Digitalization in the logistics industry as a support to business continuity amid black swan events

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DECLARATION

I declare that this assignment is my own, unaided work. It is submitted in full fulfilment of the requirements for the MSc. Industrial Engineering degree. It has not been submitted before for any degree or examination in any other university.

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Signed  this day of 2022/05/11

ABSTRACT

Business continuity presents itself as a challenge, especially given the global economic impact and supply chain disruptions caused by the novel Coronavirus (COVID-19), a black swan event. Digitalization refers to the implementation of digital tools that transform the current business model of an enterprise. The aim of digital tools is to provide innovative opportunities that ultimately add value to the organization. Digital tools can deliver distinct organizational advancements such as improving the information flow within an enterprise and reducing waste across the enterprise. These organizational advancements are particularly useful and even necessary in supporting business continuity amid black swan events.

This study aimed to investigate challenges and threats experienced by Company X, a multinational logistics company, as a direct result of the Coronavirus outbreak and how a lack of digitalization could hinder the ability of Company X to react rapidly in response to these changes. Additionally, relevant digital technologies and its influence on the business model and culture of company X were explored. A generic qualitative research design was used to explore this phenomenon. Data collection comprised of six semi-structured interviews, whereby the role of digitalization in the supply network of company X was explored.

The findings confirmed consistency with previous research indicating that strong leadership, process standardization and data integration, a strong supportive enterprise culture with a low Resistance to change factor, employee and partner engagement, alignment in business and IT strategies, a strong emphasis on training and skills development of employees, agile transformation management and the leveraging of internal and external technological knowledge ensure successful digital transformation within an organization. The study found that a lack of resources and a high degree of complexity in underlying processes prevent logistics service providers from experiencing digital transformation. Additionally, the study found that digital tools supported business continuity during the COVID-19 Pandemic.

Keywords: black swan event; disruption; logistics industry; digitalization; COVID-19 (Coronavirus); business continuity, Sub Saharan Africa (SSA)

DEDICATION

This paper is dedicated to the loving memory of my late Grandmother, Maraai.

Thank you for taking care of me since I was just a little girl. Thank you for all the homemade meals, paired with the warmest of smiles. Thank you for every coffee shared and for always listening and encouraging me. You were there from the beginning and I wish I could share the end with you.

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Above all, I give thanks to God Almighty for making a way and for providing me with the health and strength needed to complete this research. To You firstly be the honour and the glory.

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To my father Marthinus Herbst and my mother Belinda Herbst, thank you for raising, educating and preparing me for my future. Thank you for your financial support throughout the years. No words will ever be enough to show you how grateful I am. To my brother, Martiens Herbst, thank you for your words of encouragement and for the privilege I had to grow up with a sibling as kind and generous as you.

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NOMENCLATURE / LIST OF ACRONYMS

AI	Artificial Intelligence
B2B	Business to Business
B2C	Business to Consumer
BCP	Business Continuity Plan
CDC	Centres for Disease Control and Prevention
CEO	Chief Executive Officer
CoE	Centre of Excellence
COG	Customer Operations Group
COVID-19	Novel Coronavirus
CPK	Cost per kilo
DT	Digital Transformation
ECDC	European Centre for Disease Prevention and Control
GCCR	Global Customer Clearance Reporting
IATA	International Air Transport Association
IoT	Internet of Things
IT	Information Technology
OCR	Optical Character Recognition
PLT	Paper less Trade
PPE	Personal Protection Equipment
PWO	Piece Weight Optimization
RPA	Robotics Process Automation
RTC	Resistance to change
SME	Subject Matter Expert
SSA	Sub-Saharan Africa
SWH	States Warehouse
TFA	Trade Facilitation Agreement
WHO	World Health Organization
WTO	World Trade Organization

APPENDICES

1 CHAPTER 1 INTRODUCTION

The coronavirus (COVID-19) outbreak is a global catastrophe, affecting the livelihood of citizens and enterprises (Mountford, 2020). Baratta (2020), describe a black swan event as an event so significant; it changes the entireness of humankind's perspective. Black swans are depicted by their extreme rarity and ability to cause disastrous damage to the economy. Additionally, any standard forecasting instruments cannot foresee black swans (Baratta, 2020). COVID-19, a black swan event, emphasized the necessity for enterprises to adapt their operational strategies and business models to aid in the unprecedented disruption caused by the pandemic (Crawford, 2020). According to Vural (2015), enterprises cannot function in an isolated environment and can therefore face significant challenges during turbulent times. It is mandatory for enterprises to adopt a proactive and nimble approach in response to the changing environs. Digitalization will play a fundamental part in necessitating business survival.

The logistics industry is defined as a collection of organizations that coordinate the flow of both information and goods on behalf of other actors within the market (Chopra & Meindl, 2013). Logistics companies offer services associated with transport and logistics, also known as T&L. The COVID-19 pandemic caused major supply chain disruptions across all modes of transport and borders (Oxford Business Group, 2020). As part of the broader supply chain, Transport and Logistics (T&L) play a critical role in ensuring that time-critical shipments reach their destinations on time and in full (Doherty & Botwright, 2020).

Within the logistics industry, companies need to consider the advance of a new digital enterprise. Digital tools such as Robotics Process Automation (RPA), Big Data Analytics, Block Chain, Internet of Things (IoT) and Artificial Intelligence (AI) are becoming increasingly important in supporting business continuity, especially given the milieu of a digital era (McKinsey & Company, 2021). Digitalization is set to transform the logistics industry as the rapid transformation into a digital enterprise demands advanced business tools to retain market positions (Diallo, 2017).

1.1 CONTEXT

Company X consists of business units (BU's) that offer logistics services which include domestic and international parcel delivery, international express parcel delivery and road, air, ocean freight and end to end supply chain management. Company X divisions within South Africa include; Express, Aviation, e-commerce solutions, Global Forwarding and Supply Chain. All Company X divisions are owned by the same parent: International Company X Group (Company X, 2021).

The Express division provides international express services, "serving 2.5 million customers in 220 countries through over 500 airports and three main global hubs, boasting more than 45,000 service points, 250+ airplanes and 32,800 vehicles, this division's core business is international time-definite shipments (TDI)" (Company X, 2021). TDI services permit company X to deliver parcels at predetermined times.

The Global Forwarding division is accountable for ocean, air and road transportation within the Group. "Freight forwarding services include standard transportation as well as multimodal and sector-specific solutions" (Company X, 2021).

The Supply Chain division "provides customer-centric outsourcing solutions and customized logistics solutions based on globally standardized modular components. In addition, the division grows the e-commerce business globally, based on a strong foot-hold in Germany" (Company X, 2021).

As a multinational company, Company X makes use of a holistic management process which empowers the various business units (BU's) within the organization to establish best case scenarios and procedures to serve customers in the event of emergencies (Company X, 2020). Furthermore, a Coronavirus task force to manage and control the spread of COVID-19 has been established. The aforementioned task force, led by the group CEO, collaborates with international organizations. These organizations include, but are not limited to the WHO, ECDC, and CDC. The task force delivers any essential or needed information to all BU's, operations and employees (Company X, 2020).

For this research, the focus is on Company X Express SSA, which refers to International Express delivery by means of air transportation. Furthermore, reference is made to Company X Aviation, the division responsible for providing capacity with regards to air

transportation. Company X Aviation does not refer to commercial airlines, but rather to airlines that are owned/co owned by the company or chartered by Company X (Company X, 2020)

1.2 PROBLEM STATEMENT/MOTIVATION

Competition within the logistics industry to retain and improve market positions coupled with disruptions caused by black swan events, such as the COVID–19 pandemic, threatens business continuity (Diallo, 2017). Consequently, the objective of digital tools to aid in competitiveness and business continuity, especially during unprecedented times, may direct organizations to the Fourth Industrial Revolution (Medyakova, Kislitskaya, and Kudinova 2020).

In light of the existent literature, factors that prevent or enhance the implementation of innovative technologies within information systems, innovation management and change management have already been studied (e.g. King and Burgess, 2006; Ngai, Law and Wat, 2008; Nikpay, Selamat, Rouhani and Rikfard, 2013; Oke, 2004; Oakland and Tanner, 2007; Oliveira, Echeveste and Cortimiglia 2018). However, Digital Transformation which refers to the concurrent use of numerous technologies that influences the creation of digital processes, products, services and business models, require more research (Pellathy, Mollenkopf and Stank 2018).

Therefore, there is a need for comprehensive research on Digital Transformation, within the logistics industry, which will provide logistics companies with an understanding on how digitalization and digital tools can support business continuity amid black swan events.

1.3 RESEARCH QUESTION

The following critical research question guided the study:

- What is the role of Digitalization for Company X in supporting Business Continuity amidst the COVID-19 pandemic?

1.4 RESEARCH OBJECTIVES

The aim of this research was to assess the role of digitalization in supporting business continuity amidst the COVID-19 pandemic within Company X. Moreover, the following sub-objectives were explored:

- To investigate challenges experienced by Company X as a result of COVID-19
- To explore relevant digital tools that would address these challenges and to determine Company X's attitude towards digitalization

1.5 SUMMARY OF RESEARCH METHOD

A generic qualitative research design was used to explore the research question and address the objectives. Data collection comprised of six semi-structured interviews, whereby the role of digitalization in the supply network of company X was explored. Data was analysed by identifying collective themes within the transcriptions through the use of thematic analysis (Milne & Oberle, 2005). During data analysis, the data collected from all interviews was codified. Thereafter, a thematic analysis on the data collected was performed to translate the data into valuable information that ultimately answered the research question. Themes identified were gathered into valuable concepts. The proposed study's conclusions were depicted incrementally as data analysis occurred and by ultimately pursuing a holistic outline of all the data collected. Ethical clearance was obtained through the School Ethics Committee by submitting an ethical clearance form. The Ethics clearance number for this study is MIAEC 019/21.

1.6 STRUCTURE OF RESEARCH REPORT

The outline of the final research report will be as follows:

- Chapter 1 will provide background and context to the study. It will furthermore cover the problem statement, critical research question, aims and objectives as well as a summary of the study research method.

- Chapter 2 will cover literature review from other researchers to provide a comprehension of the phenomena under investigation and to analyse the outcome on equal subject matter.
- Chapter 3 will discuss the research design, methodology and data collection process of the study.
- Chapter 4 will outline the study results.
- Chapter 5 will assess the significance of the study results and discuss the limitations of the study.
- Chapter 6 will provide a conclusion to the study, managerial recommendations and directions for future research.

2 CHAPTER 2
LITERATURE REVIEW

This literature review provides an overview on the different types of logistics and logistics providers as well an overview on the COVID-19 pandemic and the impact of the pandemic on the logistics industry, globally and in South Africa. Furthermore, factors that ensure the successful realization of digital transformation and factors that prevent the successful realization of digital transformation are explored and finally, the use of digital technologies to drive value within and organization and the importance of resilience and agility during turbulent times, such as COVID-19, are explored.

2.1 TYPES OF LOGISTICS AND LOGISTICS PROVIDERS

According to the Council of Supply Chain Management Professional (2022), Logistics management is “that part of supply chain management that plans, implements, and controls the efficient, effective, forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements.”

Several types of logistics exist, of which the most common is sales logistics. Sales logistics refers to the transfer of products to the consumer, by the producer. Procurement logistics refers to the movement of input/raw materials, whereas production logistics refers to the internal movement of materials within the factory. Recovery logistics is the reverse movement of goods i.e. consumer returns and recycling efforts (Keyence Corporation, 2022).

There are several types of logistics providers. First party logistics providers (1PL) refer to organizations that ship, import and export or manufactures goods globally, a 1PL performs all logistics in house. Second party logistics providers (2PL) refer to organizations that own the means of transport i.e. aircraft, ships and trucks. Third party logistics providers (3PL) refers to organizations that are deemed to be experts and provide services regarding all components of the supply chain. Companies can outsource these functions to 3PL experts, such as Company X. The core differentiator between a third party logistics providers (3PL)

and a fourth party logistics providers (4PL) is that a 4PL logistics provider uses its own technology in offering their supply chain solutions. According to Seaspace (2022), fifth party logistics providers (5PL) “construct, organise and implement the best possible network, technologies and rates for their clients supply chain.” Fifth party logistics providers are commonly linked to e-commerce organizations (Seaspace international forwarders, 2022).

2.2 COVID-19 PANDEMIC – A BLACK SWAN EVENT

According to Baratta (2020) black swans are depicted by their extreme rarity and their ability to cause disastrous damage to the economy. Additionally, standard forecasting instruments cannot foresee black swans (Baratta, 2020). The Coronavirus (COVID-19) is a disease caused by the novel coronavirus, recently named “severe acute respiratory syndrome” (SARS-CoV-2) (Cennimo, 2020), The WHO (2020), defines the Coronavirus (COVID-19) as an infectious disease. COVID-19 originated in Wuhan City, Hubei Province, China. The outbreak was originally reported to the World Health Organisation (WHO) on December 31, 2019. On January 30, 2021, the WHO (2020) acknowledged the Coronavirus disease (COVID-19) to be a global pandemic.

The global logistics sector faced substantial challenges as a direct result of the COVID-19 pandemic. Travel restrictions and border closures implemented by governments around the world disrupted the demand for logistics services immensely. According to Cornwell (2020), many commercial airline carriers experienced an abrupt halt in commercial travel as a result of travel restrictions imposed and consequently underwent disastrous cash flow challenges. Finlay (2020), Santos and Tavasszy (2020), state that the belly space of commercial aircraft carry 50% to 60% of all airfreight, which meant that logistics firms had significantly less cargo capacity available to perform their daily operations. According to Gu, Wallace and Wang (2019), rigorous inspection protocols and quarantine requirements imposed within customs have caused significant delays in the delivery time of shipments. Additionally, the decrease in demand related to logistics caused more than 30% of ocean transportation container capacity to be eliminated from the market. The pandemic has caused demand distortions that have stressed the logistics sector significantly in fulfilment of this demand. According to Costenbader (2020), the outbreak of the pandemic led to a soaring demand for medicine and drugs, such as pain and cold medication.

2.3 THE IMPACT OF COVID 19 ON THE LOGISTICS INDUSTRY GLOBALLY AND IN SOUTH AFRICA

COVID-19 has, thus, had a significant impact on the logistics industry globally and in South Africa, This section explores these impacts.

Commercial flight departures decreased by 95% between 2020 and 2019 (Levin, 2020). Additionally, the annual value of goods that are transported by means of air transportation is estimated to be worth more than $6.2 trillion dollars, with air cargo representing an estimate of 35% of the world trade value (Dowsett and Lee, 2020). Globally, in July 2020, the capacity of belly space shrunk by 70.5% year-on-year, with a peak of 82.5% at the peak of pandemic in April 2020 (IATA, 2020). IATA's (International Air Transport Association) stance on the cargo sector (IATA, 2020) is that, despite the added utilization, freighters continue to be inadequate. The continuous shortage in cargo capacity continues to be caused by insufficient commercial air travel. According to Cornwell (2020), the abrupt halt in commercial travel caused a large margin of commercial airline carriers to face tremendous cash flow challenges. Finlay (2020), claimed that airlines had to reduce the number of destinations that they fly to, such as in the case of Emirates who decreased their destinations from 150 destinations to only 2 destinations during April 2020. Airlines of the United States of America is in quest of a 50 billion dollar government aid while the commercial airliner, Qantas, stopped all international flights within March 2020 (Busvine, Rucinski and Freed, 2020).

South Africa's decision on border closure for passenger flights was not exceptional within the Sub Saharan Africa (SSA) region. Forty-three SSA countries suspended commercial passenger flights, while seven countries significantly reduced commercial passenger flights in an attempt to reduce the spread of COVID-19 (Company X, 2020).

Figure 1 below illustrates the sharp decline in commercial flight departures from South African airports between January 2020 and April 2020. During this time, there was only one departure, representing a 99% decline in daily commercial flight departures.

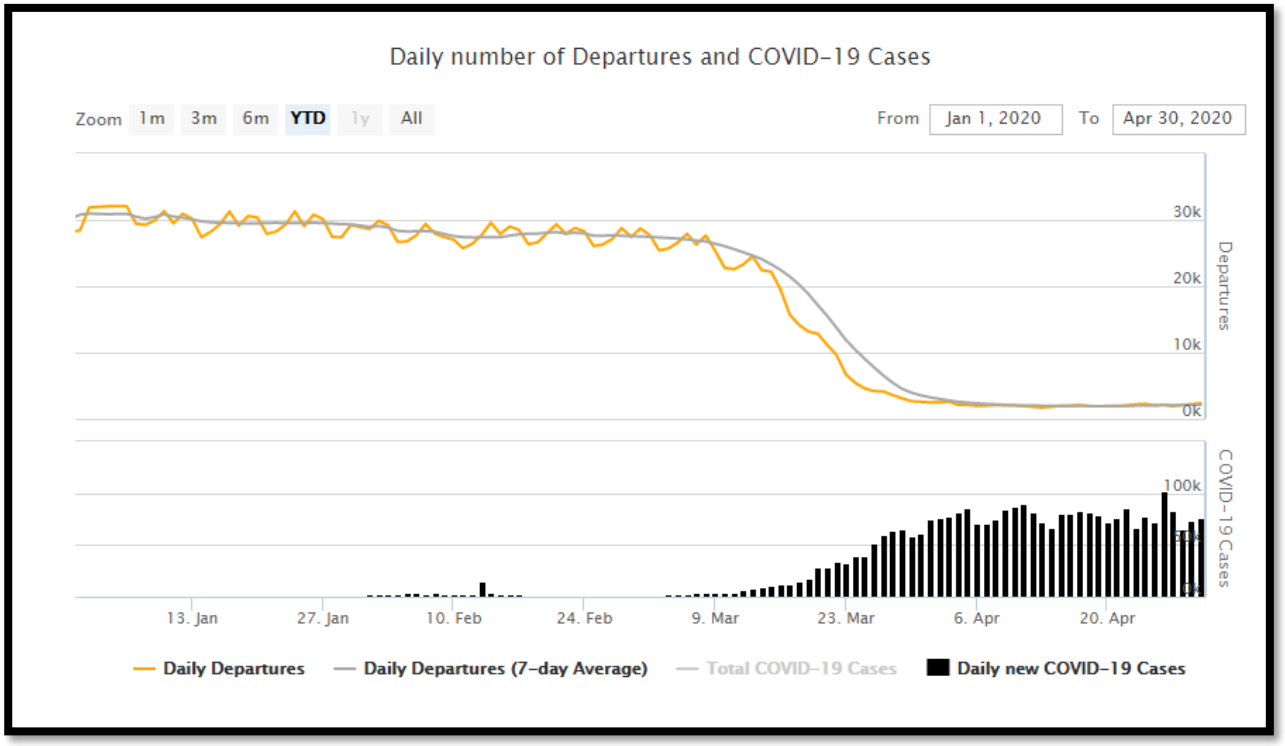


Figure 1: 1 April 2020- Decline of 99% in departures from South African Airports
Source: (ICAO, 2020)

Figure 2 below illustrates the sharp decline in commercial flight departures worldwide between October 2019 and May 2021, operating at **32%** of pre COVID-19 levels, which during this time consisted mostly of cargo aircraft movements.

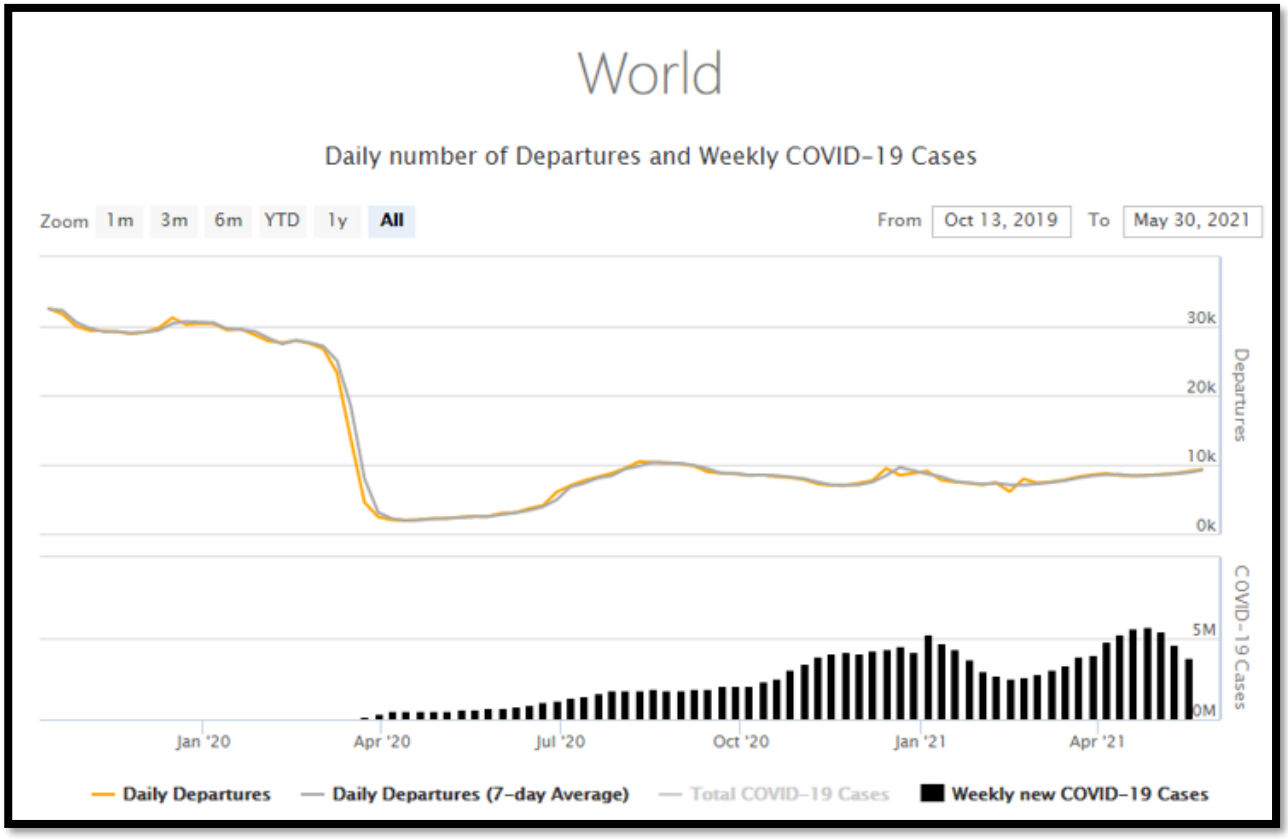


Figure 2: Q2 2021, representing only 32% of pre-COVID daily departures
Source: (ICAO, 2021)

Figure 3 below provides a holistic view on the suspension of commercial passenger flights over the entire SSA region during April 2020.

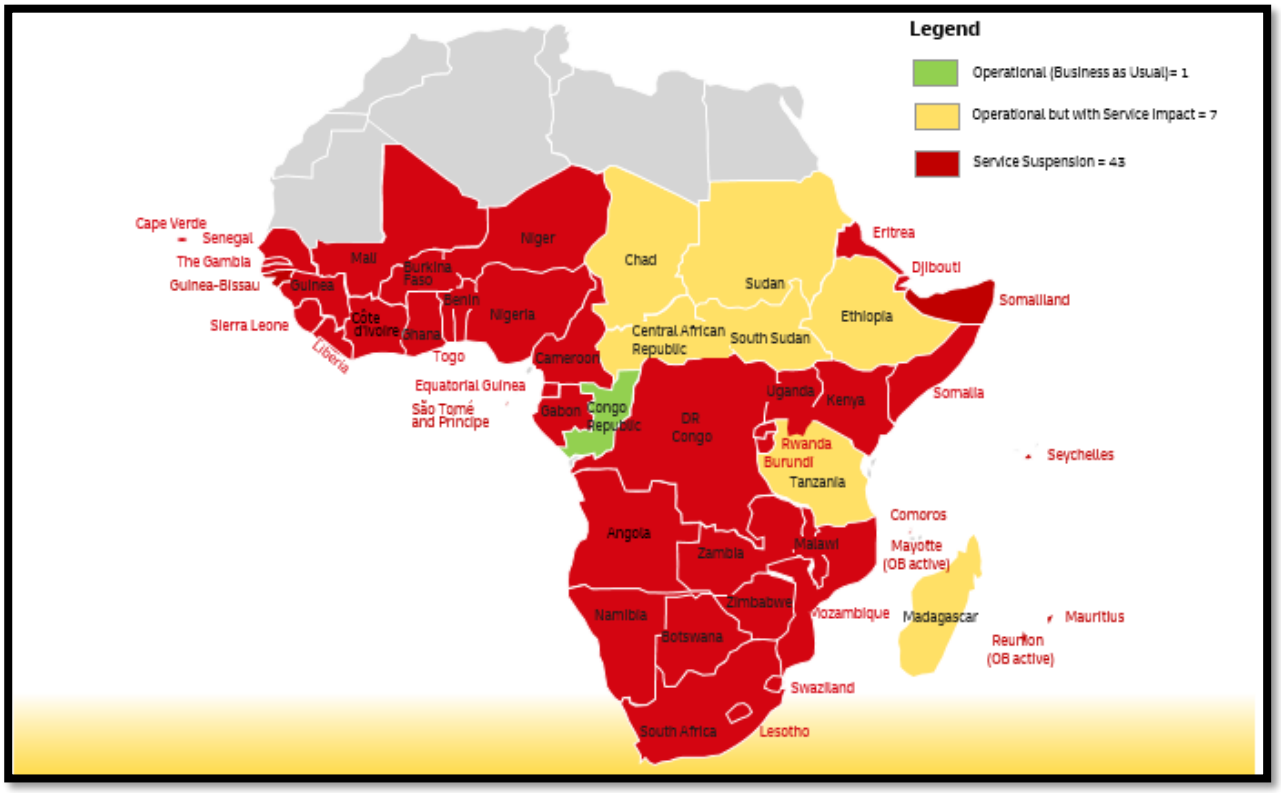


Figure 3: Suspension of commercial passenger flights within the SSA region
Source: (Company X, 2020).

A multitude of Governmental regulations around the world prohibited commercial travel to one or more countries. The motive behind these regulations was to reduce the spread of COVID-19. The global logistics sector faced significant challenges in regards to export and import restrictions imposed. On March 26, 2020, the South African Government imposed restrictions on the movement of goods. Only “essential goods” as determined and classified by the Government could be transported to the determined destinations (South African Government, 2020). The researcher are of the opinion that the reasoning behind permitting only the movement of “essential goods”, such as medical supplies, might have been to enable “essential goods” to move more rapidly and swiftly throughout the supply chain. The South African Government then announced contradicting lawgiving that allowed both essential and non-essential goods to be transported in an attempt to decongest airports and ports (Company X, 2020). Furthermore, Company X (2020) believe that export restrictions

might be viable solutions during pre-pandemic or normal periods, but might not be viable during a pandemic, such as COVID-19.

According to Gu, Wallace and Wang (2019), the rigorous inspection protocols and quarantine requirements imposed within customs have caused significant delays in the delivery time of maritime freight. According to Das (2020), the outbreak of the Coronavirus pandemic (COVID-19) has caused the logistics industry to experience a shortage of workers as a result of workers falling ill, quarantine restrictions and/or travel restrictions. For example, South-Korean workers could not travel to the Samsung plant in Vietnam (Sy-hyun, 2020). Additionally, the decrease in demand led to blank sailings, which occur when an ocean line service provider cancels a scheduled stop at a port of destination. Blank sailings caused more than 30% of container capacity to be eliminated from the market. Furthermore, the abrupt halt in commercial air travel meant that some airlines declared Force Majeure, permitting them to terminate their contractual agreements with their stakeholders. Because of the significant termination in contractual agreements by means of Force Majeure, airlines declared newfound tariffs. Rates increased by between 50% and an astounding 280% (Company X, 2020).

According to Costenbader (2020), the outbreak of the Coronavirus pandemic (COVID-19) has caused a soaring demand for medicine and drugs. Costenbader (2020), credits the spike in demand as a result of consumers reflecting a trend of panic buying due to concerns related to shortages. The sudden increase in demand subsequently led governments to ration the specific amount of items purchased per customer. Furthermore, in response to the COVID-19 pandemic, the demand for PPE increased vastly (Park, Kim, Roth, 2020).

IATA (International Air Transport Association) represents 82% of global air traffic and 290 airlines. According to IATA (2020), certain countries within the SSA region suffered more in comparison to others. The estimates depicted in figure 4 below are based on severe travel restrictions with a duration of three months. Also, the estimates below are based on a scenario of continual lifting with regards to restrictions domestically, pursued by regional and then intercontinental markets.

NATION	REVENUE IMPACT (US$ BILLION)	PASSENGER DEMAND IMPACT (MILLIONS)	PASSENGER DEMAND IMPACT %	POTENTIAL JOBS IMPACT	POTENTIAL GDP IMPACT (US$ BILLIONS)
South Africa	-2.9	-10.7	-41%	-186,805	-3.8
Kenya	-0.54	-2.5	-36%	-137,965	-1.1
Ethiopia	-0.30	-1.6	-30%	-327,062	-1.2
Nigeria	-0.76	-3.5	-37%	-91,380	-0.65

Figure 4: Impact Estimate as on 2nd April 2020
Source: (IATA, 2020)

IATA (2020) claims that the countries that were hit the hardest by the COVID-19 pandemic within the Sub-Saharan Africa (SSA) region include the below countries;

With regards to air transportation, South-Africa experienced a US$3.02 billion loss in revenue as a result of 14.5 million less passengers, thereby risking a total of 252,100 jobs and US$5.1 billion in support to the economy of South Africa. Nigeria experienced a US$0.99 billion loss in revenue as a result of 4.7 million less passengers, thereby risking a total of 125,400 jobs and US$0.89 billion in support to the economy of Nigeria. Ethiopia experienced a US$0.43 billion loss in revenue as a result of 2.5 million less passengers, thereby risking a total of 500,500 jobs and US$1.9 billion in support to the economy of Ethiopia. Kenya experienced a US$0.73 billion loss in revenue as a result of 3.5 million less passengers, thereby risking a total of 193,300 jobs and US$1.6 billion in support to the economy of Kenya. Tanzania experienced US $0.31billion loss in revenue as a result of 1.5 million less passengers, thereby risking a total of 336,200 jobs and US$1.5billion in support to the economy of Tanzania. Mauritius experienced US$0.54 billion loss in revenue as a result of 2.1 million less passengers, thereby risking a total of 73,700 jobs and US$2 billion in support to the economy of Mauritius. Mozambique experienced US$0.13 billion loss in revenue as a result of 0.7 million less passengers, thereby risking a total of 126,400 jobs and US$0.2 billion in support to the economy of Mozambique. Ghana experienced US$0.38

billion loss in revenue as a result of 1.4 million less passengers, thereby risking a total of 284,300 jobs and US$1.6 billion in support to the economy of Ghana. Senegal experienced US$0.33 billion loss in revenue as a result of 1.3 million less passengers, thereby risking a total of 156,200 jobs and US$0.64 billion in support to the economy of Senegal. Lastly, Cape Verde experienced US$0.2 billion loss in revenue as a result of 1.2 million less passengers, thereby risking a total of 156,200 jobs and US$0.48 billion in support to the economy of Cape Verde (IATA, 2020).

It is clear that the COVID-19 pandemic has caused considerable challenges within the logistics industry. Some of the main challenges include the reduction in commercial air travel which led to a significant decrease in the availability of air cargo space, trade restrictions and border closures, increased transit times and unpredictable governmental regulations. However, according to Manners-Bell (2020), e-commerce is amongst the sectors that experienced the highest growth rate as a result of the pandemic. Company X globally achieved ground-breaking operating profits for the 2020 financial year. While their earnings guidance depicted of €4.1bn to €4.4bn, they have indeed achieved €4.8bn (Company X, 2020). The Express division of company X performed the best in terms of revenue for 2020, with a 19% year-on-year increase in revenues and a 35% year-on-year increase in operating profits (Aircargonews, 2021).

2.4 DIGITAL TRANSFORMATION

Factors that prevent or enhance the implementation of innovative technologies within information systems, innovation management and change management have already been studied (e.g. King and Burgess, 2006; Ngai, Law and Wat, 2008; Nikpay, Selamat, Rouhani and Rikfard, 2013; Oke, 2004; Oakland and Tanner, 2007; Oliveira, Echeveste and Cortimiglia 2018). However, digital transformation which refers to the concurrent use of numerous technologies that influences the creation of digital processes, products, services and business models, require more research (Pellathy, Mollenkopf and Stank 2018).

The paper by Cichosz, M., Wallenburg, C. M., & Knemeyer, A. M. (2020) was used as a basis for this section. After reviewing similar literature, the researcher has found the aforementioned paper to be the most applicable and appropriate for the study at hand.

Cichosz, et. al., (2020) define the degree of complexity in the logistics network and underlying processes as a result of two main factors. Firstly, the complexity in the logistics network exist because numerous logistics service providers act as the intercessor between a diverse portfolio of customers and shippers. Furthermore, the customers vary in type, size and global geographic location, which create challenges in managing the large network of actors, inclusive of different organizations, departments and geographical locations. The second factor refers to the complexity in the underlying processes and challenges in standardizing these processes due to information technology or legal controls related to operating across borders. Additionally, given the fact that digital transformation require collaboration between numerous organizations, standardization is vital for systems interoperability (Wende and Kiradjiev, 2014; Maynard, 2015; Mazak and Huemer, 2015). The complexities in the underlying processes arise as a result of challenges related to customization when pressure from powerful clients require some form of customization that are later difficult to control. In contrast, Jeyaraj Rottman and Lacity (2006), distinguished external pressure arising from suppliers, industry norms and customers as an important forecaster of IT adoption.

Cichosz, et. al., (2020) determined a lack of digitally skilled employees that enable an organization to automate mundane tasks so that fewer resources are needed to complete the specific tasks as a barrier to digital transformation. According to Sher and Lee (2004), successful digitalization mainly depends on the possession of adequate capabilities within the organization internally. Knowledge and organizational know-how will therefore become the primary foundation to competitive advantage (Sher and Lee, 2004). Cichosz, et. al., (2020) state that a lack in technology adoption capabilities also prevent logistics service providers to experience digital transformation. This is because of the difficulty in investing and implementing the correct technology at the correct point in time. According to Cichosz, et. al., (2020), even though Information technology competence centres support and govern technological adoption services, not all technological investments are guaranteed to be a profitable and successful investment. Furthermore, technologies that are deployed for a specific customer in a specific location can be difficult to redeploy throughout a portfolio of diverse customers with differing needs.

According to Cichosz, et. al., (2020), resistance to change (RTC) is the factor that are most commonly used in literature as a significant barrier to digital transformation. Cichosz, et. al., (2020), defined two extends to RTC being institutional and individual. The institutional dimension refers to managers within the specific company resisting change on the basis that no change is needed. Cichosz, et. al., (2020) describe this mistake as common since managers believe that whatever they have done previously that led to organizational success, will also lead to success now with no additional changes needed. Polites and Karahanna (2012) describe organizational inertia as an obstruction to successful digital transformation. Polites and Karahanna (2012) define inertia as: “inertia in an IS context as user attachment to, and persistence in, using an incumbent system (i.e., the status quo), even if there are better alternatives or incentives to change.” Haag (2014, p.5) claim that organizational inertia have five sub-categories being; cognitive, behavioural, socio-cognitive, economic and political. The cognitive category denotes management’s inclination to use legacy systems, even when posed with better alternatives. The Behavioural category discuss the inclination to continue operating in a certain way, because that is how the organization has always operated. The Socio-cognitive category refers to the culture of the company in implementing difficult changes. The Economic category debate the lost costs in legacy or redundant systems and the costs related to implementing a new system. The Political dimension denotes to customers and partners resisting the implementation of new innovations, since they are also affected by the implementation thereof (Haag, 2014).

Cichosz, et. al., (2020) furthermore elaborates on how individual resistance to change are linked to the specific individual’s fears and not to the degree of digital maturity of the organization. The aforementioned fears are defined as a fear of job loss in the scenario where the employee’s job can be done in a more efficient and automated manner through digital transformation. Additionally, the fear of failure when employees do not feel that they can sufficiently experiment and familiarize themselves with digital transformation so as to not affect the end customer’s experience also affects digital transformation. Cichosz, et. al., (2020), argue that the culture of an organization is encompassed in the norms, values and attributes of an organization as well as how the organization introduces change. Cichosz, et. al., (2020) argues that customer centricity and a low RTC are the organizational culture components that are most important for a successful digital transformation. Cichosz, et. al., (2020) therefore defines customer centricity as an increased organizational focus on both

business customers and end customers as well as employee trainings to perform every single task with the customer in mind. The end goal is to ultimately use more efficient, smarter and innovative ways as a result of digital transformation to improve customer satisfaction. Furthermore, in a volatile, uncertain, complex and ambiguous world, openness to change is required. Openness to change can be simulated by creating a trusting work environment, where employees are motivated to communicate and collaborate across businesses, divisions and geographies. Cichosz, et. al., (2020) further elaborates on the importance of a working environment in which employees are allowed to make mistakes regarding innovation, because they are given responsibility in the first place.

Cichosz, et. al., (2020) determined the possibility of inefficient data protection that can lead to breaches in security controls to prevent logistics service providers to experience digital transformation. It is of critical importance that when an organization embarks upon digital transformation that extensive attention must be given to integrating numerous applications and data warehouses within the organization that ultimately support the processes of the organization. Additionally, communication networks must be of good quality and reliable and provide safeguarding against the amusement of information and unauthorised access (Bauer et al., 2013; Cervelli, Pira and Trivelli, 2017).

Cichosz, et. al., (2020) argues that strong and visionary leadership is key to digital transformation. This is because leaders are responsible for capturing promising technological opportunities and translating them into opportunities for the business to obtain a competitive advantage. Additionally, leaders must also deliver on execution and governance to enhance digital transformation and to provide stakeholders with a digital transformation vision. Antonopoulou, Hera, Constantinos, Halkiopoulos, Olympia, Barlou and Grigorios (2021) claim that leaders require digital abilities, the ability to swiftly adapt to changing environs and be capable in resolving immediate impediments. Furthermore, Antonopoulou, et. al., (2021) argue that the greater the passive leadership, the lesser the degree of pessimistic employment of “digital leadership”. Therefore, to be successful during black swan events, whereby continuous complications arise, leaders require sufficient digital proficiencies to best advance the team.

Cichosz, et. al., (2020) defines employee and partner engagement to be critical to digital transformation. This is because several digital transformation programs are often deployed

simultaneously and cannot be deployed successfully without senior management support to drive and improve the engagement of employees. Therefore, it is important that managers buy in on digital transformation early on, so that roles and responsibilities within different departments, units and even countries regarding the digital transformation vision is outlaid in a clear and precise manner to ensure a communal understanding of digital transformation. Cichosz, et. al., (2020) claims the alignment of business and IT strategies to ensure successful digital transformation. It is however important to note that the complexities in both business and IT environments causes difficulty in establishing a joined approach. Therefore, aligning business and IT strategies are best approached by pursuing an emerging strategy as it dynamically changes. Co-development and reconfiguration of IT and business resources should be deployed to accommodate for quick adaptation by collaboration across departments and organizational boundaries. Preston and Karahanna (2009) determined two success factors in achieving digital transformation. The first being the intellectual element of strategic alignment, which refers to the alignment between business and information systems and strategizing them. The second one being the social element of strategic alignment which refers to the common interpretation between business and IT departments.

Cichosz, et. al., (2020) defines process standardizing and data integration to be the biggest barrier for digital transformation. This is because systems are complex and accompanied by intricate processes. Cichosz, et. al., (2020) conveyed the solution to be within simplification by means of eliminating that which is not adding any value but requires a significant amount of resources and standardizing processes. Furthermore, data must also be standardized to combine various data sources into one. Integrating data transforms data into information that is valuable to the management of the organization since it provides the organization with a holistic and real-time dashboard of the current performance of the organization. Therefore, data integration is critical for understanding current business performance and to aid in decision making. Cui, Ye and Teo (2015) argue strategic alignment of IT functions as a facilitator for innovation which stimulates the quality of innovation.

Cichosz, et. al., (2020) argue that in realizing successful digital transformation, the importance of training employees to ensure they understand and are able to adapt to a

digital business environment must be present within an organization. Furthermore, training not only provides employees with the ability to leverage their skills within the workplace, but also to understand the key focus points of numerous functional areas within an organization where collaboration and key communication is imperative. Prior studies revealed that people are the greatest concern to digital transformation, for example Kane, Palmer and Phillips (2018) argue that employees become so fixated on their personal past successes that they fall into a “competency trap”. Furthermore, Toytari, Turunen, Klein and Eloranta (2017), state the difficulty in attempting to alter the beliefs or mind sets of people to be a great concern in the realization of digital transformation. Furthermore, a workforce that is committed and ready to adapt to a changing environment can improve productivity by 22% (Baldoni, 2013).

Cichosz, et. al., (2020) argue that in realizing successful digital transformation, agile transformation management must exist. This is because agility to rationalise organizational resources swiftly in response to volatile customer demands and market dynamics enables an organization to successfully introduce a new technological innovation since digitalization rewards the first movers and fast followers and agility enables to organization to be a first mover or a fast follower. Yang, Wang, Nevo, Jin, Wang and Chow (2014) argue that agility acts as the primary facilitator regarding the manner in which digital transformation provide organizational value. This is because digital competences enable swift decision making, enables elastic business processes and facilitates innovation within business processes.

Cichosz, et. al., (2020) define the importance of leveraging both internal and external technological knowledge to stimulate innovativeness in realizing successful digital transformation. Innovativeness within an organization can be stimulated through investing in the organization’s Research and Development centres that generates ideas from employees and partners. According to Cichosz, et. al., (2020) different approaches can be used in driving innovation for example in running pilots or by partnering with start-ups. Furthermore, early trials, experiments and pilots aid in digital transformation (Wende and Kiradjiev, 2014).

2.5 COVID-19 AND THE USE OF DIGITAL TECHNOLOGIES

According to Medyakova, Kislitskaya, and Kudinova (2020), the outbreak of the global pandemic has led to an increase in the use of digital technologies within the transportation section. To retain market positions, digital transformation demands new digital tools to be implemented within an organization (Diallo, 2017). The aforementioned digital technologies includes, but are not limited to, Cloud Computing, Robotics Process Automation (RPA), Big Data Analytics and Artificial Intelligence (AI). Additionally, these tools are too often only applied within narrow segments of an organization, specifically within marketing and sales (Olanrewaju & Willmott, 2013). According to Olanrewaju and Willmott (2013), technology drives value within and organization in the following ways; enhancing connectivity within and outside of the organization, automating manual tasks and thereby driving effectiveness and efficiency, improving decision making within an organization and driving product or service innovation.

