' acceptance and consent to participate. I observed data privacy and confidentiality to avoid any psychological or physical harm to the participants.

Obtaining informed consent from research participants is a mandatory ethical practice (Regmi et al., 2017) and Burles and Bally (2018) described informed consent as an integral part of ethics in research. Researchers can mitigate ethical bias by obtaining informed consent of participants, explaining the research details, and responding to any ethical concern (Fleet et al., 2016; Gonzalez et al., 2015). I followed Walden University's

Institutional Review Board (IRB) guideline to interact with the participants through writing and required all participants to sign the IRB Informed Consent. I did not include participants under 18 years of age, my organization, or colleagues as a participant which eliminated possible conflict of interest or power differential issues.

The participants were on a volunteer basis with the window to exit at any time as stated in the expression of interest letter and informed consent form. Given that I excluded the personal information about the participants during data collection, reporting, and analysis, the data will be confidential. I used generic taxonomies to ensure privacy and confidentiality of the participants and the data collected. Tijdink et al. (2016) acknowledged that one of the ethical considerations to ensure the confidentiality of participants in a qualitative study is to destroy the data after a study. The data collected is adequately secured in an electronic device with a secure password and will be destroyed after five years in an appropriate manner of destroying sensitive documents.

<h3 align="center">Summary</h3>

In this chapter, I discussed the research method, question, design, participants' selection process, and the rationales for the choices made. I also discussed the role of the researcher, instrumentation, and procedures for recruiting participants, data collection. The instrumentation and data collection techniques are semi-structured interviews, document reviews, and field notes. I developed an interview guide, protocol, research questions designed to answer the central research question, and established data collection and analysis plans, study validity, and identified ethical issues associated with the study and ways of addressing them. Other inclusions are issues of Trustworthiness

and how to address it in research through study validity components, credibility, dependability, transferability, and confirmability. I described ways of ensuring privacy, confidentiality, and safely securing data collected before destroying it. The next chapter comprises data presentation and analysis and, subsequently, discussion, conclusions, and recommendations in chapter five.

Chapter 4: Results

The purpose of this qualitative exploratory multiple case study was to explore

digital strategies of business leaders and managers in the maritime sector in Lagos.

Meeting the purpose of this study may help narrow the gap in the literature by answering

the central research question of "What digital strategies may business leaders and

managers in the maritime sector in Lagos include to manage and transform maritime

business operations in Lagos?" I used semi-structured interview questions, a review of

relevant documents, and reflective field notes for data collection and to provide answers

to the central research question. This chapter includes the study results on digital strategy

to manage and transform maritime business operations in Lagos. I also describe the

research setting, participants' demographics, data collection, analysis procedures, and

evidence of trustworthiness and presented the research result based on the participants'

perspectives. I conclude the chapter with a summary and transition to Chapter 5.

Research Setting

I conducted this study in Lagos, Nigeria. The study involved collecting data

through document review and interviews of business leaders and managers of maritime

companies in Lagos Island and Apapa areas of Lagos metropolis. I chose Lagos for this

study because Lagos is the home of maritime activities in Nigeria, remarkable for seaport

operations, and highly impacted by the effects of maritime activities in Nigeria. Data

collection was through interviews, documents review, and reflective field notes. The

interview was through telephone at the agreed dates and times by the participants. The

telephone interview was much more convenient for the participants as some worked from

home, given the COVID-19 pandemic and the need to observe social distancing. Two of the interviewees participated in the interview while in transit, which was the most convenient time for them, some in their offices, and a few while working remotely from home. The document review was in person at the offices of the selected companies at the agreed dates and times. There was no interruption during the interviews and document reviews and no condition that influenced the interviewees' responses or the study's outcome.

Demographics

The selected companies for this study are five maritime companies in operation for more than 3 years in Lagos. The companies are those that transitioned from manual processes to digital processes in their business operations in Lagos. Two of the companies selected are in Lagos Island and three are in Apapa, Lagos, Nigeria. To ensure confidentiality of the data collected, I used CMPY 1 to 5 to represent the companies. The selected participants included the CEOs down to the process and operations managers of the selected companies. Five of the participants were CEOs, and 15 were process and operations managers. The interview participants were assigned P1 to P20 to maintain their privacy. To further ensure the anonymity of responses from the participants during the interview audio recording, I did not record comments related to participants' demographics. No participant fit into the vulnerable categories specified by Walden University's IRB. Table 1 contains the demographics of the 20 participants.

Table 1

Participant Demographics

Company	Participant	Position	Years in Position	Location	Gender	Level of Education
CMPY 1	P1	CEO	10	Apapa	Male	Master's degree
CMPY 1	P2	Manager	12	Apapa	Male	Master's degree
CMPY 1	P3	Manager	6	Apapa	Male	Bachelor's degree
CMPY 1	P4	Manager	8	Apapa	Female	Master's degree
CMPY 2	P5	CEO	9	Lagos Island	Male	Doctorate Degree
CMPY 2	P6	Manager	9	Lagos Island	Male	Master's degree
CMPY 2	P7	Manager	7	Lagos Island	Male	Master's degree
CMPY 2	P8	Manager	6	Lagos Island	Male	Bachelor's degree
CMPY 3	P9	CEO	7	Lagos Island	Male	Master's degree
CMPY 3	P10	Manager	5	Lagos Island	Female	Bachelor's degree
CMPY 3	P11	Manager	6	Lagos Island	Male	Master's degree
CMPY 4	P12	MD	5	Apapa	Female	Master's degree
CMPY 4	P13	Manager	15	Apapa	Male	Master's degree
CMPY 4	P14	Manager	9	Apapa	Female	Master's degree
CMPY 4	P15	Manager	11	Apapa	Male	Master's degree
CMPY 4	P16	Manager	7	Apapa	Female	Bachelor's degree
CMPY 5	P17	CEO	8	Apapa	Male	Master's degree
CMPY 5	P18	Manager	7	Apapa	Male	Master's degree
CMPY 5	P19	Manager	8	Apapa	Male	Master's degree
CMPY 5	P20	Manager	6	Apapa	Female	Master's degree

Data Collection

I commenced data collection after obtaining IRB approval (approval no. 02-14-22-0758122). To improve the study's validity and generalizability, I sampled five cases (companies) to ensure adequate information on the systems' operation of the maritime businesses in Apapa and Lagos Island areas of Lagos that could lead to qualitative generalizations of the study. I used purposeful sampling to recruit participants to ensure that I obtained rich data with diverse perspectives from participants on digital strategies to manage and transform maritime business operations in Lagos. Semi-structured interviews, document reviews, and reflective field notes were used for data collection.

Initial Contact

I followed the suggested formats of Creswell (2007) for the interviews process as detailed in the interview guide (see Appendix B). I established communication with the participants, selected and accepted participants, scheduled dates and times for the interviews and document review, and conducted the interview and document review. The process included sending letters of interest for participation to the selected partner organizations and obtaining letters of cooperation from the companies contacted. I sent letters of invitation (see Appendix C) containing details of the study and the process involved via email to the potential interview participants exceeding the required population. I screened the list of participants who accepted participating in the study and signed the informed consent form. I made eliminations and produced the final list of participants who met the stated criteria. I selected 20 participants for the interviews.

Interviews

I interviewed 20 participants from five companies within Apapa and the Lagos Island area of Lagos. The interviews took 2 weeks. I began each interview following the procedures detailed in the interview protocol in Appendix B to promote consistency in data collection and the study's dependability. The interviews were in English. First, I completed the demographic information about the interviewee without audio-recording to ensure anonymity, followed by appreciating the participants for accepting to participate in the study and giving a brief overview of the study. I explained the keywords and terms used in the context of the study and the usage in the interview questions. I also explained the central research question to the interviewee, the usage of the results, and the safety of the interviewee's identity and the data collected.

The interviews explored perspectives on the relationship and relevance of digital strategies to business management and transformation and the perceptions of Lagos' maritime business leaders and managers on integrating digital strategies into the business model, process, team building, and service delivery. The interviews addressed how digital strategy in LMBs can pivot change and operational efficiency in maritime businesses in Lagos, the challenges of digital strategies inclusion in Lagos' maritime businesses, and digital strategies successfully included in maritime business operations in Lagos, and the approach. Also addressed in the interview is how continuous digital strategy compliance may sustain maritime business operations in Lagos and meet future work demands. I used open-ended questions to ensure reliability and comparability of the results, encourage participants' self-expression, and create a balanced view of the study

phenomenon (Rubin & Rubin, 2012). I asked the interview questions as listed in Appendix B with follow-up questions.

I audio-recorded the interviews using my iPhone. On average, I spent about 30 minutes on each interview. I transcribed the data collected within 24 hours after each interview using NoNote.com software through First Interview Verbatim (transforming a spoken message into a text message without alteration). Documenting the transcription procedures was also essential for managing qualitative data (Halcomb & Davidson, 2006). I documented the transcription procedures, which helped code the data, categorize it, and for theme formation. I saved the transcribed data on my laptop and external device and adequately secured it with an encrypted password.

Document Review

Researchers review documents to ensure data integrity and validation of interview responses (Harrison et al., 2017). I conducted the document review at the agreed dates and times after the interviews at the participants' offices. HR, IT managers, and in some places, the admin managers provided the requested documents as indicated in the letter of expression of interest for participation in the research. The document review was at the companies' meeting rooms without any intrusion. The documents reviewed included the companies' digital process supporting documents, digital transformation landmarks and intents, technology adoptions and strategies, workforce digital up-skill and sustainability plans, and management reports.

The documents reviewed provided insights into the strategic digital transformational processes of the companies and helped gain more understanding of the

context within which the companies operate. I used the information obtained from the document review to collaborate with the information obtained during interviews and for data triangulation. The document review lasted about 15 minutes in each sampled company, and I completed the document review within 5 days.

Reflective Field Notes

The research questions guided the reflective notes taken during the interviews. I used reflective field notes to describe the information relevant for analysis. I also used the reflective filed notes for data triangulation and to validate the responses from the interviews. I noticed the willingness of the participants to share their experiences and in-depth knowledge on digital strategies included in managing and transforming their business operations in Lagos. I did not notice any bias or insufficiency in the information provided during the data collection processes that may have warranted further probe for sufficient data to deduce meaning and interpretations to answer the research question. The data collected from interviews, document review, and reflective field notes were sufficient for the study. During the data collection process, I did not encounter any unusual circumstances and no variation from the proposed plan in Chapter 3.

Member Checking

I emailed the transcribed data to the participants according to individual responses for member-checking to ensure data accuracy. The verbatim transcription helped to minimize my bias. Member checking allowed the participants to verify the accuracy of their statements to enhance the study's credibility, reliability, and data validity and

reduces the risk of data misinterpretation (Harper & Cole, 2015; Hays et al., 2016). The

participants reviewed and validated the data with no significant changes made.

Data Analysis

I conducted the data analysis concurrently with the data collection process,

strengthening the study's accuracy and adding to the depth and quality of the data

analysis (Saldana, 2016; Vaismoradi et al., 2013). In exploratory research, content

analysis has been resourceful to address the *what* and *why* people use or do not use a

service or procedure (Green & Thorogood, 2018; Vaismoradi et al., 2013). I used content

analysis to analyze the data, given that one of the aims of content analysis is to describe

the phenomenon of study conceptually (Elo & Kyngäs, 2008). Content analysis also

involves generating initial codes inductively from research participants' recurring

statements and data patterns (Denzin, 2019). I treated the selected companies on a case-

by-case basis and used the themes developed from the data analysis to interpret the data,

explain the findings, and attach meaning and significance to the data.

Data analysis began after data transcription by organizing, identifying similarities

and patterns in transcribed data, coding, categorizing, placing the data into common

themes, interpreting, and concluding. I began by highlighting words, phrases, and

sentences that described the study's phenomenon and connected to the research question

(Ravitch & Carl, 2016). I eliminated responses that were not relevant and did not answer

the research question.

To code the data, I used the inductive coding approach. The inductive coding

procedure is an approach that enables data coding without the researcher's manipulation

of the data to fit into a preconceived coding frame and instead allows the narrative or

theory to emerge from the raw data (Thomas, 2006). I manually organized the data in a

Microsoft Excel worksheet and studied the transcripts severally to understand and

identify similarities and patterns in the data. I looked for similar sentences, phrases, and

relevant quotes related to the study's phenomenon. I excerpted sentences and phrases

connected to the study's phenomenon and the research question and aligned the excerpts

with the reoccurring statements in generating codes for the data. I coded the data

according to the text lines, recurring statements, emergence narratives from the raw data,

and patterns that formed the initial codes (see Appendix D). I further examined the

similarities, patterns, and occurrences of the segments of the data from the cases and the

initial codes. I matched the initial codes based on similarities and occurrences and in line

with the excerpts from the data to generate the final codes for the study. I ensured that the

final codes were minimized in manageable terms and addressed as many aspects of the

test lines as possible (Miles et al., 2014). I placed the codes into categories (see Table 2).

Table 1

Codes from Participants' Responses

| P	Interview Excerpts	Codes	Categories
P5	Digital strategy helped in remodeling our business.	Purpose of digital strategy inclusion. Digital strategy relevance and values.	The why of digital strategy in LMB
P12	DS pivots change and operational efficiency		
P3	Digital strategy fosters digital skill acquisition		
P9	Helps in meeting the future work demands		
P17	Digital strategy in our business enhances our business competitive edge and readiness for the digital future		
P14	It enhances the value chain of our business operation		
P12	Through integrating digital objectives into our business model, we developed a holistic strategy that affects all areas of our business	Digital objective integration in business functions. An inclusive digital goal	The why of digital objectives in LMB
P9	It helped us articulate a digital vision and roadmap for our business progression.		
P1	Integrating our organization's digital objectives into business functions fosters an inclusive business management and transformation.		
P8	Digital strategy has been pivotal to our successful business operation and management.	Digital strategy as a management tool	The why of digital strategy in LMB management
P2	Digital strategy helps develop a framework for an inclusive corporate governance in our organization.		
P11	We leverage digital strategy to rethink and renew our business processes, customer's experience, and it has been a great deal in our business management.		
P5	Digital strategy has been instrumental to our organization achieving a holistic management strategy pivotal to our business survival in this digital age.		
P12	It provided a better logistics plan and addressed the challenges with the manual process.		
P5	Digital strategies helped to create a self-sustaining work process and achieve operational efficiency.	Self-sustaining work process, operational efficiency, remodel business, capacity building, innovation, a framework for better business plan and leadership, collaboration, improve customers' experience	The why of digital strategy in LMB transformation
P16	It provides many innovative practices like business process re-engineering and business modernization.		
P20	Digital strategies remodeled our business, streamlined our operations, enhanced our digital skills, information sharing, and collaborations among stakeholders.		
P8	Digital strategy helped us to automate our workflow.		
P2	Digital strategy helps to strategically enhance a wider range of sustainable business relationships, improved customer experience, and the business value chain.		
P16	Digital skill upgrade and a digitally inclined leader.	Digital leadership, investment in infrastructure, Innovative solutions. Capacity building. Change. Digitization	What drives digital strategy success in LMB
P1	Investment in both soft and hardware digital solutions.		
P2, 9	Digitalizing the business process.		
P6	Replacing old digital implements with innovative ones.		
P14	Change in mindset and practice.		
P5, 4	Understanding customers and stakeholder's needs		

(table continues)

P	Interview Excerpts	Codes	Categories
P5	Lack of vision, strategy and direction.	Barriers to digital transformation in LMB	What to transform in LMB
P9	Data security issues and need for data protection.		
P18	Cost for the required digital resources and solutions.		
P15	Irregularities in operation and poor investment in digital infrastructures.		
P13	Digital divide, skill gap and unwillingness to adapt to digitally-enabled systems.		
P10	Lack of low-cost institutions to support digital skill development.		
P3	Availability of high bandwidth and technological architects supportive to digital transformation agendas.	Intervention measures Supportive measures for digital strategy inclusion	How to transform LMB
P4	Train and engage digitally skilled personnel, make structural changes and provide digital platforms and solutions for business process.		
P17	Investment in digital architectures, infrastructures of the mind, and skills committed to business digitization.		
P10	To orchestrate local capacity building than dependent on offshore capacities for data-based solutions.		
P1	Business leaders to be clear about how digital strategies will create added value in the organization.	Vision and defined digital goals, Technology adoption. Business process re-engineering, Digital leadership, team, culture, and systems.	How to transform LMB
P7	Understanding the role of digital technologies and the influence on existing business models and processes.		
P13	Investment in new and innovative technologies and fit-for-purpose software and cloud-based solutions.		
P19	Adapting the entire business value chain to technology implements and digital requirements.		
P17	Integrating our organization's digital objectives into our business models, process and systems, leadership, team building, culture, and service delivery.		
P1	Setting a sustainable direction for our organization.	Sustainable digital direction. Adapting to evolving digital solutions. Committed investment to innovation. Business process Drive growth. Planning. Business management	Prospect of how compliance with digital strategy
P17	To keep pace with the changing business world.		
P18	Adapting to evolving digital technologies.		
P14	Making investment decisions that replace old and digital implements with innovative ones.		
P9	Reposition the business for growth and drive our business to meet the future of work demands.		
P7	Have a well-thought-out plan and digital implementation strategies tailored to our business.		
P5	Inclusive business management.		
P13	All stakeholders to embrace change in perception and operational processes adaptive to the digital era.	Change. Adaptive to the demands of digital era. Supportive policies to digital transformation agenda. Capacity building, funding, digitally inclined standard of operation and practice	How to transform LMB
P11	The government to ensure regulatory policies and provision of supportive infrastructures.		
P3	Business leaders to ensure digital inclusiveness at all levels in maritime business operations in Lagos.		
P15	It is vital to develop and enforce a digitally inclined standard of operation and best practices among all maritime business stakeholders.		

Categories are groups imposed on the coded segments (Ravitch & Carl, 2016).

Given that I needed to explore perspectives and attribute findings in the framework of

why what, and how to leverage digital strategies to manage and transform maritime

business operations in Lagos, I categorized the codes according to the study's conceptual

framework; why, what, and how to transform. The categories were in line with the text

lines and in the order of participants' perspectives on the subject of study related to the

relevance of digital strategy (why transform), elements (what to transform), and process

(how to transform). Creswell (2015) noted that researchers could collapse codes into

themes or major headings for reporting findings. The triangulation of the data, coding and

categorizing lead to the emergence of themes. I identified the segments of the codes

related to the research question and potential themes (Miles et al., 2014). The codes as

categorized were placed into common themes (see Table 3) as the essential concepts in

the data and the significant headings for reporting the findings (Creswell, 2015; Ravitch

& Carl, 2016). Figure 2 illustrates the coding process from transcribed data to the

emergence of themes.

Table 2

Codes, Categories, and Themes

Codes	Categories	Themes
Purpose of digital strategy inclusion. Digital strategy relevance and values.	The why of digital strategy in LMB	Purpose and values of Digital Strategy inclusion in LMB.
Digital objective integration in business functions An inclusive digital goal.	The why of digital objectives in LMB	Why Integrating digital objectives into the LMB process
Digital strategy as a management tool	The why of digital strategy in LMB management	Digital strategy as a business management tool
Self-sustaining work process Operational efficiency, remodel business, capacity building, innovation, a framework for better business plan, leadership, stakeholders' collaboration, improve customers' experiences	The why of digital strategy in LMB transformation	Digital Strategy as a business transformation tool
Digital leadership, investment in digital infrastructure, Innovative solutions. Capacity building. Change. Digitization	What drives digital strategy success	Digital Strategy Implementation success factors in LMB
Barriers to digital transformation in LMB Intervention measures Supportive measures to digital strategy inclusion	What to transform in LMB How to transform LMB	Barriers to digital transformation in LMB Intervention measures supportive to digital strategy inclusion in LMBs
Vision and defined digital goals, Technology adoption. Business process re-engineering, Training, Digital leadership, team, culture, and systems.	How to transform LMB	An Integrated Digital Business Transformation Process
Sustainable digital direction. Adapting to evolving digital solutions. Committed investment to innovation. Business process. Drive growth Planning and business management	Prospect of compliance to digital strategy	Foreseeing the horizon of digital strategy compliance in LMBs
Change. Adaptive to the demands of digital era. Supportive policies to digital transformation agenda. Capacity building, funding, digitally inclined standard of operation and practice	How to transform LMB	Government and other stakeholders' involvement in LMB transformation

Figure 2

Coding Process from Data to Themes
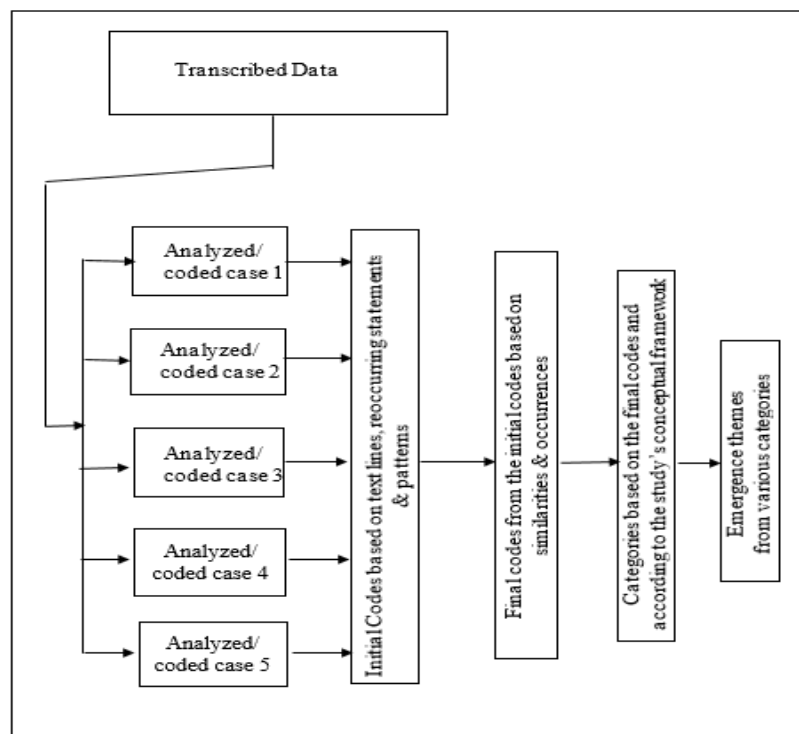
Note. This diagram illustrates the process the researcher used to move inductively from coded units to extensive representations of categories and themes.

As illustrated in Figure 2, I moved inductively from analyzing the transcribed data to coding the data on an individual case basis and from individual case analysis and coding to the emergence of the initial codes for the study based on text lines, reoccurring statements, and patterns. The initial codes generated were matched according to similarities and occurrences to generate the final codes. I identified the segments of the final codes pertinent to answer the research question (Miles et al., 2014) and matched them according to the study's conceptual framework of why, what, and how to transform to categorize the codes and from the various categories of the codes, the themes emerged.

The coding process helped assign meanings to the raw data obtained, reduced the collected data pieces to a pattern that eased the analysis of the case study data, and helped place the data into categories and themes for reporting findings. I acknowledged that data could be lost if data collected was improperly coded (Miles et al., 2014). A researcher can consider a Computer-Assisted Qualitative Data Analysis software (CAQDAS) to organize data and compare it with different forms of data output (Emmel, 2015: Swanborn, 2010). I comparatively used CAQDAS to reorganize the data to ensure that nothing was missing and enhance the study's credibility and dependability (Saldaña, 2016).

I used NVivo 12 Plus to organize the data. Woods et al. (2016) discussed that using NVivo to compare coding methods can be resourceful for data indexing, categories, and the formation of nodes. I uploaded the transcribed data into NVivo 12 Plus software to electronically organize the data to generate codes and themes from transcripts. There was no significant disparity noted between NVivo and the manual method in organizing and analyzing the data. The use of manual (hand) and electronic (NVivo) processes in organizing and analyzing the data helped enhance the study's accuracy and reliability, but the manual coding process was more resourceful and helpful in understanding the data for analysis than the QDAS.

Data insufficiency and discrepancy are often inevitable in qualitative research (Ravitch & Carl, 2016). The use of multiple sources of data collection in qualitative studies is essential to ensure data sufficiency, credibility, and authenticity of the findings (Houghton, 2020). I ensured that I achieved data sufficiency and saturation by

interviewing the participants until no new information from the interviewees. I used the

Comparative Method for Themes Saturation in Qualitative Interviews (Constantinou,

2017) - and reordered the sequence of the interviews multiple times to compare all

themes from all interviews and establish data adequacy. I used pattern matching to look

for similarities and differences in themes generated from the data (Yin, 2018). I used the

raw audio files to thoroughly check each process and stage of the interview for

discrepancies. I examined the data from interviews and documents reviewed to compare

and contrast patterns and approaches adopted by the sampled companies. There was no

significant discrepancy noticed. Given that the interview was in English and participants

purposeful sampled, I did not have limitations with expression and identifying similarities

and patterns in the data collected, coding, categorizing, achieving the emergence of

themes, and interpreting the data.

Data interpretation was essential to ensure alignment between the emergence

themes, the literature reviewed, and the study's conceptual framework (Thomas, 2017).

The participants' perspectives explored and themes developed helped in interpreting the

findings to answer the research question. I linked the codes into categories according to

the conceptual frameworks of the study in presenting and interpreting the result. I aligned

the results with the conceptual frameworks of the study to answer the research question

of what digital strategies may business leaders and managers in the maritime sector in

Lagos include to manage and transform maritime business operations in Lagos.

To improve the study's validity and credibility and enhance the generalization of

the data, I triangulated the data. Patton (2015) described triangulation as using multiple

sources in qualitative research to collect data and establish the validity and reliability of a study's outcome. Frey (2018), on the other hand, identified document review and reflective field notes as resourceful to qualitative researchers in gaining an in-depth understanding of a subject, verifying data, and data triangulation. I used transcribed data from the interview, data from the digital process supporting documents reviewed, and reflective notes I took during the interview to develop an in-depth understanding of the study's phenomenon and established the content validity of the study. Data from digital process supporting documents included work process procedure, technology adoptions, updates, workforce digital upskill and maintenance plans, and digital architectures supporting business transformation.

I compared the data sources, interview responses, document review reports, and the reflective field notes on fundamental points raised during interviews to establish the credibility of the study analysis. I related to this study, previous studies and reports concerning technology adoption in the maritime business operation in Lagos, Nigeria, and media reports that documented issues highlighted in the data from the interviews to establish the validity of the data obtained. I also reviewed databases of updated issues about digital capacity building in LMBs and digital infrastructural development in Lagos, Nigeria, to ensure the validity of the data obtained. The use of the triangulation process, reports on the study's phenomena, and previous research findings for relative analysis helped ensure the trustworthiness of the data and established the validity of the study outcome.

Evidence of Trustworthiness

Credibility

Research is credible when a researcher can link the research outcome to reality to ascertain a study's Trustworthiness (Ravitch & Carl, 2016). Building credibility in a study starts with ensuring that the researcher validates participants' responses without any misinterpretation and that participants understand the study and have confidence in the findings (Hill & Bundy, 2014). The researcher's ability to view research findings in their realism and use the triangulation method and member checking to ensure data accuracy, corroborate, refute, or expand findings enhance its credibility (Frey, 2018; Harper & Cole, 2015; Shenton, 2004). To achieve credibility in this study, I collected data through various sources – interviews, documents review, and reflective field notes. The participants were purposefully sampled through stringent criteria to ensure that I recruited the most suited and experienced participants to obtain credible and rich information on the research questions and the phenomenon of the study. I connected the interview questions with the research question, maintained consistency during data collection, and ensured data saturation using the comparative method for themes saturation in qualitative interviews by Constantinou (2017). I made an effort to avoid any misinterpretation of data and viewed the research findings in their realism without bias (Cope, 2014). I continually involved the participants and used data triangulation and member checking to verify, validate data, and establish the study's credibility (Shenton, 2004).

Transferability

Transferability is how the information obtained or finding from a study is applicable in other similar settings (Ravitch & Carl, 2016). Hays et al. (2016) described transferability as the applicability of a study's results to another study or similar situations. The ability of the researcher to describe in detail the research design, methodology, and approaches adapted, including the participants' selection criteria for a study, are determinant factors for the transferability of the study's results (Marshall & Rossman, 2016). This study reflected the detailed description and analysis of the phenomenon under investigation, research settings, methodology, design, participants' selection criteria, data collection, and analysis procedures to enhance the study's applicability in other settings. Through literature review, I provided sufficient information on the contextual depth of the study and reported, described, and interpreted in detail the findings of the study. I used patterns, codes, and themes to provide meaning for other researchers to learn from it and to consider transferring the findings to other similar situations or places. I included the study's assumptions, limitations, and delimitations to help achieve the study's transferability.

Dependability

Dependability is when data integrity, reliability, and consistency characterize the findings of a research (Miles et al., 2014; Shenton, 2004). The dependability of a study involves having well-established data, and the ability to replicate the data collected in a similar situation yields similar results (Marshall & Rossman, 2016). Noble and Smith (2015) listed member checking and keeping audit trails and reflexive journals as

resourceful to enhance the study's dependability. In order to enhance the study's

dependability, this study reflected participants' realism and consistency in reporting and

analysis of findings. During the data collection process, I kept audit trails and reflexive

journals of personal reflections that informed the study's conceptualization without bias. I

conducted expert validation where three qualitative research scholars examined and

validated the interview questions. I ensured that the data collected were accurate and

well-established by conducting member checking and data triangulation. I conducted

member checking to confirm data accuracy, ensure validity, enhance reliability, and

reduce the risk of data misinterpretation. I triangulated the data to enhance the study's

dependability using reflective field notes and digital process supporting documents

reviewed. The recording and verbatim transcription of the interviews and the data

validation processes helped enhance the study's dependability.

Confirmability

Confirmability is the authentication of data obtained and the study's result

verifiable without the researcher's influence or bias (Cope, 2014; Chen, 2015; Shenton,

2004). Ravitch and Carl (2016) described confirmability as the level to which

participants' responses shape the findings of a study without bias. Shenton listed the

inclusion of electronically recorded materials, transcriptions, written field notes,

documents, and references in a study as resourceful for a study's confirmability. Noble

and Smith (2015) recommended accurate documentation of the study phases to enhance a

study's confirmability. To achieve the confirmability of this study, I recorded,

transcribed, documented, and verified all data collected for the study. I used an excerpt of

participants' statements in the data analysis to avoid any misinterpretation of data and to view the research finding in its realism without bias. I appended supporting evidence in the study and included references to all citations and links for confirmation.