RPA refers to software robots (as opposed to physical robots) that utilize software and programming techniques to automate tasks (Company X International, 2020). Warehouse automation and robotics programs can improve efficiency when automation is increased and when transaction processes are improved (Company X, 2019). The Internet of Things (IoT) aims to virtually connect anything to the internet, permitting everyday objects to process and store information. IoT will facilitate far-reaching payoffs for logistics companies (Company X, 2020). Block chain evaluates the use of block chain technology, such as for automated billing, smart contracts, document processing, and shipment tracking. The current lack of end-to-end (E2E) integration (retail, Custom, end-consumer) generates unnecessary complexities and low levels of trust amongst stakeholders, leading to an excess in administrative costs (Company X, 2020). Block chain can provide unique solutions to create value and reduce cost by providing shared data in the eco-system that is trusted and peer-to-peer communication. Block chain also depicts the unique true value of the goods, shared from shipper to customs and clear liability of clearance as well as full traceability of the E2E process. Additional block chain benefits include the integration of existing internal services, data transparency towards end-consumer and enhanced data quality for clearance (Company X, 2019). The global Big Data Analytics team facilitates the identification and successful completion of Big Data Analytics projects everywhere at Company X, Express

division, by training analysts and creating a community for them. Through the established Company X Data Science Program, they have the ability to train and to up-skill their data analysts. This helps to generate ideas and expertise to drive innovation and show the possibilities that Big Data Analytics has to offer (Company X, 2020). 70% of a Data Analytics project's time is spent on data gathering, cleansing and exploration. This emphasizes the value of data governance, to allow faster, better and even automated data insights (Company X, 2020).

The COVID-19 pandemic has radically affected people's livelihood and has potentially changed their minds as well (Dwivedi, Hughes, Coombs, Constantiou, Duan, Edwards and Upadhyay, 2020). Albarracin and Shavitt (2018) define changes in attitude as a transfer between categories, for example from favour to disfavour. The acceleration in regards to digitalization as a result of COVID-19 has been fundamental to this change (Zimmerling and Chen, 2021). The digital acceleration caused by COVID-19 enabled people to remain connected while staying separated (Katz, Jung and Callorda, 2020). Barnes (2020), claims that the COVID-19 pandemic fundamentally transformed lives globally. Similarly, Dwivedi, et. al., (2020) state that society has benefited and continues to benefit from the information systems market during the pandemic. They argue this because they believe that the economic impact would have been much more disastrous in the absence of information systems.

Although the positive effects of digital tools during the COVID-19 pandemic appear irrefutable, challenges have also appeared in literature. Carroll and Conboy (2020) elaborates on how entire organizations have been strong-armed into the fast-tracked adoption of technology during an unparalleled time. Similarly, Faraj, Renno, and Bhardwaj (2021), state that a lack in digital infrastructure and abilities have disadvantaged digitalizing various processes. Fletcher and Griffiths (2020) state that organizations that are deemed to be less digitally mature, have undergone significantly more challenges during the pandemic and especially during lockdowns. Furthermore, companies that are deemed to be digitally mature are able to establish an internal environment that acts as a remedy to the continuously VUCA world through delivering "stability, certainty, simplicity and precision for its employees, customers and partners" (Fenton, Fletcher, & Griffiths, 2020). The goal of successful digital transformation is not to rapidly implement a range of new systems into an

organization. In fact, the rapid implementation of technology in reaction to the COVID-19 pandemic could be the exact incorrect time to be doing so (Brøgger, 2020). A strategy must firstly be understood throughout the organization, adopted, and executed within the business (Lurie, 2014). Numerous organizations had to quickly implement technologies, such as video conferencing, as a result of lockdown and social distancing regulations, which left them with little to no time for planning or evaluating different types of applicable technologies (Agerfalk, Conboy and Myers, 2020). Because of social distancing, remote working became increasingly important and consequently, so has the technology that enabled communication and operations virtually (Papagiannidis Harris and Morton, 2020). It is important to note that a significant portion of these efforts, in response to the COVID-19 pandemic, lack reflection for long-term sustained and feasible practise.

The group strategy of Company X, known as Strategy 2025 aims to deliver excellence in a digital world. It facilitates the basis for enhancing, deploying and leveraging digital tools that create opportunities for better customer service and enhanced processes within each aspect or BU within the organization. Centers of Excellence (COE's) are teams with dedicated experts and resources that work across, or within BUs to accelerate digitalization.Therefore, the basis of strategy 2025 has been created in close collaboration with a diversity of group partners worldwide, that form part of both the frontline workers as well as management and executive level to bolster a shared view (Company X, 2019).

2.6 BUSINESS CONTINUITY DURING TIMES OF CHANGE

Rouse (2020), defines business continuity as an organization's aptitude to sustain vital operations continually, both before and after disaster has struck an organization. Business continuity planning refers to the risk management processes an organization has put in place, should a disaster occur. Kenton (2019) defines a business continuity plan (BCP) as the practise involved in establishing a procedure of prevention and rescue from possible risks to an organization. The BCP is commonly created in advance and contains effort from key stakeholders and workforces (Kenton, 2019). During turbulent and instable occurrences, agility is vital to ensure business continuity (Christopher, 2000). Agility refers to an organization's competence to adapt swiftly to a changing environment (Christopher, 2000; Swafford, Ghosh, & Murthy, 2006). Agility is remarkably essential when markets

experience unforeseeable supply and demand changes. Resilience is an organization's ability to prepare for unanticipated incidents, manage disruptions and recover to ensure business continuity (Ponomarov & Holcomb, 2009), and agility refers to doing the aforementioned in an efficient and swift manner. Resilience may also necessitate increased elasticity (Moldovan, Copil, & Dustdar, 2018). Lastly, resilience can be constructed on inventiveness that includes, but are not limited to, production facilities and stock management of materials that can be swiftly triggered to reconfigure the value chain (Linnenluecke, 2017).

Organizations are said to make use of two central mechanisms in formulating digital transformation (Daniel and Wilson, 2003; Henfridsson and Yoo, 2013). These two mechanisms are referred to as Innovation and integration. The usage of processes, organizational resources and capabilities that are deemed to be new to the organization are referred to as innovation, while the coalition of the new along with the existing processes, resources and capabilities are referred to as integration (Ranganathan, Goode and Ramaprasad 2003).

Digital transformation (DT) involves innovation within operational and strategic aspects. For example in creating a digital business strategy that are used, among other things, to attract a new generation of employees (Matzler, von den Eichen, Anschober and Kohler 2018). DT is also used to install digital mind sets within employees (Hansen, Kraemmergaard, and Mathiassen 2011). DT incorporates technological and business facets (Dhar and Sundararajan, 2007), which exceeds organizational borders (Bharadwaj, Sawy, Pavlou and Venkatraman, 2013), and is grounded upon comprehensions derived from data (Sia, Soh and weill, 2016). Although the leveraging of digital capabilities are deemed to be part of the operational focus of the organization, it is important to note that it is also embedded within the strategic positioning of the organization, chiefly concerning the capabilities of online information (Barua, Konana and Whisnton, 2004), competences in regards to Data Analytics (Hausladen and Zipf, 2018) and proficiencies in regards to the established organizational digital platform (Karimi and Walter, 2015). According to Hinings, Gegenhuber and Greenwood (2018), technologies must be built with the end goal of producing digital innovation within organizational models, products and processes. Amalgamating interactions between humans and machines should be a key function to ensure synergies

between machines and humans that are indeed sustainable and adds value to the organization. (Bajer, 2017).

The DT strategy should act as a principal model to assimilate the holistic synchronization, arrangement and application of digital transformations within an organization (Matt, Hess and Belian 2015). This includes actions to establish dynamic proficiencies (Karimi and Walter, 2015) and superior learning aptitudes (Schuchmann and Seufert, 2015). Organizations require technical flexibility that can be achieved by creating an organizational structure that is agile and collective (Zimmermann, Jugel, Sandkuhl, Schmidt, Schweda and Möhring 2016). Lastly, integration includes digital harmonization through stimulating collaboration cross-functionally (Larkin, 2017) and by using organisation tools that amalgamate digital technologies throughout the enterprise (Chatterjee, Grewal and Sambamurthy 2002). Smart Workspace refers to Company X's digital ecosystem of the future. It consists of platforms, tools and applications designed to enable comprehensive collaboration and improve communication and productivity (Company X, 2021).

According to Henfridsson and Yoo (2013), digital transformation is coupled with an assortment of outcomes. Organizational setups relate to the arrangement of the components of the organization (Kanungo, Sadavarti and Srinivas, 2001) and the modification as a result of DT. When organizations' concentration are focused on open innovation, it is likely to lead to organizations that are embedded (Berman and Marshall, 2014). Furthermore, organizations establish an infrastructure that is agile (Schwer and Hitz, 2018). Additionally, the management quality of the organization shifts towards technology driven and advocated management, for example in the amplified use of AI systems that support decision making (Kolbjørnsrud, Amico and Thomas 2016). Similarly, customer focused organizational models gain prominence, which lead to the establishment of entirely new organizational models (Dutra, Tumasjan and Welpe, 2018) as well as the alteration of current models (Berman, 2012). Therefore, DT leads to data driven and automated organizational processes provided by digital technologies for the execution of tasks (Dery, Sebastian and van der Meulen, 2017), and the creation of clever, coupled and tailored products (Porter and Heppelman, 2015).

Digital transformation can create novel value streams and thereby lead to improved organizational performance (Bouwman, Houtum, Janssen and Versteeg, 2011) as well as

cost savings (Agarwal, Gao, DesRoches and Jha, 2010). Additionally, DT extends beyond direct organizational control into the environs in which organizations are entrenched. These environs include industries, IT security and systems as information technologies progressively arbitrate interactions among network partners (Tilson, Lyytinen and Sørensen, 2010). DT congregates the physical world with the digital world and thereby establishes an Omni channel setting (Brynjolfsson Hu and Rahman, 2013). Consequently, cyber security has become increasingly important (Dang-Pham, Pittayachawan and Bruno, 2017).

2.7 CONCEPTUAL FRAMEWORK

Figure 5 below illustrates the Conceptual Framework of the study at hand. The concept map below reveals the themes and interrelationships between the elements identified based on the research's literature covered. Four (4) main elements were identified; Digital Transformation, Covid-19 related disruptions, organizational culture and digital tools. Each theme has its own set of interrelationships that are colour coded in the same colour as the theme.

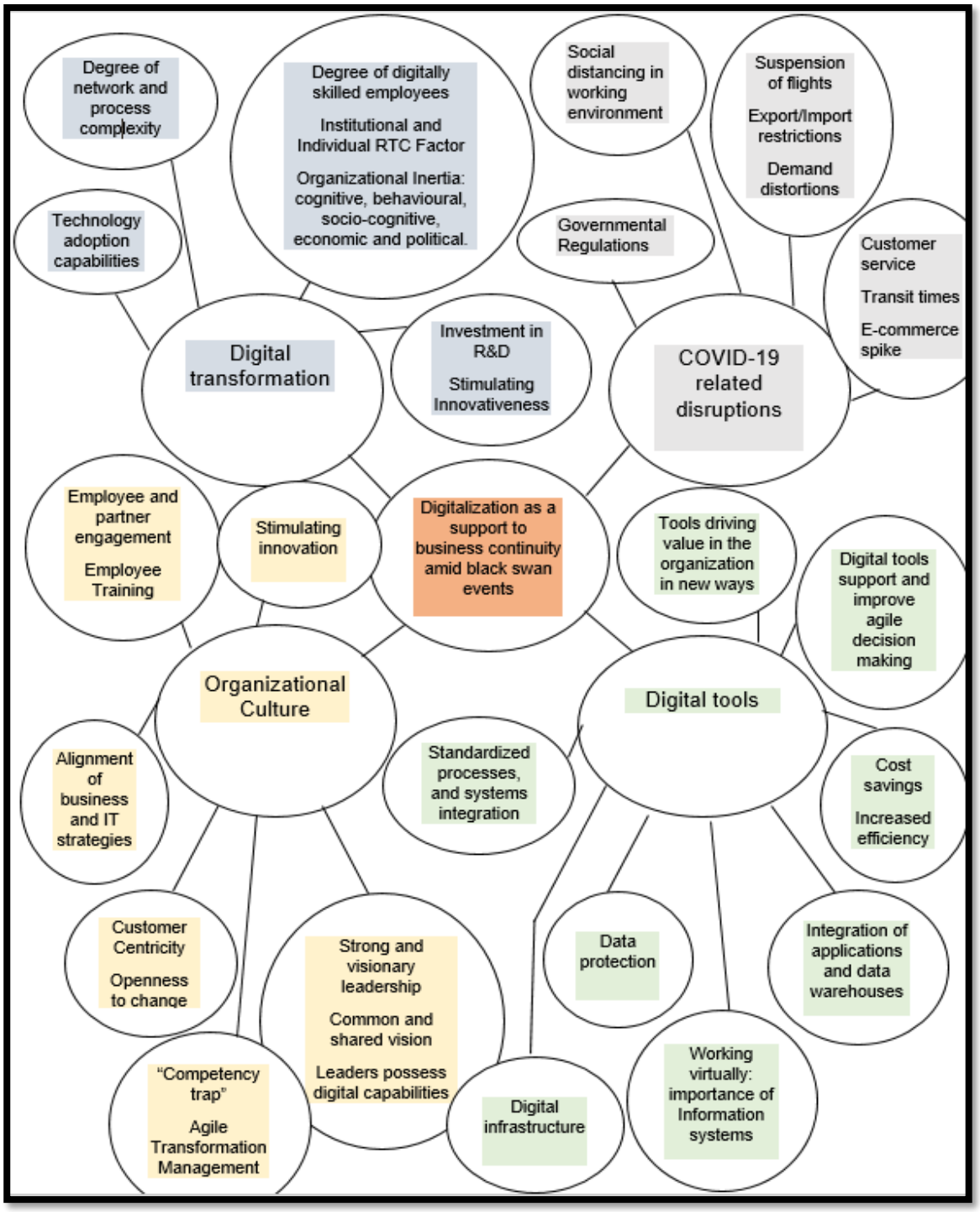


Figure 5: Conceptual Framework

3 CHAPTER 3
RESEARCH METHOD

3.1 RESEARCH DESIGN

According to Leedy and Ormrod (2015), the objective of performing qualitative research is to expand on the interpretation and understanding of a phenomenon that is currently not adequately comprehended. The study consisted of the collection of qualitative data to answer the research question as stated within the discussion guide. According to Leedy and Ormod (2015), participants' answers to the predetermined questions ultimately lead to a conclusion regarding the phenomenon investigated. Empirical research does not work with published literature in isolation; it also includes the collection of primary and/or secondary data (Babbie & Mouton, 2001). Regarding this study, primary data was collected by means of semi-structured interviews. Saunders, Lewis & Thornhill, (2016) describes primary data as unanalysed and raw. Furthermore, to enhance the study, secondary data such as company reports and internal documents were analysed when necessary. Primary data was suitable since it provided new insights on how digitalization enhanced business continuity during black swan events such as COVID-19.

Plano Clark and Creswell (2015) define a qualitative research design as a set of techniques or procedures that are used to collect and investigate qualitative data regarding a certain phenomenon under investigation. A qualitative research design facilitates the exploration and investigation of the participants' perceptions, experiences and beliefs regarding a certain phenomenon (Plano Clark & Creswell, 2015). The study aimed to understand how digitalization could enhance business continuity during black swan events, such as COVID-19. Since an explanation of the phenomenon was needed, the use of a generic qualitative research design was reasoned to be fitting (Lambert & Lambert, 2012:255).

3.2 SAMPLING DESIGN OF PROPOSED RESEARCH

3.2.1 Units of analysis

It is crucial to avoid making generalisations regarding the target population, especially since the perspectives, beliefs and experiences of participants' were examined to further the phenomena under investigation (Percy, Kostere & Kostere, 2015). To avoid generalisations being made, participants were sourced based on their knowledge in regards to the critical research question of the proposed study.

According to Monette, Sullivan & DeJong (1990), the unit of analysis refers to the exact entity from and about which data will be collected. In regards to the proposed study, the unit of analysis is a multinational logistics provider with a global footprint, referred to as company X. Additionally; units of observation refer to the relevant participants that will be interviewed (Monette et al., 1990). In regards to the proposed study, the units of observation were the employees that have experience and knowledge on how COVID-19 disrupted company X and how relevant digital tools can add value to Company X.

3.3.2 Sampling methods

According to Neergaard, Olesen, Andersen and Sondergaard (2009) purposive sampling is used in a qualitative research design. Purposive sampling permits the researcher to recruit viable participants who are deemed experts concerning a specific phenomenon (Neergaard et al., 2009). Maximum variation sampling presents numerous views on the specific phenomenon under investigation and it is a type of purposive sampling (Neergaard et al., 2009).

Numerous purposive methods for sampling exists, but the proposed study made use of homogeneous in cooperation with intensity sampling. The criterion involved participants selected based on their experience in Company X and whether they were/are part of the front line in dealing with the supply chain disruptions caused by COVID-19.

According to Patton (2015), homogeneous sampling chooses participants based on their similarity in character. The study at hand selected knowledgeable individuals, who play a

critical role in managing COVID-19 disruptions. Preference was given to senior managers, who were deemed knowledgeable in the research area, and who thereby could enrich the researcher. According to Paton (2015), intensity sampling places emphasis on participants who are rich in information regarding the phenomenon under investigation. By recruiting a firm that is a multinational leader in the logistics industry, valuable information about the manner of the firm's operations within the logistics industry could be gathered. Furthermore, the researcher could grasp how the focal firm was, and still is sustaining business continuity amidst COVID-19 and the role digitilization plays in the sustainment thereof throughout their supply network. The following particpants agreed to participate in the interviews:

Table 1: Profile of the study participants

Identifying code for participant	Participants' position/title
P1	Quality Control Centre Manager
P2	Network Control Group Manager
P3	Senior Manager, Network Operations Programs
P4	Customer Operations Manager
P5	Senior Director, Customer Service
P6	Vice President of Operations

3.3.3 Sample size

According to Polit and Beck (2012), there are no set rules when determining the sample size. Sampling should however endure until the saturation of data occur (Polit & Beck, 2012). For semi-structured interviews, a minimum sample size between 5 and 25 is appropriate (Kuzel, 1992 cited in Saunders, 2012; and Cresswell, 2007). McCann and Clark (2003) affirm that saturation "occurs when no new data emerge relevant to particular categories and sub-categories, categories have conceptual density, and all variations in categories can be explained. The links between categories must also be clearly explicated and validated" (p11). Saturation has been reached at the sixth interview, therefore the sample size included six participants.

3.3 DATA COLLECTION

According to Creswell (2012), the method of collecting data must be suitable to answer the research questions. A generic qualitative study typically involves semi-structured interviews, facilitated by open-ended questions, to enhance the degree of ease a participant experience (Percy *et al.*, 2015).

3.3.1 Semi-structured interviews

For the collection of primary data, interviews were conducted virtually. It was critical to the successful execution of the interviews that all the participants involved in the virtual interview have steady internet access (Hai-Jew, 2014).

A semi-structured interview involves the researcher to lead a one-on-one interview with the participant (Creswell, 2012). This established the interview data. Performing virtual semi-structured interviews offered some advantages that is present in in-person interviews. For example, if the camera was enabled during the interview, the researcher was permitted to see the participant and establish an informal relationship. This also gave the researcher the ability to probe when needed. Probing was used when the researcher required more information or clarification on a certain question asked (Quinlan, Babin, Carr, Griffin & Zikmund, 2015). Merriam & Tisdell (2015) define probes as follow up questions with the aim to obtain more information on a question already raised.

On the other hand, semi-structured interviews can also be limiting. According to Creswell (2012), the mannerism in which research questions are stated may cause a researcher to present prejudice into the study at hand. Furthermore, participants may also provide misleading, or even false information to the questions asked by the researcher. Regardless of the above-mentioned limitations, semi-structured interviews and the integration of open-ended questions within the interview was reasoned to be the most suitable method of data collection.

3.3.2 Designing the interview questions

A study guide is a short guide containing interview questions. This guide ultimately structures the interview process and questions to be asked (Creswell, 2012). Moments of silence or even misunderstandings can occur during interviews. It is important that the researcher do not attempt to provide clarity to the participant or attempt to restart the conversation because it is likely to introduce bias into the data (Merriam & Tisdell, 2015). Since events like these cannot be avoided, standardised probes was included into the discussion guide (Merriam & Tisdell, 2015). When conducting semi-structured interviews, the discussion guide is most optimal when it contains well-structured and well thought through questions that are open-ended (Rowley, 2012). According to Creswell (2012), interview questions is optimal when less, but open-ended because it will permit the researcher to obtain information that is unbiased by the researchers' own notions. Questions posed in the discussion guide should not be longer than necessary as this can cause participants to not answer every aspect the researchers question and therefore the researcher will not satisfactorily explore all the areas he/she wanted to (Saunders *et al*., 2016).

Wengraf (2001) suggests the use of a Pyramid Model in regards to interview research. Within this pyramid model, the advance from the Central Research Questions (CRQ) distinguished into the established number of Theory Questions (TQ) and the established Interview Questions (IQ)/Interview Interventions (II). Therefore the model is: CRQ→TQ→IQ/II. For the research at hand, the interview questions were acquired using Wengraf (2001). CRQ-TQ-IQ pyramid model.

Figure 3 below shows the CRQ-TQ-IQ pyramid model used within this study.

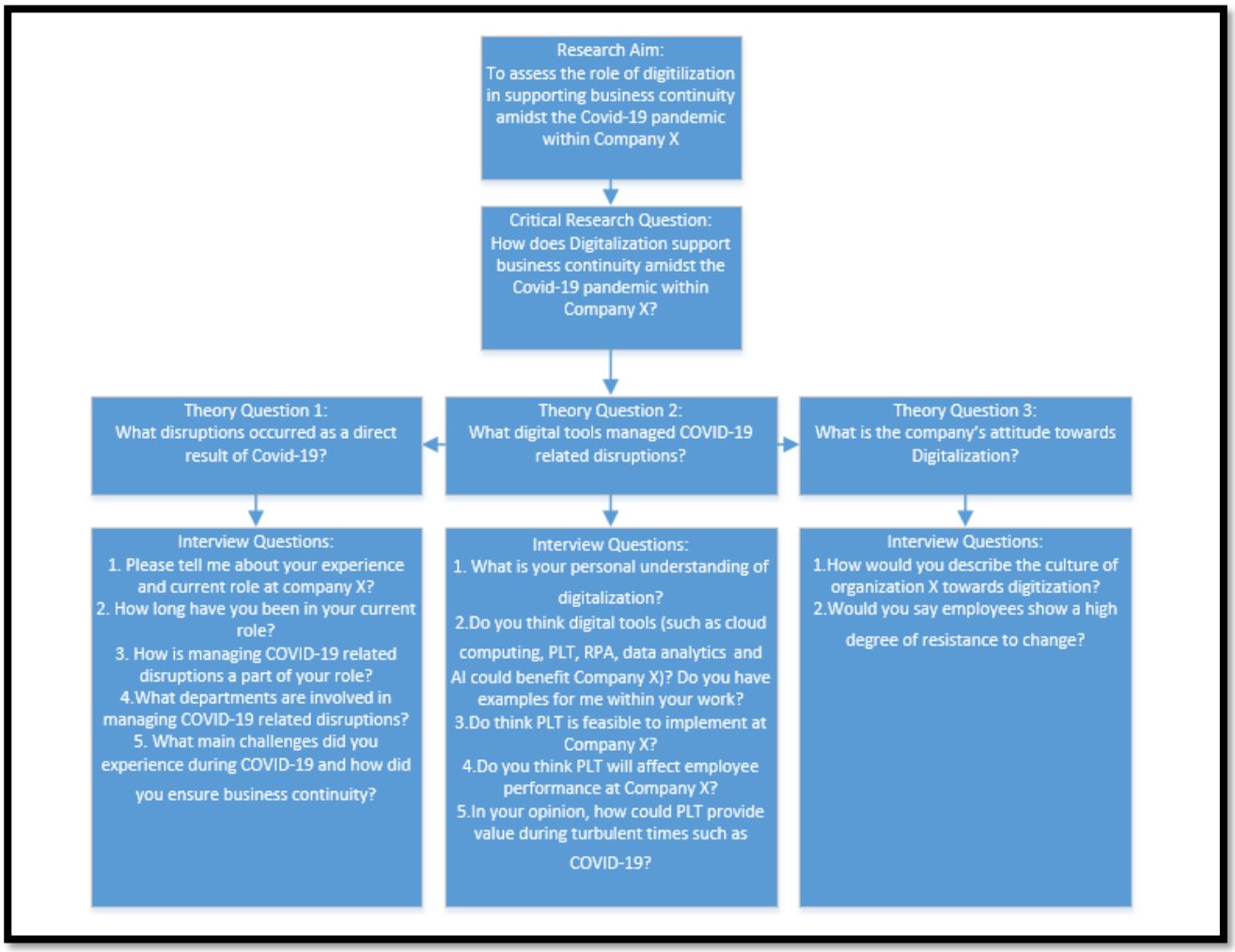


Figure 6: CRQ-TQ-IQ Pyramid Model

3.3.3 Data collection

The testing of the discussion guide determined whether any adjustments to the discussion guide had to be implemented. Once these adjustments were made, data collection commenced. Viable participants, according to the sampling criteria, was identified and contacted. In contacting the participants, the researcher provided each participant with an information letter explaining the nature of the study and a consent form to be signed by each participant individually as well as the researcher. The researcher then identified whether the participant was inclined to partake in the study by evaluating whether the participant agreed to participate in the study by providing the researcher with a signed consent form. In the case where the participant was inclined to partake in the proposed study, an interview date

and time was set that suited both the participant and the researcher. The interview commenced in accordance with the predetermined discussion guide. The interview was audio recorded with the participant's consent.

3.3.4 Data analysis

The researcher firstly identified themes through the conceptual framework. Coding refers to the handling of collected data as part of the study (McCann and Clark, 2003). During data analysis, the collected data from the interviews were transcribed and then, upon completion, thematically analysed with the data collected from secondary sources, such as company documents.

Sub-themes and themes were identified within the transcriptions and company documents through the use of thematic analysis (Milne & Oberle, 2005). Thematic analysis concerns the establishment of key themes from relationships acknowledged throughout a collection of qualitative data (Castleberry & Nolen, 2018). The researcher examined and identified codes that clearly fit together into a sub-theme. The researcher then identified sub-themes that clearly fit together into a theme. Themes were descriptive i.e. revealed patterns in the data relevant to the RQ's. The researcher analysed the data with the aim of addressing the specific research questions, thereby performing theoretical thematic analysis, rather than an inductive analysis. Thematic analysis on the collected data was performed to translate the data into valuable information that ultimately answered the research questions. Themes identified was gathered into valuable concepts. The proposed study's conclusions were depicted incrementally as data analysis occurred and by ultimately pursuing a holistic outline of all the data collected.

Table 9 in Appendix F demonstrates the way in which the responses of participants' and secondary sources such as company documents were codified, how the codes formed part of the sub-themes of the study and how the sub-themes then connected to the main themes of this study.

3.4 DOCUMENT ANALYSIS

Table 2 below is a sample extraction from the thematic content analysis (TCA) in Appendix F. The purpose of the sample extraction is to illustrate how the information found within the company documents were coded, how these codes link with the sub-themes and how the sub-themes link to the main themes.

The complete TCA can be found in Appendix F. Since the TCA in Appendix F contain a combination raw data extracts of documents and transcriptions, all coding related to documents were highlighted in grey for ease of reference.

Table 2: Sample of Documents TCA

Raw data extracts	Codes	Sub-themes	Main themes
The purpose of Big Data Analytics is to effectively utilize all the data collected by Company X to create value for the company. Building on their strong Business Intelligence (BI) platforms under IT, driven by the BI CoE. It allows Company X to achieve higher productivity and drive down costs (Company X, 2020).	Purpose	Big Data Analytics	
Centers of Excellence (COE's) are teams with dedicated experts and resources that work across, or within BUs to accelerate digitalization. Block chain evaluates the use of block chain technology, such as for automated billing, smart contracts, document processing, and shipment tracking. The current lack of end-to-end (E2E) integration (retail, Custom, end-consumer) generates unnecessary complexities and low levels of trust amongst stakeholders, leading to an excess in administrative costs (Company X, 2020).	COE's	Block Chain	
Block chain can provide unique solutions to create value and reduce cost by providing shared data in the eco-system that is trusted and peer-to-peer communication. Block chain also depicts the unique true value of the goods, shared from shipper to customs and clear liability of clearance as well as full traceability of the E2E process. Additional block chain benefits include the integration of existing internal services, data transparency towards end-consumer and enhanced data quality for clearance (Company X, 2019).	Value of block chain		

3.5 INTERVIEW ANALYSIS

Table 3 below is a sample extraction from the thematic content analysis (TCA) in Appendix H. The purpose of the sample extraction is to illustrate how the information found within the interview transcriptions were coded, how these codes link with the sub-themes and how the sub-themes link to the main themes.

Table 3: Sample of Interviews TCA

Raw data extracts	Codes	Sub-themes	Main themes
"*90% of our day-to-day activities is based on the capacity of commercial airlines"*." (P2)	Commercial airline capacity	Reduction in commercial aviation	Challenges experienced by Company X which is directly caused by COVID-19
""We've got some good cargo schedules with KLM, France air and Qatar Emirates." (P4)	Collaboration with commercial airlines		
"If we believe there is a big demand out of Malawi coming into Johannesburg and there is no flights out of Malawi, I will speak to (Company X) aviation, and then they would move that." (P2)	Company X Aviation		

3.6 THEMES

Table 4 below illustrates the main themes, which were derived from the sub-themes, linked to the study's critical research question:

Table 4: Critical research question and related themes

Research Questions	Sub themes	Themes
What is the role of Digitalization for Company X in supporting Business Continuity amidst the COVID-19 pandemic?	Reduction in commercial aviation	Challenges experienced by Company X which is directly caused by COVID-19
	Governmental restrictions	
	Trade restrictions	
	Demand driven pricing	
	Poor customer service	
	Working remotely and measures to reduce physical contact	
	Strategy 2025 – "Digitalization"	Relevant digital tools
	Global customer clearance reporting	
	Block chain	
	Paperless Trade	
	RPA	
	Conversational AI	
	Big Data Analytics	
	IoT	
	Smart Workspace	The culture of Company X towards digitalization
	Project Campfire	
	The African skill force	

3.7 TRUSTWORTHINESS

According to Lincoln and Guba (1985), should the researcher be able to warrant that the beliefs of the participant are "authentically collected and accurately represented in the study's findings"; a study may be classified as trustworthy. Lincoln and Guba (1985) identified four factors namely; credibility, transferability, dependability and confirmability that

researchers should engage to safeguard the trustworthiness of their study. The study at hand met all four factors to ensure trustworthiness.

3.7.1 Credibility

Credibility deals with a study's ability to test, analyse and then ultimately report findings in a manner that is firmly grounded in reality (Shenton, 2004). A high degree of credibility in a study means that there is a high degree of surety that the collected data is truthful (Polit & Beck, 2012). When a study is conducted in a manner, which creates believability of the findings of the proposed study, it is deemed credible (Polit & Beck, 2012).

Researchers can integrate numerous credibility tactics into their discussion guide to ultimately ensure that the proposed study is credible. These tactics will encourage participants to be at ease and answer questions openly, which promotes authentic responses from participants.

The proposed study made use of a few of these tactics. Firstly, the researcher gave a participant the opportunity to decline his/her participation in the study. The researcher informed the participant that the researcher is participating in the interview to benefit from the expertise and experience that the participant holds. This motivated individual participants to be truthful and open while emphasizing the fact that any information provided will be treated confidentially and anonymously. Before an interview commenced, the participant was informed that the interview would immediately cease, should it be the wish of the participant.

Member checks are known to be very useful in improving the quality of a study by strengthening the credibility of the study (Shenton, 2004). Researchers can incorporate three member checks into their study; this includes probing and the participant's review of the study's findings as well as the transcription from the interview (Milne & Oberle, 2005). This study only made use of probing when considering member checks due to the time constraints present in the nature of the study. By making use of probing questions, the researcher was able to gain a deeper understanding of the topic under investigation by stimulating further elaboration between the interview parties. This means that participants

are given the opportunity to add additional information while still engaging in the interview (Milne & Oberle, 2005; Polit & Beck, 2012).

3.7.2 Transferability

Transferability discusses the research study's findings and the applicability to different settings by delivering comprehensive material on the study's background and the participants from whom data is collected (Polit & Beck, 2012). Detailed information regarding the study on hand included the count of individual participants and their inclusion criteria, six semi-structured interviews and finally, a data collection period of June 2021 to September 2021 (Shenton, 2004). Furthermore, the study presented common demographic details about the participants, such as their occupation, each participant's identifying number to ensure confidentiality and the elapsed time per interview.

3.7.3 Dependability

According to Polit and Beck (2012) dependability or auditability, mentions how well the proposed study will produce comparable outcomes over a set period and set circumstances, should the study be simulated with comparable participants or in a comparable setting. There is a sturdy association between dependability and credibility because credibility does not exist without dependability (Polit & Beck, 2012). Audit trails in the proposed study caused the degree of dependability within the proposed study to be heightened and "involved a detailed description of the overall research design as well as the specific data collection and analysis methods used in the study" (Shenton, 2004; Thomas & Magilvy, 2011). Debriefing sessions for feedback on the progress of the proposed study with the research supervisor was held to improve the dependability of the study.

3.7.4 Confirmability

When a study's findings can be validated by two or more people that are independent from one another, it is known as confirmability (Lietz & Zayas, 2010; Polit & Beck, 2012). The researcher acknowledged any predilections and executed essential tasks to confirm the findings were accurate to the participant's beliefs, instead of the inclinations of the

researchers' beliefs (Shenton, 2004). Debriefing consultations were used to make the proposed study's findings dependable. These strategies ultimately improved the confirmability of the study (Lietz & Zayas, 2010). According to Milne and Oberle (2005), open-ended questions in the discussion guide provide participants with the ability to answer questions justly, while stimulating the participants to express their beliefs and thoughts. The use of probing to explain answers given by the participants, but not yet fully understood by the researcher, facilitated a greater comprehension of expressions and beliefs (Milne & Oberle, 2005)

3.8 ETHICAL ISSUES/CLEARANCE

Ethical clearance was obtained through the School Ethics Committee by submitting an ethical clearance form. The Ethics clearance number for this study is MIAEC 019/21. Ethical clearance is important when working with humans. Ethical clearance must meet four key elements. These are; voluntary consent; confidentiality; anonymity and no injury or harm to participants (Dongre and Sankaran, 2016). Participation agreement forms were given to individuals that were interviewed (Dongre and Sankaran, 2016). The form provided participant consensus and assured participants of confidentiality and anonymity of the information provided (Dongre and Sankaran, 2016). No individual was placed in any compromising situation that could cause any harm to the participant while conducting the study (Dongre and Sankaran, 2016). The consent forms signed by the participants and the letter of permission to conduct the research from Company X will be provided on request from the researcher at 1633087@students.wits.ac.za.

4 CHAPTER 4
ANALYSIS AND RESULTS

This section presents the findings on what the role of digitalization is within Company X to support business continuity amidst the COVID-19 pandemic.

The following research objectives facilitated the achievement of this aim:

- To investigate challenges experienced by Company X directly caused by the COVID-19 pandemic
- To explore relevant digital tools that support business continuity during black swan events and assess the company's culture towards digitalization

4.1 BACKGROUND OF RESEARCH PARTICIPANTS

The interview participants that are part of the front line in dealing with supply chain disruptions caused by the COVID-19 pandemic were selected. All participants hold managerial titles within Company X and are regarded as subject matter experts (SMEs).

The subject matter experts consisted of the following participants; (P1) Quality Control Centre Manager, (P2) Network Control Group Manager, (P3) Senior Manager for Network Operations Programs, (P4) Customer Operations Manager, (P5) Senior Director of Customer Service and (P6) Vice President of Operations which can be seen in Table 5 below.

Table 5: Profile of Research Participants

Identifying code for participant	Participants' position/title	Years of experience in current role
P1	Quality Control Centre Manager	4 Years
P2	Network Control Group Manager	6 Years
P3	Senior Manager, Network Operations Programs	4 months
P4	Customer Operations Manager	4 Years
P5	Senior Director, Customer Service	1.5 years
P6	Vice President of Operations	5 years

4.2 CHALLENGES EXPERIENCED BY COMPANY X AS A DIRECT RESULT OF THE COVID-19 PANDEMIC

Participants were asked whether they have experienced any disruptions directly caused by COVID-19. Table 6 illustrates the disruptions reported by SMEs within Company X.

Table 6: Disruptions experienced as a result of COVID-19

Disruption experienced	Participant/s involved
Reduction in commercial air travel	P1,P2,P4,P6
Poor Customer Service	P5
Trade restrictions	P1,P4,P6
Increased transit times	P1,P2,P4,P6
Demand driven pricing	P1,P4,P6
Governmental regulations/restrictions	P1,P4,P6
Working remotely and measures to reduce physical contact	P3,P5,P6

4.2.1 Reduction in commercial aviation

Company X is largely dependent on commercial aircraft to move the majority of their cargo between international destinations. One (1) participant mentioned, *"90% of our day-to-day activities is based on the capacity of commercial airlines"* (P2). Additionally, their core competence is to provide consistent and timely pickup and delivery of goods.

One of the critical disruptions highlighted by four (4) participants (P1, P2, P4 and P6) was the significant reduction in commercial travel. This meant that Company X had substantially less air cargo space available to facilitate the movement of their shipments.

4.2.2 Dealing with the reduction in commercial aviation

According to four (4) participants (P1, P2, P4 and P6), Company X managed capacity constraints within their network through establishing partnerships with commercial airlines. One participant elaborated on some of the commercial airlines with whom partnerships were established, "We've got some good cargo schedules with KLM, France air and Qatar Emirates." (P4). Commercial airlines who collaborated with Company X, allocated the "belly space" of their

aircraft to Company X. This provided Company X with the cargo capacity needed to serve their customers. Four (4) participants (P1, P2, P4 and P6) mentioned that these partnerships allowed grounded commercial aircraft with an opportunity to maintain a stream of revenue. In essence, these commercial airlines agreed to turn their passenger aircraft into freighters. Some of these airlines also agreed to remove the passenger seats from their commercial aircraft, after which they could provide freight services on a passenger aircraft, as a freighter would.

One (1) participant (P2) further elaborated that the restricted availability of commercial aircraft meant that Company X's own fleet of aircraft had to be carefully scheduled. The priority of these aircraft were to cater for shipments where Company X could not find a chartered carrier to perform the route. The same participant gave the following example, "If we believe there is a big demand out of Malawi coming into Johannesburg and there is no flights out of Malawi, I will speak to (Company X) aviation, and then they would move that." (Participant 2)

In response to the closure of South African (ZA) borders and the lack of commercial airline activity, as illustrated in figure 1, Company X (Express division) in conjunction with Company X (Aviation division) established an "Air-bridge", which refers to the establishment of route/s to connect one or more destinations by means of air travel, in April 2020. The "Air-bridge" connected ZA to the Middle East and Northern Africa (MENA) region to connect with their company owned Network, operating chartered B-727 Freighters, 6 times per week.

4.2.3 Governmental Regulations and Trade Restrictions

Three (3) Participants (P1, P2, and P4) highlighted the importance to understand that there is a symbiotic relationship between the movement of essential and non-essential goods. In other words, in order to be profitable within the commercial aviation industry, an aircraft has to operate at full capacity to justify operating the service. The demand for only "essential goods" at any given time may not fill up the entire cargo space of an aircraft, rendering feasibility and profitability useless. One (1) participant (P4) further highlighted this by stating, "Remember airlines are businesses, they don't fly fresh air around the world." (Participant 4)

One (1) participant (P4) stated that the South African Minister of Transport, Fikile Mbalula, declared South Africa a "No Fly Zone" on the 26th of March, 2020. Consequently, between March 26 and March 29, 2020, the Republic of South Africa was utterly disconnected from the Global Supply Chain. According to the same participant, industry lobbying at the beginning of April, 2020, motivated the Government to allow the movement of both "essential" and "non-essential" goods. The same participant stated, "So we headed the lobby, because the Managing director for Company X in South Africa knew him (Minister Fikile Mbalula). He could get some face time with the minister and he said, look, we have never done this before and we are going to drop the ball, but we rely on your direct expertise. He did listen, because what he did then is he said okay (to transporting both essential and non-essential goods)." (Participant 4)

Forty-three SSA countries suspended commercial passenger flights, while seven countries significantly reduced commercial passenger flights in an attempt to reduce the spread of COVID-19. One (1) participant (P2) commented that when he looked at the Flight Radar Map of Africa, which illustrates Aircraft operating at any given point in time, he could only identify two humanitarian flights departing.

According to two (2) participants (P1 and P6) Governmental restrictions on the export of goods led to congested airports, where goods have accumulated and formed bottlenecks. Governmental restrictions on the export of essential medical equipment from countries outside of the SSA Region posed questions within Company X on the usefulness of these restrictions, especially during a pandemic.

According to two (2) participants (P1 and P6), the South African Government's dependency on China for medical goods such as Personal Protection Equipment (PPE), created a supply dependency within the lane of trade. This supply chain dependency not only accentuates the risk of short supply when a specific lane of trade is unable to operate as usual, but it can also cause significant congestion at the entry and exit points of ports.

Furthermore, according to two (2) participants (P1 and P6), countries around the globe introduced trade restrictions on exports and in certain scenarios, imports as well. Trade restrictions on the import of goods included medical goods requiring inspection prior to the

clearance thereof. The aforementioned import restrictions posed significant disruptions to global supply chains. Direct disruptions experienced included the export ban on masks. Indirect disruptions experienced included scenarios where industries who manufactured packaging materials were not allowed to operate, rendering it impossible for food/product manufacturers to get their products on the shelves without the necessary packaging. Governments imposed several restrictions on the importing of PPE to protect the PPE manufacturers and industries in country and to ensure that imported PPE met the requirements of the local health authorities.