Study Results

This result section is structured by the themes that emerged from the data analysis, connected to the study's phenomenon, and pertinent to providing an answer to the central research question. of "What digital strategies may business leaders and managers in the maritime sector in Lagos include to manage and transform maritime business operations in Lagos?" Excerpts of participants' statements in the data analysis illustrate the study's confirmability and realism. I aligned the study's conceptual framework to the overall data analysis, forming the themes and presenting and interpreting the results (Maxwell, 2013). To validate the results, I triangulated the data to ensure data accuracy and corroborated or refuted findings where necessary to enhance the study's credibility (Frey, 2018; Harper & Cole, 2015). I compared the result with results from other related studies (Igbozurike, 2020; Onwuegbuchunam et al., 2021; Tijan et al., 2021) on digital transformation in the maritime business sector and technology adoption in the maritime business operations in Nigeria. Analyzing and reporting discrepant cases was essential to confirm the patterns that emerged from the data analysis and to ensure data adequacy, the study's credibility, and the authenticity of the findings (Houghton, 2020; Maxwell, 2013). I looked for similarities and discrepant cases resulting from the data analysis. There was non-confirming data or significant discrepant data noted to have influenced the study's findings. The data analyzed and the result presented represent the

participants' views on digital strategies to manage and transform maritime business operations in Lagos.

Themes from the Data Analysis

The data analysis resulted in 10 themes aligned with the study's conceptual framework of why, what, and how to transform digitally. Four themes emerged in the category of "why digital transformation in Lagos maritime business (LMB) which are: (a) purpose and values of digital strategy inclusion in LMB; (b) integrating digital objectives into the LMB process; (c) digital strategy as a business management tool, and (d) digital strategy as a transformational tool. In the category of what to transform, the emergence themes are: (a) digital strategy implementation success factors in LMB and (b) barriers to digital transformation in LMB. In the category of how to transform, the emergence themes are: (a) intervention measures supporting digital strate gy inclusion in LMBs; (b) an integrated digital business transformation process; (c) foreseeing the horizon of digital strategy compliance in LMBs, and (d) government and other stakeholders' involvement in LMB transformation. Tables 2 and 3 reflect the participants' responses and the emergence codes, categories, and themes.

Theme 1: Purpose and Values of Digital Strategy Inclusion in LMB

This theme refers to the rationale, relevance, and benefits of including digital strategies to manage and transform maritime business operations in Lagos. In achieving this theme, I explored in interview participants' views in Q1 on the inclusion of digital strategies in Lagos maritime business operations and in closing the digital skill gap among business leaders and managers in LMBs. The intention was to understand better

the purpose and values of digital strategy inclusion in LMB operations. All the participants (100%) emphasized the need for digital strategy inclusion in LMB operations. The participants shared that digital strategy inclusion in their business operation has been resourceful in optimizing internal and external processes. They indicated that digital strategy helped remodel their businesses and enhanced their competitive business edge, sustainability, customer satisfaction, and Lagos's overall value chain of maritime business activity. The majority (90%) of the participants considered digital strategy inclusion in LMB as purposeful and unavoidable in this digital age. Then 10% stated that digital strategy inclusion in some LMB should be relative depending on the business model and need. The explanation was that small-scale maritime business operators might have challenges digitalizing their business process, given the likely cost effect on their business.

The participants stressed that digital strategy inclusion promotes digital skill acquisition and transformation in the business process for operational efficiency. A significant number (50%) of the participants noted that digital strategy inclusion in their business fostered new business opportunities and viable solutions to their business problems. 20% think that digital strategy helps meet future work demands, and 30% feel that digital strategy inclusion fostered positive changes in the overall value chain of their business. As a follow-up question, I asked if the changes in value creation stemmed directly from digital strategy inclusion in their business compared to when digital strategies were not. The participants (100%) confirmed that the related changes in value

creation stemmed from digital strategy inclusion in their business. Some of the quotes

from the participants' responses are:

- P5: "Digital strategy helped in remodeling our business process."

- P12: "DS pivots change and operational efficiency."

- P3: "Digital strategy fostered digital skill acquisition."

- P9: "Digital strategy helps our company to meet our work demands."

- P17: "Digital strategy in our business enhances our business competitive edge

  and readiness for the digital future."

- P14: "Digital strategy enhances the value chain of our business operation"

The process supporting documents reviewed highlighted the objectives of the

digital strategy included in the business process. CMPY 2, 3 & 5 process supporting

documents highlighted operational efficiency and timely service deliverable as the

purpose and inclusive value of digital strategy inclusion in their business process. At the

same time, CMPY 1 & 4 did not, but the participants acknowledged that digital strategy

inclusion has been valuable in their business operation.

Theme 2: Integrating Digital Objectives into LMB Process

This theme refers to the effect of integrating an organization's digital objectives in

the LMB process. In achieving this theme, I explored in interview Q2 participants'

perspectives on integrating an organization's digital objectives into the business model,

process, team building, service delivery, and addressing the digital skill gap that may

drive digital transformation and business continuity. All the participants stated the need

to integrate the organization's digital objectives into the business functions. A significant

number (60%) of the participants believe that integrating digital organizational objectives into the business functions is essential because the workforce needs to understand the business strategies and work in alignment with them. About 30% stressed that integrating digital objectives in all business components helps develop a holistic strategy that affects all aspects of their business and is instrumental to their business transformation and growth. Then 10% stated that it helps meet their customers' expectations and enhances their service delivery. Some quotes from the participants are:

- P12: "Through the integration of digital objectives into our business model, we developed a holistic strategy that affects all areas of our business."

- P9: "It helped us articulate a digital vision and roadmap for our business progression."

- P1: "Integrating our organization's digital objectives into business functions fosters an inclusive business management and transformation."

The process supporting documents revealed that the sampled organizations aligned digital objectives in their business vision and functions and highlighted the significance of the organization's digital objective inclusion in the work process. In the process documents of CMPY 1 and 4, each workflow links to an objective that contributes to the organization's overall objective, inclusive of the digital objectives.

Theme 3: Digital Strategy as a Business Management Tool

This theme refers to the potency of digital strategy in managing LMB operations. In achieving this theme, I explored in interview Q3 participants' views on digital strategies related to business management and transformation. All the participants

responded that adapting to digital strategy enhances business management abilities in this digital age. The participants affirmed that adapting to the digital strategy provided them with scalable digital solutions that support the strategic management of their businesses. About 40% of the participants stated that adopting digital strategies in their business improved their data exchange, business communication, planning, and management. Then, 20% viewed digital strategy as enhancing their immediate analysis of data and decision-making process. About 15% asserted that digital strategy provided a framework for inclusive corporate governance, structural expansions, and a holistic and modernized approach to their business management. Another15% asserted that digital strategy exposed them to rethinking and renewing their business process and using customer relationship and logistics management software with an integrated Artificial Intelligent capability in managing and solving business problems. Then 10% stated that the inclusion of digital strategy in their business helped them minimize their operational cost by reducing information exchange costs, improving their resource planning, faster turnaround time, and connecting and managing the workforce more creatively, which positively impacts their business value chain.

In addition, I explored to understand the changes in the organizational structure resulting from the inclusion of digital strategies in the business process. A significant number (70%) of the participants stated that their organization was already well-positioned for digital transformation resulting in no significant changes in the organizational structure. Then 30% indicated that they expanded their organization's structure. They created new departments like the IT department and leadership roles like

IT manager, chief digital officer, and digital process support officers for effective

leadership, management, and digital transformation of their business process. Some

quotes from the participants are:

- P8: "Digital strategy has been pivotal to our successful business operation and management."

- P2: "Digital strategy helps in developing a framework for an inclusive corporate governance in our organization"

- P11: "We leverage digital strategy to rethink and renew our business processes, customer's experience and it has been a great deal in our business management."

- P5: "Digital strategy has been instrumental to achieving a holistic management strategy pivotal to our business survival in this digital age."

- P12: "It provided a better logistics plan and addressed the challenges associated with manual process."

The process documents reviewed provided automated guidelines for workflow

and reporting procedures for process management. Also indicated in the process

document of two of the companies sampled are their map-out plans for implementing

new technologies and digital strategies to improve business processes, collaborate with

all stakeholders, and strengthen business management abilities.

Theme 4: Digital Strategy as a Business Transformational Tool

This theme refers to the potency of digital strategy in leading to innovative

changes in the way LMBs operate. In achieving this theme, I explored in interview Q4

participants' views on how they perceive digital strategies transforming maritime sector businesses in Lagos. The participants emphasized digital strategy as an innovative tool in their business transformation journey. All the participants (100%) stressed that digital strategy influenced significant changes in their business operations. Accordingly, 70% of the participants believe that digital strategy remodeled their business process, fostered a wide range of innovative practices, streamlined their operations - created a self-sustaining work process and operational efficiency, and enhanced information sharing and collaborations. About 25% noted that digital strategy, through the adoption of new and emerging technologies such as Big Data, virtual or remote work digital solutions, transformed their business operation by opening up new and sustainable opportunities for their business. In comparison, 5% indicated that digital strategy helped them automate their workflow, which helped improve customers' experience and service delivery. Some responses from the participants are:

- P5: "Digital strategies help create a self-sustaining work process and achieve operational efficiency."

- P16: "It provides innovative practices like business process re-engineering and business modernization."

- P20: "Digital strategies remodeled our business, streamlined our operations, enhanced our digital skill, information sharing, and collaborations among stakeholders."

- P8: "Digital strategy helped us to automate our workflow"

- P2: "Digital strategy helps to enhance strategically and enhance sustainable business relationship, improved customer's experience, and the business value chain."

The process documents reviewed did not specifically outline the process of digital strategy transformation in their operations but outlined work and technology adoption processes and progressive plans, which in return, influence transformation in their business operation.

Theme 5: Digital Strategy Implementation Success Factors in LMB

This theme refers to the implements that drive digital strategy success in LMB operation. In achieving this theme, I explored in interview Q5, participants' views on successful digital strategy included managing and transforming their business operation in Lagos to understand the drivers and required digital components to achieve digital transformation objectives in LMBs. The participants emphasized innovations, digitalizing the business process, change in mindset, digital upskill, investment in relevant digital implements, and leveraging the value of digital solutions and emerging technologies for business operation as vital in implementing digital strategies in LMB operation. The majority (about 60%) of the participants stressed that digitalizing their business process enhanced operational efficiency, remodeled their business, and unlocked business opportunities. About 20% asserted that digital skill upgrade and engagement of digitally inclined leaders and teams leaped the successful implementation of digital strategies in their organization. In comparison, 15% noted that making investment decisions that replaced old and underperforming digital implements, both software and hardware

solution with new and innovative ones was instrumental to their success. Another 5%

pointed out reorientation and change in mindset and perception as pivotal to their

successful implementation of digital strategies. Some excerpts from the participants are:

- P16: "Digital skill upgrade and digitally inclined leader."

- P1: " Investment in both soft and hardware digital solutions."

- P2, 9, & 6: "Digitalizing the business process"

- P14: " Replacing old digital implements with innovative ones."

- P5: "Change in mindset and practice."

- P4: "Understanding customers and stakeholders' needs and expectations."

Process documents reviewed highlighted commitments to change and willingness

to learn as critical factors for successfully implementing digital strategies in their

organization. CMPY 3 specifically stated, "If we must succeed, we must change and

conform to the digital era" as a catchphrase in their process document.

Theme 6: Digital Strategy Barriers to LMB Transformation

This theme refers to the challenges that impede the drive to manage and transform

LMB operations digitally. In achieving this theme, I explored in interview Q6

participants' views on what challenges might maritime sector businesses in Lagos face in

including digital strategies in their business operations. The intention was to identify

current barriers to LMB transformation. The participants emphasized lack of vision,

strategy, direction, data insecurity, poor investments in digital infrastructure in Lagos,

digital skill gap, and cost exposure related to required human and digital infrastructure

resources as significant factors impeding the digital transformation drive in LMBs. The

participants also emphasized the non-alignment of digital technologies, the business strategy, perception and resistance to change, and government regulation as some other factors that slow down digital transformation ambitions in LMBs. Some of the quotes from the participants are:

- P5: "Lack of vision, strategy and direction"

- P9: "Data security issues and need for data protection."

- P18: "Cost for the required digital resources and solutions."

- P15: "Irregularities in operation and poor investment in digital infrastructures."

- P13: "Digital skill gap and unwillingness to adapt to digitally-enabled systems."

- P10: "Lack of low-cost institutions to support digital skill development."

The process documents reviewed did not specifically state barriers to digital transformation, but emphasis was made on non-commitment to change and unwillingness to learn as detrimental to the digital transformation effort. The documents revealed operational procedures as the operating standard varies from port to port.

Theme 7: Intervention Measures Supportive to Digital Strategy Inclusion in LMBs

This theme refers to both the internal and external digital intervention measures to support digital strategy inclusion in LMB operations. In achieving this theme, I explored in interview Q6 as a follow-up question the participants' views on what support may help maritime sector businesses in Lagos to include digital strategies in their business operations. The participants highlighted engagement of digitally inclined leaders and

teams, alignment of digital objectives with the business model and the organization's overall objectives, and investment in skills and capabilities essential to achieving increased performance and competitive advantage as internal intervention measures supportive of LMB transformation. A significant number (70 %) of the participants pointed out investment in relevant digital solutions - innovative software and implements – leadership, team, and culture, internal digital architectures, and infrastructure of the mind and skills committed to business digitization as internal measures. Then, 30% stressed building internal digital networks for knowledge and information sharing and technology-enabled work pattern like virtual or remote work patterns to maximize employee engagement and performance.

In responding to the external intervention measures, the participants emphasized business leaders, government, and stakeholders' investment in emerging technologies and technological architects for a digital-enabled environment supportive of digital transformation agendas in Lagos. The majority (90%) of the participants considered an investment in internet infrastructures with high bandwidth essential external measures. Other considerations are software for electronic cargo inspection than manual and in-person inspections, online clearing and documentation, and technologies that can efficiently gather and process massive amounts of information in the maritime sector as external intervention measures. Then 10% buttresses the effort to orchestrate reliable local capacity building for data repositories than dependent on offshore capacities for data-based solutions to access resources and computing facilities, which has not been

cost-effective for digital transformation agendas in Lagos. Some of the quotes from the
participants are:

- P3: "Availability of high bandwidth and technological architects supportive to
  digital transformation agendas."

- P4: "Train and engage digital skilled personnel, make structural changes, and
  provide digital platforms and solutions for business process."

- P17: "Investment in digital architectures, infrastructures of the mind, and
  skills committed to business digitization."

- P10: "To orchestrate local capacity building than dependent on offshore
  capacities for data-based solutions."

The process supporting documents highlighted investment in emerging digital
architectures and capacity building as part of the progressive plans. Another thing
highlighted was training and re-training the workforce as part of the intervention
measures to enhance their business competitive edge and sustainability.

Theme 8: An Integrated Digital Business Transformation Process

This theme refers to adopting an inclusive DBT strategy to manage and transform
LMB operations. In achieving this theme, I explored in interview Q7 the participant's
views on the successful approach to implementing new technologies, digital
infrastructures, digital business processes, and workforce digital competencies to support
maritime business operations in Lagos. The participants emphasized the need for a clear
vision, definition of the aspect of digital strategy and transformation that the business
need, and the needed digital solutions, both software and hardware fit-for-purpose

solutions to drive DBT. The participants also explained that digitalization of their business process included internal and external processes using technologies and optimization of IT infrastructures.

About 50% of the participants stressed the need for charity about how digital strategies can create added value in the organization's digital future and integrate digital objectives into the business models, process, leadership, team building, capacity building, culture, and service delivery. About 25% stressed that business leaders should define which aspect of digital strategy and transformation the business needs and adapt to technological innovations and competencies pertinent to DBT in LMBs. Then 15% indicated the need to understand the disparity between digital strategies from manual processes and ensure a wide range of innovative practices overreaching the manual process. At the same time, 10% stressed the need to respond to changes caused by the emergence of new technologies and adapt the entire business value chain to technology implements and digital requirements. The participants described the technologies they included as presented in table 4. Some of the quotes from the participants are:

- P1: "Business leaders to be clear about how digital strategies will create added value in the organization's digital future."

- P7: "Understanding the role of digital technologies and how they can influence existing business models and processes."

- P13: "Investment in new and innovative technologies and fit-for-purpose software and cloud-based solutions."

- P19: "Adapting the entire business value chain to technology implements and digital requirements."

- P17: "Integrating our organization's digital objectives into our business models, process and systems, leadership, team building, culture, and service delivery."

The reviewed process documents clearly defined the organizations' visions. They highlighted technology adoption plans and implementation strategies to ensure an IDBT approach pertinent to achieving Lagos's business transformation objectives and business sustainability.

Table 3

Technologies Included to Manage and Transform Lagos Maritime Business Operations

Technologies included	Company	Participants	Percentage
Data-driven solutions	1, 2, 3, 4	1, 2, 3, 4, 5, 6, 8, 9, 11, 12, 13, 14, 15, 16.	70%
IT infrastructure	1, 2, 3, 4, 5	All	100%
Cloud-based solutions	1, 2, 3, 4, 5	All	100%
Modern technologies for unique business needs like logistics and customer management software and artificial intelligent for solving business problems.	1, 2, 4	1, 2, 3, 4, 5, 6, 7, 8, 12, 13, 14, 15, 16.	65%
Digital tools like e-mail, discussion boards, chat rooms, and telecommuting platforms	1, 2, 3, 4, 5	All	100%
Local capacity building for data repositories	2	5, 6, 7, 8.	20%
Offshore capacities for data-based solutions	1, 3. 4, 5	1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20.	80%

Theme 9: Foreseeing the Horizon of Digital Strategy Compliance in LMBs

This theme refers to understanding the prospect of digital strategy compliance in LMBs for business sustainability in Lagos. In achieving this theme, I explored in interview Q8 the participants' views on how their organizations address the need for continuous digital compliance for the future of work and business sustainability in Lagos. The participants emphasized having a sustainable digital direction, long-term plans, adapting to evolving digital technologies and solutions, keeping pace with the changing business world, and well-thought-out digital strategies and implementation phases tailored toward driving the business forward into the future as needful in meeting the future of work demands and business sustainability agenda. About 65% of the participants endorsed having an impelling vision, integrating more evolving concepts, and adapting to digital strategies that suit the organization's business process as propelling factors of digital strategy compliance in LMBs. Then, 20% considered making investment decisions that replace old and underperforming digital implements with new and innovative ones to stay ahead with the newest insights and digital business trends. In comparison, 15% stressed shaping future business strategies through digital optimization and continuous investment in bridging the digital skill gap to meet future work demands. Some of the quotes from the participants are:

- P1: "Setting a sustainable direction for our organization."

- P17: "To keep pace with the changing business world."

- P18: "Adapting to evolving digital technologies."

- P14: "Making investment decisions that replace old digital implements with innovative ones."

- P9: "Reposition our business for growth and to drive our business in meeting the future of work demands."

- P7: "Having a well-thought-out plan and digital implementation strategies tailored to our business."

- P5: "Inclusive business management."

The review of the process documents indicated investing in new and innovative digital solutions and sustainable business growth and survival as possibilities of LMB digitization and compliance.

Theme 10: Government and other Stakeholders' Involvement in LMB Transformation

This theme refers to understanding the role of the government and other maritime business stakeholders in including digital strategies to manage and transform LMB operations. In achieving this theme, I explored in interview Q9 anything else that the participants may want to share on leveraging digital strategies to manage and transform LMB operations. The perspectives shared by participants in this theme extended the knowledge of how government and other stakeholders' involvement can support digital strategy inclusion in LMB operations.

All the participants stressed the importance of the government and other maritime business stakeholders' involvement in the digital transformation of LMB operations. About 45% of the participant stated that the government needs to ensure enhancing regulations and provision of infrastructures supportive of the digital transformation of

LMB. Thirty percent of the participants indicated a need for the government and other business stakeholders in Lagos to build public institutions like ICT centers for digital capacity development and to orchestrate local capacity building rather than dependent on offshore capacities for data repositories and solutions. Then, 10% stated the need for maritime business stakeholders to embrace change in perception and operational processes and adapt to the digital era, while15% stressed the need for financial help from the government and policymakers to finance digital infrastructural development and operational needs.

As a follow-up to the responses regarding funding needs, I explored to understand how digitalization is financed in LMBs, and 85% of the participants indicated that they financed their DBT through internally generated funds from trading activities or clearly defined budgets of the period, and 15%, by investors (CMPY 3). One of the participants (P19 - 5%) did not comment on the funding source for their business digitalization. Some of the excerpts from participants' responses are:

- P11: "The government to ensure regulatory policies and provision of infrastructures supportive to the digital transformation of maritime business operations in Lagos"

- P3: "Business leaders to ensure digital inclusiveness at all levels in maritime business operations in Lagos."

- P15: "It is vital to develop and enforce digitally inclined standard of operation and best practices among all maritime business stakeholders."

- P13: "All stakeholders to embrace change in perception, operational processes and adapt to the demands of the digital era."

The document review did not relate to government and other stakeholders' involvement in digital strategy inclusion to transform LMB. The highlights of the documents were business process digitalization, performance improvement, and maximizing the potency of digital strategies to create values for the business.

Summary

In this chapter, I presented the result of the study. I discussed the research setting, demographics, and data collection and analysis. I generated data for the study by exploring the views of 20 interview participants with nine interview questions, document review, and reflective field notes. The data generated were analyzed using codes, categories, and themes. The codes emerged from the excerpt of the participants' responses. The study results were analyzed within the context of the study's conceptual framework. The study's results were categorized into why, what, and how to transform LMBs and summarized in themes. Ten themes emerged from the data analysis as (a) purpose and values of digital strategy inclusion in LMB; (b) integration of digital objectives into the LMB process; (c) digital strategy as a business management tool; (d) digital strategy as a transformational tool; (e) digital strategy implementation success factors in LMB; (f) barriers to digital transformation in LMB; (g) intervention measures supportive to digital strategy inclusion in LMBs; (h) an integrated digital business transformation process; (i) foreseeing the horizon of digital strategy compliance in LMBs, and (j) government and other stakeholders' involvement in LMB transformation. I

provided evidence of trustworthiness by establishing the study's credibility, transferability, dependability, and confirmability. Chapter 5 includes an interpretation of findings, a description of the study's limitations, recommendation for further research, the implications of the findings to social change, theory, practice, and conclusion.

Chapter 5: Discussion, Conclusion, and Recommendations

In this qualitative exploratory multiple case study, I aimed to explore the digital strategies that business leaders and managers in the maritime sector in Lagos may use. Meeting this study's purpose may help improve scholars' and business leaders' understanding of including digital strategies to manage and transform LMB operations, improve efficiency, and minimize the increasingly detrimental effects of maritime activities in Lagos. Data collection was through multiple sources: semi-structured interviews, document review, and reflective field notes. The participants were 20 leaders and managers from five maritime companies in Apapa and the Lagos Island area of Lagos, Nigeria. Ten themes emerged from the findings: (a) purpose and values of digital strategy inclusion in LMB, (b) integrating digital objectives into the LMB process, (c) digital strategy as a business management tool, (d) digital strategy as a transformational tool, (e) digital strategy implementation success factors in LMB, (f) barriers to digital transformation in LMB, (g) intervention measures supportive to digital strategy inclusion in LMBs, (h) an integrated digital business transformation process, (i) foreseeing the horizon of digital strategy compliance in LMBs, and (j) government and other stakeholders' involvement in LMB transformation. I analyzed the data and interpreted the findings based on the emerged themes from the study.

Interpretation of Findings

This section is structured based on the themes that emerged from the study's data analysis, and the interpretations are presented in line with the literature review in Chapter 2. I also aligned the themes with the study's conceptual framework. The findings were

considered in the context of internal organizational factors and technological and external factors applicable to LMB operations. I discuss and provide evidence from the data analyzed to corroborate how the study's results confirm, refute, or extend current knowledge related to digital strategies to manage and transform maritime business operations in Lagos, Nigeria. The findings include the purpose, values, roles, success factors, barriers, intervention and supportive measures, and processes of digital strategy inclusion to manage and transform LMB operations.

The Purpose and Value of Digital Strategy Inclusion in LMB Operations

This theme refers to the *why* of digital strategy in LMBs related to understanding the drive, relevance, and benefits of including digital strategies to manage and transform maritime business operations in Lagos. Business leaders adapt to digital strategies to improve internal and external business processes for optimal business performance and influence the path to DBT (Sanchez & Zuntini, 2018; Wade, 2015). This study's results revealed that adapting to digital strategies helped place LMBs in competitive advantage as P9 stated that "adapting to digital strategy helps differentiate us and put us at an edge over our counterparts who are less inclined to digital strategies." CMPY 2, 3, and 5's process supporting documents highlighted operational efficiency and timely service deliverable as the purpose and inclusive value of digital strategy inclusion in their business process. This study's findings collaborated with the literature that stated that adopting digital solutions resonates with improving operational efficiency, value creation in the business, and achieving sustainable competitive advantage (Abbosh et al., 2018; Schneider & Imai, 2019).

The findings also revealed that to fulfill the purpose of digital strategy and realize the value of digital technologies, technology adaption and implementation are required within the organizational structure and functions of LMBs. Digital technologies provide opportunities that organizations leverage to remodel their businesses and transform their operations. As emphasized by 100% of the participants, technologies helped in remodeling LMBs, creating new business opportunities, promoting digital skill acquisition, and enhancing operational efficiency, competitive business edge, readiness for digital future, and the overall value chain of maritime business operation in Lagos. This emphasis by the participants confirms the description in the literature that implementing digital strategies promotes a wide range of innovative practices, business modernization, operational efficiency, transformation, business survival, sustainability, and readiness for future work demands (Agboola et al., 2019; Goerzig & Bauernhansl, 2018; Loebbecke, 2019; Wade, 2015). By adapting to digital strategies, LMBs benefit from the effects of technologies and transformational values.

As stated explicitly by P5, P17, and 19, the results also affirmed that automation of business processes has been resourceful in helping LMB organizations meet their work demands and customers' expectations related to real-time operational efficiency and improved service delivery. The literature supported this assertion, such as Tijan et al. (2021), who indicated that digital strategy in maritime business operation enhances real-time business transactions and operational efficiency. The assertion also collaborated with Kobus et al.'s (2018) emphasis that digital strategy through lean IT management (LIM) eliminates activities that consume time and resources in the organization without

creating value. Transactions and attending to business demands are conveniently achieved at a faster speed and turnaround time with the adoption of digital strategies. A massive volume of information is processed timely and cost-effective without delays. Staff digital skills are enhanced, and customers' needs are met with a positive effect on the entire value chain of LMB operations.

The LMB leaders and managers understood the essentials of digital transformation and the need for a suitable digital strategy (see Becker et al., 2018; Hess et al., 2016). By integrating logistics management solutions in the LMB process, as confirmed by P8 and P12, value creation may extend to eliminating time wastages, reducing logistics flaws, and facilitating a better tracking and truck call-up system in the entire cargo handling process and supply chain management in LMB sector. The findings signify that digital strategy inclusion in LMBs is resourceful and unavoidable. Value creation in LMBs may improve with the inclusion of digital strategies in the business operation, as 100% of the participant affirmed that positive changes in value creation witnessed in their business stemmed from digital strategy inclusion in their business operation. Based on the results, LMBs must have considerable values they can extract from digitizing their business operations.

Integrating Digital Objectives into LMB Process

This theme explains the *why* of digital strategy related to the effect of integrating an organization's digital objectives in the business process of LMBs. Business leaders integrate digital objectives into business functions to align all the business components in driving digital transformation goals (Kane et al., 2015). Participants confirmed that these

digital objectives helped align their organizational structure, leadership, team, and process to drive digital transformation in their business. Collaboratively, the process supporting documents revealed that the sampled organizations aligned digital objectives in their business vision and functions. For example, CMPY 1 and 4's process documents tied each workflow to an objective that contributes to the organization's overall objective, inclusive of digital objectives.

Through integrating digital objectives into their business model, as noted by P12 and 17, LMBs developed a holistic strategy that affected all areas of their business which was instrumental to their business transformation and readiness for the digital future. It was evident from the findings that integrating digital objectives into the business model and functions helped develop a holistic strategy that affected all areas of the business function. This finding supports the description in the literature that the integration of the right digital solutions in the business process promotes business modernization by enabling business leaders to develop core digitization capabilities and strategies that affect all business areas to achieve a holistic DBT (Pagani & Pardo, 2017; Stoffels & Ziemer, 2017; Wade, 2015). From the results, the need to integrate the organization's digital objectives into the business process was imperative. Having a digital objective integrated into the business function and developing business models adaptive to digital strategies and technology adoptions are needed factors to manage and drive an inclusive DBT in LMBs.

Digital Strategy as a Business Management Tool

This theme described the *why* of digital strategy related to the potency in managing LMB operations. Business leaders implement digital strategies to optimize their business process, strengthen their business management strategy, and realize the values of business digitization (Sanchez & Zuntini, 2018). The study showed that LMB leaders and managers focused on using digital implements, digital leadership, team, culture, structure, enabled-digital systems, and software and hardware solutions to manage and transform their business. It was evident in the results that LMB leaders implemented digital strategies to optimize their business processes and strengthen their business management strategy. Thus, they connected with the workforce more creatively, made decisions based on digitally analyzed data, reduced information exchange costs through collaboration with other organizations, improved information flow, and streamlined operation processes for efficiency. For example, P13 pointed out that through digital solutions, shipping-related information is made available online and accessible timely with a click on the related database, which reduced the waiting time for information processing for shipping operations. As a result, LMB leaders benefit from the effects of these implements and the transformational values to manage their business.