According to two (2) participants (P1 and P6), companies with business continuity plans (BCP's), such as Company X, were able to reflect nimbleness and were able to persevere in adapting to their evolving environments while sustaining business operations. BCP's ensure diversified sources of supply as part of contingency strategies. Diversified supply chains reduce the risk of product short supplies or stock outs that arise from being dependant on a specific trade lane, as in the case of South Africa's dependency on China for certain medical supplies.

4.2.4 Customer Service at Company X

One (1) participant (P5) noticed a complete change in behaviour regarding the type of goods that customers have shipped prior to the COVID-19 pandemic, compared to during the COVID-19 pandemic. Prior to the COVID-19 pandemic, when commercial passenger flights were still operating at normal capacity, individuals were able to transport various items within their personal luggage. According to the same participant, these items were now being shipped through courier companies, such as Company X. The same participant made use of prescription medication as an example. In most cases, prescription medications will be destroyed at the port of destination. This is because prescription medications are not allowed into the destination country as per their regulations.

This change in behaviour created numerous disruptions within the call centres of Company X. According to two (2) participants (P1 and P5), a rapid increase in inbound calls arose as customers wanted to speak to a Company X advisor to find out where their medication is and why it has not been delivered. Consequently, the Customer Service department within

Company X experienced a significant number of abandoned calls, which refers to calls not answered by an advisor, leading to poor performance in regards to their Key Performance Indicators.

In an attempt to manage the rapid increase in customer queries, along with staff falling ill, Company X thought it best to appoint temporary staff. According to one (1) participant (P5), this only caused further problems. Call centre training within Company X has a normal duration of 6 weeks. This is largely due to Company X having numerous in-house built systems that inductees have to learn and understand. However, because of COVID-19, the duration of the training was reduced to only 2 weeks to enable Company X to swiftly replace the ill staff members and to manage the surge in customer queries. The same participant stated that a training duration of 2 weeks was nowhere near sufficient.

"The two weeks training was no way near enough for these guys, because again, the systems are all completely different, so they struggled quite a bit." (Participant 5)

The shortening of the duration of the training strained supervisors extensively. It was compulsory for supervisors to work from the office to assist and train the new inductees. According to one (1) participant (P5), inductees were so overwhelmed that they waved any object they could find, or even stood up, just to get attention and assistance from supervisors. Consequently, supervisors did not have sufficient time available to also focus on the permanent call centre advisors, working from home. The same participant stated, "We found the pressure being put on the poor supervisor who had to be stretched between various different people to ask for help." (Participant 5)

According to one (1) participant (P5), regarding the appointment of temporary staff, it was required that only individuals with prior call centre experience be recruited. Consequently, individuals that are highly skilled within their fields were hired. This strategy was expected to give Company X a head start in dealing with the rapid rise in customer queries, however, it turned out to be a disaster because these individuals proved themselves to be over skilled for the call centre environment and they left as soon as a permanent role became available.

Lastly, the same participant (P5) raised her concern on the lack of proper change management within the Customer Service environment of Company X. This concern was twofold; firstly, some employees working from home started to work much later in the mornings and they essentially became much less efficient. Employee efficiency was measured in terms of the handling time per call. Company X had established a reasonable timeframe between when a call is answered until when it is ended and this was then recognised as the handling time benchmark. Consequently, the handling time of calls increased for some employees working from home, raising concerns. Secondly, supervisors had a greater concern on whether employees working from home were actually getting their work done.

4.2.5 Transit times

Four (4) participants (P1, P2, P4 and P6) explained that the transit time of shipments increased because of the decrease in cargo space available on commercial aircraft. Furthermore, because of the limited number of commercial aircraft available, Company X had to establish new and/or alternative routes for shipments to reach their final destinations. A majority of the new routes necessitated a longer transit time than the original routes that were established prior to COVID-19. Company X had to inform customers regarding the increase in transit times of packages. One (1) participant (P4) further highlighted this by stating, "The quickest route from A to B is in a straight line and passengers like to go on the quickest route. So the direct passenger flights from country to country, most of those flights underneath the passengers with their baggage is cargo and that capacity disappeared." (Participant 4)

Couriers were forced to move shipments by means of indirect routings, which to the customer, meant a longer transit time to final destinations. According to two (2) participants (P1 and P6), some customers were significantly affected by the increase of transit times, especially those awaiting critical shipments. One (1) participant- (P1) explained the scenario of a specific customer who move spare parts of medical equipment from Germany into South Africa. This customer's transit time moved from overnight to somewhere between 3 and 10 days. "So they move medical spare parts from Germany into South Africa…So the transit time that we actually had prior to COVID was overnight…Now, the customer moved from overnight to three days, four days, and even longer up to 10 days." (Participant 1)

4.2.6 Demand driven pricing

According to two (2) participants (P1 and P4), the reduction in available air cargo space meant that the customer demand for the moving of packages exceeded the amount of cargo supply available. Demand driven pricing thereby increased transportation costs, which was ultimately projected over onto the end customer, markedly higher than before COVID-19. Customers were ultimately forced to contemplate the trade-off between their amplified landed costs versus their estimated revenue in selling these consignments. Furthermore, according to the same participants due to the rundown demand of passenger flights, the cost per kilo (CPK) of an airline increased directly.

4.2.7 Business model and revenue impact on Company X

According to three (3) participants (P1, P4 and P6), the core business of Company X is to ship parcels and small packages (an average of 30 kilograms) as quickly as possible. However, according to the same three participants, Company X started shipping large volumes (an average of 30 tons) of PPE from China during April 2020. Because of COVID-19, Company X started seeing heavier shipments funnelled through their network. According to one (1) participant (P4), the general trend was for a customer to have an account with Company X for small express parcels and an additional account with freight forwarders for larger volumes, because they would usually be more affordable. According to the same participant, because of COVID-19, freight forwarders did not have the capacity to maintain their affordable pricing. Consequently, customers rather utilized Company X's services, because their pricing strategy could now be on par with that of freight forwarders, but with an additional advantage of quicker delivery.

The researcher noted an interesting contradicting finding; one (1) participant (P1) noted an increase in parcel volumes shipped, he credited the increase to the rise in e-commerce shipments, whereas another 1 (one) participant (P4) actually claimed that the volume of shipments reduced, but that the weight per shipment increased because they were taking over shipments that freight forwarders would usually handle. Furthermore, e-commerce revenues were reported to have an increase of 19% year on year.

Contradictory statements:

"So the more the e-commerce market increased, the more volume of parcels we actually had in our network." (Participant 1)

"If I look at last year, we actually decreased in volume. But what happened is we increased in weight because we were taking on freight forwarding, a lot more heavier shipments" (Participant 4)

Looking at how COVID-19 affected the revenue of Company X, one (1) participant (P4) stated, "We had record years. We had a record year last year, and we are on for a record year this year. From a Sub-Saharan African perspective, we are still the only game in town with our own fleet on the continent." (Participant 4)

4.2.8 Measures undertaken to reduce the spread of COVID-19

According to one (1) participant (P6), Company X implemented a strategy to reduce the amount of physical contact between the employees and/or facilities by rotating employees on the forefront of managing the COVID-19 pandemic. Furthermore, all employees who could work from home had to do so in an attempt to reduce the probability of an employee getting infected. The same participant also stated that Company X had deactivated all biometric systems to limit the contact or physical touch on communal surfaces. According to one (1) participant (P6), additional measures implemented by Company X included strict measures in the sourcing of Personal Protection Equipment, where only sourcing from countries with a lower infection rate was enforced.

Three (3) participants (P1, P4 and P6) stated that in March 2020, Company X SSA set up a cross-functional Joint Operations Centre (JOC) based in Johannesburg. The JOC's aim was to monitor pandemic driven developments within the region, both planning and coordinating the operational response to COVID-19 and to ensure business continuity throughout the region. This team consists of a number of subject matter experts to provide valuable and accurate information, a rare commodity during a black swan event.

According to one (1) participant (P3), Company X developed lockers called Swip Boxes to limit the spread of COVID-19. The same participant however mentioned that the program

currently has a low utilization rate and requires more attention, especially given the pandemic. Swip Boxes are currently not available throughout the entire SSA. Swip Boxes present Company X with a viable opportunity to ensure customers still receive the service they were promised, while limiting contact. Swip Boxes reduce the interaction that couriers have with customers, since customers are able to collect their shipments from the Swip Boxes instead of meeting a courier in person.

4.3 RELEVANT DIGITAL TOOLS IMPLEMENTED BY COMPANY X

4.3.1 Strategy 2025 - "Digitalization"

Company X's strategy 2025, as depicted in figure 7 below, revolves around "digitalization", thereby complementing the aim of this research.

Figure 7: Digitalization - strategy 2025
Source: (Company X, 2020).

The group strategy of Company X, known as Strategy 2025 aims to deliver excellence in a digital world. It facilitates the basis for enhancing, deploying and leveraging digital tools that

create opportunities for better customer service and enhanced processes within each aspect or BU within the organization.

Company X believes that digitalization will become the biggest lever in enhancing future growth. As part of strategy 2025, Company X will be expansively refashioning its Information Technology (IT) systems, incorporating new IT technologies and ensuring employees have access to progressive training that will be able to permit them to use the aforementioned technologies (Company X, 2019). Additionally, according to one (1) Participant (P1), "technology drives value in about four ways; connectivity, automation of manual tasks, improved decision-making and product and service innovation." (Participant 1)

Big Data Analytics, as part of strategy 2025, will be extensively utilized by Company X. Company X will continue to leverage and make use of their global technological expertise and capabilities, by means of global centres of excellence (COE's). Central COE's cultivate advance technologies, for example IoT (Internet of Things), in order to then deliver them to all Company X divisions. COE'S provide company X with the ability to draw on the expertise of the entire group and to move forward holistically with regards to digitalization (Company X, 2019). One (1) participant (P1) further highlights this by stating, "The organization already has an innovation centre and there's huge focus on digital platforms. So digital platforms to improve employee efficiency and to improve the customer experience" (Participant 1)

According to one (1) participant (P1), Company X foresees an increase in the demand of innovative logistics solutions across the e-commerce supply chain. The more promising e-commerce become, the more important digitalization will also be. Company X is placing a lot of their focus on leveraging technology that will contribute to improved operational efficiency and customer service. One (1) participant (P1) further empathises this by stating, "We have a business unit within for e-commerce. We are already innovative and looking at a number of ways to manage e-commerce. Due to our innovative ways, the e-commerce platforms were being developed and customers have the online means of going and being able to ship with Company X. " (Participant 1)

Lastly, Company X experienced opportunities towards digitalization brought forth by the COVID-19 pandemic. Paperwork such as master air waybills should be communicated between the appropriate airlines, Company X, as well as the appropriate suppliers

electronically through e-waybills in an integrated manner. This opportunity is further discussed and substantiated in the following section.

4.3.2 Global Customer Clearance Reporting

According to one (1) participant (P4), Company X's global customers are demanding a regular monthly report which would provide them with detailed information on their shipments' import clearance for trade and regulatory reporting purposes. This clearance reporting is provided by competitors as a standard offering. Global Customer Clearance Reporting (GCCR) was intended to ease the playing field against their competition.

According to the same participant (P4), Company X's system is currently structured around the waybill of a shipment. However, issues occur because Company X do not have access to the movement's reference number, which is customs generated when customers do back returns of shipments and have a customs audit. Additionally, Company X currently captures all clearance data manually. Clearance data includes how much someone has paid over the last year, or how much duties have been paid.

The benefits of GCCR, as stated by participant 4 (P4), are depicted in table 6 below:

Table 7: Benefits of GCCR

New clearance data repository on a stable platform that supports the storage of clearance data for longer periods.
Secure upload facility for countries on manual clearance
Supports data validation of clearance data
Online/on-demand reporting and scheduled reporting
Automated data extract – leveraging available clearance data

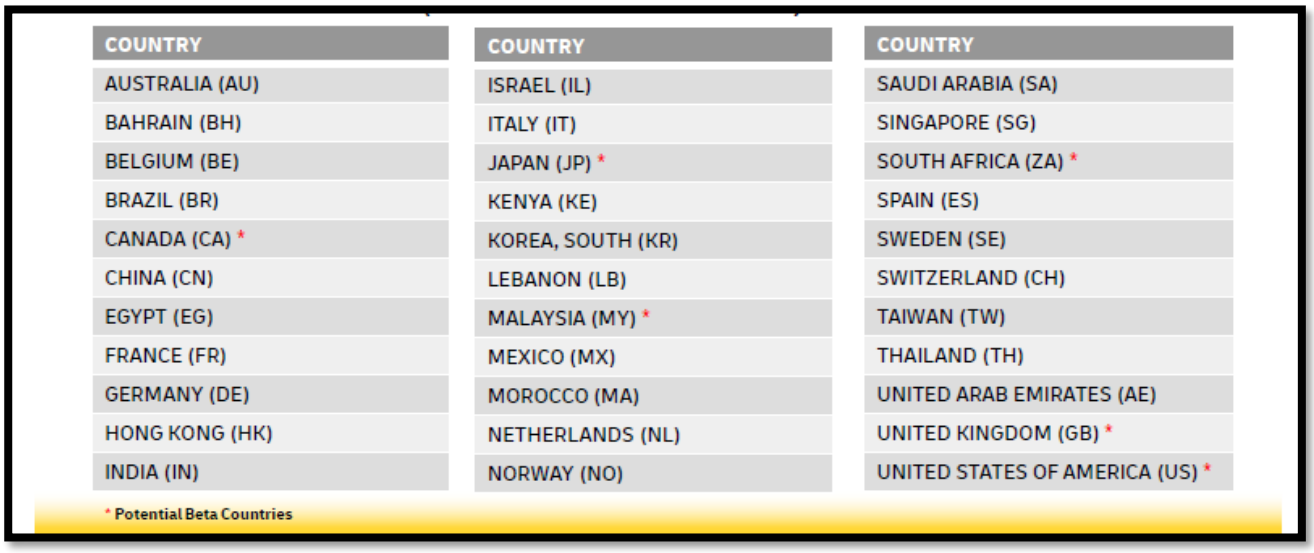
According to participant 4 (P4), the designed solution will not disrupt the current process and data flow between country clearance and local clearance authorities. As such, the other components of the Clearance Reporting Program are being built and/or enhanced in parallel with GCCR, and these need to be ready for the clearance data archive to auto-flow into GCCR.

According to Participant 4 (P4) (Company X Express Global IT – internal document) | January 2020, GCCR Capabilities include:

1. The dashboard, which are able to provide a snapshot of the quality of data received from the clearance systems by country and/or by customer program. Specific data elements from the clearance data received are validated against other data (e.g., country, currency, etc.), and against standard digit check rules such as the air waybill number.
2. On-Demand Report which is a consolidated report on clearance data that may be generated for “on-boarded” customers. Moreover, user access permission is taken into account on the content generated in the report.
3. Scheduled Report which allows users to set up and manage periodic generation of the consolidated report for “on-boarded” customers. Report will be sent to the user’s email address either in CSV or Excel format.
4. Manual Data Capture which is an offline tool built in Excel to primarily allow countries doing manual clearance to send data to GCCR. This option will only be considered and enabled for countries when endorsed by Global Customer Operations Group (COG), the automated data flow is the preferred channel for countries to send data to GCCR.
5. Download Data Capture Template that allows download of the latest available Excel template for the manual data capture
6. Administration which includes a list of modules that will allow system administrators to manage GCCR, e.g., announcements posted on the message board, templates, scheduler management, etc.

One (1) participant (P4) stated that the “Global customer reporting tool is coming online in South Africa next quarter (Q3)” (Participant 4).

Figure 8 below illustrates the planned countries for GCCR implementation.



COUNTRY	COUNTRY	COUNTRY
AUSTRALIA (AU)	ISRAEL (IL)	SAUDI ARABIA (SA)
BAHRAIN (BH)	ITALY (IT)	SINGAPORE (SG)
BELGIUM (BE)	JAPAN (JP) *	SOUTH AFRICA (ZA) *
BRAZIL (BR)	KENYA (KE)	SPAIN (ES)
CANADA (CA) *	KOREA, SOUTH (KR)	SWEDEN (SE)
CHINA (CN)	LEBANON (LB)	SWITZERLAND (CH)
EGYPT (EG)	MALAYSIA (MY) *	TAIWAN (TW)
FRANCE (FR)	MEXICO (MX)	THAILAND (TH)
GERMANY (DE)	MOROCCO (MA)	UNITED ARAB EMIRATES (AE)
HONG KONG (HK)	NETHERLANDS (NL)	UNITED KINGDOM (GB) *
INDIA (IN)	NORWAY (NO)	UNITED STATES OF AMERICA (US) *

* Potential Beta Countries

Figure 8: Planned countries for GCCR implementation

Source: (Company X Express Global IT – Internal document | January 2020).

4.3.3 Block chain

According to four (4) participants (P1, P2, P4 and P5), Company X experienced issues with employees who input incorrect or poor data when doing clearances for the International Business Machines Corporation (IBM), a leading American computer manufacturer. Common errors such as inserting the incorrect country of origin and other clerical issues occur. According to one (1) participant (P4), IBM approached Company X to be involved in their block chain project as their preferred logistics partner. The same participant mentioned that the project went live in February 2021. The countries of deployment are; Nigeria, Nigeria, Ghana, Mauritius, and Kenya. The block chain project fills out the single administration documents and has all the data required to fill it out. It thereby limits human interaction and mitigates mistakes. It is however important to note the same Participant's (P4) comment, "There is still human interaction because none of the custom systems in the SSA region are mature enough to actually have that data and connect, and this is just for IBM." (Participant 4)

One (1) participant (P4) further comments "I think from a Company X perspective in SSA, block chain is a little bit far off. If we look at Saudi or UAE customs, they have block chain." (Participant 4). The same participant further explains the reason for this as; "from a global IT perspective there is a lot of projects going on. The digitalization regarding people, customers, and invoice data electronically, everything was channelled into this year." (Participant 4). Since Company X is a multinational organization, global IT determines when digital tools are implemented and where.

Regardless of the numerous benefits mentioned, one (1) Participant (P4) is of the strong opinion that "from an African perspective, they're not ready for it. From a customs perspective, where you would use it, they're not mature enough yet." (Participant 4)

4.3.4 Paperless Trade

Information has to be transferred between various parties when goods span borders during international trade. Paperless trade refers to permitting the electronic exchange of trade-related data. Making use of electronic formats rather than paper-based documentation systems facilitate faster trade and reduce costs. Bottlenecks forming within regulatory documentation can pose significant risks and operational halts to smaller businesses or e-traders that do not possess the expertise or resources needed. Paperless trading is therefore an attractive solution in managing e-commerce and small shipments across borders.

According to three (3) Participants (P1, P2 and P4), customs in Africa still heavily relies on hard copy documentation. One (1) participant further emphasizes this by stating "Everyone likes hard copies, blue stamps, to make sure it's proper, only the more mature countries like South Africa can do it, Nigeria can't because they want to see the original invoice. " (Participant 4)

One (1) participant (P2) explained the use of a system called CAMS within South Africa. CAMS essentially allows staff members to make blog bookings online. A blog booking is an estimate of the allocations Company X would need for a specific month with a specific airline.

This meant that Company X employees no longer had to call airlines in order to make bookings. The online blog bookings further allowed the airlines to ensure they have the necessary pilots available. Company X would then receive an electronic message confirming that the booking has been made, which would allow them to arrange the appropriate workforce for the loading and offloading of shipments. CAMS also provide company X with the ability to enter the weight of the shipment on a certain flight, and CAMS will then calculate the costs. This permits Company X with the ability to ensure no costs discrepancies occur between the invoice of the airline and the determined amount on CAMS.

The benefits achieved by employing paperless trade are well perceived. One (1) participant (P4) raised his concern on the reluctance of PLT alongside the rapid expansion of global e-commerce. The same participant stated, "Countries and administrations have got to get very used to this, since the world trade organization are pushing for digitalization. It means faster clearances. It means shipments can get from A to B to be quicker with less inspections." (Participant 4)

Table 7 below shows the current deployment of PLT within the SSA Region, as received by Participant 4. According to three (3) participants (P1, P2 and P4), customs in Africa still heavily relies on hard copy documentation and only mature countries are embracing PLT.

Table 8: Paperless Trade deployment by Q2, 2021 by country within SSA

Country Code	Country	Inbound	Outbound
AO	ANGOLA	Y	Y
BF	BURKINA FASO	Y	Y
BI	BURUNDI	Y	Y
BJ	BENIN	Y	Y
BW	BOTSWANA	Y	Y
CD	CONGO, THE DEMOCRATIC REPUBLIC OF	Y	Y
CF	CENTRAL AFRICAN REPUBLIC	Y	Y
CG	CONGO	Y	Y
CI	COTE D IVOIRE	Y	Y
CM	CAMEROON	Y	Y
CV	CAPE VERDE	Y	Y
DJ	DJIBOUTI	Y	Y
ER	ERITREA	Y	Y

ET	ETHIOPIA	Y	Y
GA	GABON	Y	Y
GH	GHANA	Y	Y
GM	GAMBIA	Y	Y
GN	GUINEA REPUBLIC	Y	Y
GQ	GUINEA-EQUATORIAL	Y	Y
GW	GUINEA-BISSAU	Y	Y
KE	KENYA	Y	Y
KM	COMOROS	Y	Y
LR	LIBERIA	Y	N
LS	LESOTHO	N	N
MG	MADAGASCAR	Y	Y
ML	MALI	Y	N
MU	MAURITIUS	Y	Y
MW	MALAWI	Y	N
MZ	MOZAMBIQUE	Y	Y
NA	NAMIBIA	Y	Y
NE	NIGER	Y	Y
NG	NIGERIA	N	Y
RE	REUNION, ISLAND OF	Y	Y
RW	RWANDA	Y	N
SC	SEYCHELLES	Y	N
SD	SUDAN	N	N
SH	SAINT HELENA	Y	N
SL	SIERRA LEONE	Y	N
SN	SENEGAL	Y	N
SO	SOMALIA	N	N
SS	SOUTH SUDAN	N	N
ST	SAO TOME AND PRINCIPE	Y	N
SZ	SWAZILAND	Y	N
TD	CHAD	Y	N
TG	TOGO	Y	N
TZ	TANZANIA	Y	Y
UG	UGANDA	Y	N
XS	SOMALILAND, REP OF (NORTH SOMALIA)	N	N
YT	MAYOTTE	Y	N
ZA	SOUTH AFRICA	Y	Y
ZM	ZAMBIA	Y	Y
ZW	ZIMBABWE	Y	N

4.3.4.1 *Change management with modernization is often lacking*

According to two (2) participants (P3 and P5), Company X is lacking proper change management as a driving mechanism towards adopting digital tools. One (1) participant (P3) further highlights this by stating "Because of change management, it's difficult sometimes to change the mind set of costumers, who are used to couriers printing waybills, and writing waybills in certain places. So there is a gap right now, and we just need to fill in that gap by engaging these guys properly and making them know that this is the benefit we bring to you as a customer, as shipments get delivered quickly, because clearance starts even before the shipment leaves the origin country, if a proper change management process is used and the stakeholders are correctly engaged, at the end of the day, we will see the benefit." (Participant 3)

4.3.4.2 *Why change management is lacking*

According to an internal Company X document, received from Company X Sub Saharan Africa Customs and Regulatory Affairs, written by the Senior Director - Customs, Trade Compliance and Regulatory Affairs (P4); out of 51 SSA countries, only eight countries are using risk based profiling for customs clearance. The remainder requested physical paperwork prior to release and have an insufficient approach to controls with regards to risk. Only forty-one countries had 100% inspection regimes. Furthermore, eleven countries have varying self-developed or manual clearance systems. The aforementioned is illustrated in figure 11 below.

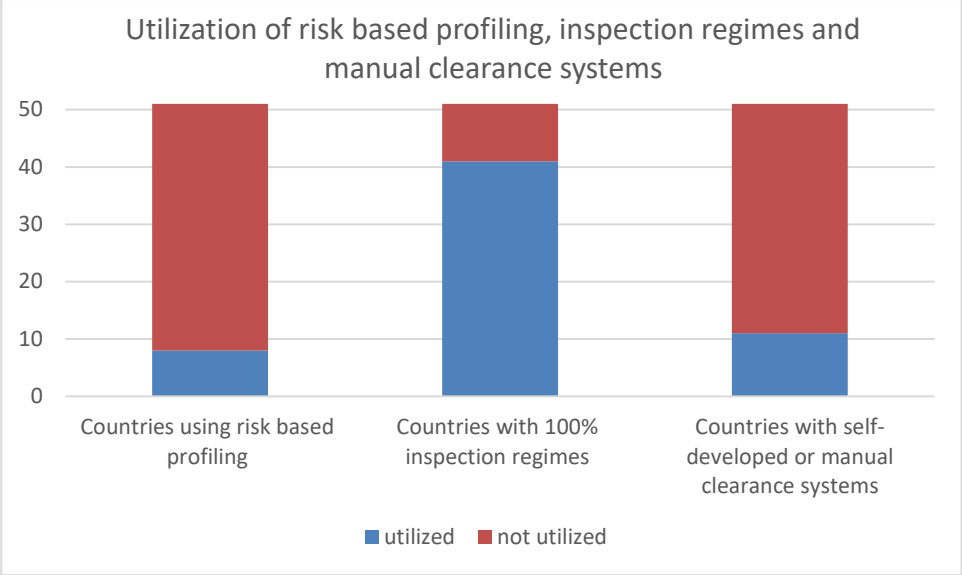


Figure 9: Why Change Management is lacking within SSA

AEO (Authorized Economic Operator) that provide easier admittance to customs simplifications programs are limited within the SSA region (Rwanda, Kenya, Uganda and South Africa). For instance, in the case where both customers and Company X have AEO authorization, all of their imports remain halted for inspection.

4.3.4.3 *Proposed Solutions to fast track Paperless Trade*

According to aforementioned internal Company X document received from Company X Express Sub Saharan Africa Customs and Regulatory Affairs (P4), the following measures can be implemented to fast track Paperless Trade:

1. Increase the reliance on advance electronic data transmission coupled with the need to mitigate against poor or inaccurate data and image quality.

1. Recognition and acceptance of digitalisation as an integral part of a modernised customer environment.

2. Integrated system solutions are essential for a smooth clearance process with single window capability and reduce needs for manual paper based entry documents.

3. Reliance on electronic document submission and digital certificates such as Certificates of Origin or EUR1 documents (in some countries, for example in South

Africa you need the hard copy EUR1 or a stamp and signature on the documents to get preferential origin duty rates)

4. Simplified document protocols such as limiting to the basic data elements needs for a customs entry to be completed.
5. E-payments for fiscal charges and reducing the need for paper based payment protocols.
6. Risk profiling versus the need to have a paperwork based approach to customs processes. Demonstrated compliance history and AEO programs will enhance and promote this.
7. Mutual recognition of and increased development of AEO programs which work hand in hand with the subsequent reduced dependency on paperwork.

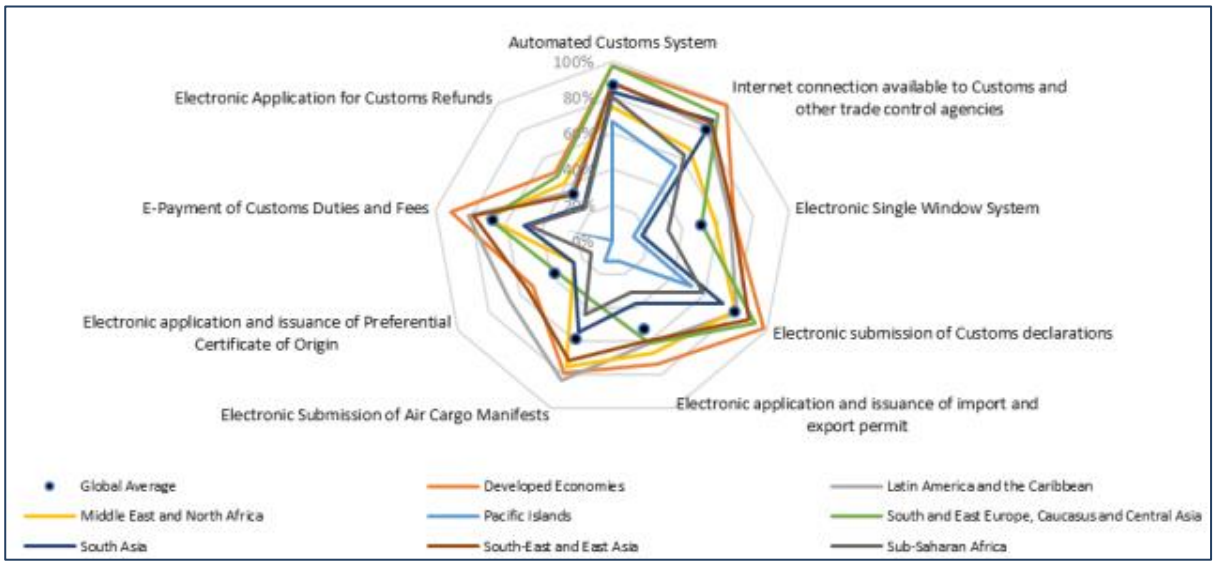


Figure 10: Global implementation of 'Paperless Trade' measures in various regions
Source: (UNTFSURVEY, 2019).

The researcher believes that making use of digital tools in a Pandemic can greatly reduce the risk of contracting the virus by reducing contact risk. For instance, if Company X had to transfer physical documents in Kenya, Company X would have to establish a file that would comprise of four sets of paperwork. Ten or more people, such as customs and regulatory officials, would be working on the four sets of paperwork. Because of Africa's predominantly paper based systems, there is an abundance of opportunity in regards to digitalization within

Africa. One opportunity may include advanced data processing. Advanced data processing refers to the possession of relevant data before the particular parcels arrive within the determined country.

4.3.5 Robotics Process Automation

RPA started at Company X globally in 2017 within the Finance function, with a small team and a lot of enthusiasm to develop a new and promising technology. Today, RPA is driven by the global RPA CoE of Company X. In addition to automation, Company X is investigating various related technologies to enhance the overall capabilities of RPA over time. For example, Smart Optical Character Recognition (OCR), a system Company X is currently implementing for AI supported content capturing in the future (Company X, 2020). One (1) participant (P3) explained how Company X makes use of OCR within Company X SSA Express Finance. When invoices are processed, OCR is integrated with a system called "Basware" whereby OCR goes and look at certain information on the invoice, picks it and codifies it automatically so the invoice can be processed for payment to the correct vendor, without manual intervention. One (1) participant (P3) states, "There is also an optical character recognition project, which has been integrated with a few applications … for processing invoices. OCR goes and look at certain information and picks it in." (Participant 3)

Case in point RPA example:

Some shipments entering destination countries require additional requests for information, such as missing paperwork. For these cases, manual requests needs to be created in GEMA. For shipments returned, a prior notification must be sent to the origin country. The RPA objective was to automate the creation of GEMA requests sent to origin countries for various customs related GEMA requests types as seen in figure 13 below.

Figure 11: Approach and Solution to automating GEMA request types
Source: (Company X, 2020).

Automating the creation of GEMA requests sent to origin countries for various customs related GEMA requests types caused 1300 open requests to be processed in 30 minutes by the automated solution instead of 60 hours. This meant that employees were freed up to do more interesting and value adding activities. The solution also led to faster communication within origin countries and faster resolution allowing shipments to proceed.

4.3.5.1 *Robotics Process Automation in Customer Service*

According to one (1) Participant (P5), Company X can receive up to 4000 inbound calls from customers. Only 0.015% of recordings from these inbound calls are listened to for quality assessments. Consequently, no quality assessments are done for the majority of customers.

According to the same participant (P5), in an attempt to solve the poor ratio of quality assessments done, Company X is currently doing a proof of concept in speech to text analytics. Speech to text analytics listens to 100% of customer inbound calls and creates positive and negative “word clouds” to allow Company X to understand their customer's needs more intricately than they do today.

Furthermore, according to the same participant (P5), to aid in the large volume of inbound customer calls, Company X deployed RPA bots. The aim of the bot is to answer the customer query without the need of an advisor. The WhatsApp bot provides customers with a WhatsApp phone number where they are able to attain information regarding a particular shipment. Furthermore, to improve customer satisfaction, the WhatsApp bot provides several links to customers automatically after a customer experienced an abandoned call.

These links provide customers with access to a live chat and to alternative platforms where customers can attain the information needed on their shipments.

According to one (1) participant (P5), prior to COVID-19, Company X made use of a very reactive approach when tracing customer shipments to provide answers to customers. In overview, customers would phone Company X with a specific query, after which an advisor would attempt to allocate the particular shipment. Additionally, advisors were not always able to obtain the status of a shipment. One (1) participant (P5) state, *"…9 times out of 10, there isn't an update on the system."* (Participant 5)

According to the same participant (P5), it can be due to several reasons, for example when the ground operator who is scanning the shipment experience an issue with his scanner, causing the shipment to not update its location or status when scanned. This meant that advisors were not able to see whether a shipment came out of the cargo hold. Furthermore, the scanners also make use of WIFI within Airports (Gateways) or Service Centres. Consequently, when these facilities experience short periods of network issues, shipments also have a delayed update since the shipment will only update once the network issues are resolved. At that point, an advisor would open up a system called "Trace". The advisor then logs the query on Trace, stating what the issue with the air waybill number is and links it to the customer's contact details. As soon as the error related to the air waybill number is fixed, the advisor will then phone and update the customer on where the shipment is.

According to one (1) participant (P5), Company X now has a proactive way of answering customer queries and improving customer service. A system called NPTS allows employees to see when a shipment should have a scan code, but does not yet have one, based on the arrival time the aircraft should have landed in the particular country. The RPA bot would then automatically open "Trace" for all shipments that do not have an update code, but that should have one, and link these shipments with the contact details of the relevant customers. The customer would then automatically be notified with the shipment status. According to one (1) participant (P5), the customer would get a notification saying, *"Mr. Customer or Mrs. Customer… we are trying to track down where your shipment is. It is delayed at customs; there isn't an update on the system as yet, because there was a problem with the scanner."* (Participant 5) As a result,

customers are proactively provided with the status of a shipment before the customer would phone with a query.

4.3.6 Conversational Artificial Intelligence

One (1) participant (P5) are of the opinion that Conversational AI might be a viable tool for Company X to deploy in the future. The same participant (P5) stated "It is the next big thing for contact centres." The same participant further explained that Conversational AI incorporates all the company's back office services/teams. The advantage that Conversational AI bring is the ability for customers to "pause" and "resume" a call made to a contact/call centre. For example, when a customer is phoning the telephone line of a call centre and as they dial, they wish to take a smoke break, they will have the ability to select an option on the phone line that allows the customer to transfer the call as a WhatsApp conversation. The system would prompt the customer to enter the phone number they wish to utilize for the WhatsApp conversation. Whilst the customer is on the line, a message is sent to the allocated phone via WhatsApp stating, for example, "You have asked us to contact you via WhatsApp, please confirm by clicking on this link when you wish to resume your WhatsApp call." This then allows conversational AI to take effect.

Conversational AI allows customers to contact a service provider on their terms.

4.3.7 Big Data Analytics

The purpose of Big Data Analytics is to effectively utilize all the data collected by Company X to create value for the company. It allows Company X to achieve higher productivity and drive down costs.

Company X captures vast amounts of data each day, be it operational checkpoints, billing queries or customer service interactions. Analysing this data provides insights into how they can become even better and, in the best-case scenario, it can lead to concrete strategic adjustments.

Each shipment leaves a data trail from the first click of the customer on their website, to the signature of the receiver and every checkpoint in-between. This raw data is accumulated, separated and transformed creating even more data. There are enormous value in data governance since 70% of a Big Data Analytics project's time is spent on data gathering, cleansing and exploration.

Case in point Big Data Analytics example:

Piece Weight Optimization (PWO) aims to make sense of the large quantities of reweigh information and use the most plausible, rather than the first provided information by the customer. PWO is a great example of how Big Data Analytics allows Company X to improve revenue quality while at the same time reducing customer complaints. A shipment has to be weighed and measured. The objective of PWO is to select the most plausible weight/dimension for billing to protect revenue and reduce credit notes. Company X needed fast delivery of a solution using home-made software and robots. They started subsequent initiatives like "hidden reweighs" to improve the accuracy of the model. The PWO algorithm is now embedded within the company and as of May 2020, live in 33 countries. The PWO system proved financial benefits that exceeded 1 million EUR at the end of Q1 2020 with 23 countries live at the time. The projected benefits for 2020 was 9million Euro and 17million Euro p.a. run rate at full deployment. (Company X, 2020).

According to three (3) Participants (P1, P2 and P3), Company X also makes use of Predictive analytics whereby the relevant system incorporates historical data to accurately calculate how a shipment will move through the entire network of Company X globally and when it is expected to be delivered. Furthermore, according to one (1) participant (P1), Big Data Analytics have the ability to take huge amounts of data and formulate it into graphic illustrations, such as bar charts, pie charts and donut charts. According to the same participant, Big Data Analytics also provides the ability to break down the information and readily illustrate where the major areas of focus on a high level should be. Consequently, it also allows employees to drill down into the actual finite detail of an air waybill. According to one (1) participant (P1), Company X also makes use of Tableau for better decision making within the business. Tableau creates automatic automated dashboards of data. The data is

further visualized in graphs or other desired illustrations. Once a dashboard is created and customized, there is no further need for manual intervention. The dashboard will automatically update with the newest data (in real time) to aid in business critical decision making.

According to all six (6) Participants, Big Data Analytics were especially helpful during the pandemic. This is because the company could not operate through their network as usual and therefore could not make decisions as usual. For example, Big Data Analytics are able to illustrate all the details of a shipment. The details include the weight, the origin, the destination and the volume of a shipment. This information is critical to Company X since it permits them to see what shipments are within their network at any given point in time. They are also able to see what volumes of parcels are coming into the region or into a specific country as well as what parcels are going out of the region or out of a specific country. Big Data Analytics enabled Company X to manage, in real time, how they process shipments, both in and outbound.

4.3.8 Internet of Things

Two (2) participants (P1 and P2) explained how the scanners used by Company X makes use of IoT. Previously, the data from scanners had to be transmitted to relevant systems by physically connecting the scanner to a laptop or desktop. Today, all the data from scanners are automatically transmitted to the relevant systems through wireless connection, once the scanner enters a facility. Furthermore, IoT permits a courier driver to plan his route through using the scanner.

One (1) participant (P1) further elaborated on “Smart connect” being part of Company X’s innovations in regards to IoT. This will be discussed further in the following section.

4.4 THE CULTURE OF COMPANY X TOWARDS DIGITALIZATION

4.4.1 Smart Workspace

All employees, whether in offices or in operational units, will become part of the Smart Workspace. This will be enabled by the Smart Connect application for smartphones and computers. The platform is being continuously expanded and improved to provide access to news, information, social walls and chats to all employees. For desktop users, the company is gradually introducing Microsoft Office365 with applications that will support digital and agile collaboration on documents and projects. Additional tools and employee services will be implemented on desktops, laptops and mobile devices around the world. Smart Workspace not only brings all this together under a single “brand,” but also ensures the various applications are intelligently linked. Company X believes that it is not just about access to the latest applications; it is about the impact these tools can have for each employee and for the company.

Every Company X employee has some 570,000 colleagues around the world. Company X therefore believes that the question must be asked - what happens when they pool all of their skills and resources, and share their knowledge? What happens when dialogue across divisions, hierarchies and national borders becomes perfectly simple? When it is possible for everyone to make their voice heard and share their ideas. When relevant news and information can be accessed at any time via smartphone. That is the vision behind the Smart Workspace. In a multinational company such as Company X, this is a massive undertaking and it will not happen overnight. It is a journey, over many months with many stations and tasks along the way. In addition, the details of the itinerary will vary depending on division and region. There will be a lot to discover and learn on this journey. So over the coming months employees can expect a steady flow of news, stories, videos and trainings, all on the topic of Smart Workspace and all easy to recognize thanks to its distinct design.

According to two (2) participants (P3 and P5), there is a great need for trainings and digital collaborations. One (1) participant (P3) raised his concern on how it took it his team more time to get a task done in collaborating with other African countries digitally, than it would have taken them if they were able to travel and do so in person. One (1) participant (P5) raised her concern on how COVID-19 increased the volume of customer queries in regards

to shipments. Managers within the call centres of Company X had to appoint temporary staff to attend to customer queries, but experienced a decrease in customer satisfaction. This was because the temporary staff members could not be sufficiently trained and did not understand the business.

4.4.2 Project Campfire

Company X believes that Digitalization needs to be driven by the business itself. Project Campfire is their bottom-up approach to make all Digitalization initiatives visible in one place and provide more autonomy to execute it locally. It is supported through their company portal with the first version live and accessible to all employees. Campfire relies on the people of Company X to continue working on the great local initiatives, and to share them via the portal.

The researcher noted an interesting trend unfolding within Company X in regards to the digitalization drive;

One (1) participant (P1) is of the opinion that only 50% of employees are embracing digitalization. He credits the hesitancy of the 50% of employees as a result of employees feeling threatened by digitalization and not experiencing job security. According to the same participant, when the customs team from Company X visited warehouses in certain countries, they found that although the countries themselves said that they are willing to embrace digital platforms, they found a lot of manual interventions taking place and lots of paper lying around in warehouses.The customs officers feel certain that if digital platforms are more leveraged, they will lose their jobs.

One (1) participant (P2) is also of the belief that those employees not embracing digitalization is doing so because they are worried that they might lose their jobs. According to one participant (P2), some of his team members who were doing online bookings, through calling the airlines themselves and those who were doing reconciliation activities manually usually completed their tasks in an estimate of five days. These employees now saw it being done in less than an hour, causing them to be worried they might lose their jobs.

One (1) participant (P4) were of the same opinion than the aforementioned participant, but he further elaborated on how ground officers are of the opinion that technology is coming to take their jobs instead of making them more efficient. The same participant believes that it is a problem unique to Africa because these workers do not understand the benefits for them.

Two (2) participants (P3 and P5) are in alignment that digitalization are not fully embraced because of insufficient change management.

"So I think change management in general is a problem." (P5)

"…there is an aspect called change management. It's difficult sometimes to change the mind set… it might be difficult, but if a proper change management process is used and the stakeholders are correctly engaged at the end of the day, we will see the benefit." (P3)

One (1) participant (P6) is of the belief that those employees not embracing digitalization is doing so because they have a high degree of RTC. "…how do we bring people with us who maybe don't want to come with us…you know, people that resist change because of the fear of change and the fear that they're not able to do that and I mean I'm 59 years old. So when I started working, we didn't have emails and fax machines and computers and digital signatures and calendars and all that stuff. We just about had a photocopy machine and a telex machine and a typewriter, you know? So, so how did we, so if, if we decided to stay and you weren't able to evolve, uh, we wouldn't have been able to get into the zoom phase and the teams phase and doing whatever we doing." (P6)

An evolution of the Campfire portal with improvements and additional features such as a workflow support will go live in Q2 2021. At the same time, Company X aims for their digitalization evangelists around the globe to work as one in a coordinated way to accelerate their Digitalization initiatives. However, based on the aforementioned opinions of the SME's, the researcher is of the opinion that Company X has to create better awareness regarding digitalization, especially within Africa and especially drilling down to first line operational workers. Additionally, Company X has to place special focus on change management.

4.4.3 The African Skill Force

The study found that all SME's (P1 to P6) expressed great concern on the worker's readiness to adopt digitalization initiatives. Furthermore, two (2) participants (P1 and P2) expressed great concern on whether Africa has the necessary human and technological resources in place to adopt and execute digitalization initiatives.

Three (3) Participants (P1, P2 and P4) are of the opinion that universities are currently not providing adequate education to prepare the future workforce on 4th Industrial revolution topics. These participants belief that the growing importance of IT should already be addressed at high school level. Consequently, if the workforce is not skilled to embrace digitalization, Africa will remain on the back leg concerning technological advancements.

5 CHAPTER 5

DISCUSSION

This study is an exploratory research on the role of digitalization in supporting business continuity amidst black swan events such as COVID-19. This section debates the results of the study in relation to the critical research question and objectives of the study.

5.1 RESEARCH OBJECTIVE ONE

The first objective of the study was to investigate challenges experienced by Company X directly caused by the COVID-19 pandemic. This objective was achieved in full as the study at hand clearly elucidates the challenges experienced by Company X as a result of the COVID-19 pandemic.

With border closures and other travel restrictions imposed, commercial airlines either completely or mostly suspended their entire operations. Finlay (2020), state that airlines had to reduce the number of destinations that they fly to as a result of travel restrictions. Since Company X makes use of commercial aircraft to transport the majority of their daily volumes, Company X had significantly less air cargo space available to perform daily operations, especially at the peak of the pandemic. This is supported by Bombelli, Santos and Tavasszy (2020), who claim that the belly space of commercial aircraft carry 50% to 60% of all airfreight.

Additionally, countries around the globe introduced trade restrictions on exports and in certain scenarios, imports as well. Trade restrictions on the import of goods, including medical goods that require inspection prior to the clearance thereof, led to a significant increase in transit times. This is supported by Gu, Wallace and Wang (2019), who claim that rigorous inspection protocols and quarantine requirements imposed within customs have caused significant delays in delivery times. Trade restrictions led to congested airports, where goods have accumulated and formed bottlenecks within Company X's network. Company X believes that export restrictions might be viable solutions during pre-pandemic or normal periods, but might not be viable during a pandemic such as COVID-19 (Company

X, 2020). Company X experienced significant delays in delivery time because of the decrease in air cargo space available on commercial aircraft. Company X had to establish new and/or alternative routes for shipments to reach their final destinations. A majority of the new routes necessitated a longer transit time than the original routes established prior to COVID-19. Couriers were forced to move shipments by means of indirect routings, which to the customer, meant a longer transit time to final destinations.

The COVID-19 pandemic caused a complete change in customer behaviour regarding the type of goods customers shipped during the COVID-19 pandemic. Because of the sudden halt in commercial air travel, individuals were unable to transport various items within their personal luggage. Unusual items, such as prescription medication, were now being transported through Company X's network. This claim is supported by Costenbader (2020), who state that the outbreak of the Coronavirus pandemic (COVID-19) has caused a soaring demand for medicine and drugs, such as pain and cold medication.

In most cases, prescription medications will be destroyed at the port of destination. This is because prescription medications are not allowed into the destination country, as per the regulations of the destination country. This change in customer behaviour created numerous disruptions within the call centres of Company X. Inbound calls received from customers surged dramatically as customers wanted to speak to an advisor to find out where their medication is and why it has not been delivered.

Consequently, the customer service department within Company X experienced a significant number of abandoned calls. Company X had to appoint temporary staff to manage the rapid rise in inbound calls and to replace the staff members getting infected with COVID-19. This is supported by Das (2020), who claim that the outbreak of the Coronavirus pandemic (COVID-19) has caused the logistics industry to experience a shortage of workers. The appointment of temporary staff caused significant problems for Company X. Call centre training within Company X has a normal duration of 6 weeks. This is largely due to Company X having numerous complex in-house built systems that inductees have to learn and understand. However, because of COVID-19, the duration of training was reduced to 2 weeks to manage the replacement of staff members contracting the COVID-19 disease and to manage the surge in customer queries.

Cichosz, et. al., (2020) define process standardizing and data integration as a barrier for digital transformation. This is because systems are complex and accompanied by intricate processes. Company X have a multitude of in-house built systems within the call centre, resulting in a low degree of standardization. Cichosz, et. al., (2020) conveyed the solution to be within simplification by means of eliminating that which is not adding any value but requires a significant amount of resources and standardizing processes.

The researcher is of the opinion that if the in-house systems were standardized and simplified, temporary appointed staff would not have faced such a steep learning curve in attempting to understand the systems, thereby adding value to the business sooner and improving customer satisfaction. Polites and Karahanna (2012) describes organizational inertia as an obstruction to successful digital transformation. Although Company X used incumbent in-house systems within the call centre, it is not clear whether there were better alternatives available. Therefore, no hypothesis regarding organizational inertia can be made.

5.2 RESEARCH OBJECTIVE TWO

The second objective of the study was to explore relevant digital tools that support business continuity during black swan events and to assess the company's culture towards digitalization. This objective was achieved as the study at hand clearly elucidates relevant digital tools, Company X's culture towards digitalization and whether relevant digital tools supported business continuity during COVID-19.

In many ways, COVID-19 has expedited technological developments and social shifts. The COVID-19 pandemic has radically affected people's livelihood and has potentially changed their minds as well (Dwivedi, Hughes, Coombs, Constantiou, Duan,Edwards and Upadhyay, 2020). The rapid surge in e-commerce experienced by Company X as the pandemic pushed consumer habits towards online consumption supports the aforementioned claim.

Because of the sudden reduction in commercial air travel, Company X could not operate through their network as usual. Cichosz, et. al., (2020) state that integrating data transforms data into information that is valuable to the management of the organization since it provides

the organization with a holistic and real-time dashboard of the current performance of the organization. Big Data Analytics enable Company X to manage, in real time, how they process shipments. Company X makes use of Predictive analytics whereby the relevant system incorporates historical data to accurately calculate how a shipment will move through the entire network of Company X globally and when it is expected to be delivered. Furthermore, Big Data Analytics provide Company X with the ability to fragment complex information and readily illustrate where the major areas of focus should be, while allowing employees to drill down into the actual finite detail. Dashboards automatically update (in real time) and support Company X in business critical decision making. It can be concluded that Big Data Analytics supported business continuity in Company X during the COVID-19 pandemic. This is because Company X could not operate through their network as usual and therefore could not make decisions as usual. Big Data Analytics enabled Company X to manage, in real time, how they process shipments both in and outbound, providing information that enabled Company X to make informed decisions.

With regards to RPA, Company X automated the creation of GEMA requests sent to origin countries for various customs related GEMA requests. The solution also led to faster communication within origin countries and faster resolution allowing shipments to proceed. RPA aided Company X tremendously during COVID-19. This is because various restrictions and border closures imposed by Governments led to significant bottlenecks of shipments at ports of entry and exit around the globe. These bottlenecks meant that it was of utmost importance for Company X to process shipments speedily. RPA caused 1300 open requests to be processed in 30 minutes by the automated solution instead of 60 hours.

Information has to be transferred between Company X and various parties when goods span borders during international trade. The bottlenecks of shipments that formed as a result of COVID-19, meant that bottlenecks also formed within regulatory documentation of Company X. Making use of an electronic format rather than a paper-based documentation system facilitates faster trade, which allowed Company X to clear bottlenecks faster. However, Data analysis revealed that customs in Africa still heavily relies on hard copy documentation and that only mature countries are embracing PLT. Therefore, it can be concluded that PLT assisted Company X during COVID-19, but only in the countries where it was successfully deployed.

According to Cichosz, et. al., (2020), resistance to change (RTC) is the factor that are most commonly used in literature as a significant barrier to digital transformation. The study found that some Company X employees who are not embracing digitalization is doing so because they are feeling threatened by digitalization. For example, when the customs team from Company X visited warehouses in certain countries, they found that although the countries themselves said that they are willing to embrace digital platforms, a lot of manual interventions were taking place and heaps of paper were lying around in warehouses. The customs officers feel certain that if digital platforms are more leveraged, they will lose their jobs.

Cichosz, et. al., (2020) elaborates on how individual resistance to change are linked to the specific individual's fears and not to the degree of digital maturity of the organization. The aforementioned fears are defined as a fear of job loss, where the employee's job can be done in a more efficient and automated manner through digital transformation. The findings of the study supported the statement that individual resistance to change are linked to the specific individual's fears and not to the degree of digital maturity of the organization. This is because Company X (a multinational logistics provider), who is deemed to be digitally mature, have employees who show a high degree of individual resistance to change. All participants as part of this study agreed that digitalization is not yet fully embraced by Company X. The researcher found this to be profound, especially given the fact that Company X's whole organizational strategy for 2025 is centred on digitalization.

The study found another reason for employees resisting digitalization. The second reason why employees resist digitalization within Company X is because some employees feel like they are not capable or familiar with the concept of digitalization and do not have a working knowledge on these digital tools. The study thereby supports Sher and Lee (2004), who claim that successful digitalization mainly depends on the possession of adequate capabilities within the organization internally. Knowledge and organizational know-how will therefore become the primary foundation to competitive advantage (Sher and Lee, 2004). It can therefore be concluded that employees who resist change based on inadequate capabilities and knowledge within Company X, are hindering Company X's ability to achieve complete DT. Contributing further, Cichosz, et. al., (2020) state that a lack in technology adoption capabilities also prevent logistics service providers to experience digital

transformation. The study proved consistency that a strong supportive enterprise culture with a low RTC factor enhances successful DT.

With regards to Global Customer Clearance Reporting as a digital tool, Company X's global customers are demanding a regular monthly report which would provide them with detailed information on their shipments' import clearance for trade and regulatory reporting purposes. This clearance reporting is provided by competitors as a standard offering. GCCR was therefore intended to ease the playing field against their competition and did not assist Company X directly in ensuring business continuity during COVID-19.

Company X makes use of IoT regarding the scanner devices used by courier drivers. Previously, the data from scanners had to be transmitted to relevant systems by physically connecting the scanner to a laptop or desktop. Today, all the data from scanners are automatically transmitted to the relevant systems through wireless connection, once the scanner enters a facility. Since data from scanners are automatically transmitted through wireless connection, no form of contact is required, whether in person or through the use of a communal surface area. It is impossible to determine the exact amount of employees that could have been infected through using a communal laptop or desktop when transmitting the data, but it can be concluded that IoT limited or reduced the spread of COVID-19, thereby ensuring business continuity.

Furthermore, in relation to IoT, Smart Workspace refers to Company X's digital ecosystem Smart Workspace provide access to news, information, social walls and chats to all employees. Since Smart Workspace has not been rolled out during the pandemic, no conclusion can be made on whether it would have aided Company X in ensuring business continuity during the pandemic. The researcher however believes that Smart Workspace could have supported Company X in the midst of the pandemic, because it could have enabled dialogue across divisions, hierarchies and national borders. This meant that relevant news and information regarding the COVID-19 pandemic and important lessons learned could have been shared effortlessly as the pandemic unfolded.

Company X experienced challenges (not as a direct result of COVID-19) with employees inputting poor or incorrect data when doing clearances for shipments. IBM approached

Company X to be involved in their Block Chain Project as their preferred logistics partner. The Block Chain project fills out the single administration documents and thereby limits human interaction and mitigates mistakes. However, the study found that human interaction still exists in SSA, because none of the custom systems in the SSA region are mature enough to actually possess and connect the necessary data. Cichosz, et. al., (2020) state that challenges in standardizing underlying processes exist because of information technology or legal controls related to operating across borders. Given the fact that there are no existing customs system meeting the requirements for block chain in SSA, it can be concluded that block chain did not directly support business continuity during COVID-19. To provide a detailed conclusion, further research must first be done on what the impacts of block chain technology would be should a customs systems exist within the SSA region that are mature enough.

Besides digital tools supporting Company X's business continuity during COVID-19, the culture of Company X towards digitalization was also extremely important. Company X managed to remain agile throughout the pandemic. During turbulent and instable occurrences, agility is vital to ensure business continuity (Christopher, 2000). Agility refers to an organization's competence to adapt swiftly to a changing environment (Christopher, 2000; Swafford, Ghosh, & Murthy, 2006). The aforementioned competence is remarkably essential when markets experience unforeseeable supply and demand changes.

The findings of the study proved consistency with the literature review in that a strong emphasis placed on employee training and skills development enhance successful DT. Cichosz, et. al., (2020) argue that in realizing successful digital transformation, the importance of training employees to ensure they understand and are able to adapt to a digital business environment must be present within an organization. The Company X global Big Data Analytics team facilitates the identification and successful completion of Big Data Analytics projects everywhere at Company X, Express division, by training analysts and creating a community for them. Through the established Company X Data Science Program, they have the ability to train and to up-skill their data analysts. This helps to generate ideas and expertise to drive innovation and show the possibilities that Big Data Analytics has to offer. Furthermore, Company X have developed a group strategy known as Strategy 2025, which aims to deliver excellence in a digital world. This digital business

strategy facilitates the basis for enhancing, deploying and leveraging digital tools that create opportunities for better customer service and enhanced processes within each aspect or BU within the organization. Although the leveraging of digital capabilities are deemed to be part of the operational focus of the organization, it is important to note that it is also embedded within the strategic positioning of the organization, chiefly concerning the capabilities of online information (Barua, Konana and Whisnton, 2004), Therefore, the basis of Company X's strategy 2025 has been created in close collaboration with a diversity of group partners worldwide, that form part of both the frontline workers as well as management and executive level to bolster a shared view.

The researcher identifies the following finding as an outlier because the evaluation on the readiness of Africa in regards to digitalization did not form part of the critical research question, however there seems to be a common concern on whether Africa has the necessary human and technological resources in place to adopt and execute digitalization initiatives. Furthermore, there is uncertainty in whether universities are currently providing adequate education to prepare the future workforce on 4th Industrial revolution topics.

5.3 CRITICAL RESEARCH QUESTION

The critical research question of the study was to determine what the role of digitalization is within Company X to support business continuity amidst the COVID-19 pandemic. The research objectives provide the framework to answer the critical research question. Both research objectives were answered in full. The critical research question was thereby also answered in full.

The COVID-19 pandemic has caused unparalleled ambiguity in supply chains around the world, affecting the manner in which goods move throughout the supply chain and changing customer behaviour and demand. According to Medyakova, Kislitskaya, and Kudinova (2020), the outbreak of the global pandemic has led to an increase in the use of digital technologies within the transportation section. To retain market positions, digital transformation demands new digital tools to be implemented within an organization (Diallo, 2017).The COVID-19 pandemic revealed that those who do not embrace digitalization, will be hit the hardest in the foreseeable future.

Big Data Analytics are able to discover unseen problems throughout entire supply chains and unfolding patterns that are not so apparent. The logistics industry are experiencing a new age where customer expectations and digitalization are progressing concurrently. Big Data Analytics, autonomous vehicles, block chain, 3-D printing and various other technologies are disrupting the market and increasing competition (Company X, 2019). Artificial intelligence perform an imperative part in the advancement of RPA, enabling RPA tools to tackle processes that are intricate and unstructured. RPA have the ability to by rationalise activities and thereby free up employees from dull activities, allowing them to place their attention on more meaningful activities. Additionally, IoT aims to connect everyone and everything online, establishing complete supply chain visibility while improving customer quality. Block chain could possibly cause supply chains to be swifter, more apparent, leaner and more firmly fixed/secure. However, there are considerable cultural and practical obstacles to conquer for large logistics deployment. Digitalization will play a fundamental part in necessitating business survival. Within the logistics industry, companies need to consider the advance of a new digital enterprise. Digital tools such as cloud computing, Robotics Process Automation (RPA), Big Data Analytics, block chain, Internet of Things (IoT) and artificial intelligence (AI) are becoming increasingly important in supporting business continuity, especially given the milieu of a digital era (McKinsey & Company, 2021).

The majority of companies handle risk management reactively. In adversity, they would establish a designated taskforce to manage and control challenges on an ad hoc basis. Company X has established a Coronavirus task force to manage and control the spread of COVID-19. The task force delivers any essential or needed information to all BU's, operations and employees (Company X, 2020). Even though the approach work, it is very time consuming since companies need collectively pool all the necessary resources together such as information and people in an attempt to produce an effective response.

The rigorousness of COVID-19 supply chain disruptions inspire organizations around the world to ponder their current supply chain risk strategies. Leading organizations are now establishing supply chain risk management strategies that are proactive in nature with a

specific emphasis on digital tools. According to Cichosz, et. al., (2020), resistance to change (RTC) is a significant barrier to digital transformation.

As the importance of digital tools to rise, organizations are comprehending the need to focus their attention to the human side of their tasks. Digital tools and essentially digital systems require humans to develop, maintain and better these tools, ensuring an intimate and consistent partnership between humans and machines. Organizations that do not comprehend the critical role of humans in their supply chains successes will see numerous problems arise including shortages of skilled labour or downright rejection new digital tools. In the foreseeable future, organizations will have to tackle disruptions caused by black swan events through a human-centred approach to innovation. Organizational leaders are at present going the extra mile to cultivate a digital mind set through launching optimistic cultural norms, constantly upskilling the workforce and standardizing processes. Supporting the above, Company X believes that digitalization will become the biggest lever in enhancing future growth. As part of strategy 2025, they will be expansively refashioning its Information Technology (IT) systems, incorporating new IT technologies and ensuring employees have access to progressive training that will be able to permit them to use the aforementioned technologies. (Company X, 2019).

5.4 LIMITATIONS

Limitations of a research project refer to factors outside the control of the researcher and that may influence the findings (Leedy and Ormrod, 2010). The following limitations were identified:

As the COVID-19 pandemic is relatively new in literature, it has not yet been studied extensively. The holistic influence COVID-19 had and still has on global supply chains is still undetermined. It has caused financial ramifications that is and will continue to be experienced throughout global supply chains. Despite contributing to literature on the role of digitalization during black swan events, this study consisted of a small sample of six participants. The researcher had a limited amount of participants available to interview since the research report only investigated a single multinational logistics enterprise. The categorisation of the digital tools and how they support business continuity for logistics

companies during black swan events were identified after a limited number of interviews. The digital tools and how they support business continuity during black swan events are fit for organizations where logistics refers to the core business of the organization. Therefore, to apply the paper to a wider audience, for example to companies whose core business is not logistics, but who make use of logistics to support other core activities, it would need to be sophisticated firstly for that segment. In addition to that, the focus of this paper was on the benefits and opportunities of digital tools amidst black swan events, meaning that the potential costs and risks were not the focus. Hence only the beneficial aspects of these tools were discussed.

6 CHAPTER 6

CONCLUSION

As the world is still wrestling the effects of COVID-19 pandemic, efforts of various digital technologies and tools, such as IoT, Big Data Analytics, AI, block chain, RPA and PLT are attempting to lessen its effects. The changes brought on by digital transformation has become more imperative as top management seek methods to guard their organizations from forthcoming black swan events.

This paper contains a comprehensive literature review of the impact of COVID-19 on the logistics industry in which the researcher explore significant challenges as a direct result of COVID-19. Following this, the researcher explore Digital Transformation and the factors that prevent or enhance successful digital transformation. Next, the researcher discuss COVID-19 and the use of digital technologies followed by an exploration of business continuity during times of change.

In the thorough discussion, the researcher dissects the challenges that arose as a direct result of COVID-19, the various digital tools that support business continuity amid COVID-19 and organizational culture towards digitalization. The findings of the study show that the research objective was achieved.

Primary data was gathered, after which interviews were transcribed and analysed and data segments were categorised to the point of saturation. The data within the literature review of this study and the study's empirical data were compared. Relevant digital tools were analysed along with their potential abilities to support to business continuity view amidst black swan events. Directions for future research and important managerial implications result from the study at hand.

6.1 MANAGERIAL RECOMMENDATIONS

The benefits derived from digital tools are clear and evident within the study. However, a significant concern in regards to digitalization remains data privacy and protection. Company X can ensure data privacy by managing who receives data and by solely authenticating these controls. Secondly, to inspire the collaborative sharing of information, Company X can offer partners incentives when they are sharing information. Lastly, Company X can enhance their focus on maintaining an agile supply chain with economic viability. This can be done by supplying partners within the supply chain consistently and continuously with information changes, as to enable the entire supply chain to react swiftly (Lee, 2020).

6.1.1 The researcher's proposed collaborative approach to Regulatory decision making

The researcher is of the opinion that Governments should establish working groups that involve the private sector. Continued engagement is critical in ensuring a workable and sustainable future for the supply chain and logistics industry. It is also critical in ensuring the free flow of trade during such critical times. The public sector should ensure that current and future policy as well as regulatory decisions are not made in a silo approach. There has to be a holistic approach that incorporates the views of all stakeholders in a controlled and focussed manner. Continued awareness needs to be raised on the importance of the transport sector to ensure economic continuity. Consequently, coordinated action is indispensable and must include the private sector.

Furthermore, the researcher beliefs that having interactive dialogue (virtually) versus documented submissions tends to have better and far more practical outcomes, which can be easily implemented with the least amount of cost disruption. It can also avoid the back and forth outcomes that documented submissions tend to have before the final implementation takes place. The partnership needs to ensure extensive consultation with stakeholders in the private sector prior to the implementation of new programmes. Communication between all government agencies at the border and the private sector will be critical to the future recovery of black swan events.

Ensuring that the partnerships have well defined terms of reference with specific defined objectives, assigned actions and timelines along with a specific approach on how to measure the effectiveness of implemented policies, processes or regulatory changes and the impact it has had to essentially create a sense of accountability and responsibility. There should be regular feedback sessions in which the effectiveness of policy changes or system changes can be measured and outcomes defined for further enhancements.

6.2 DIRECTIONS FOR FUTURE RESEARCH

There is prospect to further and in depth, research a restricted number of the digital tools identified for an exact field of logistics for example replenishment of goods or inventory assessment, interviewing experts within the specific field. As companies might show hesitancy to invest in digital tools unless they have proper data such as financial requirements, quantifying the advantages and investments such as digital infrastructure could be recommended for future research. Furthermore, there is prospect to research South Africa's readiness towards digitalization i.e. whether human resources are becoming adequately skilled, as well as the impacts thereof in achieving DT.

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APPENDIX A

- DISCUSSION GUIDE -

INTRODUCTION

Good morning/afternoon [Mentioned the participant's title and surname].

My name is Marisna and I am currently completing my Master's degree in Industrial Engineering at the University of Witwatersrand.

Thank you for your time and willingness to participate in my research study. I am conducting research into the field of digitalization and am trying to understand how digitalization can add value to organizations in supporting business continuity amid black swan events, such as COVID-19.

There are no right or wrong answers, so please feel free to openly discuss your experience with me.

In conducting this research, I hope to understand:

- The challenges experienced by Company X during COVID-19 and the role that digitalization plays in supporting business continuity
- What the culture towards digitalization is at Company X

I have asked to interview you because I feel that I can learn valuable information, relevant to my study, from your personal and professional experience. You are the expert and I am here to learn from you.

Should you feel uncomfortable at any point during the interview or with any question asked, you are welcome to refuse to either answer the question or to request that the interview be halted temporarily or concluded. I would like to remind you that your participation is completely voluntary.

I understand that this might be a sensitive topic, so I wish to reassure you that your identity will remain anonymous. The information that you give me will be treated as confidential and will not be disclosed to outside parties.

This interview will take more or less an hour of your time. Please confirm that you are comfortable with this. If you are not, we can reschedule this interview for another time/day that is more convenient for you?

[Wait for participant's response.]

May I please record the interview as this will allow me to listen to it again at a later stage when we I am transcribing and analysing the data that I have collected from you? Please take note that this recording will also be confidential and will not be made available to outside parties.

[Wait for participant's response.]

Before we start, I would like to remind you to read through and sign the consent form so that you understand the purpose and nature of this interview?

[Wait for the participant's response.]

MAIN QUESTIONS

Note: Broad questions on their background

1.1. Can you please tell me about your experience and current role at company X?
1.2. How long have you been in your current role?
1.3. How is managing COVID-19 related disruptions a part of your role?
1.4. What departments are involved in managing COVID-19 related disruptions?
1.5. What is your personal understanding of digitalization?

Note: Questions aimed at answering the critical research question

2. Let us discuss the role digitalization plays in supporting business continuity during black swan events.

2.1. How would you describe the culture of organization X towards digitization?
2.2. Would you say employees show a high degree of resistance to change?

2.3. Do you think digital tools such as cloud computing, PLT, RPA, Big Data Analytics and AI could benefit Company X?
2.4. Do think PLT is feasible to implement at Company X?
2.5. Do you think PLT will affect employee performance at Company X?
2.6. In your opinion, how could PLT provide value during turbulent times such as COVID-19?
2.7. What main challenges did you experience during COVID-19 and how did you ensure business continuity?

CONCLUSION

This concludes our interview. Is there anything else you would like to add to our discussion?

[Wait for participant's response.]

Should I require any additional information or have any follow-up questions, would it be okay with you if I contact you via email in relation to the above mentioned questions?

[Wait for participant's response.]

Thank you very much for allowing me to interview you and for taking time out of your schedule. I really appreciate the opportunity to learn from you.

APPENDIX B

- Turnitin Overview -

Digitalization in the logistics industry as a support to business continuity amid black swan events

Marisna Fourie

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School of Mechanical Industrial and Aeronautical Engineering

University of the Witwatersrand

Johannesburg, South Africa.

APPENDIX C

- Interview Transcriptions -

Transcription of interview with Participant 1

Researcher (00:06):

Great. Thank you. Then I will just start going quickly. Can you just give me a brief overview about your role and your experience at DHL?

Participant 1 (P1) (00:20):

Okay. Thank you. Um, my, my journey in DHL is at 11 years already. So I'm in the organization for that timeframe. Actually today has been my anniversary, uh, 11 years

Researcher (00:34):

I saw this morning. Congratulations.

Participant 1 (P1) (00:38):

Thank you so much. Um, so in my current role, um, I manage our quality control center. So the, the control center, it's, it's a proactive monitoring facility and it's a control tower approach. So it's similar to how you have like a Nasa style control center. So what we basically do here on a day-to-day basis is proactively monitoring of our shipments that are moving through the network. Um, and there are defined customers that will form part of the scope of the quality control center. However, due to the, the system that we use and the availability of information, uh, on our scope, we are able to cover a much more, uh, uh, aspect of customer monitoring because we monitor by flight level. So it covers multiple customers. Um, we also proactively monitor breaking news. So we, in, in Sub-Sahara region, we look at the four main channels such as, uh, ENCA, alkazira, sky news and CNN.

Participant 1 (P1) (01:45):

So by monitoring, breaking news, QCC quality control center, uh, they are able to, uh, monitor to any events that may impact on DHL operations, such as political or weather related issues, anything that may cause a disruption to our network, we're able to quickly pick that up and activate, uh, contingencies and how we would go about doing that is by making sure that our key stakeholders, uh, like customer services, uh, commercial, uh, aware of, of impact. So when we have situations that occur, we, we establish, uh, the nature of the situation, its impact and potential contingency. So by formulating this type of information, we share that business, uh, so that they can, the customer service team for example, can manage, uh, their customers, um, other aspects of what I do, um, by managing the QCC, uh, we do a lot of data analysis as well.

Participant 1 (P1) (02:51):

Uh, we look for trends, uh, in operations, uh, where we can find opportunities to improve. We do some root cause analysis and, uh, by, by analyzing data, we can pick up some trends and, uh, make recommendations. Um, and then we also have some, some core scope of the QCC, which are your time-sensitive, uh, business critical, uh, customers that we monitor. So we, we monitor their shipments from the time it's picked up up until it's delivered to the end customer. And by watching those shipments through the network, uh, where we pick up any deviation, we can react immediately and contact the facility where the incident may have happened and work on getting the shipment back on track. So on a day-to-day basis, uh, that's what I go about doing and managing escalations, looking at a lot of data. Um, so that's in a nutshell my day to day activity. And because you see, so,

Researcher (03:51):

Um, based on what you just said, I think the QCC was then during all the COVID disruptions, the first point of contact, if I could, if I can put it like that. Um, would you agree with that?

Participant 1 (P1) (04:06):

Okay, that's a good question. The QCC played a fundamental role, um, especially when it came to the service alerts. So we have what you call a special service update and SFU for those, uh, you know, it's formulated on country by country level or region level, depending on the impact for countries where maybe flights were grounded, et cetera. So the QCC did play a role in that. However, we did have another approach. So we had a joint operation center that was put together prior to COVID now the joint operations center we made up of functional heads from various parts of the business, such as security, customs, and regulatory affairs, um, uh, operations, um, as well as service quality and the QCC. So we did play a role. Uh, we are still fulfilling a role in this aspect of ensuring that communications are going out where, where the quiet, uh, we have once a week now, where we have a regional update that goes out to the business and that, uh, information entails what's countries are still under lock down where they are flagged prescriptions, um, and any other impacts or any other, uh, compliance requirements by country level.

Participant 1 (P1) (05:28):

So that information is formulated through the joint operation center and it's communicated through the QCC.

Researcher (05:36):

Okay, great. And what would you say is the main, um, responsibility or function of the joint operation center? Why was it put together in the first place?

Participant 1 (P1) (05:49):

Okay. Um, so the reason why this was actually formulated together, because it became a central point of contact for managing, um, the disruption that our business has faced. So a central point of contact and like a crisis management center, uh, that's the function of the joint operations center. Um, so centrally we are able to coordinate and manage, uh, the disruptions that were, were faced by the business and also with having the expertise of the necessary functional heads, uh, decisions were, were made coordinate and, uh, to be able to execute on those decisions. So on a day to day basis, uh, we were assessing country by country and decisions were made, um, in terms of our flights that we had available, because you would find, uh, you know, during the COVID time, especially in initial stages, we had a lot of major disruption with commercial flights being grounded. Um, and we, as DHL were still able to operate because we've had our, uh, aviation network, the actual aviation that was still operating. So again, the, the joint operations center centrally we're coordinating, uh, all the decisions that need to be made to ensure that we still have continuity, uh, within the business.

Researcher (07:17):

Okay, great. So, um, the joint operations center would know about all the disruptions happening and then they would, um, put in place mitigation plans, um, after they brainstormed. Am I understanding that correctly?

Participant 1 (P1) (07:34):

Yes, absolutely. And, uh, and more specifically, if I can give you an example, like, you know, during, during COVID, where we were mainly operating in the initial stages, the first two or three months when we were mainly operating and relying on our commercial flights, um, we still, you know, we had to manage the volume of shipments that are moving through a network. So there had to be some, some guidelines in terms of what we would allow in our network and what we would not be able to manage. So decisions were obviously made again there around heavyweight or larger parcels that would not normally be within our network, but we will still be able to manage, um, normally with commercial flights. So in this aspect, it's, uh, it's operations, uh, collaborating closely with commercial and sales to ensure that we are able to still, uh, accept the volume of, or size and weight of shipments from customers that the network was still

able to carry and still provide, uh, the, the services, although we had disruptions in terms of our transit time. So normally our transit times, uh, the time of pickup up to delivery. Um, on average, they may be up two to three days, depending on which country they are moving from and to, um, what we've had scenarios where transit times were extended five and more days due to, uh, the effect that COVID had on the business, but again, the joint operations center, uh, and then collaboration through sales, through commercial, we're able to still coordinate our business in the best possible way.

Researcher (09:19):

That's great. And thank you for the example it really helped. Um, would you say that this, uh, the, the, um, transit time that was longer because of COVID led to a decrease in customer satisfaction?

Participant 1 (P1) (09:35):

Um, my view, um, I would say we actually saw in terms of customer satisfaction. I do think that there is an element. There would definitely be an element where I'll give you an example of a customer that we monitor in the QCC, uh, the customer it's a medical customer. So they, they actually move medical spare parts from Germany into South Africa, and it goes to various hospital sites. Now these are medical spare parts that are probably used for medical procedures. So a technician will come out to the site and install those parts. Maybe it's an x-ray machine, they get installed. And then there are appointments that are made and the doctors will need to carry out the procedures. Sothe transit time that we actually had prior to COVID was overnight. So pick up in Germany and then the connection out of Frankfort hub on the south African airways flight.

Participant 1 (P1) (10:33):

And that was arrived in Johannesburg overnight. And you have a next day delivery now with the, with the COVID impact, we had the likes of south African airways grounded and up to now, they're still not operating that lane. So the alternate routings that we had to move with other hubs and gateways in the network, for example, we're moving our cargo from Frankfurt into Amsterdam, and then from Amsterdam into South Africa. Now, the effect that this had was the transit time for the, for this customer moved from overnight to three days, four days, and even longer up to 10 days. So the impact to this customer was they have to now move medical procedures and so on. So it did have a ripple effect where the concerns were, you know, their transit time now is impacted, but we had to manage that through explaining and reemphasizing, uh, the disruption that we faced and the lack of commercial carriers, uh, the influx of, uh, of cargo into our network.

Participant 1 (P1) (11:41):

And we still had to to serve the network and our customers, but we were still considered the only game in town during that time, um, when DHL was still operating. So from a customer satisfaction point of view, that's the downside, but the upside was, DHL was still operating when most, even our competitors, we're not, uh, we're not operational. So we were still moving cargo across the board. And what we also saw was a real increase in volumes of cargo that we actually never saw prior to COVID. And this was fueled by, uh, a rising increase in the e-commerce market. And up to now, uh, primarily the e-commerce market is still a preferred method for consumers. So the more the e-commerce market increased, the more volume of parcels we actually had in our network. And even, even up to now, we still have a huge, uh, increase, uh, in the number of shipments that are moving inbound and outbound through our network. So on that part of it, uh, customers, uh, you know, were still satisfied that we were still able to operate and move the shipments from a, to B during a time of disruption like we face.

Researcher (13:00):

Its great. Thank you, would you say that DHL is prepared for such an increase in e-commerce? Or would you say that we are a bit behind digitally perhaps, um, in regards to the rest of the globe? Um, or would you say that we are prepared to take on the jump in e-commerce?

Participant 1 (P1) (13:23):

Um, I think, I think we, we, we, as DHL, we, we, uh, we actually are, prepared. And the reason why I'll say this is because, you know, if you look at, uh, uh, our organization and it's focused strategy, so DHL's focus strategy is delivering excellence in a digital world. So the organization already has an innovation center and there's huge and major focus, uh, on digital platforms. So digital platforms to improve efficiency in operations to improve efficiency in, uh, in terms of employee efficiency and to improve the customer experience, and the fact that we have, uh, an entity, DHL express, and we have an entity, a business unit within DHL that is DHL e-commerce. So they are already innovative and looking at a number of, of ways to manage e-commerce. Now, I'm not sure if you've heard of, but we have the DHL e-commerce project in SSA

Participant 1 (P1) (14:32):

And that was also to promote the use of e-commerce platforms. Um, and it was actually a very successful project. Um, and started fueling and growing e-commerce as well within Sub-Saharan Africa. So from that point of view, I would say DHL is, is much prepared. However, from a capacity point of view, we have

obviously seen a surge in the volume of cargo that are coming into our network. And as a result, we have faced some constraints where due to the high influx of cargo, transit times have been, uh, effected because, uh, we only have a certain amount of capacity with the commercial carriers that operating at the moment, and they are doing their best to accommodate DHL express as best as they can to carry our cargo. And then we also are obviously relying on our DHL aviation network to combat any impact, but currently, um, you know, it had required us to to look at how parcels are moved through the network and alternate routings within, and identify it to be able to mitigate the impact as fast as possible.

Participant 1 (P1) (15:49):

So in summary, I do, I do feel that DHL is prepared and, you know, they are really striving and working towards improving, uh, and enabling the digital platforms even further because you'll find technology drives, you know, uh, value in business in, in about four ways I can think of, uh, one is announced connectivity, um, automation of manual tasks, um, and improved decision-making as well as product and service innovation. So that's where the e-commerce market and due to our innovative ways, um, the e-commerce platforms were being developed and customers have the online means of going and being able to ship with DHL.

Researcher (16:39):

That's a great answer. Thank you. . So when you just spoke about automation, um, I thought of what is your personal understanding of digitalization?

Participant 1 (P1) (16:51):

Um, so for me personally, going digital, you know, it's all about, I would say it's really about moving away from traditional manual ways of doing things and bringing, you know, more efficient ways of doing things. So for instance, you know, when you have, you're working with a lot of paper, maybe, you know, the platforms that are now available at digital platforms where you can still do things digitally, um, and minimize the manual need for, even for instance, for, for trading. So where you have customs that require physical paperwork for inspection of parcels. So I'll give you an example. Yeah. In South Africa, for instance, we have port help. Now we have medical shipments that come in from various countries, such as blood samples, they will come in and they will come with a set of paperwork, like the import permit, um, the commercial invoice, variable, um, and any other important documents that maybe accompanied now, the, the file needs to be prepared by, uh, DHL employees and manually taken to port help. And you can imagine in the term of, uh, of COVID now we want to minimize any physical contact, et cetera. So going digital

would really be a way of integrating, uh, and customs, for example, accepting this type of paperwork through electronic submissions, and they can still assess the paperwork and give us a release of the parcel.

Researcher (21:46):

Great. Thank you. So, um, how extensively has paperless trade been deployed across SSA? Um, according to your knowledge,

Participant 1 (P1) (21:50):

Um, I am seeing some signs of it, but, you know, within my area, I don't know if I may be able to answer within, within my department as far as SSA goes, I know that there are a number of initiatives from the customs and regulatory department where they are working towards paperless trade. So there are quite a few initiatives, uh, in place. And, you know, I would say, uh, from, from some recent discussions that I had with, uh, one of the directors of customs and regulatory affairs, uh, he did mention that there are projects that are actually going on to improve paperless trade. So there are some initiatives in place, but I'm, I'm not entirely able to give you a lot of detail on it, but I can give you some detail on, you know, on digital platforms or how we are doing things within the QCC.

Participant 1 (P1) (22:41):

One of the, one of the platforms that we are, we are now using, you know, traditional emails, a common way of communicating and moving data around such as large files, Excel files, what documents and presentations. So what we are also leveraging now is we have what we call an Ishare type within, uh, within the SSA business and globally, but from my department as well, we are leveraging it. So we have an Ishare site for the QCC. And it's more like your cloud based platforms. So you now minimizing email traffic and, and the use of heavy data in sending large files. So we have a, uh, an IShare site and we store all our files now going forward. So any word documents, Excel files with data, they are stored in the shared site versus emailing it to a number of users, um, and each user will have access to the site. So if they need to go in there and access that file, they are also able to do that. So that's one of the, the platforms, uh, that we are contributing from my department.

Researcher (24:13):

That's a great example. Thank you and then, um, you also mentioned robots earlier on, um, do you know whether that is something that is already happening within Africa or not really?

Participant 1 (P1) (24:17):

Um, so within, uh, within DHL express, um, I do know that there are some projects of robotics process automation that are on, on the way. Um, and our programs team, you know, obviously really will have a bit more information on that. However, I know that there are some initiatives being looked at, um, but within express itself, I have not seen us doing any automation as yet, for instance, in the warehouse. I haven't, I haven't come across any automation yet.

Researcher (24:32):

Yes. Um, same the same on my side. And, um, when I did a bit of research, I saw that actually in Germany, they, um, they, a lot of pilots has been done. So, um, in your personal opinion, would you, would you say that it is something that would flow down through DHL's network or, um, would it rather be looked at at whether it's viable and only deployed in certain areas?

Participant 1 (P1) (24:43):

All right. That's actually a good question. And, um, from my view, um, most of our hubs and gateways and warehouses currently are still manual manual based versus if you look at, uh, our hubs and gateways where parcels move through in large quantities or large volumes, like in Cincinnati hub,the Hong Kong hub Singapore hub, they have more automation due to the volume of parcels that they handle in a given night, for instance, like in some of these hubs I know they normally process on average over 500,000 pieces a night when the whole operation happens and therefore, you know, they have justified more automation. So I think in Sub-Sahara, you know, the parcel volumes, with a steady rise that continues, there is a need to look at how can we have more automation brought in into the warehouse, especially like auto sorting systems, where they can sort our parcels and flyers, um, and that will also improve accuracy.

Participant 1 (P1) (25:39):

So I feel there's definitely a need for, for more of that to filter into Sub-Saharan Africa. Um, and, and, you know, we need to do more, more pilots. So there's definitely a need for that to come in. But on the other side, if I just may, may add where we, in terms of data usage, there's definitely good initiatives, uh, from like Big Data Analytics, machine learning. Those are some of the things that are happening already now in my area of work, we have some applications that we use and they are already using machine learning, predictive analytics. So, uh, as well as data mining. So from the predictive analytics part of it, the system uses historical data and it's able to accurately work out how a shipment will move through the DHL network and when should it expect to get delivered. So it accurately is able to calculate that.

Participant 1 (P1) (25:59):

So that is happening at the moment. And then Big Data Analytics is also happening, uh, in our business. Um, there's another system that we are using and using Big Data Analytics. So it can take huge amounts of data and formulate it into graphic illustration, where you have bar charts, pie, charts, um, donut chart, um, and it breaks down the information and shows you already, you know, where the major areas of focus, uh, on a high level. And you can go down into the actual finite detail of an airwaybill. So we already have that going and just, uh, actually earlier on, I'll share with you, uh, I was on a call earlier on where we were being exposed to a new system that's introduced in the business as well, Tableau. So Tableau is another online platform that is working in integrated with our data and it'll build automatic automated dashboards, um, and take the data and visualize it for you in graphs, et cetera. And then there will also be no need for manual intervention. Once you customize your dashboard for how you want it, it'll then be fully automated and no, uh, manual intervention will be required. So there's quite a lot of initiatives from the data side of it that I am, I am experiencing, but, uh, in terms of the, the warehouse and more robotics, I have not really been seeing much of that.