The finding confirmed the assertion that business leaders who had digital leadership skills promoted digital culture and collective understanding among teams to articulate digital strategies for business process and survival (Gbangou & Rusu, 2016). A business owner (P12) specifically pointed out that digital strategy helped connect with the workforce more creatively. The process documents reviewed provided automated

guidelines for workflow and reporting procedures for process management. Digitalization of LMBs fostered the effective use of technology tools to manage the workforce for optimal performance and reduced transaction costs in the LMB value chain. Digital awareness by the workforce and sensitivity to digital culture and practice, as advocated by P1, 14, and P19, are also essential components in building a digital team, adaptive workforce, managing, and achieving digital transformation goals in LMBs.

Business leaders use digital strategies to manage and address the challenges of traditional-based and manual data management systems (Onwuegbuchunam et al., 2021). The study results indicated that adapting to digital strategies provided a better logistics plan through digital call-up systems and addressed the challenges and delays associated with manual business processes in operations. P12 asserted that adapting to the digital strategy provided their organization with a better logistics plan for ship to ship, ship to land, and land to ship operations through electronic data exchange applications and logistics software for digital call-up systems compared to the manual process. Digital applications, P9 pointed out, are resourceful in managing traffic, port logistics, trucks, ship vendors, chandlers, and avoidable delays in shipping operations. Similarly, P8 and P12 pointed out that tracking shipments, container examination procedures, and documentation processes such as manifest submission and clearances are better with online processing than manual processes. This finding confirmed the literature that described digital strategy as vital in restructuring and managing business activities and addressing the challenges of using traditional-based and manual data management systems to process and manage business operations (Onwuegbuchunam et al., 2021). The

result also signified that digital strategy adaptation helps in data management, timely information processing, business communication, planning, and ship operation management.

The study's results also revealed that digitalization of the business process provided inclusive corporate governance and structural expansions in LMBs. Within the LMB processes, digitalization changed the organizational structure to expand departments and create new roles. Although the majority (70%) of the participants confirmed that they were already well-positioned for digital transformation resulting in no significant changes in their organizational structure, 30% (CMPY 1 & 3) confirmed that they expanded their structure and created new departments and roles like IT department, IT managers, and chief digital officers for effective leadership, management, and digital transformation of their business process. This finding affirmed the assertion that critical thought on how to digitalize the business process to deliver the maximum value is essential in the business digital transformation and management process (Kosic, 2018). Organizational structures that considered the flexibilities of digitalization were seen as suitable for managing and implementing digital transformation agendas in LMBs. The findings signified that the digital transformation process in LMBs requires a flexible structure to create a framework that can enable a fast response to business demands and technological changes.

In response to technology adoption, the findings showed that one of the essentialities of digital strategy in LMBs is using technological tools and leveraging the strategic roles of emerging technologies for business management and transformation.

LMB leaders manage their business with technology-based solutions. Business leaders and managers in LMBs allowed technological changes in the entire business process, replacing old and underperforming digital components with new and innovative ones to manage their businesses and realize the value of digital technologies. This finding confirmed the assertion that business leaders who had digital leadership skills kept track of their organizations' infrastructures and technological advancement trends in managing and transforming their business (Gbangou & Rusu, 2016).

The results of the study affirmed that adapting to digital strategies provides scalable digital solutions that are supportive of strategic management of LMBs and collaborated with the findings that digitization of business processes supports business leaders in attending to managerial concerns and help shape how business leaders manage and create values in organizations (Binuyo et al., 2019; Nadeem et al., 2018). The perspectives shared by participants are an extension of knowledge on how essential and unavoidable digital strategy is, in managing, and transforming LMB operations in this digital era.

Digital Strategy as a Business Transformational Tool

This theme explained the why of digital strategy related to the potency of digital strategy in leading to innovative changes in the way LMBs operate. New and emerging technologies opened opportunities for business transformation, and the ability to transform businesses to capture digital business values ensues. The study revealed that business models, structure, leadership, workforce, culture, operational processes, and customer experiences are the key transformed areas in LMBs. This finding aligned with

the assertion in the literature that business models, processes, and customer experiences are the key areas requiring digital transformation, given that transformation in these areas, affected other aspects of the organization (Westerman & Bonnet, 2015). In effect, LMB leaders adapt to digital strategies to optimize ship operations and transform the critical areas of their businesses for better service delivery.

In line with Onwuegbuchunam et al. (2021) report, this study showed that LMB leaders leveraged digital strategies to remodel their business activities, streamline their operations, enhance the workforce's digital skills, and information sharing and collaborations among other digitally inclined maritime business stakeholders. P5 and 16 specifically buttressed that adapting to digital strategies provided their business with a wide range of innovative practices like business process re-engineering, which helped created a self-sustaining work process to achieve operational efficiency. In the result of the study, the digital strategy was seen as a propelling implementation for transformation in LMBs.

The findings highlighted that through the adoption of emerging technologies and digital solutions, the business transformation was influential in the sampled LMBs. About 25% of the participants noted that digital strategy, through the adoption of emerging technologies such as telecommuting platforms opened up new and sustainable opportunities for their business which confirmed the assertion of Tijan et al. (2021) that maritime businesses can leapfrog by adopting digital strategies to optimize service delivery. For example, P1 pointed out that, as with every other business sector and human endeavor, the COVID-19 pandemic impacted the maritime business sector in Lagos and

presented the need for a strategic approach for business survival. Customers' expectations for reliable and sustainable services were met by adopting digital solutions such as virtual work patterns and other telecommuting platforms and stimulated the need for consistency in digital transformation for business survival.

The process supporting documents reviewed outlined technology adoption processes and progressive plans of digital strategy adoption, which influence continuous digital transformation in their business operations. It was evident in the study's findings that digital strategy was resourceful in the transformation journey of the sampled LMB organizations. The digital strategy was an essential tool for rethinking, renewing, and transforming the business process of LMBs.

Digital Strategy Implementation Success Factors in LMBs

This theme explained the what of digital strategies related to the implements that drive digital strategy success in LMBs. A significant number (60%) of the participants emphasized digitalization of their business process as the primary factor contributing to the successful implementation of digital strategies in their because digitalization of the business process impacted other aspects of their business function. This finding confirmed the report of Kostić (2018) and Warner and Wäger (2019) that realizing business transformation objectives requires business digitalization, strategic initiatives, digital capability, and proactive measures to deliver business values. This finding also confirmed the assertion of Wade (2015) that the use of digital technologies in the business process drives digital transformation and helps a business shift from its existing fit to a new and improved fit. Technology adoption and digitalization of the business

process was seen as requisite factors to drive digital strategy implementation in LMB operations.

Kostić (2018) also discussed that business digitalization's essential components to deliver value in business transformation drive include having a digitally skilled leader, the right digital team, the right attitude, the right digital culture, and the proper digital culture infrastructure, and digitally-enabled systems. In line with Kostic's view, the result revealed having a digitally inclined leader, change in mindset, digital skill upgrade, and understanding of customers' needs and expectations as vital factors that facilitated the implementation of digital strategies in LMB operations. About 20% of the participants asserted that digital skill upgrade and engagement of digitally inclined leaders and teams leaped the successful implementation of digital strategies in their organization. They stressed that having the required digital capabilities is essential to adapting to digital strategies and technology use, as evidenced in the responses of P12 and P16 that they trained and engaged the workforce with the required digital skill and those with the requisite knowledge to maintain digital implements. This finding confirmed the report of Hess et al. (2016) that digital capabilities should be integrated with digital technologies to achieve the desired digital transformation result. It means that having the required digital capabilities is essential to successfully implementing digital strategies in LMBs. Digital capability fosters digital business agility and enables organizational leaders to be hyperaware of the future digital trend, make informed decisions, and promptly execute the necessary changes (Wade, 2015).

Developing business models and making investment decisions adaptive to digital strategies were also identified as needing factors to drive successful digital strategy implementation in LMBs. About 15% of the participants indicated that transforming their business models and making investment decisions that replaced old and underperforming digital implements, both software and hardware solutions with new and innovative ones was instrumental to their digital strategy implementation success.

This finding aligned with the recommendation of Wade (2015) in his Digitization Piano that digital transformation in the business model pivots an inclusive digital transformation effect in other business functions and enhances competitiveness and success in the marketplace. The participants also reiterated perception, change in mindset, and alignment to global digital culture and best practices as pivotal to the successful implementation of digital strategies. The process documents reviewed highlighted commitment to change and willingness to learn as critical factors for successfully implementing digital strategies in the organization. The findings, therefore, signified that acquisition of the relevant digital skillset and capabilities, fit-for-purpose technologies, change in mindset, and culture inclined to digital fruition are needful implements to thrive in digital strategy implementation in LMBs.

Digital Strategy Implementation Barriers in LMB Operations

This theme explained digital strategy related to what challenges might impede digital strategy implementation in LMBs. Although Lagos is considerably an ICT hub of West Africa, daunting challenges impeding the implementation of digital strategies in LMBs were evident in the study's findings. Responses from the participants confirmed

the description of Adetunji et al. (2017) and Onwuegbuchunam et al. (2021), that lack of vision, strategy, digital divide, digital skill gap, infrastructural deficit, poor investment in digital solutions, perception, unwillingness to change, data insecurity and regulatory challenges are common barriers to implementing digital strategies in LMB operations.

Lack of Vision, Strategy, and Direction

As asserted by P5, findings from the study confirmed that lack of vision, strategy, and direction negatively impact digital strategy implementation in LMBs as some LMB leaders struggle to understand what direction to lead their organizations digitally. As a result, some LMB leaders make decisions that do not favor adapting to digital resources to manage and transform their business, and digital strategy implementation in LMB operations becomes a challenge. This finding confirms the assertion of Microsoft (2020) that without vision, direction, efforts to improve, digital awareness, and inclusion, digital transformation, and its benefits in Nigeria will be limited. It also collaborates with the description of Nwaiwu (2018) and Betz (2018) that business digitization does not only mean adopting or acquiring new technologies but setting digital directions for the organization to be more adaptive and responsive to change using evolving digital solutions such as artificial intelligence and the Internet of Things to create new business procedures. It means that the lack of clear vision, strategy, and direction by LMB leaders are, among other things, the barriers to digital strategy inclusion in LMB operations. Clear vision with aligned strategy and digital direction are needed factors to drive digital strategy implementation in LMBs.

Digital Skill Gap

The study's findings revealed the digital skill gap as one of the key barriers to digital strategy implementation in LMBs, as P13 and P19 specifically stated that the digital skill gap and unwillingness to change adversely impact technology adoption in LMBs. This finding confirmed the report in the literature that technology adoption and the use of digital strategies in Nigeria businesses indicated a low level of digital literacy and a digital skill gap among some business leaders in Lagos to manage and transform businesses in Lagos (Oke et al., 2020; Zubairu et al., 2020). The need for LMB leaders and the workforce to upscale to the digital competencies pertinent to support LMBs and not to miss opportunities presented by digital technologies is essential in the leadership frame and implementation of digital strategies in LMB operations.

Digital Divide

The study confirmed, as noted by P13 that a digital divide exists in the city of Lagos among businesses and individuals and has been instrumental to the consistency in the inability of some LMB leaders to access digital resources, use the Internet, computing facilities, and digital solutions to transform their businesses. For example, P13 added that in the heat of the COVID-19 pandemic, a significant number of LMBs and other businesses in Lagos could not adapt to virtual or telecommuting work patterns due to poor internet availability and the high cost of internet resources and other required digital implements to access online facilities. This finding collaborated with the assertion in the literature that the level of technology adoption in Lagos lacks sufficiency, and the ICT service cluster, is still in its infancy (Adetunji et al., 2017). It means that the participants

saw the digital divide related to poor internet availability at remote locations independent of the office facility, low-cost and accessible digital skill resource centers, computing facilities, and other implements to access internet resources for work as impeding factors to digital strategy implementation in LMBs.

Poor Investment in Digital Infrastructures and Cost Effect.

The study's findings revealed that poor investment in digital infrastructures related to required human and digital infrastructure resources is a significant barrier to implementing digital strategy in LMBs. The participants argued that some LMB leaders chose not to digitalize their business due to infrastructural deficits and high-cost demand for the acquisition and implementation of digitally enabled systems and architectures. P15 and P18 expressly indicated poor investment in digital infrastructures in Lagos and cost related to required digital resources and solutions as a big challenge that their organization faced while driving digital strategy implementation. Relatedly, P10 confirmed the lack of low-cost institutions to support digital skill development is detrimental to digital skill acquisition and impedes digital strategy implementation in LMBs. This finding confirmed the assertion in the literature that there is no known availability of sufficiently strong government-owned institutions or centers to support the IT skill development drive in Lagos. It means that poor investment in digital infrastructures and the high cost of acquisition and implementation of digital solutions negatively impact digital strategy implementation in LMBs and expansive DBT in Lagos.

Perception and Resistance to Change

Attitude and mindset within the success pursuit construct are critical to adaptive functioning (Bolman & Deal, 2017). Some business leaders are reluctant to trust some digital strategies arguing that digital solutions or strategies could fail to deliver as presumed (Coltman et al., 2015). This study's findings revealed that some LMB leaders are unwilling to adapt to a technology-led business operation. P1 and P13 described the perception and unwillingness of some business leaders in LMBs to adapt to digitally-enabled systems as impeding factors to implementing digital strategy in LMB operations. In line with Okundaye et al. (2019), the study's result revealed that some business leaders perceived the adoption of disruptive and innovative digital solutions such as the Internet of things into business as insecure and a security threat to the business given the history of failed defense perimeters in protecting business activities. This finding confirmed the assertion in the literature that negative perceptions avert a significant number of business leaders in the maritime sector from digitalizing their business activities to achieve 'the blue economy dream' in the Nigerian maritime sector (Igbozurike, 2020). It means that perception, skepticism, and resistance to change agendas avert some business leaders from adapting to digital strategies. Changing attitude to a positive frame is essential to drive an inclusive digital strategy implementation in LMBs.

Data Insecurity

The result (P1, P9, & P20) revealed that data security, the risk of data theft and increased need for data protection affects the willingness of LMB leaders to take risks and make decisions under uncertainty. This finding collaborated the report of Chakravorti

et al. (2021) that the poor state of digital infrastructure, the safety of data, and the regulatory framework increase the fear and risk of data insecurity that feeds people's perception negatively of digital strategy adoption in businesses. The result showed no possible protection to ward off cyberattacks completely, but can only be managed and adversely impact the decision to implement digital strategies in LMB operations.

Regulatory Challenges

Irregularities in maritime operations and non-compliance to the required operating standard were equally seen as impeding factors to digital strategy implementation in LMBs. P15 indicated that irregularity in operations and non-compliance to the required standard impact the ability to adopt digital strategies in LMBs for operational efficiency. For example, the document review revealed that the maritime sector regulations vary and depend on the port of operation related to the authorities' activities and operational procedures, making an effort to achieve a digitally harmonized and integrated operation challenging. Again, for proper tracking of vessels and smooth shipping operations, there are current technological solutions required, P17 noted. Such solutions include modern radiographic solutions for receiving signals, energy monitoring solutions, and critical indicators for best route and weather optimization, which help track vessels, predict emissions, and manage the vessel's maintenance costs and operations. The findings revealed that most ship owners/managers do not put in place the implements as required (P17). The authorities in charge of inspection to ensure compliance often overlook it. In effect, shipping companies resort to manual processes or in-person confirmations to ensure smooth shipping operations than adapting to digital solutions.