Researcher (26:54):

I agree. I think, um, something I would also agree with is that I'm not sure that SSA I is currently doing the volumes to really justify the cost of implementing robots but, um, with the, with the surge in e-commerce that is likely to continue after COVID 19, would you say that it might be more, more viable then?

Participant 1 (P1) (27:03):

Absolutely. I think, you know, that can be definitely a recommendation to the business because if we are seeing a real surge in hubs and gateways are having an increase in volumes two, three times more than we had prior to COVID, then there will definitely be a need, where the business should consider some investment in some form of automation further, uh, to improve the efficiencies. So I think there's definitely going to be room for that, uh, for the business to consider. Hmm.

Researcher (27:28):

Okay. That's a good answer. I agree. And then with regards to, um, the culture of employees, in your opinion, would you say that they are ready to embrace digitalization? Or would you say that they would more feel that they have a resistance towards it and then that they almost feel threatened by it let's say job security and all that?

Participant 1 (P1) (27:52):

Hmm. I think this is a really good question today because you know, the topics as well, uh, even from the business itself internally, there's lots of focus on digital platforms on digitalization is a number of, uh, like messages that go around to the business. And I feel that for me right now, you know, unless there's probably more extensive research done, which I, I also would like to undertake further. I w I would, I would say in my view, I'm going to say 50 50 because yes, people are seeing the benefits, the value of digitalization definitely. And they can see, you know, how it can improve the way we do things or we can become more efficient. Um, so definitely I would say people are embracing it and are also welcoming it, but then on the other side, I would say, and I'm only, I'm just giving you this based off, you know, how I would be perceiving it right now.

Participant 1 (P1) (28:55):

And I would say the other 50%, uh, probably, you know, people are thinking, you know, does this now put our jobs at risk, um, and I'll give you one example, because this is a, an example from a discussion that I had, uh, some weeks or months ago. Um, so there were some, some checks being done, uh, from the customs side. And when, when the customs team from DHL sites visited warehouses in certain countries, they found that although the countries itself, customs itself said that they are willing to embrace, uh, digital platforms to do business and make things easier. Um, what we found there were a lot of manual interventions taking place and lots of paper lying around in warehouses. Um, and some of the feedback that came out of that was customs feel that the customs officers feel certain that if digital platforms are more leveraged, they will lose their jobs, but they are not seeing that it will actually improve the way they do their work. So I'm going to say, you know, right now I would, I would say it's a 50, 50, the way you look at it within the business.

Researcher (30:11):

Um, I agree with that. It's, I think it's, it's, it will be very challenging and it will continue to actually be a greater challenge to teach the workforce that, or to help them understand that they, that they need to work hand in hand with technology. Um, and that's, they would perhaps be needed for more strategic thinking instead of just routine and automated tasks, which actually indeed can be performed by some form of automation. And that actually, it might also benefit them. I mean, if there's something like fetch robots, then they have to travel less in a day, less injuries. But, um, it sounds simple, but I think it's, uh, to, to get everyone on board is going to be extremely difficult

Participant 1 (P1) (30:57):

Indeed. And I think also what needs to happen, you know, in my view, I think the business, you know, although there's a lot of focus and awareness right now on digitalization, how the business plans on moving forward with the digital platforms. I think what we, maybe a recommendation that I would like to make is we need to have more visibility on, on the future jobs as a result of, you know, this digitalization, like for instance, Big Data Analytics. And I know we have, uh, I know of two, the business has got two individuals so far within Sub-Saharan Africa, within the regional office, but two individuals that are already, you know, are a Big Data Analytics specialist, these are the future jobs, uh, robotics process, automation specialist, Big Data Analytics specialist, um, machine learning specialist. Those are going to be, you know, the more future and relevant jobs as well.

Participant 1 (P1) (31:53):

Um, and if I can maybe just ask you to have a look, if you have not, there's also a logistics trend that DHL express releases. I don't know if you've ever come across. There's a DHL, there's the DHL, a logistics trend Radar. Now the logistics trend, you know, looks at, from now in the next five years, uh, what technologies are going to be relevant. So it looks at technology trends. So if you are able to get a chance, look at the logistics trend data, it's likely you'll also find it. It's just an open force, so it will be on the internet. Right.

Researcher (32:35):

Great. I will definitely do that. Thank you. um, and then, um, yes, I just wanted to add there, um, I think roles that is relevant to the fourth industrial revolution will become critically more important, but also, uh, my opinion is that I'm not sure that within Africa we have the expertise or, uh, we have enough resources for that yet. So, um, yeah, I'm not sure if, if, if you agree with that or if you think that, um, we are on, we on, uh, we are on our way to having an increase in learning of it. I know it is something that people become more aware of, but I don't feel like we have enough technical resources if I can put it like that.

Participant 1 (P1) (33:25):

I'm going to agree with you on that one, because I think it starts off even from high school level, where now there needs to be more awareness, more maybe bringing on some subjects, even like how you science now. So in school, high school, there's a lot of new subjects that are coming on board and there needs to be more from an educational curriculum side of it, uh, the new, uh, uh, what that's going to be in the future, right, for the future generations, the new jobs. So those are, that are already existing now, or the demand for it is rising. There needs to be a introduction to that already at high school level. So, and then universities as well, for instance, need to probably my view that providing courses or modules or subjects on, on these. And that's just the way to start upskilling our people locally, because right now I feel there's

still a lot of quiet for that resource, that resource of labor in those fields, or that expertise will be very low right now. So if technology is moving at such a rapid pace, it's going to be difficult for most countries to even keep up, if you don't even have the technical skills, uh, in line with the technological advancements.

Researcher (34:46):

Yes. I absolutely agree with you. So, um, when we look at the internet of things, um, that basically has a potential to connect or to virtually connect anything to the internet. Um, can you think of an example where it has been, um, attractive to, to DHL or even used by DHL, or are they, do you know of a way they are really planning to make use of it?

Participant 1 (P1) (35:16):

Um, I think one of them I can give you right now is like the, the courier scanners. So the courier has a handheld it's now, you know, a scanner that looks like a mobile device. So it's definitely a smart device, um, that are now used in the warehouses. So it's no longer one. That's probably like your traditional infrared or RFID scanners. So you have now one, which is a mobile, like a mobile device, and it connects to the internet. It's got, uh, uh, network connection points in it. So even if the courier is not in the warehouse, it won't need the wifi to still connect to an external network. So it's a smart, a smart device that gives the courier a number of functionality in it. So he's able to have, for example, Google maps and he can see his route.

Participant 1 (P1) (36:11):

He can plan his route, et cetera, within the scanner. And then obviously once he comes back to the office, there'll be through wireless connection that you can transmit all the data from the scanner to our systems previously, maybe you will need to connect it physically into a device from the scanner itself to a laptop or desktop, and then download your data. But now that can be done, uh, that can be done, uh, wireless wirelessly. Um, and then, you know, I think there's, there's quite a few apps that are being developed as well to support, uh, the business even further. There's, uh, there's one that's called the smart connect. So it's an, it's a recent app. And, uh, it gives you again, more, more engagement. Um, it's a, it's an app that allows you to, it's like how you have your Facebook, but this is now internally within, uh, within DHL. And, uh, there's a lot of functionality and information that's available in it, smart connect, but in terms of devices, I think, uh, what's currently working is the couriers smart scanner.

Researcher (37:28):

That is a really great answer and example, thank you. So then, um, can you think of any of the, let's say fourth industrial revolution, digital tools that might not be viable in a African context? So let's say if we look at cloud computing and paperless trade and robotics process automation, big Big Data Analytics, internet of things, all that, um, is there anything you could think of that might not really fit in a south African context?

Participant 1 (P1) (37:59):

Hmm. I think, uh, maybe a one I can think of, um, is like an autonomous, uh, transport. So I think right now, you know, with the infrastructure of the continent, there's still a lot of development that is needed, like where you already have, you know, uh, other regions, when you, when you, when you look at news and articles, uh, you know, already moves towards, you know, having an autonomous, uh, transport, uh, being developed. So I think we are far away from that and probably, you know, with more infrastructure development, um, those things can become more relevant in the future. Um, even having, like I've seen, uh, um, somewhere else as a fully automated, uh, within Africa, I have not seen a fully automated warehouse. So these are things that are going to come from more infrastructure development and more upskilling getting the technical, a lot of things developed upskilling people and, uh, infrastructure in order to be able to get to that level, um, because where you have a fully automated warehouse, I mean, efficiencies, they may, may be quite high compared to more manual way of doing things.

Researcher (39:24):

Absolutely. Um, yeah, we absolutely don't have the infrastructure for that yet. Um, so, um, um, so, um, any of this fourth industrial revolution tools, can you think of any one of them or a few of them that would particularly would be particularly good in providing value during turbulent times? So like pandemics and our recessions and things like that?

Participant 1 (P1) (39:58):

Yes. Um, definitely I think for us right now is, uh, uh, you know, the, the big Big Data Analytics and being able to, uh, interpret data because even during the pandemic now, you know, there's a lot of data in, in many areas, like for instance, uh, from, from a shipment level, uh, all the details of the shipment, the weight, um, the, I mentioned the origin, the destination. Um, so from, from a shipment point of view, in terms of shipment numbers and volume by weight, um, that information is definitely critical because we really need to know what is currently in our network right now at any given point in time, what volumes of parcels are coming in, uh, to the region or to a country, what parcels are going out of country or region, and by having big Big Data Analytics available, having an integrated dashboard, uh, that can show us, uh,

data in real time, it's really critical for us to be able to manage how we process those shipments, um, and those, those, uh, cargo in an outbound.

Participant 1 (P1) (41:13):

So I think, uh, real-time data visibility, which is an element of what we do have in, in many areas is really fundamental, but the analytics of it is important because that analytics allows us to visualize, uh, what is happening. We need to be able to interpret the as, as easy and as understandable as possible. You can have tons of data, but if you really don't analyze it, or if you can make it meaningful, then it's pointless having the data. So I think Big Data Analytics will be one of those fourth industrial revolution items. That's the fundamental in this time. Um, and the other one, I would say, uh, will be something of, you know, more integrated digital platforms was in a time of a pandemic. You also want to minimize, uh, physical contact. So the more we can have integrated systems, like for example, between DHL express and the airline partners that we have, if you can have more integration then where, where any manual intervention is required for paperwork, et cetera, all that can be electronically transmitted.

Researcher (42:31):

That's an excellent point. And then that brings me to my last question, um, which is going to be quite a broad one. But if you can, if you can give me a few of the main challenges that you experienced within your area, um, as a direct result of COVID 19, and then how you actually managed to overcome them and ensure business continuity.

Participant 1 (P1) (42:56):

Hmm. Okay. I think, um, that's, yeah, it's quite a broad, uh, one to look at, um, you know, the primary one for me in, in my area, because, you know, we are proactively monitoring shipments that are moving through the network and we've got some, you know, uh, high end customers due to the nature of the business, uh, that they are on the QCC scope, um, because of sensitivity, et cetera. So what is, what is the constraint is, you know, customers still want, or some customers still expect the same level of service even prior to, to call it. Um, and that is still up till now a huge constraint where a customer still cannot understand why shipment is taking, uh, a longer period of time to arrive, um, because they, they, they are under the impression, you know, that commercial airlines have returned to normal. Um, but they are not aware of the upsurge or the increase, uh, in e-commerce business that has also fueled the increase in parcel volumes.

Participant 1 (P1) (44:08):

So we have to manage our customers, uh, accordingly, so where they, they are still demanding, you know, for the parcels to arrive on time. And because our hubs and gateways are dealing with so many parcels at a given time, some, uh, once they go missing, but they don't get the priority, the handling at that given moment in time, because our hubs and gateways, they do, you know, work on a, on a last, in first out basis, uh, primarily, you know, unless the there's some processes in place for specific customers, but they, they, their sole function is to receive the shipments and connected out as, as efficiently as they can, but they are possible that arrive, that they don't get the checkpoints, we lose visibility on them. And, uh, by not having checkpoints, uh, you know, the check points so far of a parcel tells the story from the time it's picked up up to, up to the time it's delivered.

Participant 1 (P1) (45:09):

And we've got customers who are really, you know, intelligent as well, and they use our online tracking platforms to track their parcel. Um, so they are also aware when you lose that ability now, because of the constraints the network, you know, is dealing with, we lose visibility on shipments. Some of them end up arriving in the country, uh, without the checkpoints from the previous location. So these are some of the constraints we have to manage, um, and, you know, give our customers the best explanations, the best scenarios of how we are dealing with them, because you also have human errors that happen where a parcel does not get scanned accordingly. Uh, as for our processes, they get loaded into a container without scans, and then they arrive in a country like it will come from Amsterdam into JHB gateway at the facility, um, because it doesn't have the necessary scans on it.

Participant 1 (P1) (46:09):

There was no data transmission. That data transmission is so important because it's a declaration to customs, uh, of incoming cargo now, where there is no transmission. Then there's now a manual submission that's required customs and entry to be submitted before the shipment can be cleared. So then you have further delays as a result of, you know, us probably not following our global standard operating procedures, um, that, that creates additional delays. And then once the shipment is cleared, the other delay that maybe is already passed, uh, the sorting process timing to make delivery on the same day, and then maybe the customers insist I want my shipment today. So we now maybe have to look at getting a third party because we have standard delivery cycles within our business day to day. Um, and if the shipment is cleared after the delivery cycle, it'll only go onto the next delivery cycle.

Participant 1 (P1) (47:11):

So now we may need to have a at that party, come out to collect the shipment and then arrange a same day or a special delivery. So those, those from out of a few constraints, but the best way in how we would manage it is we would be upfront, honest, and clear and concise, uh, with the customers and informing them, you know, these are the realities of what the world is facing, what the business is facing, but how we are going about solving it, um, methods even when we have, uh, human errors, um, or, or situations where shipments, we're not proud of ties. We, we address these, we do a root cause analysis and process, and we share findings with customers as well, uh, where we explained to them that on, on these basis, these are the contingency plans being put into place. So that's how we manage a few of those constraints

Researcher (48:13):

That was really, really good information. Um, I just, yeah, I would like to ask you if there's anything from your side that you would like to add or discuss perhaps,

Participant 1 (P1) (48:25):

Um, yeah, I think your, your, your topic, you know, it's, it's a really relevant topic that you're exploring and especially within, you know, within business itself, but, you know, within DHL, uh, our focus is all about delivering excellence in the digital world. So we are really working towards all the best possibilities, uh, to move in that direction. Um, and there's, there's a huge benefit as well from it, uh, for protecting our environment, for instance. So I really do support a lot of initiatives. Um, I mean, you know, something as simple as, you know, if you're working from home, um, and you haven't started your car for maybe the whole week, let's say you're working from home. We didn't have a need to even go out. Um, is, can you imagine the amount of carbon emissions that were, were reduced just by having your car parked in the garage?

Participant 1 (P1) (49:25):

So, so it's the concept and, you know, DHL is going green. So there's a lot of initiatives about, uh, you know, sustainability, so electric vehicles, uh, and other forms of cleaner energies where we can contribute to the environment. So I believe that digitalization, you know, it's just how I am perceiving it, but there's benefits to it as well for protecting and sustaining our environment, because we have to think of the future generations and with, uh, with climate change and all of these things happening now, it's a sad reality of the impact and consequences that we are facing. Um, and we have to do everything we can now, not tomorrow, not yesterday, yesterday's too late, but right now we have to start doing everything that we can, um, for sustainability. Um, and the other aspects about our business, you know, we want to make it a successful business. That's why we exist. Um, this business creates work for so many employees out

there and they are providing for their families. So if we, if we draft, I know the business, uh, plans and objectives, and as individuals, if we are able to contribute, um, to that, that business will be successful. Uh, it will be more efficient and we will be relevant, uh, going forward. Um, and I think we can take this business even further.

Researcher (51:01):

That is really well-said, actually quite touching as well. So, um, thank you very much for allowing me to interview you and for taking the time out of your day, I really do appreciate the opportunity to learn from you. And, um, it has been really valuable to me. I've definitely learned a lot more about, um, digitalization with regards to DHL. So thank you very much for sharing your knowledge with me.

Participant 1 (P1) (51:27):

Okay, I thank you for allowing me.

Transcription of interview with Participant 2

Researcher (00:05):

Okay. So firstly, can you just briefly tell me about your current role and a little bit about your experience in DHL?

Participant 2 (P2) (00:19):

Yeah, so, uh, so currently I'm employed as NCG manager for DHL South Africa. Okay. Um, but I'm based in Johannesburg gateway. Um, so what we do or what I do basically, uh, on a day-to-day basis, I support the business in the, in a, in a form of, um, you know, routine, right? How quickly can we route our shipment, uh, to destination various destinations, various regions to beat the competition. Right. So, and then how do we, how do I do that? So it is based on the relationship that we have with different carriers. So our airlines partners that we use, right? So we have commercial airlines that we're using. We also use our own, uh, DHL Aircraft, um, just to make things easier. Uh, we do not have access to a certain market or frequency of commercial flights is not great so we will then use our own.

Participant 2 (P2) (01:42):

Yeah. Okay. So we also have, um, um, within our mist the line haul, so to speak across border line, haul domestic line haul, um, is what we do. Um, but basically 90% of our day-to-day activities is based on the, on the, uh, commercial airlines, as you're aware, uh, because our transit time is so short or competitive, so to speak. Um, so there's a reason why we basically, we fly everything that we do it is only those few shipments for us that, uh, will be sent across the border by truck or to a town, one town by, you know, vehicle. But again, we still remain competitive. Our strict measures are really, uh, there to prove that we do not compromise on the service quality. And then in terms of my, the service, my length of services within DHL. Um, but so this year I'm 16 years with the business. Okay. So,

Researcher (02:55):

Wow. It's really long. Congratulations

Participant 2 (P2) (03:06):

Thank you. Thank you. Yeah. So that's what we call it is loyalty, right? So the, and then I've been into both ground operation as well as, uh, air operation. So it's kind of like being, uh, really my, my life within DHL. It has really been about, uh, in operation, right? Yes. Okay. So that's in, in brief, uh, that's who I am and what I do.

Researcher (03:39):

Great. Thanks, And in, um, earlier you mentioned that you do work with commercial airlines at times. So during, um, COVID 19, when that was disrupted, how did it affect, well, your day-to-day work

Participant 2 (P2) (04:03):

That was tough. I mean, my work I've never felt so much pressure, um, in my entire career at DHL. I mean, that was, I don't know what to call it. Uh, so on, on your document, I read somewhere whereby you spoke about the black Swan. That was indeed the black Swan because, um, but one of the, you know, within our offices, we've got, uh, you know, because w whatever that we do, uh, the business is really going towards digitalization. So we, we, we can take the aircraft as they fly right into different, uh, destinations right. From different regions. So I can tell you that, uh, during that time, when we were first gone into lockdown, there was a time whereby when you look at the map of Africa, right. You couldn't see not even a single flight, there was that time. Okay. So when one goes look into, uh, what was happening in the middle east, you'll see maybe one or two flights, and those will be humanitarian flights.

Participant 2 (P2) (05:26):

So I guess, um, you know, because of, we work for one of the most, um, you know, international company in the world, so we had to come up with, uh, the solution, right. So the solution was, uh, you know, uh, what do we do because airports are closed, right. Um, you know, since they closed, customers are closed, but others are still buying goods online. Uh, we, uh, we talk about, did the, I mean, I'm referring of when one speak about the goods online I'm referring to because of there were no flights operating, um, COVID and nobody was really sure as to, you know, what this COVID it was all about. So we're all scared. Right. All worried. Um, and companies such as a U um, um, health organization's, government, department of health, hospitals, they were procuring these goods. Right. Uh, your PPE all over the world. Right. Because, um, so what, what happened, uh, when, uh, COVID was first detected in China, Uh, so basically the whole world was sending PPE into China, right. By that time we had many flights that were flying into China. Right. So we could send to support, uh, you know, even DHL we sent a lot of PPEto some of our colleagues in China. Right. So there were donations that were made.

Participant 2 (P2) (07:55):

So, but when COVID started to spread across the world and then countries closing their borders, um, then we had this issue. So what the business then did was that, um, we were, we had to engage with authorities in different, uh, uh, uh, airports or different countries. Okay. Try to get the landing permits. This is when

now we have to use or service our customers using our own DHL Aircraft. Right. So, because of we, in South Africa, we have limited number of flights. Um, so where did the other thing that we had to do was to approach other carriers, right? Other airline companies that were basically ideally not doing anything because, um, they are meant to move passengers, but no passengers allowed to leave their homes. Right. No passengers were allowed to, to land in airports. So what we quickly did, uh, we approached those airlines.

Participant 2 (P2) (09:12):

And then we said to them, okay, can we then agreed to use your services, uh, to move our goods into different sectors or different lanes or different airports in different countries. So across the world, or DHL did the same thing. So they approach local carriers. Okay. So what we did was that, um, we agreed with other airlines that, that, that will remove the seats, passenger seats from the aircraft, and by removing the seats they make space for, for cargo, right. Others didn't want to remove, uh, seats. Why, because, um, for you to remove seats, you still need your aircraft to be certified to by the civil engineers of, uh, um, civilian engineers of, uh, uh, your local, uh, Civil association, or Civil aviation or for your country. So the issue was that civil aviation authorities or civil aviation, uh, officials were, were not around, they were working from home.

Participant 2 (P2) (10:35):

Right. So what we had to do, we had to agree with those airline on the charter basis, that they will do different destinations for us. And we will load boxes on top of the passenger seats. So we did it. Okay. So DHL global leader also supported us in terms of the, in terms of the Intercontinental connections, meaning that, um, shipments that are being picked up in Hong Kong or picked up in Europe, or U S that will move shipment from those origin into Africa, then distributed among different stations. So we had flight, uh, uh, you know, uh, just to give an example, in terms of hours, we, we had, um, one Intercontinental flight from Paris land into Nairobi and an out of Nairobi. We also had a dedicated charter into Johannesburg and out of Johannesburg because of we support different. We support about 12 countries from JHB

Participant 2 (P2) (11:50):

We had to use, um, local airline companies or commercial airlines from JHB to those countries and supported by our own DHL flights. So it was an operation that had to run 24 7 because they, because of the backlog where, I mean, there were times whereby we were sitting with over a hundred tons of shipment on the floor, not, not being able to be sent out or, or, or, or, or, or maybe let me say not all, but meant not being able to send out, but we're able to receive cargo. Okay. So our volume will just pile it up.

So it was such a massive experience, but, um, with the collaborations and to corporations, uh, coordination among us as the business. Okay. So we managed to start, we managed to start, uh, clearing the backlog, um, and servicing our customers. There was a, there was a point whereby when, when one look at, um, at the flight radar, you could see only DHLs crafts, right?

Participant 2 (P2) (13:12):

Flying all over Africa and DHL, DHL, charter, DHL, uh, uh, uh, charter aircraft. So that was the only time when by we managed to, uh, look, um, the issue that we're faced with, or starting to service our customers better. So it was really, um, uh, a combination of, uh, uh, or collaboration between DHL as well as the commercial airlines. So for me, that was the innovation that it has never existed before, but it exists that you're in, uh, during COVID whereby we strapped shipments on the seats and our customers at the end of the day, they were happy because we, we, we were able to deliver the, uh, uh, protective equipment or PPE, uh, within reasonable times. Okay. So there were times whereby uh, shipments took longer before they can reach destinations, but our customers were kept informed. And then our customers really trusted us during that time.

Researcher (14:58):

Well, that is really, really extremely valuable information. And I'm so glad that you went in depth. Um, well, it is, it's actually quite significant that you were able to experience this type of, um, I don't know, almost just scattering of plans, um, in your many years of DHL that you were able to, um, to be part of this still. So, um, you mentioned how you partnered with other airlines and, um, everything you did to kind of manage the disruption. So with what other departments did you work along, alongside in managing this disruptions?

Participant 2 (P2) (15:18):

Yeah, so, yeah. Great question. So when we will have to work with, um, so within DHL, we've got another division called DHL aviation. Um, I think you might've heard of them so detail aviation are responsible for managing the, the, the day to day, um, w what do we call it? The, so that they are basically responsible for managing the aviation activities. Okay. Um, but in the sense that, um, the crew, the aircraft maintenance, um, you know, it will be done by them. Right. So if, for an example, I see that the going into Angola, I'm sitting with about 10,000 kg. Right. So what I will then do, I will say to DHL aviation, I'm sitting with 10,000 kg. I know we had a flight yesterday, um, but I need to clear my backlog. Can I ask you to schedule another flight for tomorrow?

Participant 2 (P2) (16:39):

Okay. So when DHL aviation will do that, they will quickly based on my request quickly, be in touch with the destination airport as for the landing payments. And then also look for the crew, the crew that will be available to operate, JHB to Angola and Angola back So basically that is their, that is their responsibilities. So I, we had to work with them. So if we believe that, um, there is a big demand out of Malawi come into Johannesburg. So again, because of there is no flights out of Malawi, Zambia, so I will speak to DHL aviation, and then DHL aviation would do that. I'll also have to, uh, speak with DHL finance team, right. Finance in the sense that whatever costs that we incur, they need to know about it. Right. They have to, um, approve it. Okay. And before we can proceed. Okay.

Participant 2 (P2) (17:51):

The other department that we have to work with is basically, um, but the, the operation within, uh, different gateways, right. Different countries. So, as an example, if I have a flight to Angola, I need to let, I'm going to know that tomorrow, tomorrow I will be having a flight. So this is the type of aircraft. This is the estimated volume that we have. Okay. Uh, please have the team ready so that they can receive this flight and process the shipment as quickly as possible. Right. We do not want to delay that flight because that flight went, once it gets back to Johannesburg, we wanted to go to a certain destination such as Mauritius, such as Harari, such as a Gabarone, so forth and so forth. So we'll have to collaborate with many, many, many, uh, department, many people. Yeah. And I said, so that whatever that we do, um, the is no gap of, uh, uh, uh, or any service failures in between, right?

Participant 2 (P2) (19:01):

So those were really key people that, uh, we have, we know we have to work with obviously, um, again, within, within operation, that will also ensure that, uh, uh, in other stations they will show that by the time they fly to land they already arranged with customs officials to come and inspect, if they want to inspect the shipmenton arrival they will do that. Okay. If a certain country or certain stations, they want to do deliveries, they will engage again with the ground operations and make sure that the couriers are there. So the collaboration was, you know, it, it really, um, you know, it was number one priority, and it really proved proven during the hard lockdown that if we can work as one, there's so much that we can achieve as a business, so everywhere. So that collaboration within, uh, within the interdepartmental is very key. No one can wake insiders.

Researcher (20:13):

That was great. And it's, it's true, as you say, Hey, as a one. Um, so my next question would be, what is your personal understanding of digitalization? If you have to say what you think about it and what it means to you?

Participant 2 (P2) (20:53):

It basically, so basically it says to me that, uh, um, uh, we basically, as a business or as people, so we are basically moving away from doing things manually. Right. Um, and moving it into a paperless environment. Right. So, which is driven by, um, you know, uh, technology. So everything for me, everything is, is really, it involves around technology. So for me, I will say, um, digitalization is about that. So we need to take advantage of this, uh, current phenomenon, which is, uh, which is digitalization and again it is in line with, uh, uh, our business strategy. If we look at the DHL business strategy today, 2025, it's all about that. You understand. So we're going to deliver, we deliver excellent through, uh, uh, uh, or in a digital world. So this is what we do. And then again, in the, if, if you allow me to tell you exactly what we are doing, uh, as NCG, so we basically, yeah, so we, we, we in the forefront of, of digitalization, and especially when it comes to our relationship with all the stakeholders that we're dealing with.

Participant 2 (P2) (22:25):

So as an example, um, about 80 to 90% of our Volume really are or 90% moved by air. So the question is, uh, how do we ensure that, uh, the, the relationship with the airlines, you know, the bookings, how do we show that, uh, we get the communication that our shipment has been uplifted, um, and then the payment, any form of communication. So we, we have, um, but what do we call it? A program called the CAMS, right? So CAMS stand for commercial airline, uh, management system. So what do we do every month? So at the middle of the month, every month, we have to do what we call it, the blog bookings, right. With all the airlines that we're using. And I'll just give you one example. So for, oh, I should men that are going into Europe, or maybe, let me give you two example, I'm going into Europe and then other shipment going into, uh, let's see China, right.

Participant 2 (P2) (23:48):

Asia Pacific. So what do we do? We've got different carriers that we're using. So into Amsterdam, we do the blog bookings online. So we don't have to call the airline and say, okay, for the month of June or for the month of July, um, we want to have so much, allocations on your flight. No. So we go onto our own system, and then we set up our requirements, right. Um, capacity then we'll look at, um, at, uh, at the trend of how much volume have we been, uh, sending into Europe on a day to day basis. So we look at the

day one up until day seven. Okay. So what are the trend? Are we able to, uh, fill up the airplane container? If we were to book container on a daily basis, Monday to Sunday.

Participant 2 (P2) (24:48):

So, so with there, because we manage capacity, so we know, um, that there are some other days whereby our volumes are really, uh, uh, going down and the other days whereby it goes up. So what do we do then? So when we do our monthly bookings, so when we're able to project and say to the airline, so Dhl in Johannesburg, right. Or DHL in Cape town, because we're also assisting helping Cape town in terms of the bookies and other stations. So we will need, as an example, PMC PMC is the, is the airline pilot that is used to load cargo, right. Or need, and that will be again, used to, to go into the aircraft, to the final destination. So it was basically used to hold the cargo for different customers. So we send communication to them to say on Monday, we need two positions, two pilots on a Tuesday, we just need one so forth

Participant 2 (P2) (26:02):

They depend on the, on the, on the number of days, but as what we're doing currently Monday is a hard day. Why is it a hard day is because of during the weekend, they had no activities within our business, currently many customers or many businesses do not work over the weekend. Okay. Simply because of the, what is happening with COVID, right? So because of that, no pickups or collection from our customers on Saturday and Sunday, it then affect our Monday. So our Monday, in most cases, flights depart empty, or the, uh, uh, our, our shipment that we load on each and every aircraft where we have agreement with our volumes is very low, but the volumes that start to pick up on Tuesday, so forth and so forth up until Saturday morning is, you know, we can go as my test, five to eight tats per flight.

Participant 2 (P2) (27:07):

So we, everything we sort of, we do the online book booking. So the airline will know, okay, today DHL will be, uh, having one pilot, uh, the waybill no is so forth and so forth. So everything gets done online. So we do the block bookings. Okay. So the, we also do the same with Emirates going to Hong Kong or Qatar airways going into Doha, so forth and so forth. So once we have done that, we get the message back immediately that you bookings for the month of July has been confirmed and booked. And right. So based on that, we then take that communication. We send it to our operations guys who are loading containers and offloading. So based on that, they will know.

Participant 2 (P2) (28:05):

So on a daily basis from JHB to Hong Kong, we have a dedicated container at this particular weight. So they will have that roaster and they will just continue. Yeah. Using that, get the, on the day of operation they will load the container. And then what do we do? They just take the information, the final, what, what, what, what we have, we have what we call it a within our operation, we call it, uh, uh, the final test weight. So the final test weight is when operation they've built a container, they then once it's ready, they know that everything has been loaded. They put it on the scale on the scale, then they will then produce what we call it. Um, the electronic test weight that electronic test weight, it will then be sent to our offices within the NCG. So, based on that information, we will then produce, what do we call it?

Participant 2 (P2) (29:15):

A pre-alert, meaning that we need to tell the airline, as well as the destination station that DHL Johannesburg is bringing in one container. And the weight is 1.5. Right. So I ask it in that, uh, when, once we have done that the, information electronically, it will go to the carrier. Okay. And to the destination. So we do not produce paperwork anymore is what we call it the e-waybills. Right. So once that has been sent to, to, uh, to the carriers, to destination, then the,our driver will then go to the airline and drop off that particular container. Okay. Um, once that has been dropped and received it, so we, as DHL within NCG , we will get the message back from the carrier to say, we have received your your container, go into Amsterdam, or going to Hong Kong as an example.

Participant 2 (P2) (30:41):

So once we have received that, okay, then we need, we acknowledge that message to say, yes, I've acknowledged once that has been acknowledged, they willwill see that, uh, once the flight depart or once the flight is taxying within the OR Tambo, we get the, what do we call it? Uh, the, the, the message that says the flight, the shipment has been loaded into the flight and the flight has taken off. So that message will give us the accurate, the exact time when the flight did to depart in Johannesburg. So that message will come through to us in the form of electronic, with what we call it, uh, the FWB message. So it will tell us KL 592 going into Amsterdam departed Johannesburg, like now 16:55, we will get that message. So once we receive that message, then where do we then do as NCG, we then go into one of our programs and we scan the shipment, the checkpoint, which is called CU stand for confirm uplift.

Participant 2 (P2) (32:03):

So why do we do that? So we need to tell the business that all those shipments that were destined to go to Amsterdam. So this are the entire European volumes, right? They have now departed on this particular flight. So the same information, will electronically go to our customers, then they get the message that

their shipment has departed. So that in itself, it eliminated the number of queries and number of, uh, uh, uh, phone calls that we'll receive from customer service or sales wanted to find out if the shipment is gone or not. Okay. So the same way that we received, um, that we're sending the pre alert to, uh, destinations as well as, as well as to the carriers, the same application will also calculate the expected cost. Right? So remember this service at the end of the day, we will have to pay, right.

Participant 2 (P2) (33:18):

So how do we make sure that the amount that the airlines says they will charge us it correspond with our system? Okay. So what do we do? So every year, DHL issue out their tender to the airlines and then airlines bid. So we will then do, we will choose the most reliable airline, obviously with the best rates. So once we know how much the airline charges, we then include that on, uh, on the system that we call it CAMS. So the moment we have entered the weight on a certain flight, so CAMS will then calculate the costs. Right. So based on what? Based on the final weight of that shipment. Okay. So why do we do that? We want to know our costs, so that by the time at the end of the month, when the airline send us the invoice, we're able to compare that what we're paying for is exactly what we have recorded on CAMS in the form of accruals.

Participant 2 (P2) (34:40):

Okay. So once we do that, then we happy to, reconcile once we receive the invoice, what we then do, we go into the system and reconcile the invoice. Once we get to the, the status, which we call it, the okay status, the okay. Status has, it means that your expected costs, as well as the invoice that came from the airline matches as an example, just to give you the example. So, um, into Amsterdam, um, perkg, we're paying $2, 5 cents, okay. That is PKG, right? Meaning that if we have two thousand kg or 2,500 kg, that is build on one pilot, so that will be multiplied by the $2 5 cents. And then it will give you the total cost. So that total cost must matche the one the invoice that the airline will send it to us at the end of the month.

Participant 2 (P2) (35:54):

Okay. So once that has been done, we then send it to our finance team. Finance team will then pay. So we see that. So the amount of visibility, everyone can see our cost everywhere in the world, um, the, the accountability or the visibility of our costs, again, it's in line with the expectation of the, of the business, right? So basically this is what we are doing from, from the bookings up to final, uh, um, payment, everything has been done electronically. So what the airline are doing, when they send us the invoice, they also, they send us the invoice as well as the Excel sheet. So that Excel sheet we upload it on the system on the same CAMS, and then it will calculate our cost. So everything is just, um, um, um, is, is, is this digitalized

right? So why we are doing that, it eliminates human errors, right? Because if I was to do, um, uh, bookings or pay or do the, the, the reconciliation manually, there will be the, might be a typing error. So with that, it really took away our, our, our billing, billing errors. Okay. So in a nutshell, this is what we are doing

Researcher (37:29):

um, there's been a lot of digitalization from what I can tell, um, everything that you told me that basically went from, from paper to an online version. So, um, would you say that this really helped DHL during COVID-19

Participant 2 (P2) (38:00):

In a big way? Right. So it is, it is really, um, being the, the game changer, right? Because what do we have also seen is that even at that, at that pattern us or our that's, our stakeholders, are also moving towards that. So they are able to accept, uh, our practices. So what used to happen before is that two things will happen, uh, or maybe not, not necessarily two things. Um, two, two of our stakeholders will have a problem with number one when we issue, or when we tender our volumes to the carriers, right. Customs, as well as the carriers or ground handlers, they will say, no, we want to see the physical paperwork. Right. So we then said, well, if you go into our system, everything is there. So customs is aware as to how much freight we're sending it out on the day, carriers are aware.

Participant 2 (P2) (39:23):

Okay. So that in itself, it has helped us to facilitate our import and export, in a speeded way. Because during that time, we did not want to waste time, right. In the ramp, trying to sort out the manual load to plan manual, uh, paperwork. So the flight will come in, get offloadedand we'll load and It goes, okay, while customs is there facilitating that while the other carriers are there. So it has really helped us in a big way, because the other airline partners five hours before, before the, the, the operation, or before the flight take off, they will know the estimated weight. So they can start planning the fuel as to how much fuel do they need to put into their aircraft. Okay. Um, how many crew members do they need for that operation? Okay. So it really had helped them to, to, to, to speedy their plans, as well as their operation. So it was just touch and go. So that in itself, it has really helped us.

Researcher (40:47):

It's great. So I was thinking, while you were speaking about the whole paperless trading now, can you think of any other digital tools that really assisted, um, DHL during COVID-19 maybe, um, they, some other

automation let's say within the gateway or there is some Big Data Analytics that you know about or internet of things, any other thing that you can think of that really, um, proved to be valuable?

Participant 2 (P2) (41:21):

Yeah. So, so the other thing that we really, it really helped us during the pandemic, or even now what I do still add value. Number one is what we call it, uh, the flight radar, right? So with the flight Radar, um, we are able to look into the flight Radar, and I can tell the type of aircraft that I see, um, coming into Johannesburg. And then based on that, I'm able to make a decision as whether do I increase my allotment, right you're looking at the aircraft or reduce my allocations, meaning my bookings. So what is happening is sometimes other carriers, uh, based on the, on the demand, right? So they will just decide to, to cancel their, uh, or what do we call it? We, we, we, we, we were saying reduce or downgrade the equipment by downgrading equipment it means if they were to operate, let's say seven, 777400, then they look at the number of freight and passengers that they have.

Participant 2 (P2) (42:53):

They say, well, today we really have less numbers. So, so if we operate this aircraft such a big aircraft, so we'll lose money, so what we'll then do lets downgraded. So they will get downgraded into a smaller aircraft. So we are able to see that without the airline speaking to us. Okay. So we can look at that and say, oh, so this guy is, they've dowbgraded the equipment. Then it means instead of giving them 2000 KG, so let's rather reduce the risk and let's give them one car. And then who else is operated? So we've got those tools, right? So we can be even on the CAMS, flight Rader. So based on that, we are able to make decision immediately. And then in most cases, our decisions are really, uh, uh, uh, proven right because our customers are happy.

Participant 2 (P2) (44:00):

The business is happy because if you look at, uh, flown as booked, so our flown as booked is currently is sitting at 90 so last week we were sitting at 97.4% against the target of 94%. So flown is booked is what we have booked at the, uh, with the airline. And they still get uplifted with no issues. Right? So this is because of those type of, uh, uh, uh, digitalizations, um, that is helping us to make the decisions. The other thing that we're also looking at it. Yeah. Thanks. So the other thing that we're also looking at is the, QCC. So with the QCC, I can be able to see how much shipment, how many shipments have been picked up today in South Africa. And then I can make a decision as to, you know, how much space do I need today on a different flights go into different destinations. Okay. So those, those are really some of the key, key, key, uh, Tools or methods really helps you to make better decisions

Researcher (45:14):

Okay. Yeah. That's great. Brutus, thank you for, for explaining that. So thoroughly, to me, I'm sure I'm really taking a lot away from this, from this, um, interview with you. And a lot of it will be very, very valuable, um, for my project. So I was thinking, yeah. So I was thinking, um, how would you describe the culture of DHL towards that digitalization? Do you think they are, um, embracing it, or do you think some of the employees might be a bird skate and, and, and feel like maybe, um, some form of automation will take over their jobs. Let's say robots, let's say staff in the gateway are scared of you to robots and they feel they'll be replaced. Yeah. Yeah.

Participant 2 (P2) (46:11):

Look at the, uh, so in terms of the business, towards the digitalization, I think the business has made it clear that, uh, uh, digital digitalization is the way to go. Okay. So, and the business has platforms to support everybody. Just one that, so, um, that is the, I will say the, the attitude of the business towards digitalization is, is very positive. Okay. Um, and again, um, it is, it is the future. It is the future of the business. Um, now to answer the question of, uh, how does the employees take, uh, digitalizations? Yes. Um, I've asked, are taking it positively or positive while others are really skeptical about it too, because they, they believe that it will take away their jobs. Okay. I have had a contest with some of my team members who are doing this online bookings because what they were doing even before, so they will call the airlines and they were doing it manually when they were paying, they were paying the, we're doing the reconciliation manually.

Participant 2 (P2) (47:40):

Now the work that they used to do it in five days, they can now do it in less than in less than an hour. Okay. So the, they are worried they they might lose their jobs. So I think it is, um, our responsibility as managers to, to make sure that we speak to our employees, that, uh, in the sense that we, we say to them. So although bulk your work of, or our work has been digitalized, it is our responsibility to make sure that we align ourselves with what today's work environment or what today's, you know, uh, uh, uh, businesses require us to do meaning that we need to, to, to upskill ourself, right. In the sense that we remain competitive with what we're doing, digitalization is not going to go anywhere. Right?

Participant 2 (P2) (48:53):

So , it is the responsibilities is with us to make sure that we align ourself with, with the demand of digitalization, meaning that we need to, you know, um, uh, upskill ourself and the business has those tools

today, whereby people can do the online training, um, you know, so that we do not, or our people don't not lose our jobs simply because of, uh, uh, you know, this new culture that we can't, we can't run away from. Right. So the, what do you also asking me? I mean, this is, this is exactly the debate that I, uh, uh, that we, we are always having as colleagues. Right. Um, and I think maybe even in terms of your studies, uh, the, this question will always come that, uh, I've had people, they, the, the leave university today, uh, but day to day do not posses, or they do not have the skills that the business required today. Okay. So many colleges and universities are, are producing graduates, but do those the question, is, are those graduates, uh, really in line with what the current market, or the current employers are looking for, right. Essentially in terms of the digitalization. So the universities, colleges, schools, I think they just have to be serious with, uh, um, the digitalization courses.

Researcher (50:54):

Right. And I agree with you, um, that was actually going to be my last, um, my last question. So, um, I absolutely agree with you. I want it to say that, um, well, the same as you mentioned, the digitalization is not going anywhere. And I actually believe that, um, because of COVID-19 while in the first place, um, customers today, want things quicker and faster and better and all that. So, um, and as you mentioned earlier, something a worker would have, would have done in five days, can now be done in one hour. So it is almost a must to, to, to go the digital route in order to survive as a business. And I think also because of COVID-19, um, customers became aware of, you know, um, things that weren't available on the shelves and they, they, um, because of that, they can be aware of and got interested in logistics.

Researcher (51:54):

They realized it's, you know, it's logistics, that's, that's causing everything to be on the shelves and to be available. And, um, I believe in the long run that it will actually push the, um, efforts, um, all digitalization efforts, like, I don't know, contactless identification and paperless trade, as we mentioned earlier, because that is how you will survive. And what you said earlier, um, is, is, is really valuable because I don't believe in South Africa, we currently actually have the, the resources or the skills available in order to walk alongside with this changing environment. Because if we look at, um, how digital everything is going, I don't believe we have tech savvy or tech savvy workforce that understands how, you know, all those digital tools work. And, um, yeah, I think life, as we know, it is going to change. It's going to change quite quickly.

Participant 2 (P2) (53:01):

Indeed. Indeed. Absolutely.

Researcher (53:05):

Yeah, definitely.

Participant 2 (P2) (53:08):

I fully agree with you and, and we we've got to be ready.

Researcher (53:13):

Exactly, exactly. Yeah, it is. It is going to happen anyway. We can't wish it away. Right. We can just embrace it.

Participant 2 (P2) (53:29):

We just have to embrace it. Also the, the, if you look at, uh, at today's environment, the companies that do not use, uh, take advantage of the technology, right? So we see them, they really, uh, being left behind. They are really struggling today. They either have to retrench or closed out

Simply because the competition is ahead of them. The competition is ahead of them. So it is very important that, uh, each and every organizations, they take technology, um, and they put it at, uh, to be their number one priority. I also don't believe that, uh, uh, technology, it only, uh, uh, take away people's job, but it doesn't create jobs. Right. So I believe that it, yes, it, it does take away the manual work that could have been done by 10 people for a week or whatever, but it also creates opportunities. Right. So it depends as to how prepared are we as the society or as the business, or again, even as individuals. So we just have to be prepared for that.

Researcher (54:39):

Yes. I definitely agree with you because I feel like people, or, um, people should, or the workforce is going to compliment digital tools and it's not, it's not, um, taking your job. It might just, you might just end up not doing something routinely, but you aren't, you might end up doing something else with, um, more strategic decision-making or something else. Um, instead of, you know, doing something routinely, routinely that has human error.

Researcher (56:59):

Great. Brutus, thank you so much for your time. Um, I know you are super busy. I could hear earlier on and I would really like to take the opportunity to thank you for taking time out of your really busy day. And I

really appreciate the opportunity to learn from you. I got all the information I needed and, um, yeah, just thank you for sharing, for sharing with me.

Participant 2 (P2) (57:16):

Like to take this opportunity as well to wish your all the best.

Transcription of interview with Participant 3

Researcher (00:08):

Thank you so much. Okay. And then, um, can you please just tell me about your current role in DHL?

Participant 3 (P3) (00:23):

I am currently the senior manager of OPS programs. Uh, I have been doing that for four months, uh, before that I was just the manager ops program. So it's basically the same thing. It's just transiting from one position to being the one who's heading the ops programs team in, in SSA. So, uh, basically that's it. And, uh, it is about deploying applications. It is about project managing applications. And, you know, when you, uh, doing one or two or more than one project concurrently then it becomes programs. So that's the word, what programs come from. It means that we concurrently managing multiple projects with respect to ops applications, deploying it, getting the users to understand it also working with the global IT team and regional IT team. So we are like the interface between, uh, IT and ops and ensuring delivery of the project.

Researcher (01:46):

Okay, perfect. Thank you so much for, for the answer. So, um, how is managing COVID-19 related disruptions, a part of your role? Um, you mentioned that you are working with the applications and all that. So I assume the whole digitalization aspect is very applicable actually to everything that happened as a result of COVID-19. So how would you say that tie in with what you do on a day to day basis?

Participant 3 (P3) (02:14):

Well, I think of everything that has changed, uh, our approach to business and how we used to do things before now. Uh, my team used to travel a lot to use, to go into the countries to understand your problems and requirements. And then now sit around with the global IT team to design a solution or to also, you know, to look at a solutions to problem. And I think, uh, over the past two, one year and a few months, we've not been able to do that. So we, we now have to engage people more remotely, and that is when digitalization comes and we spend most times now on calls and meetings, online meetings. Engaging these people, we now have to do things remotely online when we have to travel as much as we did. So our approach has changed, has changed our approach to things. I mean, probably we spend more hours doing things more, but we're still getting things done despite the fact that we can't travel, we have to do things remotely. So the change is there. We, we, we certainly can't go and get into those countries and support them as much as we used to or the way we used to because of, of travel ban and getting into the countries,

looking at the ops process. But now we now have to engage them on online meetings and they have to take us through that process, uh, you know, online and remotely.

Researcher (03:48):

Okay. That's really interesting. So, um, with what other departments are you closely involved working on, on all this applications and everything you mentioned earlier on, um, with regards to IT and, and ops?

Participant 3 (P3) (04:04):

Yeah, so I mean, it's, it's Cross functional, we will work with IT obviously, and we are in ops. Uh, we obviously work with all other functions. I mean, I've got applications that has, uh, as you know, uh, involvement with commercial. I have devices that needs, uh, the commercial departments back in, you know, certainly, uh, we, we have to work with them and also get their buy in and support. Uh, we have applications that are also interfaces with, uh, with CS. You know, we, we certainly have to also engage them and from time to time, uh, certainly we have to be also involved in the procurement of devices and sometimes we need to pay suppliers and the people who designed this applications and, you know, and when, when you need to get, uh, people paid, you all usually have to engage with finance and, and, and you can see that in me coming to you and say how do we load this on get, you know, we need to pay these people and all of that. So it's, it's cross functional. I have to deal with people across all functions. And I think we've been doing that quite well.

Researcher (05:24):

Okay. Excellent answer. Thank you. And, um, is there any interesting projects perhaps in the pipeline that you're currently working on? Um, that is, is actually just because of COVID-19 that happened. So this application would, would not have existed without, um, the pandemic?

Participant 3 (P3) (05:47):

Uh, no, none, but I would say COVID-19 has changed our approach to the design of certain, uh, applications. Uh, we'd like right now. We have what we call the lockers, the swip boxes. We're looking at how we can make use of them, um, more and more, and now we can bring them into SSA. And, uh, right now the utilization is low or we quietly think, how can we use them? Because they will be very useful with respect to COVID-19 that means that the cost would, it will reduce, uh, the interface that couriers have with customers. Customers can now pick their shipment from, from this locker. And we're looking at something like that, especially in South Africa. So it has changed the design, you know, and the approach when there wasn't so much drive for the use of this lockers before now, but, you know, COVID-19 has

changed the fact because of the fact that, uh, there is social distancing, and we can use this opportunity to reduce how much time or space are courier's engaged with customers while the customer still get their shipment and still get the service we promised them.

Researcher (07:12):

Ah, excellent. Okay. Okay. That's really great answer. Thank you. That's very applicable. So, um, what is your personal understanding of digitalization? What does it mean to you?

Participant 3 (P3) (07:26):

For me digitalization is, is basically using technology to solve problems. That is my personal understanding of digitalization. It means use of technology using technology, uh, information technology to solve problem, and it could be a different aspect of technology could be artificial intelligence. It could be, uh, robotics, it could be scripting, it could be programming, basically looking at a program, designing a solution and, and, you know, with the use of information technology and getting it solved. So that to me is digitalization.

Researcher (08:14):

Oh, okay. Great. Thanks. Thank you. So, um, with regards to what you just mentioned, do you think any of the tools is actually feasible in Sub-Saharan Africa? So let's say, let's say for instance, um, uh, robotics process automation, or big Big Data Analytics, AI that you mentioned, internet of things like all those big fourth industrial revolution, concepts, cloud computing, computing, stuff like that. Can you, can you see that happening in Africa?

Participant 3 (P3) (08:50):

It is really because looking at doing a few, uh, robotics projects, robotic process automation, RPA, we were looking at doing a few of it in Africa, especially in South Africa and with the current use of, uh, internet and in more countries. I mean, and I'm not speaking about South Africa right now, I'm speaking about countries, uh, where, well, maybe not as economically as advanced as South Africa, I'm looking at, uh, Ghana, Mali, you know, uh, Kenya definitely with internet, you know, coming to making the world a global village, uh, certainly robotics or automation, scripting data analysis is the way to go. And I'm pretty sure DHL has got a few projects with respect to, uh, business intelligence in SSA while we were chasing RPA projects in ops there is also RPA projects for finance, you know, so I'm fully aware of that. So I think it might take time, but it will certainly come to stay at the end of day.

Researcher (10:13):

Great. Thank you. And can you can, do you perhaps have, uh, an example for me? So when you say, um, RPA ops, do you, do you perhaps have an example, maybe something that is currently being worked on?

Participant 3 (P3) (10:30):

Yeah, so we we've, we've got, uh, I'll mention two things. We've got, uh, an application right now called DCC, uh, data cleansing, uh, classification. And there is a script where this applications goes into what we call the customer master file to look for certain customer information and gets it, bring it into the application. And this makes the life of our Clearing agent, uh, agents at the airport easy because instead of calling the customers to get this information or going to look at it in the Excel sheet, it's already there because of this script. So that's one thing. There is also an optical character recognition, uh, project, which is, this has been integrated with a few applications also where invoices can't, uh, or your invoices. Uh, this OCR goes and look at certain information, picks it in, uh, gets it into about one or two applications. And, and it also, it's also to ease the clearing of shipment of customers. So, uh, we, we, we currently, these are things we're currently doing or working on, so, and it certainly would ease the lives of our of, uh, uh, staff and also make our customers happier.

Researcher (12:10):

Oh, great. Thank you. And, um, are you familiar with paperless trade? And if so, what, what is your opinion about it?

Participant 3 (P3) (12:20):

I'm familiar with people it because I work from time to time with, uh, with the project manager inches Kanji. Uh, we, we look at a few things to get an um my opinion is it is a good project. It is, it will, uh, improve, uh, we serve our customers currently. Then it might be hard to embrace in certain countries outside of South Africa, but at the end of the day, I mean, customers realize the benefit and the value it brings to them and they end up embracing It much more

Researcher (13:02):

When you say it might be difficult to embrace, um, in certain countries. Why is that? So,

Participant 3 (P3) (13:11):

Uh, because of change management, project management, there is an aspect called change management and stakeholders engagement, basically because, uh, in, in project management, you know, it's like I mentioned, there is an aspect called change management. It's difficult sometimes to change the mindset of costumers, who is used to couriers printing waybills for them writing waybills for them in certain places. So it is a mindset change or mind, or, you know, the gap, there is a gap right now, and we just need to fill in that gap by engaging these guys properly and making them know that this is the benefit we bring to you as a customer, as shipments get delivered quickly, because Clearance starts even before the shipment leaves the origin country and all of that. So, uh, that's why I said it might be difficult, but if, if, if, if a proper change management process is used and the stakeholders are correctly engaged, uh, at the end of the day, we will see the benefit.

Researcher (14:25):

I absolutely agree with you. And it's a fantastic answer. So are you, or are you aware of any, um, change management programs that is currently implemented or is, um, do DHL have a plan to address this gap that you mentioned earlier?

Participant 3 (P3) (14:46):

Uh, I'm not, I'm not aware. I'm not aware, but as a, as a person and for team, we, we are quite vast in, in, in, in project management processes and change management processes because, uh, a few of my team members are certified project managers in, in, in prince two PMP and all of that. So the knowledge and skill is there. So, and, but this was acquired individually. So, uh, with respect to DHL, I'm not sure if there's, I'm not sure if there's anything that they might be, they might not, maybe I'm not just going out to look for those processes, but of course we have things like first choice and all of that. I'm not well waxed with first chose. I know that , but I know it's about a lean six Sigma, which is also a change management process. So, like I mentioned, I mean, I've not gone so deep with respect to DHL personally. Uh, I and my team members had acquired the skills.

Researcher (15:53):

Okay. That's great. Thank you. That's certainly understandable. Um, so do you think, uh, paperless trade or any of the other tools we spoke about earlier? A little bit of AI, a little bit of robotics process automation. Um, do you think any of that specifically provides more value during, um, difficult times such as pandemics or recessions, or, um, do you think it is always valuable or do you think actually that it's more valuable during pandemics to ensure that the business survive? So in essence, a business won't be able to survive without digital tools during difficult times, or does it not matter if that makes sense?

Participant 3 (P3) (16:39):

So, for me, it's real, it's again, change in all times, not just during a pandemic, uh, it becomes useful in a pandemic because, um, because we need less human interaction. Secondly, the pandemic would go away at some point. And you know, is this still a game changer? Yes. Uh, does it make changes? Yes. Will companies survive without digitalization? No, because companies have got competitors. And if you look at one of our three bottom lines, it is for us have a profitable network. If you've got competitors who embrace digitalization and much more than we do, and to make the customer's life easier than we do, then at some point they will get, you know, who would be out there beyond the business. So this is a future with respect to what we do as a logistics company, which respect to pushing and, and making sure that I add in the e-commerce business and getting businesses for e-commerce, uh, e-commerce uh, provide us or, or, or on those who participate in e-commerce certainly digitalization is the future and the way to go.

Researcher (18:03):

Right. So would you think that, okay, we have seen a spike in e-commerce now during the last, well, during the pandemic, do you think that it will continue to be as high? Do you think consumers are now more comfortable with e-commerce and that they will continue to go that route?

Participant 3 (P3) (18:27):

Definitely. Yes. Uh, before now you would see that, uh, people were embracing e-commerce COVID away, the way that e-commerce is the future. And if you look at any serious organization, a serious company would be looking at what aspect of e-commerce they can tap into, because that's the future. People are going to be working for whatever remotely, much more people want things delivered to them. The one of the best companies in the world, Amazon strives on e-commerce. So, so certainly, you know, uh, even without all the pandemic e commerce was, and still is the future.

Researcher (19:17):

I absolutely agree with you. Um, I also believe that, um, there was, you know, especially the older people was a bit more hesitant, um, for electronic payments and things like that. But now during COVID, there was almost no other option than to try it. And, um, they, they are more comfortable with it now, so I can understand where that surge also comes in, which brings me to, um, to my question, how do you think, um, your just your own personal opinion, uh, the workforce at DHL is embracing digitalization. So let's take, for example, robotics. Do you think that they are almost frightened by it in a sense of they are scared to lose their jobs? Or do you think that they understand that they are complimenting technology and, um,

perhaps to be used for more strategic decision-making in stead of, you know, doing the, the routine tasks that a robot can actually do?

Participant 3 (P3) (20:24):

In respect to the people I interact with, i would say people are there to, to ensure the success of digitalization. I've not seen anyone who's been threatened by it so far. So, but I'm just speaking from my own personal experience. Uh, so they are embracing it. They are open to it.. Uh, that's my opinion. And that's what I've seen.

Researcher (20:57):

Okay, great. Yes, it is just your personal opinion that I'm, that I'm looking for. So, um, what main challenges that you experienced during COVID-19 and how did you overcome them within your own working environment now? So within your own capacity and your team's capacity.

Participant 3 (P3) (21:18):

Yeah. With respect to myself and my team's capacity, it has to do with deployment and training. Most of the applications has to do with processing a process ops process, and being there during deployment showing the guys how it's done, you've got the shipment. You show them how the relation between the applications and the shipment you understand. Then, you know, it's kind of in a shipment, uh, doing clearance. This is all mostly what our application is doing. We are always there to give this country support during the deployment and ensuring deployment goes in a seamless manner. I mean, this is, this was our biggest challenge. And, uh, like I mentioned, we just, we just had to, we just have to pull through doing it remotely.

Researcher (22:22):

Okay. That's a great point. You're making. Um, so is there anything interesting that you are currently working on that is new to DHL and have not existed prior to now?

Participant 3 (P3) (22:42):

Nothing, nothing new. We were working on, all things we started working on was before COVID, uh, I mean, it's just a bit enhanced because, uh, because, uh, COVID came, so taking a different route.

Researcher (23:03):

Okay. That makes perfect sense. So is there anything AI related where you can give me a practical example?

Participant 3 (P3) (23:16):

Uh, well, the only thing it's not really AI, like I mentioned, so it's just, uh, like the optical character recognition project, scripture running. It's a bit of AI, but not fully AI, so, uh, yeah. Yeah. But, but in, in other countries, in other countries, uh, we've got, uh, we know we've got much more advanced automation, like, uh, uh, finding sorting, you know, automating automation, uh, with respect to certain shipments. I mean, you know, facilities where certain things is done by, by the machine or by, by specific technology. So, so, but currently in Africa, no.

Researcher (24:20):

Okay, great. Perfect. Um, and then I wanted to ask you, um, sorry, just give me a sec, um, with regards to CAll BI and wireooth, if I'm not mistaken, you are involved the, or, or am I mistaken?

Participant 3 (P3) (24:40):

Sorry. Um,

Researcher (24:42):

CallBI and wiretooth? Um, the speech recognition analytics? I believe that's happening in Nigeria.

Participant 3 (P3) (24:51):

My team is not involved.

Researcher (24:53):

Okay, perfect. Okay, perfect. That is the questions I have from my side. I really appreciate your time. And then if you can just remember to sign that consent form and send it to me otherwise, I am not allowed to use this interview

Transcription of interview with Participant 4

Researcher (00:07):

Thank you very much. So just firstly, um, can you please just tell me about your current role? Um, in DHL.

Participant 4 (P4) (00:17):

Okay. So I have got many hats, I'm currently a customer operations manager of Sub-Saharan Africa. I'm also customs customer support manager for Sub-Saharan Africa, mostly a joint lead of the joint operations center of Sub-Saharan Africa. And I'm also a lead for the vaccine task force in Sub-Saharan Africa.

Researcher (00:41):

Right. That's excellent. Um, can you tell me a bit more about the joint operation center that you just mentioned?

Participant 4 (P4) (00:48):

Sure. Okay. So the Joint operations center, it was set up in March, 2020. Um, and that it was in response to obviously COVID, um, the, the COVID pandemic was basically set up with myself and Jason Blackman and lead, um, to coordinate the countries, um, as the countries went down into lock down, uh, and adjust our network. So we kept the shipments moving. We kept the flight, the, the aircraft fly, um, and really just to, you know, just to weather the COVID storm, um, as a, as a, as it unfolded. And what we found was obviously, uh, the commercial passenger aircraft, uh, industry collapsed, um, we're still currently running it just 30% pre COVID, uh, flight departures. Um, so 30% of pre COVID capacity, most of the aircraft that are flying are cargo aircraft passenger. I travel hasn't really come back. So what does that mean from a DHL perspective?

Participant 4 (P4) (02:04):

Well, from a career perspective, so it affects everyone and indeed, uh, even the wider logistics community is the passenger aircraft played an integral role with the global supply chain. Why? Because the quickest route from a to B is in a straight line and passengers like to go on the quickest route. So the direct passenger flights from country to country, most of those lights underneath the passengers with their baggage is cargo and that disappeared. Yeah. So what we have to do and what the airline industry has today is obviously a fairly common pivot and is into cargo schedules. So these, yes, we've got some, we've got some good cargo at schedules like KLM, France at the Virgin Qatar Emirates. All the big players is they grounded a lot of their

passenger fleets. Most of the passenger fleets. And what they did is they utilized, uh, airplanes to run cargo only flights, uh, just to keep the space, to keep the revenue coming there.

Participant 4 (P4) (03:20):

And we'd seen some good shedules KLM, especially from Europe and who we depended on, uh, in the Southern cone of Africa, uh, that's daily, uh, from Amsterdam into Johannesburg and into Cape town. Although Cape town is quite a new development and we're glad to see it. Um, so obviously the, the, uh, the need is there, the you know, the, uh, the demand is there for the cargo and these schedules all being are being run. When is passenger travel coming back well, are all to themselves or international, uh, cargo, um, civilian airline, uh, organization, their ICAO, uh, their predictions is we won't see pre COVID activity, uh, from a commercial airline perspective until 2024, that is the scale COVID has had a, and it's serious. It really is. And, you know, it's companies are looking at how they negotiate, how they rework this is the new norm. Um, and, and that goes through every stage in a customer interaction. How do we, how do we interact with our customers? Because nothing is certain things, countries go in and out lockdown, uh, you know, uh, schedules have changed, you know, it makes it very, a bit of, um, unreliable, . Yeah. But busy, you know, it's always strained.

Researcher (05:07):

Yeah. So chaos. You're always fighting a fire.

Participant 4 (P4) (05:12):

Yeah. So where we used to, you know, I mean, we used to communicate with our, you know, our standard performances and those were literally set in stone every quarter they'd be changed. And they were pretty much set in stone, but now, you know, those could be out of date within a week, you know, because something is happening somewhere in the world is, and that's why we go to the transit time with service quality, my boss, uh, PM you know, his team work, um, on that and say, okay, what's our performance like, and, you know, when w when I think back to April, this, uh, yeah, April, 2020, you know, some of those transit of times were bad, you know, so, but we're now we gradually got back our transits, ours. We are the best transit at times. I think of all the courier companies.

Participant 4 (P4) (06:09):

I do believe that, especially in Africa, we're the only game in town because we are saving our own fleet of aircraft. And we were able to use and adjust, you know, we w we started going into countries that hadn't seen a yellow tail in years, but we just restarted it up. You know, we applied for, we applied for, uh, flying

rights and yo, we said, we said, you know, and it was really nice, you know, during COVID you get a little email from, so like, Ghana, you know, a small country and saying, we love to see the, we love to see the DHL plane, because we know we're connected with the world and you're the only player in the sky. So like,

Researcher (07:04):

Yeah, it really is something good that actually came out of, um, COVID. So earlier you mentioned that, um, the passenger flights are about at 30% capacity. So would you say, uh, based on your own, on your own experience, do you think that there is perhaps , or was perhaps a decrease in customer satisfaction for DHL? Um, and I'm referring now to longer transit times?

Participant 4 (P4) (07:33):

No, the complete opposite we picked up so much business. We had record years.. We had a record year last year, and we're on for a record year, uh, this year, uh, Y I mean, from a Sub-Saharan African perspective, we are still the only game in town with our own fleet on the continent. So we picked up, you know, a lot of freight forwarding customers because the freight forwarders, they have many challenge because, you know, the cargo aircraft were full. We used our buying power because we are, you know, one of the biggest, uh, one of the biggest, uh, express companies in the world, you know, we can use our buying power with our airline partners, but we can guarantee not guarantee that space, but we're up there with the, you know, getting our cargo on board and having those contracts in place. So, no, I mean, it was complete opposite. Um, we went down and we actually said, if I looked at last year, we achieved, we actually decreased in volume. Okay. But what happened, increased in weight. And that was because we were taking on freight forwarding freight to it a lot more heavier shipments

Researcher (08:57):

Okay. That is really interesting. Well, that's where it's probably now stemming from DHL being the only game in town. So why would you say, or why would you say you're in your, in your own opinion, you think is what is the reason behind, um, the packages now being more, more heavy? Is it, is it because, um, perhaps DHL's Weighting was a bit more expensive for heavier packages, but now, since now the only game in town, um, during COVID you basically have to use it

Participant 4 (P4) (09:29):

Exactly. They didn't, they don't have the choices to, who can provide the services. So the increase of weight was, I mean, from an express perspective, what do we do? What's our core business. We are parcels and small packets. So, you know, a half a kilo to 30 kilos is that also like core business. So what we saw is we

saw, let me take you through a timeline. So April May, 2020, we started picking up, uh, requests for quotes as PPE shipments from China, you know, and we saw that weight there, I mean, these were big shipments, you know, uh, 30 tons and stuff. So, and then what we saw is we saw the heavier shipments also being funneled through us. Most customers, they all have an express account for their small, fast documents, a small parcels , and a logistics account with another with a freight forwarder to do their larger shipments, because indeed freight forwarding. It's a lot cheaper. We go up as the weight goes up, And what we saw is, you know, the freight forwarders, they were, they are still having real trouble because, you know, if the capacity's not there, the prices go up as well. So it actually puts us on par with the other ones and customers can come to us and go, can you do this, you know, in a better time for the same price. Of course we can, because we've got our own global fleet as well. All I've got to do is get it to Europe or middle east, then it goes on to one of our, one of our Intercontinental flights.

Researcher (11:41):

That makes perfect sense. Thank you, George. Um, okay. It's, it's really starting to paint a picture. So with what other departments did the joint operations centre really work closely with in COVID-19 related disruptions?

Participant 4 (P4) (12:05):

Every single one. So when we say joint operations center, that means it's every single business. Well, I'll not say business unit, but it was every single business unit because that was, and it was every single country in SSA, but also every single function, functional department, everyone has something to play, whether it was finance, whether it was operations, whether it was customer service, whether it was commercial, everyone played their beds. And we actually had functional leads across the, uh, in the joint operations center.

Researcher (12:42):

Okay. Okay, great. Um, would you say that what you've learned during the past two years, almost two years, uh, from the pandemic to really establish really good risk mitigation plans, or what are you doing with everything that you are collecting?

Participant 4 (P4) (13:05):

Okay. So a bit of history for myself. Okay. So I'm actually designed to do this. So that's why I was put in there by, and maybe because of my history. So before I joined DHL I served in theair force, uh, in the United Kingdom. Um, and I was a logistics specialist, so I was working in war, war, torn places and doing

humanitarian work. So when it comes to you, uh, yeah. So, so when it comes to, you know, uh, pandemics and stuff, it's easy, you just have to be trained for it. So, yeah. I just brought a skillset that I had already. I was in the right place at the right Time. Yeah.

Researcher (13:57):

Sure. Okay. Okay. That's great. Um, so if you think about digitalization, what is your personal understanding of it? I mean, it's the whole 4th industrial revolution and all that obviously is thrown around every day, but what is your personal take on it?

Participant 4 (P4) (14:19):

Um, I think it's good. I think it's, um, from a customer's perspective, uh, and from a logistics perspective, you know, it's about sharing the data. Um, it is electronically, um, logistics has been very paperwork driven. So with the master waybills, customs, customs document, always being, especially in Africa, it's always been very document, you know, hard copy document blue stamp, blue pens, cetera. Um, we need to move away from that the way the global e-commerce, uh, is expanding, um, you know, countries, countries, administrations have got to get very used to this, and they've got to shift their view, um, on digitalization, um, well customs, uh, or, uh, organization, uh, and the world trade organization, uh, that they're both pushing, uh, for digitalization. What does that mean? It means faster clearances. It means shipments can get A to B to be quicker with less, uh, inspections.

Participant 4 (P4) (15:27):

There's more, um, uh, it's, it's more transparent, um, with the data sharing, um, obviously from a security perspective, um, the sharing of data is critical, especially on airlines, et cetera. Um, yeah. Also, I mean, I look at it from that point of view. I mean, I'll, I'll give you an example with e-commerce and why it's important. Um, cause obviously that is part of the, the big digitalization picture. When I, when I, uh, joined SA first in 2012. Okay. There was no real e-commerce business, you know, it wasn't like the UK, I was used to the UK. I could go on, Amazon eight o'clock at night would order a iPod. Uh, if it broke, I could order an iPod and they'd be there eight o'clock in the morning through my letterbox on Amazon prime. You know, there wasn't that here, you had a, you know, you had this little baby company called take a lot, then, you know, just starting out.

Participant 4 (P4) (16:43):

And I mean, they've grown now, obviously, but now we see Amazon coming down to the screen on to, on to the, uh, onto the stage, uh, actually one of my customers. Um, and you know, you can order on Amazon

in South Africa now, and it could be Here, within a couple of days, you know, so Sars, they are aware of it. I'll have to, I'll have, uh, a couple of calls with Sars regarding the commerce. So they are looking at, um, we've already seen a bit of a concession, um, by SARS where they've amended the customs act. Um, previously you were only allowed three imports or exports up to 5,000 Rand a year. Um, and it's unlimited, I think it's 50, 50,000 and then a limited number of shipments coming in and out to the Republic. And that really is to cater for your, average, normal citizen who wants to buy online, you know, they are aware of it. And they say, you know, by working with the big e-commerce companies like Amazon, they know that the information that the data they get is true and accurate and, you know, they can collect their revenue from that, um, via whichever company brings in, whether it be DHL express or FedEx or, or whoever. So it's a good source of income. And that is one of the benefits, um, of digitalization.

Researcher (18:25):

Thank you. I do agree and, and I mean, today we, as consumers, we want, we want things fast. We want it now. Um, and that is just the way it is happening and we need to adapt with technology as it is changing, but do you think the DHL's, uh, culture is ready for this? Do you think the employees embrace digitalization or do you think they would be, or that are, um, and this is just your personal opinion. They are perhaps a bit more, um, reluctant to it or, uh, or even feel threatened by it.

Participant 4 (P4) (19:10):

No, on the contrary from a, from a DHL express, uh, perspective. When I came on board, you know, I was quite amazed at how much, um, how much digitalization tools, online tools that we have. Um, we're probably one of the companies that, uh, have, you know, a vast array in our toolbox, um, digitalization, um, it's well, well, it's all ensconced into DHL culture, you know, because we have our tracking online tracking, you know? Um, so I think from a DHL perspective. No, it's, it's been, uh, you know, um, digitalization is part of the organizational culture. Um, although, you know, I think people embrace it. They don't embrace change because that means organizational change. And that's very difficult in a, in a, in a, in a company as big as DHL. Um, you know, Ken Allen, you know, he had the vision, he made it, he made it digitalized.

Participant 4 (P4) (20:19):

You know, I think he did a lot of work with it without international specialists. certified international specialists, everything was done online. You know, you can do you do your courses online it's because we're such an international company. We have to be digitalized to connect, to train, you know, it's, it's quite an amazing company. Now, if we go back and you said, George, okay, so let's look at another

organizer or another organizer like customs. Now, what the customer, one of the biggest, one of the biggest problems with customs and maybe government, um, organizations when it comes to digitalization and I will use customs as a, as a, uh, as an example in Ethiopia. So Ethiopia is a formal customs inspection, um, for every single shipment, whether it be dock or parcel that comes into the country and they're inspected by us, you know, this is long and laborious and, you know, we've approached Ethiopia quite a few times and say, well, what about digitalization?

Participant 4 (P4) (21:35):

What about making yourself more productive? And the problem is, is the guys up at the top. So the ministers, they get it, they see digitalization as the way to go, okay, they're understanding. But when it comes to the officers on the ground, you know, they see it as a threat, they see it as the threat to the, their jobs. It's not, it's just going to make them more efficient, but they see a computer and they see technology is coming to take their jobs. And that is the problem you've got in Africa because they didn't understand the benefits for them.

Researcher (22:17):

Hmm. Hmm. That makes a lot of things. Yes. Yes. That makes a lot of sense. Okay. So, um, can you think of any digital tools that were particularly useful to you in managing, um, Covid related disruptions perhaps by paperless trade or some robotics process automation or big Big Data Analytics, AI, you know, internet of things, all those, all those types of things with an SSA?

Participant 4 (P4) (22:45):

No, I saved the world with a spreadsheet.

Researcher (22:52):

No ways.

Participant 4 (P4) (22:58):

So I think one of the, what allow, what allowed us what allowed us to be quite good was all tracking. . Uh, so tracking tools definitely. Uh, they definitely allowed us to, you know, uh, be able to track shipments, but be able to give that instant communication to the customers. Uh, but for me that was, that was it, you know, um, because it was more up, more operational, so yeah, it was, yeah, really. It's just, it was just the tracking tools.

Researcher (23:43):

Hmm. Hmm. Okay. Okay. Good to know. And then, um, what is your personal opinion about paperless trade? I know earlier you, um, you spoke about it a little, so, um, do you think it is, it is really feasible throughout SSA? Um, I mean, you, you mentioned the other African countries now, for example, Ethiopia who is a little bit more reluctant, um, in, in digitalization, do you see these tools spreading throughout Africa or do you think we are not just there yet?

Participant 4 (P4) (24:16):

Not just the, I can give you, I can give you the list of African countries with paperless trade if you want.

Researcher (24:23):

Yes, that would be great. Please do. Okay.

Participant 4 (P4) (24:27):

You say I'm helping with someone's education here. Um, so yeah, so you made it yeah, you you're quite right. We're not there yet. Um, everyone has been harping on about, um, the African free continental trade agreement. Um, yes, it's brilliant. It's going to be a silver bullet. Yeah. Not for a while. And they haven't even decided on tariffs now paperless trade would be pivotal, um, to get that going. But the problem is everyone likes hard copies, blue stamps, make sure it's, uh, make sure it's proper. So there are only, um, how many they are, but I'll share it with you. Um, there are only certain countries and then mostly the, the more mature companies, uh, countries, um, South Africa for one, they can do it, um, Nigeria for, for another, they can't, uh, because they want to see the original invoice.

Researcher (25:35):

So, um, what main challenges that you experienced during COVID 19? I know earlier you mentioned the passenger, the passenger flights, um, um, well, there's obviously a massive reduction in that, but besides that, um, some border closures or, uh, governmental issues, legislation issues, anything like that.

Participant 4 (P4) (26:15):

Yeah. So, um, I think in the first days of COVID, we started with a bang and we had the famous, uh, Mr. fekile flashing his phone, you know, and say, look, no fly zone well done what have you just done? And we had to get to a young Jed, to go and lobby, uh, on behalf of American express parcels association to say to him, what have you done? Um, because by basically, you know, making that no fly zone, no aircraft coming in, he basically cut South Africa off from the global supply chain for roughly a week.

Researcher (27:08):

Yeah.my personal opinion is we still won't know for, I don't know, maybe the next thing is we, we will still feel the, uh, off the shock of, of it, but I actually did not know that someone had to go and talk to someone. Um, no, I w I didn't know that at all. It is. It is. Yeah.

Participant 4 (P4) (27:47):

So we did a bit. Yeah. So we headed the lobby, uh, lobbying that jed, uh, because Jed knew him, the managing director, South Africa, he is ex head of sales. Um, so he has the contacts. He knows, you know, the players, like the minister he could get, uh, to get some face time with the, uh, with the minister, um, and, you know, and to be fair to the ministry, he said, look, we've never done this before, and we're going to drop the ball, but we rely on, you know, you know, we've, we rely on your direct, your, you your expertise. And he did listen, uh, I got to be fair to him. Uh, he did listen even if it was just like in bits, because what he did then, is he said okay. So only, um, it was only essential medical supplies, et cetera, but yeah, I mean, he couldn't understand why, you know, there was no flights coming in. Well, there wasn't enough medical, uh, essential medical supplies to fill Aircraft, because you've got to remember non essential goods have a symbiotic relationship to essential medical supplies. Why? Because it fills planes, remember airlines, they are businesses they don't fly fresh air in the world.

Researcher (29:25):

So it took a few weeks to get that across, and then he did, and then he opened up a little bit and yeah, common sense prevailed.

Researcher (29:41):

I never knew that DHL had so much influence in, in this. I mean, this is it's huge

Participant 4 (P4) (29:49):

Not only DHL as such. I mean, we, we, you know, we wanted to lead companies and, um, by the south African express parcel association. So, you know, Jason is on that, uh, on that board, um, you know, so we work very closely with them. Um, DHL usually take the lead because we seem to be the only one interested. Um, yeah. So we did it on behalf of all our competitors as well. Because Jed had the contact.

Researcher (30:43):

Yes. Wow. Okay. That is very, really, it is something big. So, um, do you have any interesting projects, maybe that's going around with regards to digitalization, currently, something in the pipeline,

Participant 4 (P4) (31:02):

Global customer reporting tool. GCCR. That's my baby. And that's coming online next quarter. I'm really looking forward to that with South Africa.

Researcher (31:19):

Do you mind to tell me a little bit more about it? What is it? What's, what's the aim?

Participant 4 (P4) (31:30):

Um, yeah, so basically we've been because of the way our system is designed, that is all around the waybill. But when customers, especially when they're doing back returns and then maybe have a customs audit is the, the local government will always ask for an MRN. So movements reference number, which is customs generated. Now, we don't have that visibility on our normal system. So what we were trying to do is all the clearance data so how much have I paid over the last year, or how much duties did I pay, you know, all that data we didn't really have that we had to, we had to go in and we had to do it manually. So it was long laborious. And a lot of our competitors they have them, because remember DHL is and express parcel business.

Participant 4 (P4) (32:34):

Um, so the way we did it was we based it around the waybill, which was, you know, it was probably logical at the time. Now the people that copy this obviously looked through all the processes and said, well, actually you need to base it around the , the clearance. Yeah. Because everything is about the clearance, so our competitors, they can do what GCCR does, they can do everything. So we are chasing, you know, them now saying, well, we need this reporting because every, all the big companies, the global companies, they're all asking for this kind of reporting, so I can send you the deck on it so you can see what it is. Um, and give you a bit of insight

Researcher (33:21):

Yes. Please do please send any supporting documents related to that I would really appreciate that.

Participant 4 (P4) (33:34):

Um, okay. So then last one. Okay. So my second one is block chain for IBM. So yeah, I'll send you IBM deck as well. Okay. So they've got they, uh, they want this, we had a problem a few years ago with the quality of, uh, Clearance and the data that our, uh, declarants were inputting when doing the, uh, the clearances for IBM. So all they wanted to do is they want to find a way to eliminate all the clerical errors, et cetera, wrong codes, or country of origin. So they came, they actually came to us and said, look, DHL. And we're actually building a block chain. Uh, we'd like you to be involved, uh, as our logistics partner. Um, yeah. So I've been on that project now probably two years, two and a half years actually. Um, and went it live in the go live. It went live in February. Yeah. We went live in February and as far as we can see, it's looking good, uh, w and I will send you the deck, uh, but basically it's Nigeria, Nigeria, Ghana, Mauritius, Kenya. Okay. There they're the countries that have gone live with it. And basically it fills out the single administration documents, all the data required to fill that out, so it limits the human interaction and mitigates mistakes, there is still human interaction because none of the custom systems in the region are mature enough to actually have that data and connect

Researcher (35:34):

Yes, that is really, really interesting. Um, I wanted to ask, um, oh, I've heard actually within the office, um, I've heard, uh, think it was one or two people saying that block chain is so far in the future. It is, um, it's not at all viable for Africa yet. Uh, you obviously have now, and you will send me that information please, but you, you have, um, you have explained that it is actually going live already.

Participant 4 (P4) (36:35):

This isjust for IBM, this is just for IBM. You got to understand that, you know, I think from a DHL perspective, I think block chain is a little bit far off. Um, however the, if we look at something I think it is Saudi or, or UAE, customs, they have block chain as well as we get as DHL gets. Uh, what's the word, I'm sorry uh, visibility, but to get, uh, visibility of the block chain and get used to it I think we'll see things develop the problem we've got from an IT perspective from a global IT perspective is there is a a lot of projects going on. Uh, so we have 2 22 exits. So the digitalization basically of getting people, getting customers, uh, invoice, data electronically, et cetera, all, everything was channeled into that, um, this year, because it all happened this year. So, um, I think they'll start looking at the other projects and maybe block chain, but I think it'll be, I think it'll be sooner rather than later what the people are thinking, but from an African perspective, they're not ready for it. The, from a, from a customs perspective where you would use it, they're not mature enough yet.

Researcher (38:25):

Okay. Okay. That makes perfectly sense. Thank you so much, George. Um, we have actually covered all the questions that I had, um, on my side. So I would like to ask you if there's anything else that you would like to add to the discussion, maybe something you that just came to mind.

Participant 4 (P4) (38:46):

No, I think I've probably covered everything. I mean, from a, from a digitalization perspective, I mean, I'll send you what I got. Uh, I'll send you, the IBM deck, uh, the block chain. Um, I'll send you the JOC. I'll send, you the list of PLT countries. If you need anything else, please just give me call

Researcher (39:11):

Thank you so much, George. And thank you for sending me all of that. I'll go through it. And then if you don't mind, if I do have any questions on it, would it be okay with you if I just pop you an email and you can respond whenever you have time?

Participant 4 (P4) (39:25):

Well, just drop me, drop me a Skype

Researcher (39:29):

Oh, perfect. Okay. Thank you so much, George.

Transcription of interview with Participant 5

Researcher (00:09):

Okay, so please tell me about your role and experience at DHL, your current role just briefly.

Participant 5 (P5) (00:19):

Okay. Sure. So I've been with the business for about a year and a bit to started in March last year. I'm fairly new to the logistics industry, the transport sector. Um, and I am the senior director for customer service in South Africa. So my team typically manages all facets of customer interaction for South Africa. It is the biggest, um, customer service team that we have in the SSA region. Um, and we do everything from, uh, managing booking queries, uh, for shipments to actually managing the collection of that shipment. Um, of course our operations teams literally go out and collect those shipments, but we arrange, um, or the collection times via the systems that we have. We also have, um, a team that manages our key accounts. Um, so these are our top priority customers who have accounts without business. I manage that piece as well. Um, also sort of like a, a basic, um, uh, a query management team for those customers that we believe are our top customers in the business.

Participant 5 (P5) (01:30):

There's also, um, admin teams that perform the function of what called backline. Um, it is basically chasing shipments, um, that could be originating from South Africa or originating from other countries, uh, and giving feedback to those customers on where the couriers are and on what's happening, with they queries. Um, I also have a team that is named a frontline team. They actually a call center team. Um, so it's a, an inbound call center where our customers can contact us for any queries that they have under the sun. And we either help them, or we direct them to the relevant people, nine times out of 10, we help them, um, because it would be something that is within our scope of control. We have a number of, uh, bots in the team that manage a function called our service desk unit. So when, uh, customers, um, want to question or query anything via our website, they can either send us a note on the website and that comes through to a live person or the, uh, the bot will handle it.