Poor Level of Technology Adoption Among Maritime Regulatory Bodies in Nigeria

The result revealed a poor level of technology adoption among regulatory bodies, emphasizing the Nigerian Ports Authority (NPA), Nigeria Maritime Administration and Safety Agency (NIMASA), and Nigerian Customs as not living up to expectations. This finding collaborates the description in the literature as evidenced in the series of newspaper publications (see Appendix A), that the regulatory bodies are not living up to expectation. P1 and P17 emphasized that the regulatory authorities ought to be the first to accept the digital transformation and lead as the flag bearer in the country; instead, the acceptance rate remains below expectation and negatively impacts maritime business operations in Nigeria. The continued use of underperforming technologies in the Nigerian maritime space negatively impacts the effort to digitalize maritime businesses, digital infrastructural development, and operational efficiency at the nation's seaports (Ali & Odularu, 2020). In line with the report of Onwuegbuchunam et al. (2021), P17 noted that manual cargo inspection and processing of shipping documents, in-person and paper applications, and clearances still characterized the activities of NPA, NIMASA, and Customs. It means that operational procedures at NPA, NIMASA, and Customs are not advancing technology adoption in maritime business and are dissuasive to digital strategy implementation in LMB operations.

Relatedly, P19 asserted that non-compliance to maritime legislation and the required standard might have been influenced by the cost implication of meeting the required standard and lack of understanding related to the value of the legislation. The result showed that the irregularities and non-compliance to the required standard were

seen as barriers to inclusive digital strategy implementation in LMB operations. For an inclusive digital strategy implementation in LMB operations, harmonized regulation and compliance to the required global standard and set out rules guiding maritime business activities in Lagos should be the watchword.

Intervention Measures Supportive to Digital Strategy Inclusion in LMBs

This theme refers to how digital strategy inclusion is related to intervention measures to support digital strategy inclusion in LMB operations. The interpretation here includes internal (organizational) and external (government and other stakeholders) intervention measures supporting digital strategy inclusion in LMBs.

Organizational Intervention Measures

The findings revealed engagement of digitally inclined leaders and teams, alignment of digital objectives with the business model and the organization's overall objectives, and investment in skills and capabilities essential to achieving increased performance and competitive advantage as internal intervention measures supportive of LMB transformation. Creation of digital leadership roles like Chief digital officer, IT manager, or Digital process support officers, and investment decisions adaptive to digital strategies and capabilities essential to achieving increased performance, P17 noted, helped enhance their organization's commitment to business process digitization and implementation. This finding confirmed the assertion of Nambisan et al. (2017) and Gupta (2018) that digital leaders adopt the digital solution-oriented approach and encourage teams to experiment with digital solutions, reimagine processes, and think critically to offer solutions to business digitization problems. It means that digital leaders,

teams, and investment decisions adaptive to digital strategies and the capabilities essential to achieving operational efficiency are supportive recipes to achieve digital strategy inclusion in LMBs.

The process documents (CMPY 1 & 3) reviewed highlighted training the workforce as part of the intervention measures to enhance the business' competitive edge in modern technologies as P4 emphasized training and engaging digitally skilled personnel as one of the drastic measures taken by their organization. This finding affirmed the assertion of Oke et al. (2020) that to bridge the digital skill gap to support business transformation and help minimize business closure in Lagos, a digital skill upgrade is paramount. It means that actively shaping the competitive edge of the business through employees' training to meet the demands of the digital era is an essential measure to prepare LMBs for digital strategy included in the business operations.

Changes in the structure and business process of the organization often lead employees to assume roles that were conventionally outside of their functions. Making structural changes to build a framework for an inclusive digital strategy implementation was seen as an intervention measure taken to support digital strategy inclusion in LMB operations. Again, as indicated by 30% of the participants, building internal digital networks for knowledge and information sharing and technology-enabled work pattern to maximize employee engagement and performance were interventional to barriers to digital strategy inclusion and LMB sustainability. The findings mean that effective practices like adjustment in organizations' structure and developing the required skills and platforms to create a pivotal framework for the fast response to business demands

and technological changes support digital strategy inclusion in LMBs. External measures related to Government and other stakeholders' interventions were also highlighted in the findings.

Government and Other Stakeholders' Intervention Measures

The external intervention measures refer to the how of digital strategy inclusion in terms of how Government and other stakeholders' involvement can support digital strategy inclusion in LMB operations. The result revealed the role of the Government through the regulatory bodies' involvement as essential to digital strategy inclusion in LMB operation. The majority (90%) of the participants considered government and other stakeholder's investment in both soft and hardware solutions like internet infrastructures with high bandwidth, electronic cargo inspection software opposed to manual and in-person inspections, online clearing and documentation procedures, and technologies that can gather and process a massive amount of information cost-effectively as required interventions. Other measures, as revealed in the result, include:

Local Capacity Building. About 30% of the participants indicated a need for the Government and other business stakeholders in Lagos to build public institutions like ICT centers for digital capacity development. The essence is to help bridge digital skill gaps and foster local capacity building rather than dependent on offshore capacities for data repository and solutions. The results aligned with Adetunji et al. (2017) discussion that Nigerian businesses depend majorly on offshore data repositories that are often not cost-effective and present the need for the Government and other business stakeholders to promote the building of local ICT hubs for digital capacity development and data

repository. In effect, to help bridge digital skill gaps and foster local capacity building for data repository and digital solutions. It means an intervention by the Government and other stakeholders to make policies and investment decisions that will foster local capacity development for practical cost effect on digital strategy implementation.

Funding. Digitalization of LMBs in the framework of technology adoption, acquisition of digital infrastructural, and meeting operational needs requires funding, and the result (P11), indicated that the majority (80%) of LMBs finance digital transformation in their businesses through internally generated funds and emphasize the need for the Government to fund digital infrastructural developments. The study showed that digitalization is majorly financed by the cash flow generated from trading activities, services, or defined budgets. LMBs need financial intervention from the Government and policymakers to finance digital infrastructural development. It means that digitalization so far in LMBs has been majorly through internally planned projects and private financing. This finding collaborates with Hess et al. (2016) conclusion that most companies use internal funds for their business digitalization drive. The need for government intervention funds and a budget to support funding of ICT projects and the provision of a digitally enabled environment is essential.

Government Regulations. The result indicated that most ship owners and players in the maritime sector do not adhere to stated rules and regulations, as P11 emphasized the need for the Government to ensure compliance with regulatory policies supportive of the digital transformation of LMB operations. Businesses are increasingly exposed to cyber threats due to the intensive use of new technologies. The result of barriers to digital

strategy implementation showed no possible protection to ward off cyberattacks completely. Appropriate regulations and countermeasures supportive of anti-cyberattacks and data security to encourage an appetite for digital strategy adoption was also seen as another needful intervention by the Government.

As evident in the barriers to digital strategy implementation and in literature, the decline in compliance with the required standard and operating rules is traceable to failed regulatory and environmental policies and enforcement procedures (Arogundade & Nwani, 2018). It is essential for the Government to develop and enforce digitally inclined standards of operation and best practices among all stakeholders, as 10% of the participants emphasized the need for maritime business stakeholders to embrace change in perception and operational processes and adapt to the demands of the digital era. Maritime business leaders, the Government, and other stakeholders' interventions related to enforcing compliance to regulatory policies, investment in physical infrastructures, software solutions, the infrastructure of the mind, and skills committed to digital strategy implementation are essential measures to digital strategy inclusion in LMB operations.

Adopting an Integrated Digital Business Transformation Process

This theme explained how digital strategy inclusion is related to adopting an inclusive DBT process to manage and transform LMB operations. The result indicated the need to integrate the organization's digital objectives into the business models, process, leadership, team building, capacity building, culture, and service delivery as P17 specifically stated that integrating the organization's digital objectives into their business models, process and systems, leadership, team building, culture, and service delivery was

resourceful in their digital strategy inclusion process. The result also (about 75% of the

participants) highlighted the need for a clear vision, definition of the aspects of digital

transformation that the business need, and the needed digital solutions, both software and

hardware fit-for-purpose solutions to drive DBT. P13 on the other hand, pointed out that

no particular technology is a one-stop solution to achieving digitalization objectives. This

finding collaborated with the assertion of Gupta (2018) that business leaders should align

digital skills and vision that revolutionized with technology evolutions to reimagine and

reinvent businesses. Business leaders must be clear about how digital strategies will

create added value in the organization's digital future for inclusive management and

transformation of LMBs leveraging digital strategies.

The study results also showed that an increasing number of LMBs are adapting to

network components, digital architectures, applications, storage facilities, or other

resources accessible through internet connections to structure business operations,

provide services, and improve business performance. Modern technologies for unique

business needs like logistics and customer management software and artificial

intelligence were also adopted in LMB operation as 65% of the participants confirmed

using such for solving business problems. Digital tools like email, discussion boards, chat

rooms, telecommuting platforms, and local and offshore capacities for data repositories

were also used. Eighty percent of the participants confirmed using offshore data

repositories, while only 20% relied on local (within Nigeria) data repositories. It was

imperative from the study findings that to have an inclusive digital strategy to manage

and transform LMB operations requires adopting an IDBTP.

The findings also showed that the extent of digital strategy inclusion in LMBs operations depended on the size of the business, business model, and financial capability, given the prevalent constraints such as the digital divide, infrastructural deficit, and high-cost effect of business digitalization. Some of the key findings to keep in mind included the state of digital infrastructures in Lagos, Nigeria, the digital divide, and funding constraints to drive and achieve digital transformation objectives. Transforming LMB operations, as revealed in the study's result, requires funding ability, digital skill upgrades, infrastructural enhancements, and the development of a digital ecosystem in the spectrum of maritime business operations in Lagos.

The result also indicated the need to understand the disparity of digital strategies from manual processes, adapting to technological innovations and competencies pertinent to DBT, and ensure a wide range of innovative practices overreaching the manual process as P7 emphasized the need for business leaders to understand the role of digital technologies and how they can influence existing business models and process. Studies argued that technology evolutions present valuable opportunities for business transformation and threats to the safety of business operations (Sebastian et al., 2017), LMB leaders leveraged the emergence of new technologies to identify and respond to opportunities to transform their businesses. The ability to respond to changes caused by technological evolution positively emits innovation and business digitalization (Tunc & Aslan, 2020; Wade, 2015). From the result, it is needful that LMB leaders continue to respond to needful changes caused by technology evolution and adapt the entire business process to technology implements and digital requirements to capture business values.

The ability to transit to automated and paperless procedures, innovative business models adaptive to digital strategy, and to respond to technological changes for value creation must be needed for an IDBT. Digitization automates manual processes from analog artifacts to a digital design for value creation (Gobble, 2018).

Butt (2020) affirmed that a framework that supports digital transformation in business using an IDBT process helps organizations minimize their risk of failure. Kane et al. (2015) argued that technology alone does not provide value without strategic integration of other components to drive digital transformation goals. The results showed no less approach among the sampled companies to using an IDBTP for digital strategy implementation in LMBs. The process documents reviewed defined the organizations' visions and highlighted technology adoption plans and implementation strategies to ensure an IDBT approach pertinent to the transformation drive. The Digital strategies inclusion process in all the companies sampled showed no significant difference in design but an inclusive framework that support digital strategy implementation in LMBs (see Table 4). It means that digital strategy implementation in LMBs required IDBTP.

Foreseeing the Horizon of Digital Strategy Compliance in LMBs

This theme refers to how digital strategy relates to understanding the prospects of digital strategy inclusion in LMBs for business sustainability in Lagos. The findings revealed having a sustainable digital direction for the organization, long-term plans, and adapting to evolving technologies and solutions as factors to address the need for continuous digital strategy compliance in LMB operations for business sustainability in Lagos. About 65% of the participant endorsed having an impelling vision and adaptive

digital strategies as propelling factors of digital strategy compliance in LMBs. This finding collaborates with the description in the literature that for a business to remain competitive and sustainable, the leaders must be visionary, responsive, and comply with digital transformation strategies pertinent for business survival (Schwertner, 2017). A vision with direction adaptive to digital strategies that suit the organization's business process is essential to addressing continuous DBT and sustainability agenda.

Other factors revealed include keeping pace with the changing business world to meet the future of work demands, making investment decisions adaptive to business innovations, replacing old and underperforming digital implements with innovative ones, staying ahead of the newest insight and digital business trends, and having a well-thought-out strategy and implementation plans fundamental to repositioning the business for growth and continuity. About 20% of the participants considered making investment decisions that replace old and underperforming digital implements with new and innovative ones very essential. These findings confirm the emphasis of Berghaus and Back (2017) that for businesses to remain sustainable, there is a need for business leaders to keep up with digital shifts and changes in the competitive landscape. Businesses that exclude compliance to digital strategy in their sustainability agenda experience an adverse effect on realizing business sustainability objectives (Sanchez & Zuntini, 2018). It is imperative that having a well-thought-out plan, keeping up with innovative trends, and responding are necessary to achieve digital strategy compliance and business sustainability objectives.

As stressed by 15% of the participants, the use of technologies helps shape future business strategies through digital optimization and continuous investment in bridging the digital skill gap to meet the future work demands. This emphasis confirmed the description in the literature that implementing digital strategies promotes a wide range of innovative practices, business modernization, transformation, readiness for future work demands, business survival, and sustainability (Agboola et al., 2019; Goerzig & Bauernhansl, 2018; Loebbecke, 2019; Wade, 2015). Complying with digital strategy created the opportunity for business leaders to retool their skills and strategies for operational efficiency, optimal performance, and business sustainability.

Business Growth was also considered as a possibility emanating from compliance to digital strategy. The findings revealed that compliance to digital strategy helps reposition businesses for growth as P9 specifically stated that compliance with digital strategies helped reposition their business for growth. This finding collaborated the emphasis of Alizadeh (2017) that business leaders need to capitalize on the rapidly growing digital economy to reposition their businesses for growth and mitigate the risk of losing access to significant opportunities. It means that the maritime business sector in Lagos needs digital strategies to be repositioned for growth and to mitigate the risk of losing opportunities accrued to compliance to digital strategy, given that businesses that lack digital strategies in this digital era suffer exposure to missed value-producing opportunities to increase efficiency and capture business values (Nwaiwu, 2018; Schneider & Imai, 2019). It is imperative that transforming to a technology-led way for business growth and sustainability is the prospect of complying with digital strategy.

Achieving an inclusive business management process was another factor revealed in the horizon of compliance to digital strategy. The study's findings revealed adequate management of business interactions and transactions as another key possibility of complying with a digital strategy in LMBs operations for business sustainability, as P5 specifically indicated that compliance to digital strategies has been pivotal to inclusive business management in their organization (CMPY 2). This finding confirmed the assertion of Pagani and Pardo (2017) that complying with digital strategy equips the maritime business sector with digital solutions and emerging technologies to transform the business interactions and transactions process to enhance operational efficiency. Transforming the maritime business sector with digital solutions will improve service provision, information sharing, operational efficiency, and logistics management and minimize the detrimental effects of maritime business activities in Lagos to achieve the sustainability goals of Lagos businesses.