Participant 5 (P5) (02:35):

Um, we've got a bot intervention where the bot will be trying to answer questions before handing that over to, um, an advisor, which are what my staff are called. We also have a, uh, another RPA bot, which is a WhatsApp bot. So there is a WhatsApp phone number that our customers can utilize, um, and contact

us to get any information on shipments that they need, um, and quite few other digitalization bots that are coming up in the pipeline outside of that, I've been in customer service for 20 years. Um, in that time working in this kind of environment, the customer service environment, um, in, um, my previous company, I worked as an outsourcer, so I would handle major, um, customer service departments for companies like Coca-Cola tiger brands a lot of the FMCG, um, kind of, uh, off-brands um, I managed teams in the U S the UK, Australia, and South Africa. Um, I am also the, um, customer service expert, one of seven customer service experts. Um, in South Africa, I am the ambassador, um, again, across EMEA for, uh, the global contact centre organization. Um, and I have worked with various different technology firms to bring digitalization into contact centers over the last while. Um, I've been recognized as a pioneer with a couple of awards under my belt around digitalization as well.

Researcher (04:11):

Wow. That really is an excellent so thank you so much any you've got, um, you've got quite a lot to do to put it, put it simply. Okay. That's, it's great. It's it really is great. So, um, you mentioned earlier, uh, well, when you spoke a bit about digitalization, how would you say in essence COVID 19 actually caused disruptions in your sphere of work.

Participant 5 (P5) (04:44):

Okay. So it's been major, um, I mean, as a business and a business off the, I think a lot of our, our top tier businesses, um, have been focusing on digitalization, but the pandemic has sort of forced us, um, to, um, to progress on these initiatives much sooner than we would have liked to. Um, I think one part of it is that we seem to be at a mini businesses again, not a DHL specific onset, is it, we in this kind of environment and call center environments always wants to be in control of what happens around our staff and our customers. And because of that control, you know, whenever we spoke about flexibility, um, off working hours, it was always working hours. It was never working space. And so the pandemics for forced us to move lots of people to work from home.

Participant 5 (P5) (05:37):

Um, like I say, we weren't ready for it in the beginning, we struggled all of our key, uh, KPIs had failed, uh, for months on end. Um, we continue to sort of at some point, uh, have a lot of our people still come to the office again, because we thought the level of individual, you know, this is never going to work. Um, and then there was the technology technological issues that we had where not everyone had a laptop, they had desktops. Um, we didn't have 3g cards to give out to people. Our people did not have fiber connection at home. And it was so many different things that have happened at the time that we, we sort of ensured

our people were working from the office and covid struck at our office and when it did, this was roundabout, um, April towards middle to end April last year.

Participant 5 (P5) (06:29):

Uh, the pandemic came to us. The office sent a lot of our people out with COVID-19 and when that happened, we had no choice, but to mobilize the teams to work from home. Um, I remember sitting in late in the evenings of the office packing boxes of, uh, desktops. So we could send these to our staff home, wait for them to say that the courier has arrived, um, and ensure that all of the plugs were in the box and do a check. And, you know, it was so many unnecessary things because we should have, we should have planned better, um, in actual fact pre COVID in actual fact. So, um, we, unfortunately one of the people at the receiving end of some of the nastiest KPIs during that time, we actually had to even, uh, hire new people, um, for the business to hire temps that would come in and solve a problem because our people got sick. Um, and that led to an even greater problem because we started managing KPIs. Yeah. But our quality to our customers with specific, um, customers are complaining more, the people that we had hired as Temps, didn't actually understand our business, they want in it for the long-term anyway, because again, they were Temps. Um, and, and there was a whole lot of, um, you know, issues around what had transpired there after, um, with the, the, some of the decisions that we had made, uh, off the cuff.

Researcher (07:57):

Wow. That is really significant then. Um, I can, I can relate with some of the other interviews I've had and with operations, how they explained what happened with regards to the transit times. And, you know, I can, I can only imagine if a customer has to wait longer for a package that you would be at the forefront, you and your team would be at the forefront in, in having to provide answers and dealing with it. Was there any, um, specific to technology that you made use of, um, that's that's really,

Participant 5 (P5) (08:34):

Yes, absolutely. So, um, you know, listen, somebody in the contact center space in particular, um, there are technical tools that we have, um, that we make use of. So it's not, you know, an in-house system. It is an external system. Um, just again, because of the, the makeup of the, of the system and the fact that it is a contact center specific system. So we had utilized that kind of software. We were utilizing it anyway, but there was a slight change to the kind of software we do use in the office versus home-based uses. So we realized that, um, one of the other things that we weren't using or as often was a SMS tool. Now, what would happen is if a customer calls in and say, um, you have hypothetically speaking, you've got 10 people taking calls. Uh, and now I've got a hundred people in my team.

Participant 5 (P5) (09:27):

So say for example, you have 10 people taking inbound calls and customer number 11 phones in what typically happens is customer number 11 has to wait until one of those 10 people are done with the calls before best person, that customer gets approved by one of our advisors. So typically what happened was we found that more and more customers wanted to use shipping solutions because a lot of people that were traveling and pre lockdown a lot of people people that were traveling when they traveled, took things for family members. So they took, I kid you not, they took medication, they took clothing items. Um, they took chargers, they took laptops. You know, it's a whole range of things that, uh, customers were sort of taking on planes with them. So now when Lockdown happened and none of those flights were leaving the country, um, the only option you had was to use a courier like us to transport that stuff.

Participant 5 (P5) (10:23):

And so we started seeing a different behavior we started seeing vitamins being shipped out. We started seeing prescription medications being shipped. Um, and that obviously it comes with whole host of issues because you cannot just send prescription medication, they have rules and regulations about what goes what's allowed in different countries. Um, and if you send something that shouldn't be there, it gets destroyed, it didn't get returned. So it just created more havoc for customers. So what would happen is because of all of these queries and people wanting to speak to somebody to get answers as to how long it's going to take for a medication to reach a different country. For example, you found that for the 10 advisors, um, that we were hypothetically talking about, they would have been 50 calls that came in at that particular time. There were days that, um, I, my customers had abandoned calls.

Participant 5 (P5) (11:14):

So basically an abandoned call is where you as a customer contact us. And when you contact us, we are unable to take your call for whatever reason we could be busy. And you put the phone down, uh, because you'd been waiting too long. They were days in April that I remember where we had 700 abandoned calls in one particular day and it went on and on and on like that. So we started to use some of the digitalization initiatives that were the support tools that we had, like, um, the, the SMS tools, if a customer called us from a cell phone number, we were able to see what numbers customers called us from. And if, uh, and most of those numbers are usually cell phone, luckily. So we extract that data from the system immediately, and we start sending messages to those customers to kind of say, uh, you know, in keeping with the 160 character content SMS, by the way, we kind of say, we're so sorry that we missed your call. Um, we'd love to speak to you. Um, but you know, it's really busy right now, basically contact us on the

following platforms. And we put in links to our website links to the WhatsApp bot, um, the telephone number links to our live chat. So we kind of try to direct our customers to use the alternative platforms that we had available for self service at that point.

Researcher (12:32):

Yeah. And that is really great because, I mean, at least you get feedback and you get that nice, you know, that nice connection with the business way, the sorry, we missed your call. And these are alternative sources. You can get the information that you need instead of, you know, just trying to call again and again and again. And, um, as you mentioned, the over 700 abandoned calls in one day, that is, it is a really significant, um, if I might ask , has that improved a lot, um, up to now, or are you still having some COVID, um, related feeding issues and system issues and things like that?

Participant 5 (P5) (13:13):

So it has, um, it has been resolved quite substantially. And I think, again, more than, than anything else, we were kind of forced to do it because, you know, our customers will complain, but, um, so whatever what ever, um, plans we had in place sort of fast tracked all of it to get to the point that we're at now, our average abandoned number, um, on a daily basis. I'll tell you, I mean, I'm looking at my ques right now, our average abandoned number for today for example, was 12 calls abandoned

Participant 5 (P5) (13:46):

And those could be, again, I don't have the detail, the detail will be onto the report tomorrow. It's usually 24 hours later, but, um, I there's probably a significant amount of those calls where customers sort of release the call in the first 10 or 20 seconds of dialing the number, which is not significant.

Researcher (14:06):

Yes. Yes. So, um, during all this chaos with what other departments did you work with closely in managing the COVID-19 related issues and queries, and as you mentioned, um, that's actually something I never thought of is, is the, the not wanting to seem to things, you know, seeing the change in behavior, as you mentioned, the prescription medication and things like that. Was there any other departments that you really worked with closely that you needed the input?

Participant 5 (P5) (14:36):

Yes. So we, we worked with a lot of, I tell you why the one touch point, um, that I didn't mention to you about customer service is that, um, every country, every DHL express business and the country has their

own country website on the country website is a picture under the complaint section of the country manager. So the managing director of that country, and under that picture kind of says, um, you know, along the lines of talk to me, if you have any issues. So our country manager or managing directors picture appears on the south African website. And it says, you know, um, uh, I'm here to hear any of your complaints or compliments that you want to send my way. Please connect with me. It's is an acronym that we refer to as STTT it stands for straight to the top, and it goes straight to the top to this particular individual.

Participant 5 (P5) (15:33):

Now, of course, our managing director doesn't have the time to look through every single customer query we get hundreds of these every month. And so my team, um, I've got a specialized group in my team that manages those kinds of complaints. Now, why am I telling you about this? Because your question around which teams do we deal with? The answer is all of them. Because when these complaints come through, the complaint could be something related to our e-commerce platform, which means IT needs to be involved. It could be an account customer, which means, um, the sales team needs to be involved. It could be a finance related issue, which is when finance gets involved, for example, so closely based on the actual issue of the pandemic, we work very closely with it, of course, just to ensure that we had our people mobilized, um, and ironed out any of those issues.

Participant 5 (P5) (16:28):

The second team that we worked quite closely with was our sales team, and the reason behind that is, they deal with our top customers. And so if there is a problem, they need to be kept in the loop of anything that is happening, uh, outside of that, whenever they were strict to the Tufts. Um, these could have also been billing queries where customers were saying they were billed incorrectly, or they felt that, um, you know, there was something that you'd refer to as weight discrepancy. So basically if you call me and ask me to pick up something from your house, um, and I'm DHL, I say to you, that's fine, you know, what does the package weigh. And you could tell me the package is one kilogram and needs to go to Australia. Um, I'll quote you, and I'll say to you that package of one, kilogram is going to cost you 1,400 rand.

Participant 5 (P5) (17:18):

Um, but it is subject to change upon reweight. So I come in and collect the package from your house, and I take it through to our center to sort a, and start moving it along to get it to a plane. When I go and take us back to the sorting center. And I reweight, um, you know, I quoted you on the one kilogram worth of shipment, but actually you didn't have scale. So in actual fact, the shipment weighs 1.5 kilograms. And so,

you know, for 1,400 grand, I possibly not going to charge 2000 grand for that shipment. So I would come back to you and tell you that you owe me another 600 grand in order for the shipment to proceed. And you could either say, no, it's fine. Um, actually give me the shipment back 2000 is too much of money. If that's the case, you've already paid me 1,400 rand so finance will need to refund you that balance because it's already gone through our bank accounts.

Participant 5 (P5) (18:11):

And, um, you know, we, we don't handle any of that. So I would have had to contact finance to get the detail. I'll tell it to you, say, go ahead, I'll make payments. And we'll send proof of payment when you make the payments and you send me proof of payment. I still have to submit that to the finance team to locate it in the bank accounts to the bank statement. Because as you know, um, you know, there are people that would lie about making those kinds of payments. Um, and so those are, that's kind of how each of the teams will get involved.

Researcher (18:41):

Wow, sure. Um, okay. So there is a lot of collaboration going on. So how, how does this happen? Day-to-day how do you collaborate? How does a query that belongs with finance or something that belongs with IT? How, how does it get routed?

Participant 5 (P5) (19:00):

So we've got very intricate systems. We've got, uh, platforms where work gets allocated from one to the, other so it is not as simple as saying, you know, I need to contact finance. So I'll send one of my friends in finance, an email and asked him to look into a query. We have to intricate systems, um, where a query can move from one to another. We've got systems like acronyms systems, like Gemma systems, like CSB. We've got something called the SCT platform as well. So basically these are tools that allow us to communicate interdepartmentally, but at the same point is able to manage our service level so we can see how old it clearly is, even though it might reach finance today but it might come from customer service five days ago. So you're able to kind of see how long that query was in the queue, um. I think the one thing that we potentially can do better is to integrate these systems to work better, because like I said, its various systems. And, um, I believe in, you know, the future that we want to get to, we should have one or two systems, not these various different systems, you having different passwords for every single one of them. And they all operate interdependently, for example. So that I think is something that we do need to consider.

Researcher (20:24):

Hmm. That was actually bringing me to my next question. So I wanted to ask that earlier, you mentioned with the load of queries you had, that you had to employ a lot of same, um, well, temporary staff. So how did they handle the being a multitude of systems? Because I assume they need training now for each one of them, instead of having a more standardized approach in, in, I mean, independent means where you don't really have time to, you know, as, as, as it would be in normal day to day, you have time to take someone through those systems, but now there's such a big load to deal with. Uh, how did, how did you go about to ensure that you continue? And, I mean, I know you mentioned, um, it went badly with the KPIs at first, but over time.

Participant 5 (P5) (21:13):

So excellent question. Um, we didn't manage very well. What we did was our training process. Um, and again, you know, reflect processes for almost everything in our business. And our training process is actually one that gets conducted over a six week period. That's how it should be done. However, because we were in a pandemic and our people just getting sick one after the other, we had absolutely no cover. They were days that we just weren't meeting service levels. I mean, there were months on end not meeting service levels. So what had happened was we, uh, reduce the training time from six weeks to two weeks. And we went and found people that were out of work in contact center environments, because, you know, if you've got somebody with at least contact center backgrounds, um, the assumption is that they would cope a lot better than taking somebody fresh off from school and upskilling them into a call center type environment.

Participant 5 (P5) (22:18):

So we went to the, for people that are highly skilled and brought them onboard. And of course the repercussions of that were terrible. One was that those people were too skilled to be in our environment, so the first chance they got to getting a permanent role, they left. So they would just go up, secondly the two weeks training was never no way near enough for these guys. So because again, the systems are all completely different, as you know, lots of in-house built systems, so that I struggled quite a bit. Um, and we found the pressure being put on the poor supervisor who had to be stretched between various different people to ask for help. Um, we then had to ask most of our supervisors to return to the office and just be available. And I remember there were days where these new people would just raise their hand or stand up and they'll be, you know, waving a flag, whatever they could find, uh, to wave to get attention so that they could be helped. So those people, by the way, also weren't allowed to work from home, because how

then do you get them the assistance that they need on the spot, if they were in the building and we had all our trainers, every one of our supervisors around that would have helped them to get, um, to get, you know, that kind of priority. So in hindsight, it was not as simple as we thought it was going to be, but it was a very hard lesson to have gone through

Researcher (23:38):

Wow. Okay. I can understand. So, um, when, when everyone had to work home, um, you now mentioned that this does not include the new people where they're allowed to at a later stage work from home later after the the two weeks training maybe?

Participant 5 (P5) (24:00):

It was yes. They were allowed to work from home, but not after the two week training, because after the two week training, they struggled for months thereafter, we have, um, a concept of mystery shopper. Um, I'm not sure if you're familiar with the concept, but basically we hire an external company to call in and pretend to be a customer. And that external company measures us against set criteria on how our people handled, um, a call and South Africa, meaning my team had failed, um, on those mystery shopper calls months on months at a time because all of our new people were being surveyed. They didn't know how to handle themselves. They were very nervous. Uh, they were overwhelmed, the training is not sufficient. Um, and, and this went on for months whilst we had to go back and redo. And in hindsight, if we stuck it out for the six weeks, I've gotten to actually focus on the training properly. We wouldn't have suffered so much in the long run. So we put more focus on the here and the now rather than the long-term benefit.

Researcher (25:08):

Uh, okay. Okay. That makes sense. Um, so would you say that the, the employees now being, uh, the, the new teams, as well as your loyal long-term employees, would you say that there is a culture where they show a, um, I resistance to change, maybe, um, let's say now with how training systems change or, um, if COVID forced things, a user to use, another new system in a new way, is they, from what you can tell a factor where there's a high resistance to change factor and, um, you, you were struggling with that a bit.

Participant 5 (P5) (25:49):

Yeah. So I think change management in general is a problem. I'll tell you why. Um, there were some aspects and, and people, you know, wouldn't necessarily, um, share the direct experiences would mean some instances because of who I am. They're not going to tell me that working from home is not really great for them because they would rather want to be at home than come to the office. Um, but you know, being in

the environment for such a long time, I can, I can read the undertones. I know exactly what some of the issues were that people who really struggled with, I would change management perspective. They were issues on both sides of the fence. There were issues from a staff member's perspective where, um, they, you know, would normally, for example, start work at eight o'clock. They wouldn't stick to their patterns of waking up at six o'clock.

Participant 5 (P5) (26:34):

They'd start to wake up at seven 30, for example, and get delayed and not start at eight o'clock. Now this was not a widespread issue. These segmented issues with certain individuals in the team, then you had the supervisors that were mostly working because of the new inductees, but their staff were working from home and they will only be able to support with the new inductees. So the problem with the supervisors then was a trust issue because they were wondering, you know, now that our staff are working from home, you know, how much work are they actually doing? Are they working as efficiently as they should? And we started to see certain things go down in measure. For example, we've got, um, some issues with, uh, uh, average handling time. So when, when a call gets answered, we've got a reasonable timeframe that we deem is reasonable to end the call with.

Participant 5 (P5) (27:32):

And what started to happen was people took longer on calls. So we allowed it because there were issues like load shedding issues, like connectivity, depending on where the individual lived. So that contributed to a higher average handling time than you would have in the office, et cetera, et cetera. That then means that you take less amount of calls in the day because you're spending more time talking to customers. And so in lesser calls will come to you. And so th th the entire measure of those things were, um, also sort of, you know, at this point, exasperated. Um, and we got to a point where, um, when we had to be double checking and triple checking how our people were handling themselves with this entire change, the last piece was also around, um, the change management process in itself. So when we asked people for example, to come into the office to collect gifts that were being handed out, or, you know, to, to just come and, uh, have a touch base with the leaders, for example, they didn't want to come in.

Participant 5 (P5) (28:34):

They were worried about their safety, and they were worried about what it meant for them to come into the office during a pandemic. Now that for me also spoke to the fact that the change management process was slightly flawed because people like me, for example, I can tell you that in the past year and a half, I've probably worked from home about 15 times, and that's it, the balance of the days I'll be going to the office

every single day. We've been managing health and safety very carefully in the office space and all of these kinds of things. So people were unsure about what the new norm looked like, and they were afraid to come into the office. Those that stayed at home, um, if even if they did have load shedding issues and whatever, we'll watch a lot closer from the supervisor perspective, because the supervisor, wasn't a hundred percent sure as to whether they really did have a load shedding issue, or whether they, um, were, were deliberately trying to create problems. Now all of this leads to the fact that the change management could have potentially been handled a little better. Um, but at the same point, you know, when I speak to my colleagues in, in the other industries, I can tell you that we handled it a lot better than most other companies

Researcher (29:45):

That's great news, um, there's, there's a lot of very helpful and very useful things within this interview. Thank you so much. Um, I wanted to ask you, how did you actually measure the performance of your call center agents calls they were working from home? Um, so you, you mentioned the, um, the handing time of a call. What system do you use or, or how, how did you manage the performance? And, um, I mean, is there a way for you to actually know if they say they have load shedding, those actually do not have load shedding. Um, I mean, I assume laziness, or, you know, that also plays a role in here.

Participant 5 (P5) (30:25):

Absolutely. And that goes, you know, it goes to show for anyone in any industry, but let me tell you, in a corporate environment, it's very difficult to lie because if you are a call center agent, we have a system called Avaya, a V a Y a, the Avaya system is something that transfers calls to a particular advisor. So if I am a call center agent, I will get a login and I have to log in to Avaya every single day, because that's the only way the calls will come through. If I'm not logged in to Avaya, it triggers a message to my supervisor to say that I'm not locked in all of the wallboards that we have. We have wallboards that tell us how many calls coming in at any given second, how many calls we've taken for the day? How many people are logged in, uh, from our staff compliments into the queue at any given time, who's busy on the call and who's waiting for call.

Participant 5 (P5) (31:20):

So, you know, it is such a regulated team. You absolutely cannot lie about where you are. When do I go on tea i have to state that I'm going on tea on the system. And that's the only way the calls will stop coming to that person. If I don't speak that calls will continuously come to you, and if I don't say and now walk away, I go to the bottom. For example, without saying that I'm going on a break, what happens is those

calls will come to me and customers will say, hello. Hello. They'll realize nobody's there and they'll cut the call. So your average call duration becomes shorter. It's a trigger for me to go and see, there's something wrong with that person's line. Let me understand why their calls are such short durations and I can pick up with the person, of course, all of these calls recorded.

Participant 5 (P5) (32:09):

So I know, you know, if there's background noise or the baby crying and all of these things, because those calls are recorded. Um, it also tells me how many calls each person in my team took under their individual names. What the average handling time is, how much break and lunch time they took. For example, the maximum amount of lunch that we offer people is an hour. The minimum is 30 minutes. So, you know, you could come to me and say to me, I don't want to work. I'd rather work in 30 minutes lunch and only take a 30 minute lunch and finish work a bit earlier. And of course, you know, that that is relative to whether you can allow it. If you know, you've, I've worked for you for 10 years in this call center. And I've said to you that I want to finish work half an hour earlier.

Participant 5 (P5) (32:54):

Chances are, you'll give me that exception and you won't give it to other people. So there are people that will work a 30 minute lunch and the balance of the guys work an hour lunch and two 15 minute breaks, and those differ. So for example, if you are a healthy person, you'll take one hour lunch and two 15 minute tea breaks. If you are a diabetic, you're probably going to want more in between breaks because you have to eat more often depending on your chronic condition. And so all of that gets factored into a schedule. Um, and we regulate the entire function via these schedules. So to answer your question around how we measure people, we have all of the measures. We know how many times are people were not locked in, whether they were on sick leave, uh, annual unauthorized leave, annual leave. Um, we know how much of calls they've taken every single day, um, and whether they were on training, whether they had coaching sessions and all of those kinds of things. Wow, this is really

Researcher (33:50):

Fascinating. So let's now say that if someone that, um, claims to be diabetic, do you, do you require a Dr. letter to keep that because I mean, otherwise, or how do you check that they actually do deserve a longer lunch or more frequent breaks?

Participant 5 (P5) (34:08):

Yeah. Okay. So I'll pick an extreme case and just explain very quickly what happens. So we've got an individual that's a quadriplegic in the customer service, um, and this particular individual has a stomach bag. And, um, also, um, you know, uh, the, the actual bladder bags and all of that. So she doesn't know when her bag is full. And unfortunately, if she doesn't know, then the bag will overflow and she will mess herself, um, in her wheelchair. And the only time that you you'll find out, she, she says that, you know, she's kind of lost her sense of smell. Um, and when these things happen, then her colleagues, I mean, she's, she's been quadriplegic for about five years. Um, and she's worked for us for about 10 years. So her colleagues around her will come and say, uh, you need to go to the bathroom.

Participant 5 (P5) (35:02):

Something's wrong. So, and those are extreme cases. I mean, in the last five years, she's probably had one or two of those instances. The rest of the time she manages it too, because we ensure that her breaks are, um, at such times where she's able to go to the bathroom, clean off, change a bag, et cetera, et cetera, somebody, um, we've got a couple of people who have, um, hypertension issues, hypertension coupled with severe, uh, diabetes, where they inject themselves with insulin. And if they don't eat at certain times, they could pass out just a few things that could happen to them in order to decide what is fair and what is unfair. We do ask her doctors, not if an occupational therapist needs to give us a note. What's the ask for that? Because if the contact center cannot afford to have that individual on the floor, then we, we do make those decisions and those hard decisions and say, but the seniors are too, and is not suited type environment because there's no way if we can accommodate for the sheet now with a paraplegic person.

Participant 5 (P5) (36:10):

And the reason that I have a quadriplegic, the reason I brought this up is because what that person, it's easy for us to say that we can accommodate her. If we had 15 quadriplegic people in the center, you wouldn't be able to manage with it, and then you cannot choose. How do you choose if one person is better than the other outside of performance. Then we probably going to go a harsher route of saying, well, you know, actually there's some of our people that we think are not suited to the environment and we're going to have to take very hard stances around moving them out of our team.

Researcher (36:44):

Wow. Yeah, that makes perfect sense. And I mean, um, if someone or the longer someone is away, the less calls can be taken. So, um, that really affects you directly. Um, any, do you have any interesting digitalization drives currently going on anything new or something that's implemented that, uh, that, that you find to be really interesting, but I'm just not aware of.

Participant 5 (P5) (37:13):

Yeah. So, um, in order for me to answer this question, I need to quickly explain the process to you. So we've got a process called a trace, long story short. What the trace actually does is, um, it is an opportunity for us, um, to query where a customer's shipment is. Okay. So long story short, this particular trace, um, a customer will call us and the customer potentially say, you know what, guys actually have a problem. I can't find my shipment. Um, we then go online to try and figure out why the customer can't find the shipment. And nine times out of 10, we'll see. Well, there isn't an update on the system. And the reason that there isn't an update is it could be that the shipment was recently just taken off a plane. And the guy that does the scanning maybe had problem with the scanner, maybe, um, the entire network, uh, the, the, um, the network in the airport had gone down for 30 minutes or whatever the case is.

Participant 5 (P5) (38:18):

And there is no update as to whether that shipment had come out of the cargo hold. So at that point, we, um, open up something called a trace. It's basically a query, um, that we then use to go and ascertain whether where the customer's shipment actually is trying to give feedback now how this would happen is really reactively. So the customer would phone in and say, you know, actually I'm trying to track our shipment on the website and it's not giving you any detail. That's how we kind of pick up that there's a problem with the shipment. We then, uh, open up this trace, it's a system generated process. Uh, and a staff member physically goes and types in what the problem is with the air waybill number and puts in the customer contact details. And then as they get feedback, they will then phone and update the customer.

Participant 5 (P5) (39:06):

Now this trace process like I say, it's very reactive, we have now a proactive way of doing this by using a bot so what the bot does is there is a a system called NPTS in our, in our business. And in that space, um, you know, the customer would, the customer wouldn't know what we are seeing, but on our side, we'll be able to see the shipment should have, uh, a scan code by now, based on the time that this, uh, plane was due to land in that country. And if it doesn't have an update code, the bot automatically opens up this trace. Um, and so it will go to the Team with the trace being opened automatically to the customer's contact details from the waybill data. And when the customer hears from us, it's actually the tracing team following up on a shipment saying Mr. Customer or Mrs. Customer, there is are problem here. Um, you know, we, we are trying to track down where your shipment is. This is what we found. It is delayed at customs, there isn't an update on the system as yet, because there was a problem with the scanner. So it

proactively allows us to go and contact the customer and give customers feedback rather than wait for the customer to phone us and say, did you miss up my shipment? I don't see any athletes

Researcher (40:26):

That is interesting. And I mean, it's also, um, reduces the traffic on, on the calls with regards to how many calls youget, because even before the customer can think to phone they'll, they are already notified. So that is really great. Yes, absolutely. And is there anything, anything else, um, that you can think of?

Participant 5 (P5) (40:53):

So, um, outside of that, I mean, there's quite a few other, we've got four other RPA processes that are being launched over the next while, which sort of takes away the mediocre work and allows our people to do more meaningful tasks, um, and lets the bot sort of handle the rest. Um, another initiative that we are running is called speech analytics. So basically in a call center, you handle thousands and thousands of calls on a daily basis, right? I mean we've had days where we kid you not, handled 4,000 calls a day, um, you know, center. And the problem is that when you assist in quality, you only assess a small percentage of the quality from those 4,000 calls. You probably only listening to 60 of those to do quality assessments and manage the quality aspect. And the problem with that obviously is the obvious, you know, um, you're not listening to majority of the calls from your customers.

Participant 5 (P5) (41:48):

You don't actually know whether your customers are happy or sad. So the speech to text analytics, what it does is it creates these word clouds that tells you negative versus positive words, what our customers are saying about the brand and it can measure on all calls that are coming into the center. So it is something that we are busy with at the moment we, you know, in a POC, um, and hopefully within the next two to three months, we can go live with a proper demo, uh, on this particular thing. And that will then allow us to understand our customer's needs more intricately than we do today. There is a concept that some of my colleagues may or may not have mentioned. It's called ICCC. It stands for insanely customer centric culture. It says that we know that we are majority market share holders in this business, in the country.

Participant 5 (P5) (42:36):

And in order for us to continue being the ambassador of, um, off the courier service business, we need to ensure that our service is top notch. The only way that you do that is if you are insanely customer centric. And so everything is about making sure that our customers are at the forefront of every decision that we make and these kinds of things will be, get their feedback directly, uh, and off the cuff, based on the tone,

based on whether they raise their voice in the call conversation. I mean, the data that we're going to get from this, the analytics is going to be unparalleled and it will allow us to focus our attention on the weak spots in our business.

Researcher (43:15):

Ah, okay. Okay. Um, so once you have all that information and an overload of data, how will you make sense of it? Will they, do they provide dashboards maybe? So, um, you, you will know, oh, am I, in my mind, you will now have access to something very powerful, but what will you do with it to make sense of it?

Participant 5 (P5) (44:08):

Yeah, so they do give us interactive dashboards. Um, and, and in the center it is a pity that we are in this pandemic, I would have loved for you to come and see the actual center in its life setup. We've got, um, we've got these led screens across the floor and these led screens will basically tell us, you know, how many calls we've taken, what our service level is, blah, blah, blah. Now the intention is that this, uh, particular speech and text analytics tool also will develop a screen that will kind of tell us what are the big words our customers are using? What's the next sentiment based on what the bot is telling us, uh, based on the customer sentiment. Um, again, the, the positive versus negative words that they're using, the tone that they're using, um, and the entire call gets transcribed, um, written out and transcribed.

Participant 5 (P5) (45:03):

And that you can imagine is a little bit more tricky for South Africa because we've got so many different accents. Um, nonetheless, these are kinds of the things that the system does, and this is not a new concept. I mean, speech analytics came out, um, globally about six years ago. The reason that it's taking so long in countries like South Africa is because of the dialect and the way in which we pronounce our words. So, um, you know, I'm keen to see how this thing works. We've already started some tests and the tests are going really, really well. So when they give us this data, uh, we then take that data similar to what we do now with our ICCC data. Um, so for example, even not our, uh, complaints, when we get these complaints, we analyze it and we do a root cause analysis on every single complaint from that root cause analysis we see is that, where is that issue?

Participant 5 (P5) (45:53):

Is the issue with any in customer service, she, the issue and how do we help our behavior is the issue with operations issue with finance, what actually is this capitalist issue and ask that sort of perpetuates, we're

able to see the bulk of where our issues are and we will go and we'll tackle those specifically. So we'll go to the big ticket items that are going to be our large opportunities. And that also cater for some of our biggest risks, of course. And we'll use this option to tackle those things so that we can start to unpack, uh, the, the customer sentiment and improve our offering altogether.

Researcher (46:30):

Yes, because when you're tackling, well, the biggest problem. You'll see the greatest improvement. Um, that's, that's really great. I really hope the, um, the concept goes well and everything works with the, you know, how, how we pronounce our words, but up to now, um, you say it's been, it's been working fine within a south African context?

Participant 5 (P5) (46:54):

Well the test did. Yeah. Yeah. There is, uh, we've already picked up an error, um, with one of the calls last week. So again, it could just be that there was an issue with the line because of the load shedding and the connectivity, or it could be that we still have a dialect issue. So, um, I guess once we unpack that a bit more, you know, we'll be in a better position to tell you whether it's that, or it's just a normal connectivity issue. I'm hoping it's the connectivity issue.

Researcher (47:22):

Yes me too. Sure. Well, you've got some really interesting things up any, and um, I think I am through what I had to offer from my side. So I would like to know if there's anything that, um, that you would like to add to the interview besides what I, what I asked?

Participant 5 (P5) (47:50):

O the only other thing I could potentially add to the conversation is, um, we are also, as I said, we are members of, um, you know, various different customer service communities globally. And what's good about that is that the pandemic and the issues that we are facing, are, obviously the same that, you know, other companies and other businesses are facing as well. So it did give me a huge sense of relief that others are facing the same thing, because often you wonder if you're in a little bubble and some of the stuff that you experience other people don't experience, um, and a lot of the new technologies and the way of working is very similar to the stuff that we're doing right now. Um, the only other introduction, uh, from a customer journey point of view is something called a conversational AI.

Participant 5 (P5) (48:44):

It is the next big thing, uh, for contact centers, but it incorporates all of your back office services, your back office teams. So for example, if I'm a customer and I am phoning in the telephone line, which is an 0860 number, and as I dial I realized, oh, I really need a smoke. I could select an option on the, the phone line that says, um, please, can you transfer this call as a WhatsApp to me? And we'll continue the conversation via WhatsApp. Then the system would ask you to type in the phone number, um, that you wanted to utilize for, uh, your WhatsApp conversation. Then whilst you're on the line, the message gets sent to your phone via WhatsApp saying, you have asked us to contact you via this channel. Please confirm with this as a channel you want to use by clicking on this link and whatever the case is, you click on the link, you go into WhatsApp call or WhatsApp chat, or WhatsApp call depending on your, um, on your preference. And so conversational AI takes effect. And so you, you know, you can, you can contact, uh, your service provider on your terms and the way and the manner in which you want to contact them. So that's the other thing that you possibly want to maybe look into as part of, um, off your study somewhere.

Researcher (50:01):

I will definitely look into that. That is really interesting, even if I think of just, um, within my own personal capacity, how many times I've phoned, I don't know, the the bank and then you have to leave now, or, you know, you need to hang up the call. And then later, later during the day, you need to go through that whole 10 minutes waiting period again. So that is really, really interesting.

Participant 5 (P5) (50:28):

Yeah. Okay. So outside of that, I mean, if there's anything else you're welcome to reach out to me. Um, I just, I want to really wish you everything of the best. Um, and you know, I know that extrapolating the data is the easy part. I know that coding is going to be the difficult part. Um, so if there's something that doesn't make sense and you need to reach out, you're always welcome to do so.

Researcher (50:55):

Thank You, Annie. I really do appreciate it. And I would like to thank you very much for allowing me to interview you. And also, as I mentioned earlier for taking the time, and then I really appreciated the opportunity to learn from you. I've got a lot of, um, you know, informational and helpful things, but, um, yeah, this was the easy part, as you said, and how to make sense of it all, and to write about it, that's going to be the tricky part.

Transcription of interview with Participant 6

Researcher (00:00:28):

Well, I will try and make it as, as quick as possible. Uh, thank you, Anthony. So just, um, how long have you been in your current, uh, current role as VP of ops?

Participant 6 (P6) (00:00:59):

5 years and then 20 years with DHL in total.Um, yeah, that's an interesting place and that's been an interesting journey, so that's quite exciting

Researcher (00:01:07):

so in the previous call I had with you, we spoke a little about some of the most significant COVID-19 related disruptions that you experienced. And, um, one of them was the restrictions imposed by governments when, um, you know, only essential goods as determined by the government could be transported. So I would like to ask you if you think that, um, you know, the reasoning behind this might've been to enable essential goods, uh, to move more, I don't know, swiftly throughout the supply chain.

Participant 6 (P6) (00:01:42):

Okay, Marisna, uh, I mean, uh, are you talking about a global perspective or Southern Africa perspective?

Researcher (00:01:50):

So for, for this, uh, research, everything is going to be just SSA based.

Participant 6 (P6) (00:01:55):

Okay. Um, well, I mean, I think that obviously the pandemic is a black Swan event, so I don't think anybody actually forsaw the impact of it, um, I mean, we all watched the developing pandemic in China in 2019 in December and January. Um, and we watched it, um, take over, the restrictions in that, that, that put in place in China, but I don't think anybody really expected it to expand across the globe with the speed and the extent that it did. And, and then in March, 2020, we eventually got to the COVID situation in Southern Africa and South Africa, and then obviously up north as well. So I don't think anybody was actually overly prepared for it to actually saw the full ramifications of it. So one of the major impacts, I think for all of us was the fact that there was a very uncoordinated response to it, meaning that every government, uh, across the world actually, and obviously in Africa, um, reacted very differently to the COVID situation.

Participant 6 (P6) (00:03:19):

So for example, um, in South Africa, we went straight into a level five lock down. Um, if you will recall that we went straight into the delivery of essential goods only, um, meaning that, um, we could only deliver goods that were deemed essential by the government. Um, that list started off very short. Um, and then it started growing exponentially as, as goods got added to that list, because I don't think anybody really thought about what was essential and what wasn't essential. Originally. There was also a very interesting step taken by the south African government, um, where they, they actually essentially also shut down all e-commerce kind of operations, where, where people were able to deliver goods that were non essential to people's homes. And it was quite an interesting.

Participant 6 (P6) (00:04:29):

The minister's whole view was that, um, it was, uh, an equal opportunity thing. And that, that at the end of the day, you, you shouldn't be able to enjoy e-commerce while you lock down at home, if you lived in Bryanston, but there was no e-commerce service in, in Kyalitchi or whatever the case is. So they basically just pulled down on everything. Um, and that, that, that was quite, um, an interesting step to take and obviously business started losing business, but one of the key things for us was there was no real determination in the beginning to say what was essential and what wasn't essential and essential goods, but by the very nature, um, it is depended on the need of the person. So for example, um, I had a big argument at one stage about a company that was, uh, getting its people to work from home and they needed, um, routers to be delivered to the people at home and, and routers weren't on the essential goods list, but for that company's lifespan, um, routers were essential because they couldn't operate because they couldn't work from home. So it was a big debate about what was essential and not what was nonessential.

Researcher (00:05:57):

I can also imagine the ramifications for DHL because I mean, an Aircraft has to operate at full capacity to basically justify operating the service. So if you're bound to only a limited amount of goods, um, that is very problematic.

Participant 6 (P6) (00:06:15):

Yeah. And we eventually ended up, I mean, in those first couple of weeks, three or four weeks of, of essentially essentially, um, sorting out goods that were essential versus non essential goods. Um, we ended up holding about 35,000 shipments, uh, in our Johannesburg facility in the gateway. And then eventually

we had to start clearing these goods and, and delivering them to our service points where we could sort all of them. And then after about three or four weeks, the government said that we were able to then deliver these things. So then we went out and we had to deliver them, but it was quite a challenging time for us. Um, equally it was quite challenging servicing the Namibia's and the Swaziland Botswana's Kenya's Tanzania, all these places, um, because they also declared, um, the fact that they would only allow essential goods to cross borders. Now, again, that affected road movements a lot more than air um, given the fact exactly what you said that an aircraft was carrying a mixed bag of goods. China started exporting PPE in huge volumes.

Participant 6 (P6) (00:07:26):

Um, and we were basically then for sorting, what, what was sort of deemed to be essential on the ground and holding the non-essentials in, in our facilities. Um, then of course there was pressure from customs to say, well, you're now holding all these goods in SSA facilities, in bonded facilities. So we were then in that predicament where we were saying to a customer, uh, across Africa in many instances, well, could you please pay the duties in Taxes on your item because it landed in the country and we need to clear them because of the customs regulations. And we were saying, well, you need to pay us your $500 duty. The guy was saying, well, okay, I'm happy to pay the duty when can you deliver it. And we were actually saying, well, we don't really know if we can deliver it because it's declared a non essential item.

Participant 6 (P6) (00:08:22):

So we also then had quite a lot of resistance from the customers, um, in terms of to get the goods cleared and then paying for goods, that there was no definitive kind of plan to deliver on, but there was a lot of lobbying that we did with governments. Um, and, and again, that was a very interesting exercise, um, because some countries such as Swaziland, Botswana and Namibia, uh, are reliant on South Africa. Uh, Swaziland is surrounded by South Africa so everything in and out of the city comes out of South Africa. So you had one set of legislation imposed by the south African government on the south African side of the border, but yet a more lenient approach from the other authorities. So essentially you could move a pen and pencil set out of the city, but you couldn't bring it into South Africa and you could move, you could move it out of South Africa into the city. Another thing, we also implemented employee rotation. We maintained 24/7, 365 of our time in Africa.

Participant 6 (P6) (00:09:34):

So there were, there was quite a lot of that kind of confusion, but luckily that sort of cleared itself up within three or four weeks, when I think everybody sort of realized that the stupidity of trying to decide on what

is essential and what is not essential. So the government sort of had to come around to that. And then also realizing that, um, again, in a south African context, that 90% of the population was at home. People were frightened on to go to the checkers and pick and pay and all the rest of it. They had to allow home deliveries again, they had to start allowing e-commerce to flow again, so that it take a much more relaxed attitude. There was also the obvious ramifications that came with job losses. Um, businesses closing down because they weren't able to trade.

Participant 6 (P6) (00:10:37):

So I think they had to just really find their feet, but equally, I mean, when we talk about government, it wasn't only government. I mean, it was the private sector as well. We had to find a whole new operating norm for an operating rhythm, um, and, and adapt to the changes that, that, that had come about. I mean, one of our biggest impacts on DHL in Africa, um, really was the fact that whilst we have 12 of our own aircraft in Africa, we are still quite reliant on commercial, the belly space in passenger Aircraft and overnight all of those disappeared. So we were then really having to look at solutions to say, how do we continue our business in Africa? How do we continue delivering, um, goods and services in and out of every, all of these countries to our customers using the assets that we actually hold.

Participant 6 (P6) (00:11:37):

And we were pretty much able to do that. And, and we were within about six days able to get flights in and out of every country in Africa, um, and albeit with worse transit times, people who were used to, um, overnight services, um, Now were now getting their service in three or four days, sometimes five days. But the end of the day there was a service. And at one stage we were the only aircraft really operating in the entire African on the entire African country. In actual fact, it was so bad at some places that airports had to specifically open up and send staff to the airport, air traffic controllers, ground operators, to actually manage just this one aircraft, which was arriving to deliver and collect goods or goods in and out of the country. So we were able to do that.