The majority (65%) of the participants also see compliance with digital strategy as an enabler to the integration of more evolving concepts such as the Big Data, Artificial Intelligent, telecommuting, cloud computing, and Blockchain in LMBs to provide more innovative ways to collect and manage information and data exchange. It is evident in the result that digital strategy compliance in LMBs is future-oriented as LMBs was generating increasing values through digital strategy inclusion in their business which may continue to deepen in the future with continuous compliance to digital strategies.

Limitations of the Study

Limitations are procedural constraints in a study that may impact a study's result (Marshall & Rossman, 2016). The limitations of this study include difficulty in participant selection due to precisions on inclusion criteria and accessibility issues related to participants' availability for interviews and consenting to IRB Informed Consent. Only the participants who signed the Informed Consent participated in the study, which limited the expanse of perspective and data obtained from experienced participants who did not sign the Informed Consent. Given that only participants who signed the Informed Consent participated in the study, the study's findings depended significantly on the sampled participants' responses to the research questions and documents reviewed. The responses may have been influenced by biases and not holistically represent the views of other business leaders and managers in LMB. The purposeful sampling design adopted may be a restriction to the qualitative generalizations of the study.

Other limitations include difficulties and refusals experienced in obtaining Letters of Cooperation from the partner organizations. Some organizations had stringent policies guiding the issuance of such letters and granting interviews. Poor connection during telephone interviews was another limiting factor to the study as some calls were disconnecting and reconnecting and, in effect, extended the time spent interviewing some participants. Reluctance among some partner organizations in granting access to their private and confidential documents for analysis was another limitation. Some of the participants may have had concerns about the safety of information and trade secrets. They may have been a bit economical in letting out some vital information during the

interview and another limiting factor in the study. To ensure that I obtain rich and credible information for the study, I ensured that I interviewed all the selected participants. I triangulated the data obtained from the interview with document review and the reflective field notes taken to ensure the sufficiency and reliability of the data, enhance the study's validity, and establish the trustworthiness of the study. Using the member-checking to review the transcribed data mitigated the limitation of possible personal bias in the interpretation of data and presentation of the study results.

Recommendations

This qualitative exploratory multiple-case study explored digital strategies that business leaders and managers in the maritime sector in Lagos may include to manage and transform maritime business operations in Lagos. At every step of my data collection, analysis, and interpretation, I paid attention to the findings and documented the evidence fundamental to making meaningful recommendations. In line with the study's findings, strengths and limitations, and the literature review in Chapter 2, I made my recommendations.

Recommendation for Digital Strategies to Manage and Transform LMB Operations

The findings of the study revealed the purpose and value of digital strategy inclusion in business operations, the effects of integrating an organization's digital objectives in the business process, the roles and potency of digital strategy inclusion in managing and transforming LMB operations, digital strategy implementation success factors and barriers, intervention measures to support digital strategy inclusion in LMB

operations, an IDBT approach to manage and transform LMB operations, and the prospects of digital strategy inclusion in LMBs for business sustainability in Lagos.

The findings highlighted the importance of establishing a common purpose, vision, and direction when considering digital strategy inclusion in business which was lacking among some LMB leaders (P5). I recommend that LMB leaders be visionaries and catalysts to lead teams to think innovatively to achieve digital transformation objectives (Northouse, 2016). To ensure clarity of purpose, I also recommend, in line with the concepts of this study, that LMB leaders and managers should always explain why adapting to digital strategy, how to adapt, what to implement, and what benefits will result from it.

The findings showed in the digital strategy integration process, roles, the potency of digital strategy, and in the success factors that one of the components of digital strategy in LMBs is the use of emerging technologies to manage and transform business operations. Business leaders and managers in LMBs allowed technological changes in their businesses to realize the value of digital technologies. It was evident in the findings that LMB leaders managed and transformed their businesses using technology-based solutions. The participants described the technologies they included, as shown in Table 4, for better service delivery and to improve business performance. I recommend continuous integration of technology-based solutions - both soft and hardware to manage and transform LMB operations.

The result also indicated that the majority (80%) of LMBs financed digital transformation through internally generated funds from trading activities or clearly

defined budgets of the period, and 20% by shareholders or investors. While business leaders make an effort to finance the digital transformation of their businesses through internally generated funds, the digitalization of LMBs in the context of digital infrastructural development and digital skill acquisitions requires funding support from the Government. The Government needs to make investment decisions that can spur the appetite for digital strategy inclusion. I recommend funding support and infrastructural development by the Government and other stakeholders.

The rising number of incoming freights to Lagos/cargo containers running half-load, given the unfavorable exchange rate and import conditions in Nigeria (P9 & P17), was another concern revealed in the study's result. Over 70.61% of international traffic and 70% of total National cargo freight pass through Lagos (Office of the Lagos State Government, n.d). Ineffective cost management and unnecessary congestions are the consequences. Kobus et al. (2018) emphasized that digital leaders should challenge the status quo (existing reality) and adopt new strategies and mindsets to rethink and renew processes. Evidence from the literature review (Sia et al., 2016) and the findings attest that digital platforms unite people in a space to use digital solutions to innovate, coordinate, and streamline communication and collaboration to capture values. I recommend that business leaders and cargo handlers in LMB operations consider using digital platforms to maximize cost and optimize logistics and traffic flow in Lagos. Such platforms could be MyKN, Challengers Flexport, and Tradeshift, launched in Europe to coordinate cargo load operations, logistics, clearances, and cost management (Lehmacher, 2020).

As noted by P13, no one technology solution or platform today serve as a one-stop solution to emerging digital strategy needs. For example, no database repository has information on Lagos's shipping or other maritime-related activities. An integrated digital solution or platform that could offer a one-stop solution to shipping and other maritime-related information repository needs could help to improve service provision, collaborations, and information sharing. It may also reduce the cost of access to information, resulting in fewer delays in obtaining information and fostering better management of LMBs compared to manual searching of files and communication over email, fax, or telephone to obtain information that often causes delays and information leaks.

Emails containing sensitive information are exchanged via unsecured networks and public domains with less or no measures for data protection, P12 noted. An example was related to situations where some shipping companies use YAHOO.COMM and GMAIL.COM as official email addresses or radio communication channels with high-frequency interferences during communications with personnel onboard vessels. Information leaks and undue exposure to hackers, piracy, and militant attacks are the consequences, as the case has been over the years (Nwalozie, 2020). Insecurity beseeches losses and high insurance costs and, in effect, economic ramifications that impact the government or organization's budget for capital ventures such as digital infrastructural development. The Government and the maritime regulatory authorities need to enforce countermeasures to ensure the safety of information exchange for safe and smooth shipping operations.

The study's findings identified specific rules, policies, and measures supporting digital strategy inclusion in maritime operations. The need for compliance was also identified as a vital factor in inclusion in LMB operations. Through the regulatory bodies, the Government should implement policies that can drive collaboration and compliance among stakeholders and policies that are supportive of digital infrastructural development to ensure digital inclusiveness at all levels in maritime business operations in Lagos. I recommend strict intervention measures by the relevant authorities to enforce compliance to the required standard.

Team management was another factor identified as critical to digital strategy implementation in LMBs. Teams need to possess skills adaptive to digital strategy implementation for efficiency and optimal performance. Workforce digital skill upgrades that match emerging technologies can help support digital strategy compliance and optimal performance. Again, while navigating the lines of digital strategy inclusion related to virtual or remote work patterns, team satisfaction is essential. Studies revealed that using videos when communicating reinforces the sense of fun, connectivity, and happiness. It could be a way to overcome the isolation that can creep in when people are not meeting in person, manage the team, drive connection, satisfaction, and optimal performance among teams. As revealed in the Literature, Zoom, Microsoft Office 365, Google Meet, GoToMeeting, Facetime, Adobe Connect, Amazon Chime, and Digi-Tell Apps are, as at the time of this study recommended as effective and supportive modern digital solutions for real-time conversation, telecommuting, and information sharing. Relationship building should be an ongoing strategy.

Concerns about business closure in Lagos were raised in the literature review, the problem statement of the study, and the findings of the study. Literature review associated the cause of business closure in Lagos with a lack of digital strategy and technology-led approaches in the business process of most shipping companies and other maritime-related activities in Lagos. Digital strategy inclusion in the business process enhances productivity, operational efficiency, business performance, and transformation (El Hilali et al., 2020). Digital strategy inclusion in the business process supports the endeavors of organizations to develop in a resilient and sustainable way (Esses et al., 2021; Oskam et al., 2021), but the literature review and the study's findings demonstrated a dearth of research on digital strategy inclusion in maritime business operations. There is a need for the Government and institutions to fund research and development of innovative technologies in maritime business operations in Nigeria focal to technology inclusion and advancement in the maritime sector, enhance operational efficiency, and business sustainability to help change the narrative of business closure in Lagos.

Recommendations for Further Studies

A literature gap exists on how to include digital strategies to manage and transform maritime business operations in Lagos, Nigeria. Accordingly, the findings of this study identified some impeding and success factors to digital strategy inclusion in managing and transforming LMB operations. The scope of this study was limited to maritime businesses in Lagos, Nigeria. The population was five maritime companies in Lagos Island and Apapa areas of Lagos, excluding maritime business operations in other areas or cities in Nigeria. The study focused on the perspective of business leaders and

managers in LMBs and did not include other employees of the selected companies and other stakeholders in the maritime sector.

The study design was a qualitative method with an exploratory multiple-case study approach. There is a need for further studies on digital strategy inclusion in maritime business operations, including the excluded population and its applicability in other cities and scopes of maritime activities in Nigeria. I recommend further research to consider the exclusions and quantitative methods to replicate the study in a similar or different setting to validate or refute the findings. A quantitative method through an online survey may offer diverse perspectives from the excluded population on the study's phenomenon and extend the findings beyond Lagos to enhance the generalizability of the findings. The expansion of the study to include the exclusions may create a more comprehensive understanding of the dynamics around digital strategy inclusion in managing and transforming LMB operations.

Implications

Implication for Positive Social Change

The study's implication for positive social change lies in its potency to advise Lagos' business community on how digital strategy inclusion in business may help sustain business in Lagos and influence positive changes. The study's findings underscored the shared value of digital strategy inclusion in LMB operations. Some of the key findings from this study to keep in focus on the effect of digital strategy inclusion include better management of maritime businesses in Lagos, transformation in the maritime business sector, better service delivery, time and cost savings, reduced logistics

flaws, and traffic congestion on Lagos roads, business sustainability in Lagos, increasing socioeconomic opportunities and benefits, and economic progression. The implication of the findings may include optimized logistics and traffic flow in Lagos, developing technological abilities, job creation, improved unemployment rate, and household income to achieve a better living standard in Lagos and, in effect, positive social change.

With the adequacy of digital infrastructural development and proper implementation of digital strategies in LMB operations, there would likely be a reduced influx of residents from rural areas to urban areas who leverage digital infrastructures to work and live in urban areas. Residents in far and remote areas can enjoy working from home without exposure to health and societal ills that characterize commuting on Lagos roads to work in areas like Apapa and Lagos Island. People can perform their duties optimally and access business transactions and interactions by leveraging digital solutions, achieving business continuity, stable jobs, steady income, better planning and living standard, and positive social change.

On the spectrum of economic growth, the study revealed that the maritime sector contributes significantly to the GDP of Lagos, socioeconomic opportunities, and economic progression (Office of the Lagos State Government, n.d; Osho & Adishi, 2019). Digitalization brings business and socioeconomic processes (Vasilescu et al., 2020). The study showed that maritime business digitalization fosters business sustainability and a possible increase in income and government revenue through tax generation for socioeconomic progression. Proper management of LMBs leveraging digital strategies may help reposition the maritime sector to improve its contribution to

the economic progression of Lagos state and effect positive changes in value creation.

The study's findings may help organizational leaders in Lagos develop technological

architects and entrenched change culture to eliminate business and societal challenges

posed by business closures in Lagos for social and economic progression. Integrated

digital strategy implementation in LMBs may foster harmonized logistics and improved

transportation systems through land and waterways to help decongest traffic on Lagos

roads, generate revenue for the state, and offer socioeconomic benefits and positive social

change. Applying the study's findings may positively impact socioeconomic equilibrium

and influence positive social change with the underlying prospects of digital strategies

inclusion in LMB operations.

Implication for Theory

The maritime sector contributes significantly to the GDP of Lagos (Office of the

Lagos State Government, n.d; Osho & Adishi, 2019), but no known study at the time of

this research explored digital strategies to manage and transform maritime business

operations in Lagos. Studies and other academic accomplishments revealed limited

information on digital strategy as management and transformational tool in LMBs. The

gap in the literature presented the need to explore how to provide information that may

help improve the inclusion of digital strategies to manage and transform maritime

business operations in Lagos. I reviewed and analyzed the literature and the study's

findings related to concepts and theories in managing and transforming LMBs leveraging

digital strategies. The study's findings provided valuable information on digital strategies

to manage and transform LMB operations and thus, created an opportunity for theoretical

expansion and implementation. The knowledge gained from this study of how digital technologies paired with capabilities to transform business may impact both theory and practice of business management.

The study provided inclusive theoretical support on digital strategy inclusion in business. It enriched the literature by providing an IDBT approach premised on digital capabilities, soft and hardware solutions, and digitally-enabled systems to manage and transform maritime business operations in Lagos. This study advances technology adoption discussion to digital strategy and its related influences on Lagos's business management, transformation, and sustainability. Exploring business transformation from a digital strategy standpoint offered valuable insights and new knowledge. It addressed the gap in the literature in the context of digital strategies to lead, manage and transform LMB operations for business sustainability in Lagos. The study provided a significant contribution to the theoretical development of digital strategy as management and transformational tool in LMB operations and the foundation for further research on the topic, given the limited case study examples that may enrich practice' and scholarly understanding of digital transformation in business (Ivančić et al., 2019). The study is significant to theory because the strategies explored and insights gained may assist the theorists and scholar-practitioners understand how maritime businesses in Lagos may seek solutions that may change the narrative of business closure in Lagos. Following the completion of this study, business leaders, managers, and other stakeholders in Lagos maritime business sector now know the why, what, and how to include digital strategies to manage and transform maritime business operations in Lagos.

Implications for Policy

The maritime sector contributes significantly to socioeconomic opportunities and the economic progression of Lagos state and Nigeria at large (Osho & Adishi, 2019). The study's findings revealed that government and policymakers' involvement in the digital transformation of maritime sector business is essential to chart the way forward. The literature review and the study's findings demonstrated a dearth of research on digital strategy inclusion in maritime business operations. They had created an information gap for policymakers to make policies that will foster efficiency in the Nigerian maritime sector (Aluko & Odularu, 2019). This study might bridge the information gap and bring the policymakers' awareness to the increasing fear and risk of data insecurity, impeding the decision to adopt digital strategies. Also, the need for digital infrastructural development, local capacity building for data repositories, and non-compliance to some required operating standards. The anticipation is that the policymakers might benefit from this research by deploying the findings to formulate policies that may help to enhance the inclusion of digital strategy at all levels in maritime business operations. To enhance operational efficiency, address the concerns noted in the study's findings and the detrimental effects of maritime business activities such as business closure to foster economic progression and positive social change.

Implications for Practice

The study's analysis provided a distinctive approach to using digital strategy to manage and transform maritime business operations to effect positive changes in value creation. It was evident in the result that LMB leaders implemented digital strategies to

optimize their business process, strengthen their business management strategy, and make

decisions based on digitally analyzed data to capture business values. Businesses that

lack digital strategy in their business transformation agenda suffer exposure to missed

value-producing opportunities to increase efficiency and create more value (Nwaiwu,

2018; Schneider & Imai, 2019). This study may significantly contribute to the

management profession and practice by providing insight into understanding the

impediments to business survival in Lagos and using the findings as a decision support

tool to manage and transform maritime businesses for better business practices and

improvement.

Organizational leaders, managers, and practitioners might benefit from this

research by deploying the findings to bridge the digital skill gaps identified, redesign

their business processes, and retool their skills, strategies, and leadership styles for

optimal business performance. Employees trained in updated technologies are pivotal to

digital strategy implementation and match the present and future work demands (Arntz et

al., 2019). The empirical data and recommendations made in this study may reinforce the

awareness of business leaders and institutions on the training needed to develop a

technologically skilled workforce in the maritime sector. Given the highlights of digital

strategy inclusion in business as a management and transformational tool, the findings of

this study may also assist organizations' leaders who are looking for an effective

framework to transform their business to consider the DBT paradigm as an option to set

up and position their companies to a transformational fit for survival in this digital age.

The study's findings may also increase the awareness and desire of business leaders,

managers, and other practitioners in the maritime industry to commit to including digital strategies to manage and transform their business operations.

Conclusions

This qualitative exploratory multiple-case study explored digital strategies that business leaders and managers in the maritime sector in Lagos may include to manage and transform maritime business operations in Lagos. Participants' perspectives on digital strategies to manage and transform LMB operations in line with the related literature reviewed framed the study's findings to deduce meaning and interpretations to answer the research question. In retort to the research question, the study revealed that managing and transforming LMB operations is achievable through inclusion of soft and hardware digital solutions at all levels of the business process using IDBT approach. With digital strategy inclusion, values were generated, and could continue to deepen with continuous compliance to digital strategies in the entire framework of maritime business operations in Lagos. Following the completion of this study, business leaders, managers, and other stakeholders now know why, what, and how to include digital strategies to manage and transform LMB operations and areas requiring further research and development. In effect, business leaders, managers, and other stakeholders may now include digital strategies to develop technological architects and entrenched change in the management process and practice focal to operational efficiency to enhance business sustainability in Lagos and influence positive social change.

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Appendix A: News Publications on Gridlock Situation in Lagos

Appendix B: Interview Guide

Dissertation title: Digital Strategies to Manage and Transform Maritime Business

Operation in Lagos, Nigeria.

Research design and method: A qualitative explorative multiple case study.

Participant's recruitment strategy: Purposeful sampling

Interview format: Telephone interview

The telephone interview is flexible in scheduling and in obtaining in-depth and detailed

information from research participants. A telephone interview takes less time, cost-

effective, and helps to observe the social distancing norm amid the COVID-19 pandemic.

With face-to-face interview, the interviewer could be distracted during note taking

compare to telephone interview that can enhance note taking without distraction (Sturges

& Hanrahan, 2004).

Procedure for Participants Recruitment

The participants are business leaders and managers of maritime industry in Lagos,

Nigeria. The first step for recruiting the participants for the interview would be to identify

organizations and individual participants that can provide relevant and sufficient

information to answer the research question (Patton, 2015). The participants must meet

the stated selection criteria. The procedures I will follow to recruit the participants

includes:

1. **Develop a list of criteria for the required participants**

   • Must be in the maritime industry within Lagos Island and Apapa areas of Lagos

   State

- Been in operation for at least three years

- Have implemented digital strategies to transform and sustain their businesses

- Use both software and hardware technologies for process improvement and architectural built.

- Must be business leaders and managers.

- A male or female adult of at least 20 years and above

- Live in Lagos, Nigeria but could be of any nationality

- Ability to speak English fluently for easy communication and understanding

2. **Selection Procedures for the participants**

- Obtain information about potential individual interview participants from the HR of the selected companies

- Do a background check to identify participants that meet the stated criteria

- Purposefully make selections based on the stated criteria

- Target an average of four persons in each of the five companies selected to reach the 20 interviews required

- Contact the selected persons in writing through e-mail to inform them about the details of the interview, forward the Informed Consent Form for signing, and to schedule interview dates and time.

- Request from those contacted to suggest other participants

- Check on the list of suggested persons, make elimination and produce final list of participants

3. **Preparation**

- Send letters of invitation via e-mail to the participants to confirm their participation

- Send a follow-up letter to the respondents with Informed Consent letter for signing.

- Schedule interview appointment dates and time

- Conduct the Interview

4. **Conducting the Interview**

- Use the developed interview protocol to ensure uniformity and consistency in obtaining rich information

- I will use semi-structured interview and the timing of the interview will be about 30 minutes

- Start by completing the basic information about the interviewee related to location, organization, position, date, and timing.

- Introduction (open statement) and share with interviewee the purpose of the research

- Explain the keywords and terms used in the context of the study and the usage in the interview questions

- Explaining the central research question to the interviewee

- Explain how the result will be used and safety of the identity of the interviewee and the data collected

- Use open-ended questions to encourage participants' self-expression and balanced view of the study phenomenon

- Audio-record the interview using telephone

- Make a closing statement in appreciation of the participation in the interview and further actions that may be required.

- Conduct member-checking and peer debrief through telephone

Interview Protocol

Date: _____ Organization: _____ Location: _____

Interviewee's Position:_____ Start Time: _____ Finish Time: _____

Introduction

My name is Charles Emelogu, a doctoral student of Walden University studying management. Thank you for accepting to be a part of this study. The purpose of this qualitative exploratory multiple-case study was to explore digital strategies that business leaders and managers in the maritime sector in Lagos may include to manage and transform maritime business operation in Lagos. This interview, as you already know, aims to explore perspectives from business leaders and managers on digital strategies implemented to manage and transform maritime business operation in Lagos. The phenomenon of interest is the lack of digital strategies among business leaders and managers in maritime sector in Lagos and the increasing rate of business closure in Lagos. The interview will last for about thirty minutes. I will be asking you questions regarding your perspectives on digital strategies included to manage and transform maritime business operations in Lagos. I will be taking notes as you respond to each question.

There will be an audio record of this interview for transcription purposes. You have the right to decline or exist at any time as stated in the informed consent form and should you desire to stop before the end of the interview, kindly let me know. I will email to you a summary of the transcript of this interview at a later time to verify the accuracy of the information you provided, make changes if any, and kindly let me know. The data collected will be adequately secured and analyzed in my study. I will exclude your identity in the data analysis with no trace of it to your responses. Do you have any questions or concerns about this interview that I need to know? Are you ready to start the interview and would you mind if I call you by your first name?

Central research question: The central research question is: What digital strategies, may business leaders and managers in the maritime sector in Lagos include to manage and transform maritime business operations in Lagos?

Interview Questions

The research questions include;

1. What are your views on inclusion of digital strategies in maritime business operations in Lagos and closing the digital skill gap among business leaders and managers in the maritime businesses in Lagos?

2. What is your perspective on integrating organization's digital goals into the business model, process, team building, service delivery, and addressing digital skill gap?

3. How do you explain digital strategies related to your business management and transformation?

4. How do you view digital strategies transforming maritime sector businesses in Lagos?

5. What do you view as the successful digital strategy included in your organization to manage and transform your business operation in Lagos?

6. What challenges might maritime sector businesses in Lagos face in including digital strategies in their business operations and what support may help?

7. What do you view as successfully approach to implement new technologies, digital infrastructures, digital business process, and up-skill of workforce digital competences to support maritime business operations in Lagos?

8. How is your organization addressing the need for continuous digital compliance for future of work and business sustainability?

9. Do you have anything else you may want to share or question to ask?

Closing Statement

Thank you so much for your time, participation, and improving the quality of my study. I really appreciate the understandings you showed. Please, I want to request that I get a chance to speak with you if I need any further clarification. In the next few days, I will send you a copy of the transcript for member-checking to assure that the transcribed interview responses are accurate. If you want to make any alterations, please do so and email it back to me. Please also let me know, if there are no changes. I will call to hold a debrief session with you to discuss the outcome of the study, the methodology, and certify that the responses and transcription as used in the study truly represent your view before the final exit.

Appendix C: Invitation E-mail to Potential Interview Participants

Dear (Participant's name)

Invitation for Participation in Research Interview

My name is Charles Emelogu, a doctoral student at Walden University in the Ph.D.

Management program with Specialization in Leadership and Organizational Change. I

am inviting you to participate in my research on **Digital Strategies to Manage and**

Transform Maritime Business Operation in Lagos, Nigeria as "interviewee."

The purpose of the study is to explore digital strategies that business leaders and

managers in the maritime sector in Lagos may include to manage and transform maritime

business operation in Lagos.

The process involves signing a consent form that I will forward to you, about 30 minutes

confidential and audio recorded telephone interview, and about 25 minutes' member-

checking on phone to be scheduled at a time convenient for you to speak one more time

after the interview to discuss the researcher's interpretations and for you to share your

feedback. All information would be kept private and confidential. No name or

information that may lead to the trace of your identity would be mentioned in the study

report. Please let me know if you would like to participate. I will appreciate your earliest

response in view of the time-bound for the interview. You can contact me by e-mail:

charles.emelogu@waldenu.edu if you have any concern.

Thank you very much in anticipation of your consideration to participate in the study.

Gratefully,

Charles Emelogu

Appendix D: Initial Codes from Participants' Responses

Interview Questions	Excerpt from Participants Responses	Initial Codes
Q1: What are your views on inclusion of digital strategies in Lagos maritime business operations and in closing the digital skill gap among business leaders and managers in the maritime businesses in Lagos?	Digital strategy inclusion in the business functions helps in remodeling our business, pivots change and operational efficiency in our business. Fosters training, digital skill acquisition and operational efficiency. Helps in aligning organizational leadership, team, process, and structure to drive digital transformation and business continuity. It in meeting the future of work demands. It enhances business remodeling and new business opportunities. Enhances business survival and readiness for the digital future. It enhances the value chain of maritime business operation in Lagos.	**Perspective** Purpose, Relevance. Values.
Q2: What is your perspective on integrating organization's digital objectives into business model, process, team building, service delivery, and addressing digital skill gap?	Integrating organization's digital objectives into business functions fosters an inclusive business management and transformation. Help developed a holistic strategy that affects all areas of our business. Helped us in articulating a digital vision and roadmap for business progression. Has been instrumental to our business survival and readiness for the digital future. Has been transformational and pivotal to our business growth	Strategic roadmap, to management transformation, business survival, digital future, business growth
Q3: How do you explain digital strategies related to your business management and transformation?	Digital strategy has been pivotal to our successful business operation and management. Helps in developing a framework for an inclusive corporate governance in this digital era. To rethink and renew our business processes, customer's experience and it has been a great deal in our business management and transformation journey. Helps differentiate us and put us at an edge over our counterparts less digitally inclined. Has been instrumental to our organization achieving a holistic management strategy pivotal to our business survival.	Management, corporate governance, renewed process, competitive advantage, business survival.
Q4: How do you view digital strategies transforming maritime sector businesses in Lagos?	Digital strategies will create self-sustaining work environment and operational efficiency. Provide a wide range of innovative practices like business process re-engineering and business modernization. Remodel business activities. Streamline operations. Enhance digital skill upgrade and collaborations among stakeholders. Provide better logistics plan through digital call up systems and address the challenges and delays associated with manual business process in in Lagos maritime business operations. Help develop a digital framework for business governance. Enhance strategic and sustainable business relationship, improve customer's experience, planning and management and contribute to the value chain of LMB.	Self-sustaining Efficiency, plan, innovation, re-engineering, skill upgrade, collaboration, digital framework, relationship, customer's experience, management.
Q5: What do you view as the successful digital strategy included in your organization to manage and transform your business operation in Lagos?	Having a digitally inclined leader. Adapting to technological innovations. Investment in soft and hardware digital infrastructures, change in mindset, business process, and practice. Digital skill upgrade. Leveraging the value of digital solutions and emerging technologies for business operation. Investment decisions that replace old and underperforming digital implements with new and innovative ones. Focusing on digitalizing the business processes. Developing new business models, and transformed our business.	Leadership, innovations investment, digital skill, digital solutions. Infrastructure, change, business opportunities.

| Q6: What challenges might maritime sector businesses in Lagos face in including digital strategies in their business operations and what support may help? | Data security issues and cost exposure related to required human and digital infrastructure resources. Poor investment in digital infrastructures. Digital skill gap, and unwillingness to adapt to digitally-enabled systems. Poor digitally enabled systems and work environment. Non-availability of low-cost institutions to support digital skill development. Risk of data theft and increased need for data protection. Low bandwidth and technological architects. Low investment in physical and infrastructures of the mind and skills. | Security, cost, poor investment, unwillingness, data protection, inexperience. Tech architect, Low bandwidth, no intervention. |

Q7: What do you view as successfully approach to implement new technologies, digital infrastructures, digital business process, and up-skill of workforce digital competences to support maritime business operations in Lagos?	Clarity about how digital strategies will create added value in the digital future of the organization. Saw maritime operation without borders. Understanding the role of digital technologies and how they can influence the existing business models. Investment in new and relevant technologies, Train and engage digital skilled personnel. Acquire fit for purpose business technologies. Build digital architectures and ensure digitally-enabled system. Innovative practices overreaching to the manual process. Provide digital platforms and solutions to information exchange. Adapting the entire value chain to technology implements and digital requirements. Defining which aspect of digital strategy and transformation does the business need. Adapt to technological innovations and competencies pertinent to digital business transformation. Understanding the disparity of digital strategies from analogue or manual processes and the expectations.	Clarity, Vision, understanding, influence, training, fit for purpose, architect, innovation, digital platform, information exchange, value chain, implements, business needs, transformation, disparity, expectations
Q8: How is your organization addressing the need for continuous digital compliance for future of work and business sustainability?	Setting a sustainable digital direction for our organization. Adapting to evolving digital technologies and solutions to achieve our sustainability goals. Foreseeing the horizon of business digitization and sustainability through research. Investment decisions that replace old and underperforming digital implements with new and innovative ones. Integrating the organization's digital objectives into the business model. Including relevant digital resources in our business process to meet the future of work demands. Having a digital strategy that suits the organization's business process. Having a long-term planning and a well-thought out digital strategies and implementation stages tailored to our business advancement.	Digital direction, digital solutions, research, digital objectives, business model, new technology, digital resource, future of work demands, planning, digital strategies, implementation.
Q9: 9. Do you have anything else you may want to share or question to ask?	Maritime business stakeholders to embrace change in perception, operational processes and adapt to the demands of digital era. The government to ensure regulatory policies and infrastructures supportive to digital transformation in Lagos Maritime business leaders to ensure digital inclusiveness at all levels in maritime business operations in Lagos. Need to orchestrate local capacity building than dependent on offshore capacities for data-based solutions. Enforcement of digitally inclined standard of operation and best practices.	Change. demands of digital era, government & Stakeholders involvement, supportive policies, capacity building, best practice,