Participant 6 (P6) (00:12:37):

We were also able to quite quickly, um, move to supplement or compliment that 12 aircraft in the continent by hiring in another eight or nine, aircraft too. So we ended up operating about 21 Aircraft on certain days to make sure that areas that weren't covered by our network were seviced. So we ended up flying, for example, from Nairobi into Tanzania. We flew from Johannesburg into Malawi, which is not normally covered by the network because it's covered by Cal. Uh, we lost all our uplift out of Europe and in the Americas into, uh, South Africa, which obviously, as I earlier said, was important for the Botswana

and Swaziland to the cities because South Africa is a hub for those areas. Um, but we had to move very quickly to get our own flights. So we then set up that air bridge between Nairobi and Johannesburg and Nairobi and Bahrain and Nairobi and Bahrain were serviced by DHL aircraft out of Bahraini to Nairobi.

Participant 6 (P6) (00:13:48):

And then we charted regionally, um, and set up that bridge to cover the rest of the world that, that, that should get into South Africa as well as the parts of Africa. So, um, uh, uh, network is very, very strong in west Africa and central Africa that obviously operated at a premium, but we also had to start adding additional countries where we never normally went to. So we never had, we didn't operate the service prior to COVID into The Gambia. We didn't operate the service to Chad. For example, both of those areas. We had to approach the government and get permission to operate. And albeit it wasn't every day, two or three times a week. So that's challenges that we had, and there were many other challenges related to operating an aircraft network.

Participant 6 (P6) (00:14:53):

Um, and the fact that our pilots weren't able to layover, because they were not allowed to get off the aircraft. They were not allowed into the country. So normally they would land in Kinshasa. They would have finished the route in Kinshasa, uh, get off the aircraft. The replacement crew would get back onto the aircraft, crew that stopped in Kinshasa the night before. And the new crew, the old crew would basically go to the hotel and then fly the airplane back the next day, when it came in again with the previous crew. So we had to really rejuggle our flight and duty times. We had to look at all our routes and, and make sure that our crew is safe in and out. And then obviously there were curfews imposed by all countries across Africa. And we had to make sure that we were operating aircraft, um, within those windows of curfews, because, um, we also had instances where pilots arrived back in countries because of weather or whatever.

Participant 6 (P6) (00:15:59):

And they had to sleep in the aircraft because they weren't allowed to disembark at the airport. And they were not allowed to go through immigration at the airport, and they weren't allowed to drive home, even though that they physically lived in the country because of the curfew. So it was, it was lots of stuff that was going on. And, um, luckily for us, I think we, we reacted very agile. We were very agile, flexible, and nimble. Uh, we put together the job quite quickly. I think when COVID came we stood up the jock, got the right people in the job. And we were really coordinating on a daily basis with the aviation people, with the express people and with all the countries. The real key of our success was our job to be perfectly honest because we had a centralized command.

Participant 6 (P6) (00:16:52):

So we were responding to every country's needs from a central point of view, whilst understanding the needs of the other countries, if you get what I'm saying. So it was it wasn't Nigeria trying to look off to Nigeria and, and, uh, Cameroon trying to look off the Cameroon. It was a centralized picture where we looked at what we could do for Cameroon, but then we also looked at what the impact of what we were doing. So we were doing a lot of, um, planning with respect to looking at cause and effect. So there was a lot of moving of pieces on the chess board every day. It was a very dynamic thing. But again, the most important thing was that we were actually able to maintain the services in all 51 countries in Africa on a pretty consistent, consistent, and reliable basis so that a customer could actually plan his supply chain based on our schedules, which were realistic and, and pretty pragmatic in terms of what we could do.

Researcher (00:18:16):

Yes, that's fantastic, Anthony, but, so how were customers informed of, you know, the increase in transit times and how did they react when you mentioned it earlier?

Participant 6 (P6) (00:18:27):

Well, I mean, we, we, we suddenly also, I mean, from a DHL point of view, uh, prior to COVID the week before, COVID, I suppose there were 15,000 people within the 110,000 people of DHL and the whole wider world of a 650,000 DHL people who were most, probably 30,000 people that were enabled, um, to, to, um, communicate digitally. If you like within three weeks, we got our digital communication, um, community within DHL up to about 80,000 people. Um, meaning that as CS operations, for example, could work from home. Uh, customers gateway people could work from home and I'm talking across the world could start working from home. Um, and then our sales force also became a really virtual sales force where we were then communicating with our customers virtually via Skype by, and then zoom came along and that blew up. So we then all got involved in zoom and then teams came later.

Participant 6 (P6) (00:19:38):

So we were then all using teams and we were virtually engaging with all our customers. Um, and, and obviously having a lot of data at our disposal that we will be able to target specific customers in specific countries, predicated on the, the frequency of use the, they need the views, um, the urgency of use of, for example, a customer like Siemens, that, that uses us across the continent for, um, critical care medical equipment that's required in hospitals and things like that. So, um, um, equipment in cat scans and x-rays and all that kind of stuff, but we were able to explain to them quite clearly what the impact would be and

what kind of changes they would have to expect in the business model. And in the main, I think that that was one of the real positives of COVID if luck is that COVID was such a global thing, everybody understood the impact.

Participant 6 (P6) (00:20:48):

You know, it's much more difficult to explain something, like a strike. You know, if DHL had had a strike well in that's on DHL, but, but COVID was such a monumental phenomenon that it swept the globe, everybody was, was, was fully aware of it. Everybody could actually see the impact, everybody, not everybody, but a large amount of people that moved from the offices to homes and had to set up home offices and things like that. So I think our customers were in the main, exceptionally appreciative of how fast we were able to move, how fast we were able to restore services, where, um, we potentially people wouldn't have a service, but equally from the communications point of view, I think that COVID was actually very good for our customers in a way, um, meaning that we, within two weeks, we started conducting webinars from an Africa point of view for customers to attend and to tell them where we were every day.

Participant 6 (P6) (00:21:59):

Honestly, we would then give them the news, the updates, the changes impacts the transit times, what was happening with respect to goods, central goods, what had been changed in terms of curfews, et cetera, et cetera, et cetera. So, uh, I certainly think our customers actually, um, benefited hugely. And the big theme for me was that normally when we are talking to a customer, um, it would be through an Email and we'd send them a letter, an email, the sales person would call them up and have a chat to them. I think what this did for us was it expanded our reach. So we had webinars where we had eight or 900 customers on those webinars from the biggest to the smallest. So there, so we were able to actually talk to eight or 900 people with a very consistent message.

Participant 6 (P6) (00:22:52):

And we were also very clear on that in the beginning that we used a spokesperson, um, I suppose a bit like the government. So for example, we did not use Jason and George, and then Norman and all, a lot of other people, we had a consistent face in all our webinars so that the information was credible. And what I said on Monday was the same person saying it on Wednesday, or it might be a little bit of a different message, but it was the same person. So our customers, I think, actually came out of it quite well. I think long-term, it's also changed the way we're going to deal with our customers. Uh, lots of people have realized, I think that they don't actually need to see us as much as they thought they did.

Researcher (00:23:52):

Yes. Thank you, Anthony. I just wanted to ask you how it's going to change in the long run since this is something good that came out of COVID.

Participant 6 (P6) (00:23:59):

Yeah, I think there were lots of good things. You know, every everything there's a good and a bad. So we are actually now talking in our commercial community to our customers. And when we finish a meeting with our customers, we actually saying, how would you like to communicate with us? Would you like to see us every two weeks? Or are you happy to do a zoom with us? Or how would you like us to communicate with you? And that's obviously a question we never asked previously, we'd just turn up and come and see them. So it's, it's really interesting dynamic the way it's changed. And I mean, even from the most important thing that DHL in Africa and globally was actually keeping our people going because the, the assets, the airplanes, the processes, the systems were all still there, but everything that we do is people driven business.

Participant 6 (P6) (00:24:58):

So we had to keep the frontline people going. We had to keep the couriers in the field. We had to keep people on the ground at the airport to service the, the aircraft because the aircraft, unfortunately haven't yet learned how to unload and load themselves. We had to have drivers. We had to have warehouse people in our gateways to, to manage in and outbound. And that was a key for us. I think business was always a priority for us, but the number one priority for us during the whole of COVID was, and still is to say, how did we actually keep our people safe in the front line? How did we actually make sure that our couriers were still in the game, in the field, able to pick up and deliver and serve our customers' needs? And I think that was something that was tremendously appreciated by our customers, a, the extent we were going to keep our people safe, but equally we were able to remain in the field, despite all the adversity, every single country that we worked in, we got declared as an essential service by the government, so that we were allowed to continue using our frontline people in a safe way, because at no stage, did we say that any shipment was more important than somebody's health and safety.

Participant 6 (P6) (00:26:27):

Um, and thank God we managed to keep our people safe. And we managed to continue operating during that period. Although we had to introduce new things like contactless delivery and, um, more phone calls to customers and even leaving shipments on the pavement and phoning a customer and then coming out

of their house. So they offered to come and collect on the pavement. We had to sanitize shipments in certain countries. Um, even though there was no evidence from the world health organization or any medical experts that said that shipments could carry the virus. Some countries felt that there was a necessity. So we had to spray our shipments and all those kinds of things. And that even came with some challenges because what did you spray the shipments with? Um, and eventually we were able to find a recipe if you like that we were able to put together that was supported by the world health organization.

Participant 6 (P6) (00:27:26):

And then we sprayed our shipments. And because we sprayed our shipments, the labels came off, which is, there were lots of little things that happened. But I mean, generally I think we were certainly able to manage most of the impacts quite, quite well, actually. And as I said, and think that we've grown our business, the numbers, the global overall, um, revenue, uh, that we, we, we were able to achieve in 2020 indicated that I think that, um, the biggest challenge just really from a numbers point of view from a revenue point of view was capacity. There was just no capacity. Every jet in the world was flying. Every jet in the world was flying at double the price to what it would normally be flying. Um, and I think if there was more capacity, we would have been able to do more. So there was a real restriction.

Researcher (00:28:23):

Anthony, I heard one participant who raised a concern on, um, you know, how it took his team longer to get a task done in collaborating with other African countries digitally than it would have taken them if they were able to travel and do so in person. So what is your opinion on this? And do you think it's more prominent in Africa?

Participant 6 (P6) (00:28:48):

Ah, you know, again, it was a double-edged sword as far as, um, as, you know, DHL, our culture is that we travel and we visit our countries and we get stuff done in the countries. I can't honestly say Marisna, that there was not one day during COVID or the real height of COVID and let's just talk 2020, it's still very evident in 2021 nothing's normal yet. But, um, in 2020, uh, I cannot say that there was one day that I felt that I hadn't been able to do my job and get done what I was supposed to be getting done in actual fact, I think I had a, um, a much better, um, overall grasp of things as the head of operations. And as you know, I look after many portfolios, but, um, I felt that I had a better grasp of it because I was able to talk to anybody in Africa.

Participant 6 (P6) (00:29:58):

You know, if I traveled to Kenya and I was in Kenya for a week, well then that's where I was and I wasn't anywhere else. I wasn't anywhere else with COVID. I was able to be everywhere and I'm still actually using a lot of digitalization to get everywhere. So people that I'd never spoken to in my entire five years in DHL, uh, in Africa we were suddenly talking to the couriers in The Gambia or in equatorial Guinea, or in Liberia, you know? COVID actually gave us the opportunity to go through digitalization, to actually get into those countries, join the PDs in the countries every day and actually talk to the troops. So, so I actually think it was really a great benefit for us. And whilst we didn't travel from our chairs, we probably did a million more miles then we would have been able to physically do. So I don't think there were any impediments,

Participant 6 (P6) (00:32:06):

I mean, for everybody, I mean, CIS is a core foundation program for us and it's a classroom training. I mean, so 2020 and even 2021 there was a whole cultural movement in DHL, because you weren't able to have classroom training and some stuff you just can't easily replace digitally. But I think what was very important for me is that that it really got us to focus on what we have to do, what we need to do and what did we want to do? anything, um, that was really fundamental to our business. Um, we, we, we were able to do.

Participant 6 (P6) (00:33:36):

The leadership was really very important and the tone from the top was, was, was, um, phenomenally important. And I'm talking about us as the AMB, but I'm also talking about the GMB and John Pearson's view. And, um, my other boss Travis's view. Um, and, and how did we, as the opscommunity get together every single day and talk about how we were going to coordinate between the six regions, what I was doing and what Europe was going to do for me and what I could do for Europe and Asia Pacific and that kind of stuff, but what was really very important was is that as a leadership team, we also acknowledged right in the beginning that we'd never experienced this. Yeah. So we, we, we, we never been in this position. Yes. We'd had, um, crisises in our life, when we had 9-11, that changed everything in America because the space was closed.

Participant 6 (P6) (00:34:43):

I was around when we had the Ash cloud and that goes down Europe for a month. I was around in 2010 when we had the credit crunch and people stopped traveling, Aircraft flying people, lost their jobs, um, and various other things, but they were all, um, minor in terms of the geographical coverage at times. So we knew how to handle the Ash cloud. And we did really well managing that, but, but we hadn't managed a global pandemic to this extent that that Italy was closed. Germany was closed, you know, uh, South Africa was closed, uh, Brazil was closed, um, and China was open, you know? So, uh, I think that was what, what,

what we realized as leadership was, as I said, that none of us had actually ever been here yet. So we didn't have any experience of it. We had contingency plans, but they were more regional than, than anything else, because of course we have earthquakes and floods and all that stuff. Um,

Researcher (00:35:50):

But yeah, you basically have to trial and error. What can you do if you've never been in such a situation it's amazing how great DHL did, I mean, the numbers speak for themselves. So, and it's true what you say. Um, it all stems from, from the top down, because being able to be so flexible and agile that has to come from, you know, solid leadership.

Participant 6 (P6) (00:36:16):

Yeah. And we had the acknowledgement that we'd never beeen there before. Where now that was part of the real thing, because we also realized, and we realized that in Africa, ourselves quite quickly, that a decision we made on Monday with the best will in the world might not be the right decision on Wednesday because it was that dynamic and things change so fast that something we were doing on Monday might not be the right thing on Wednesday. And in actual fact that might not be the right thing on Friday, what we decided to do on Wednesday. So I think there was the main thing was how did we communicate this to our customers and to our staff, to be able to say, you know what, we, we all sort of making the best decisions that we can, but I'm going to be really honest with you.

Participant 6 (P6) (00:37:10):

I might be saying something on Monday and I might be saying the exact opposite on Wednesday, but, but because the situation has changed and I'm making a decision today based on what I know today. So what am I saying? Uh, I've promised a country shipments four times a week, they hadn't put in curfews Monday. They hadn't, restricted people working on public transport. So Wednesday that all happened. So we would have to go back to those customers and say, well, the decision we made on Monday was, was based on this, but this is what happened on Wednesday. So, you know, w we had to be quickly able to say, well, the decision we made had to be reversed changed, or in some we actually improved on the decision, but other times we had to walk it back.

Participant 6 (P6) (00:38:19):

So that was quite an interesting time. And I think another thing that really helped DHL was whilst we such a big organization, the leadership is actually a very flat structure. So the people who really control DHL, there's very few in number. So the GMB, which is global management board is 10 people. And then there's

six regional boards. So the, the control span whilst there's thousands of people in between all of these people that the communication channel from John Pearson global CEO to Hennie is a direct phone call. There's no layers to go through. So we were able to quickly make decisions. So for example, I directly report Hennie, but equally, my boss really would most probably be Travis who runs global operations and aviation. So, but I have the same access to Travis as what I have to Hennie. So we were able to, as a group talk very quickly amongst ourselves every day to make decisions.

Participant 6 (P6) (00:39:33):

And I think that that's vitally important. There is, it was a very agile, flexible, but, but available, uh, and, and a flat structure. So how did we communicate these decisions to the troops?

Researcher (00:39:50):

So, um, just to be clear, if let's say they were more layers and, um, the structure was not as flat and, um, you know, you had to maybe make five phone calls before you could get to Travis. Um, how do you think it would have changed how good DHL did during the pandemic?

Participant 6 (P6) (00:40:18):

Well, uh, I think that it would certainly had real impact on us because decisions that we had to make now would have taken longer to make, because you'd have, yeah, we wouldn't have been as flexible. And my favorite words are, flexible, agile and nimble, and we wouldn't have had that kind of agility. And also the more people you go through, the more opinions there are, the message gets diluted and the more conflict there is. So I then didn't have to convince Travis's three people on what I wanted to do, I had to convince Travis and if others agree, then I could do it. But I didn't have to spend my time wasting time in trying to convince layers and layers of people, it was a very direct command and control. I could say Travis, that's my situation. That's what I want to do. That's my suggestion. What do you think? He could say, well, you know, um, maybe we should do it on Tuesday, not Wednesday. That was the debate, but very rarely will be second-guessed. And, and I think that that really allowed us to respond in a, in what was ever changing dynamic world.

Researcher (00:41:36):

Yeah. As you mentioned, you can make a choice on Monday. It's not necessarily going to be valid on Wednesday. So imagine now having all that layers, given how quickly the environment changes.

Participant 6 (P6) (00:41:58):

Complexity and ambiguity now that's exactly where, what COVID really personified. So VUCA has always been around. We've always lived in a VUCA world, but VUCA for us was a country. So in terms of, um, Libya, Libya working in Libya is a real VUCA example. It's volatile. You never know what's going to happen. It's uncertain. It's certainly an uncertain dynamic. Why? Because they fight each other, and today they blow up the airport. Um, it's complex because of all the tribal relationships, it's ambiguous because you dealing with a warlord today, that's in power. You think you've found the right man, and tomorrow you're not, you know, so who do you even pay taxes to in, in, in Libya, who is the government, somebody wants Taxes for imports, but are you paying the right person? Or are you paying a warlord?

Participant 6 (P6) (00:43:01):

So, but, but so COVID actually made VUCA a worldwide thing. It really, it blew it up and, and having our management structure actually abled us, to overcome the volatility and the uncertainty and the complexity and the ambiguity, because there was none because we actually had a very direct line of command to each other. And, and like equally it works both ways, you know, um, Travis had a direct line to me. So if, if Travis wants to know what was going on in Africa, or we had something to talk about, um, what he thought in Africa, he didn't have to, to talk to Hennie to talk to me, Travis talks to me, you know? So yeah, that, that for me probably would be a real focus area.

Participant 6 (P6) (00:44:16):

And if you expand VUCA, so we, we all know that focus, volatility, uncertainty, complexity, and all that kind of stuff, but they all come to measure. So if there's a VUCA counter, so if you countering VUCA the volatility you counter with vision, and I think we had the right vision, you counter the uncertainty with understanding, and you counter the complexity with clarity and you counter the ambiguity with agility. So I think whilst we, whilst we all understood the VUCA, we also, as a company and I have to be honest, I'm quite a VUCA person. So I actually managed to get this into the OPS EXCOM that we can understand VUCA, but there's also these countermeasures because everybody just talks about VUCA, but they don't actually talk about countering the effects in an organization.

Researcher (00:45:19):

But so if you really want to irritate me do a SWOT analysis

Participant 6 (P6) (00:45:45):

Because, but, but there is a way to actually do a SWOT analysis that that actually is meaningful. And that you take each of those strenghts, weaknesses, opportunities and threats, and you weight them in terms

of strategic factor analysis, and you're creating a scorecard. And then you actually turn it into a document called taws. And taws becomes where you are using the, the opportunity based on your strategic factor analysis of each of those, where you are using the opportunity to counter the threat and where you are using the strength to counter the weakness. Now that that's, that's the evolution of SWOT. So if you're doing it, then you do SFAS so you do strategic strategic factor analysis. You do EFAS, which is environmental factor analysis. And then you eventually end up with something as I say as Taws. And that's a phenomenally powerful tool because it's not subjective anymore.

Participant 6 (P6) (00:46:54):

You actually have a weighted scorecard and you're able to, you know, because a general SWOT people say, um, a strenght is that we've had our staff for 30 years. That's a strength. And I mean, it's something you should write about in your thing is to say the experience in the knowledge levels in DHL, and the fact that we retain staff, and we have a very low staff turnover, rate Blah, blah, blah. Especially in the leadership is a phenomenal strenght, which helped us because we were able to coalesce everybody's knowledge and experience of 9-11, 2010 Ash cloud. And we were able to bring all that stuff to the party, even though we'd never experienced COVID, but just talking about swat again. So that's that our people would have been with us on average 23 years. But equally, if you ask me, that's one of our greatest weaknesses, there are people that have been with us 23 years. And, you know, we've got people that have been dead for a hundred years and they still stand up and they are still there every day and we paying them, but they're not adding any value, you know? So it's like, you've heard the saying that people are our greatest asset. Would you agree with that?

Researcher (00:48:18):

Well, yes and no. Um, yes. For the reasons that you mentioned earlier as well, I mean, they, they, they are at the heart of DHL. If you think about the courier and all that, what would you do? Let's take that away. And now it's, COVID what would you do without them? But I think also if you are, for instance, with a company for 25 years, um, you can get very comfortable. Um, and I mean, if, if you don't get in new blood, how do stay, how do you stay with the time? How do you exactly, how do you stay relevant?

Participant 6 (P6) (00:48:51):

So the actual answer to the question is people are our greatest asset, but the real phrase should be the right People are our greatest asset, So right Person, right place, right time. That that's the important thing. So, you know, but people talk about people are our greatest asset. Well, yes, they are, but the right people, are actually our greatest asset.

Participant 6 (P6) (00:49:59):

And, and that's our biggest challenge in DHL is how do we bring people with us who maybe don't want to come with us or don't have the ability to, to come with us? Um, you know, people that resist change because of the fear of change and the fear that they're not able to do that and I mean I'm 59 years old. So when I started working, we didn't have emails and fax machines and computers and digital signatures and calendars and all that stuff. We just about had a photocopy machine and a telex machine and a typewriter, you know? So, so how did we, so if, if we decided to stay and you weren't able to evolve, uh, we wouldn't have been able to get into the zoom phase and the teams phase and doing whatever we doing, you know, so

Researcher (00:50:55):

Exactly. And I mean, now we are move into 3d printing and new stuff.

Participant 6 (P6) (00:51:01):

Yeah, exactly. Yeah. So, I mean, and again, you learn new stuff every day. I've just had a bridge fitted in a tooth here. And my bridge was delayed for three weeks. There is, excuse me. The reason it was delayed three weeks was because my bridges were made in Durban and when they had the riots, um, the factory that made my bridges, was burnt down and I said, well, why don't you just make it in Johannesburg then? And well, they couldn't because they now print bridges on a 3d basis. Yeah, quicker and more accurate, but equally again, you know, the thing that, that I I'm a great, um, um, so I wrote a thesis, a, a Paper on this, um, for my MBA. But, um, it's, it's a very different conversation to what are we actually talking about, but, but nothing changes. If, if, if you get what I'm saying, the model is the model is the model.

Participant 6 (P6) (00:52:13):

Nothing actually changes. Um, um, so, so meaning that I had a bridge before, and in actual fact, I got this bridge in 1983 and it was given to me by the government because I was in the police force. And that bridge lasted me until 2019. Now it was a manual bridge made with a mold. It was stuck in with cement, which today they would say was unhealthy and all the rest of it. But that served me for nearly 40 years. Then I got a new bridge, a new digital bridge. And it broke within the first two days because the support wasn't right. So they had to redo it. So all I'm trying to say, and this is a real thing for me. The model is the model is the model. You know, uh, people will talk to you today about communications changed, yes communications changed, but has the model changed?

Researcher (00:53:19):

So, so when you say the model is a model, do you, do you mean that only the process changes, but, but the model is still the model.

Participant 6 (P6) (00:53:29):

The model is the model. People have to talk

Researcher (00:53:32):

Yes

Participant 6 (P6) (00:53:34):

The methodology or delivery changes, but we keep on talking about, oh, there's such massive changes. All the life is changing. It's not changing.

Researcher (00:53:45):

We're doing the Same thing in a different way.

Participant 6 (P6) (00:53:47):

So whether, you know, today, people talk about us getting overnight somewhere. Well, the pony express was delivering parcels in the, in the wild west. It might've taken a few days longer, but the Courier Express industry was around in 1820

Participant 6 (P6) (00:54:07):

The model existed. So the model is just evolved. The model has just improved, but the model is the model is the model. You know, the, the economic investment cycle can never change. You have to have investments so that you can produce earnings so that you can produce jobs. And people with jobs have to have expenditure and savings. And if they don't have that, the model collapses You know, people talk about e-commerce and they talk about our fantastic e-commerce. It's not, it's never been new. You know, when I was a kid, they'd bring them up to my house, deliver milk to my house. And my mother would phone the butchery and say, I need a pound of mince. And two lamb chops and six kilograms of Boerewors. And someone would come to your house on a bicycle with a striped coat on. I don't know if you remember those bicycles that had a big Basket on the front. And they had two legs that they could park the bike outside your house say, and, and, and he delivered the stuff. Your mother would pay a he'd go away. That's

e-commerce. What's different is now we don't have to phone. We can use our app now to get it. So yeah, so the modeling had to remain the same. It was how we actually worked the model. And the problem with the model is say, that's why there's a problem with COVID and what we're doing today, if you, ah, a model is always a model. So just think about a balloon. You, you can, you, you can blow into a balloon and you can tie knot in it. Then you can bend it and you can push it. Then you can shape it. But when you release it, it goes always back to that balloon because that's the model. So a bit like economic model, which is a really good model, but if there is no savings, you can print money to, to create investment. But if there's no basis for it, eventually you're going to run out of money. And you can manipulate the model for a point to a point, but, but equally, as soon as you can't manipulate it anymore, it goes back to where it was. And the way I explain it to my students really was just think about your life. You are born and you die. There's nothing you can do to change those, the input and the output. Now, the difference is the transformational phase in the middle. You can do lots of things there. You can take tablets, you can have surgery, you can, uh, be careful. You, you can avoid COVID. You can do everything in there that determines when you are going to die, potentially, but equally you're going to die. That's the output. It's not going to change

Researcher (00:58:44):

Really good comparison and easy to remember. It's exactly that the model is the model.

Participant 6 (P6) (00:58:49):

You can't change it and you know what that model's been around. And it depends on what you believe in, but if you want to say it to Adam and Eve were born and Adam and Eve died. And between that, they decided to cock up by eating the apple, which caused all the trouble that we have today. That just depends on what you want to believe. But I mean, I'm saying that that model is the model. Now, today, we all living longer because we have medication, but that model of us all living longer is imposing massive economic impacts on us. Say, we don't have the workforce, et cetera, et cetera. So when you, mess with the model, there's a consequence at the end of the day. That's what it is. So, yeah. So COVID, I think that was very key to us. We stuck with our model of delivering a service to a customer in the quickest, fastest, best, possible time. It was just really the methodology of how we, so we didn't do anything that was outside of our model.

Researcher (01:00:06):

Okay. Okay. That makes perfect sense, Anthony and like, like you mentioned, I mean, with medicine evolving and all that, we're getting older But if you look at the population pyramid, it's basically turning upside down. So what's going to happen for instance, in Europe, when there are so many, older people, and I mean, so little young people to carry,

Participant 6 (P6) (01:00:27):

you're going to have to have immigration. And where are you going to get immigration from? You're going to get it from Africa and Asia. But then that's going to bring, it's going to bring its own problems of nationalism and all this kind of stuff. Why? Because we've, we, we screwing with the model. So you don't want to screw with the model, but the model is the model is the model.

Participant 6 (P6) (01:05:24):

What's important for me. And as you know, I used to lecture at university now that is for seven years. Um, but what's really interesting as a lecturer is when you're marking papers. And that's where I started off saying that if I was a lecturer, I'd be totally bored this year and last year, because everybody's writing about the same stuff. So part of my conversation yet for you was to try and bring in new stuff that you'd actually provoke the thought of the lecture and say, listen, actually thought about the organization and the management structure.

Researcher (01:06:18):

Yeah. And I really want my supervisor to enjoy reading my paper. So I'm going to bring this in. What are, um, is there anything else that comes to mind Anthony, I know everything w.r.t All the disruptions related and all that, but I mean, if, if she has six papers all based on COVID um, I think bringing management and the structure and all that and doing a proper literature review on that, that'll be that that's going to be really interesting cause it, it excited me as well.

Participant 6 (P6) (01:06:49):

Yeah, there's another whole thing. I mean, which, which, I mean, as again, I think exciting, but um, if you talk about the value chain and I'm not talking about the value chain in terms of supply chain, I'm talking about the value chain that that's quite, that's quite important. So that was specified many years ago and, and, and Peter Drucker, I think that, yeah, you'd have to check that.

Researcher (01:07:20):

So the value chain was really, um, a, um, uh, a segregation of, of, of the business. Um, and it really talked about the fact that, that in the, the, the real, the real value chain was stuff that happened. So inbound, logistics, operations, outbound logistics, marketing, and sales and services, those were the hard, direct primary activities of the business. Then you have support activities which were the infrastructure, the management, then you have HR, then you have technology and you have procurement. Now, I think what

was really important there about COVID and maybe there's a couple of years before COVID, but that whole value chain model has changed because I don't think technology development today is a support structure. It's, it's a real part of your direct and primary activities, because if you don't have technology in there. So I think that's also something, if you really want to do, find something to write about is have a look at the value chain and, you know, the, the human resource management, is it today a support activity? Yes. It is a support activity in that you're putting people in. But if you look at the work that's being done on HR business partnering, it's actually becoming a primary activity because having the right people in the right place at the right time is actually a primary activity now.

Researcher (01:09:14):

And that's the nice thing about writing a paper, it's your opinion. Yeah. So say you are able to say, well, you know what, I think that Peter Drucker's value chain, which came out in 1950 or whatever it was, it really was relevant then, but with the COVID actually has changed the way the value chain works. But that's just something that you could maybe play with if you want to.

Researcher (01:09:49):

I am going to thank you so much, Anthony, this is going to be so much better. Cause I knew something was off when, when I became bored writing about my own paper and I just needed that inspiration. I'm so glad I had this interview with you. Um, because now I have something fresh to bring in that, you know, I'm going to enjoy writing about it.

Participant 6 (P6) (01:10:10):

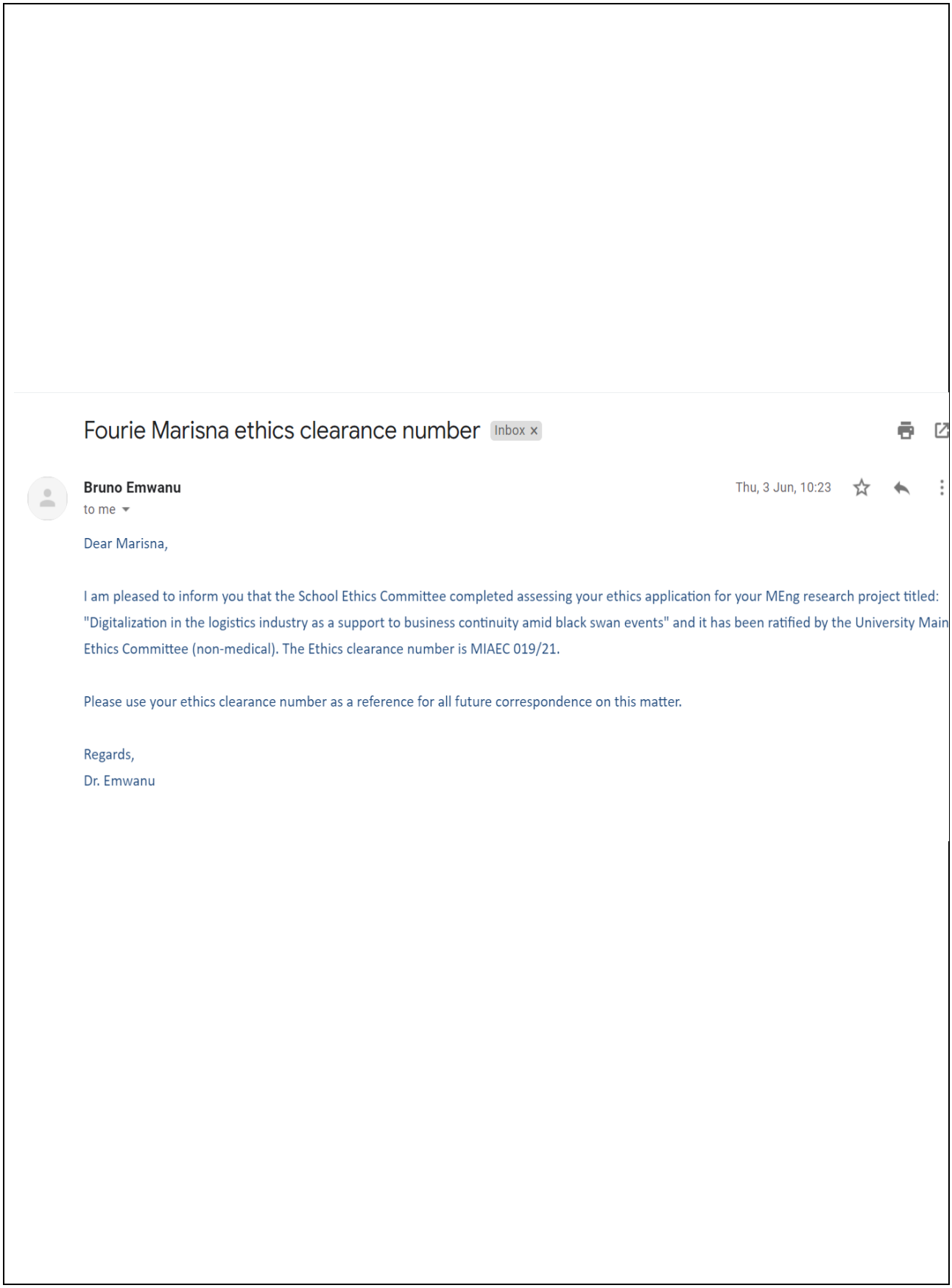
Yeah. So, I mean, just, I mean, if you have a look at it, it's, I'm just checking.

Participant 6 (P6) (01:10:12):

So it's Michael Porter's value chain, sorry, Peter Drucker, Michael Porter's value chain, but yeah, that's just interesting stuff just to, you know, and sort of takes you, it keeps you in the same vein, but just gives you another dimension.

APPENDIX D

- Ethics Clearance -



Fourie Marisna ethics clearance number Inbox ×

Bruno Emwanu Thu, 3 Jun, 10:23

to me

Dear Marisna,

I am pleased to inform you that the School Ethics Committee completed assessing your ethics application for your MEng research project titled: "Digitalization in the logistics industry as a support to business continuity amid black swan events" and it has been ratified by the University Main Ethics Committee (non-medical). The Ethics clearance number is MIAEC 019/21.

Please use your ethics clearance number as a reference for all future correspondence on this matter.

Regards,
Dr. Emwanu

APPENDIX E

- Participant Information Sheet-

University of the Witwatersrand
School of Mechanical, Industrial and Aeronautical Engineering
Johannesburg, South Africa

Date

Dear Manager,

Re: Participation in Research on Digitalization

I am a Master of Engineering student in the School of Mechanical, Industrial and Aeronautical Engineering at the University of the Witwatersrand, under the supervision of Dr. Bernadette Sunjka. My MEng title is Digitalization in the logistics industry as a support to business continuity amid black swan events.

I am conducting research into the field of digitalization and am trying to understand how digitalization can add value to organizations in supporting business continuity amid black swan events, such as COVID-19.

There are no right or wrong answers, so please feel free to openly discuss your experience with me.

In conducting this research, I hope to understand:

- The challenges experienced by Company X during Covid-19 and the role that digitalization plays in supporting business continuity
- What the culture towards digitalization is at Company X

I have asked to interview you because I feel that I can learn valuable information, relevant to my study, from your personal and professional experience. You are the expert and I am here to learn from you.

APPENDIX F

- TCA -

Table 9 below illustrates how the participant's responses were coded, how these codes link with the identified sub-themes and how the sub-themes link to the main themes in this study.

Table 9: The connection between codes, sub-themes and main themes identified in this study

Raw data extracts	Codes	Sub-themes	Main themes
"*"90% of our day-to-day activities is based on the capacity of commercial airlines"*." (P2)	Commercial airline capacity	Reduction in commercial aviation	Challenges experienced by Company X which is directly caused by COVID-19
""We've got some good cargo schedules with KLM, France air and Qatar Emirates." (P4)	Collaboration with commercial airlines		
"If we believe there is a big demand out of Malawi coming into Johannesburg and there is no flights out of Malawi, I will speak to (Company X) aviation, and then they would move that." (P2)	Company X Aviation		
"During the COVID time, especially in initial stages, we had a lot of major disruption with commercial flights being grounded. Um, and we, as DHL were still able to operate because we've had our, uh, aviation network, the actual aviation that was still operating." (P1)	Company X Aviation		
"I mean, one of our biggest impacts on DHL in Africa, um, really was the fact that whilst we have 12 of our own aircraft in Africa, we are still quite reliant on commercial, the belly space in passenger Aircraft and overnight all of those disappeared." (P6)	Commercial airline capacity		
"Now, the effect that this had was the transit time for the, for this customer moved from overnight to three days, four days, and even longer up to 10 days." (P1)	Increased transit times		
"And what we also saw was a real increase in volumes of cargo that we actually never saw prior to COVID. And this was fueled by, uh, a rising increase in the e-commerce market." (P1)	Increase in e-commerce		

Raw data extracts	Codes	Sub-themes	Main themes
"due to the high influx of cargo, transit times have been, uh, effected because, uh, we only have a certain amount of capacity with the commercial carriers that operating at the moment, and they are doing their best to accommodate DHL express as best as they can to carry our cargo." (P1)	e-commerce capacity constraints		
"Other airline companies that were basically ideally not doing anything because, um, they are meant to move passengers, but no passengers allowed to leave their homes. Right. No passengers were allowed to, to land in airports. So what we quickly did, uh, we approached those airlines. ." (P2)	Collaboration with commercial airlines		
"So what we did was that, um, we agreed with other airlines that, that, that will remove the seats, passenger seats from the aircraft, and by removing the seats they make space for, for cargo, right." (P3)	Commercial airlines acting as charters		
"There were times whereby we were sitting with over a hundred tons of shipment on the floor, not, not being able to be sent out." (P2)	Backlog due to capacity constraints		
"And we were pretty much able to do that. And, and we were within about six days able to get flights in and out of every country in Africa, um, and albeit with worse transit times, people who were used to, um, overnight services, um, Now were now getting their service in three or four days, sometimes five days. But the end of the day there was a service." (P6)	Increased transit time		
"So there were times whereby uh, shipments took longer before they can reach destinations, but our customers were kept informed.	Increased transit time		

Raw data extracts	Codes	Sub-themes	Main themes
And then our customers really trusted us during that time." (P2)			
"The passenger aircraft played an integral role with the global supply chain. Why? Because the quickest route from A to B is in a straight line and passengers like to go on the quickest route." (P4)	Increased transit time		
"I do believe that, especially in Africa, we're the only game in town because we are saving our own fleet of aircraft. And we were able to use and adjust." (P4)	Company X Aviation		
"When I think back to April, April 2020, you know, some of those transit of times were bad, you know, so, but we're now we gradually got back our transits, ours. We are the best transit at times. I think of all the courier companies." (P4)	Increased transit time		
"And we'd seen some good schedules KLM, especially from Europe and who we depended on, uh, in the Southern cone of Africa." (P4)	Collaboration with commercial airlines		
"So for example, um, in South Africa, we went straight into a level five lock down. Um, if you will recall that we went straight into the delivery of essential goods only, um, meaning that, um, we could only deliver goods that were deemed essential by the government. Um, that list started off very short. Um, and then it started growing exponentially as, as goods got added to that list, because I don't think anybody really thought about what was essential and what wasn't essential." (P6)	Transporting of only essential goods	Governmental Restrictions	
"we realized that in Africa, ourselves quite quickly, that a decision we made on Monday with the best will in the world might not be the right decision on Wednesday because it was that	Importance of being flexible, agile and nimble		

Raw data extracts	Codes	Sub-themes	Main themes
dynamic and things change so fast that something we were doing on Monday might not be the right thing on Wednesday. And in actual fact that might not be the right thing on Friday, what we decided to do on Wednesday." (P6)			
"Originally. There was also a very interesting step taken by the south African government, um, where they, they actually essentially also shut down all e-commerce kind of operations, where, where people were able to deliver goods that were non-essential to people's homes."(P6)	Restricting e-commerce		
"So there were, there was quite a lot of that kind of confusion, but luckily that sort of cleared itself up within three or four weeks, when I think everybody sort of realized that the stupidity of trying to decide on what is essential and what is not essential. So the government sort of had to come around to that. And then also realizing that, um, again, in a south African context, that 90% of the population was at home. People were frightened on to go to the checkers and pick and pay and all the rest of it. They had to allow home deliveries again, they had to start allowing e-commerce to flow again, so that it take a much more relaxed attitude. There was also the obvious ramifications that came with job losses. Um, businesses closing down because they weren't able to trade." (P6)	Reinstating E-commerce		
"And we eventually ended up, I mean, in those first couple of weeks, three or four weeks of, of essentially essentially, um, sorting out goods that were essential versus non essential goods. Um, we ended up holding about 35,000 shipments, uh, in our	Backlog		

Raw data extracts	Codes	Sub-themes	Main themes
Johannesburg facility in the gateway. And then eventually we had to start clearing these goods and, and delivering them to our service points where we could sort all of them. And then after about three or four weeks, the government said that we were able to then deliver these things. So then we went out and we had to deliver them, but it was quite a challenging time for us..” (P6)			
“What's our core business? We are parcels and small packets. So, you know, a half a kilo to 30 kilos. So what we saw was requests for 30 tons and stuff. Most customers, they all have an express account for their small, fast documents, a small parcels , and a logistics account with another with a freight forwarder to do their larger shipments, because indeed freight forwarding is a lot cheaper. We go up as the weight goes up, And what we saw is, you know, the freight forwarders, they were, they are still having real trouble because, you know, if the capacity's not there, the prices go up as well. So it actually puts us on par with the other ones and customers can come to us and go, can you do this, you know, in a better time for the same price. Of course we can, because we've got our own global fleet as well. All I've got to do is get it to Europe or middle east, then it goes on to one of our, one of our Intercontinental flights.” (P4)	Increase in shipment volumes as a result of demand driven pricing	Demand driven pricing	
“I think the primary trade restriction that would have had a very big impact was actually the, the main source for PPE out of the world.” (P1)	PPE exporting trade restrictions	Trade restrictions	

Raw data extracts	Codes	Sub-themes	Main themes
"Likewise, many governments responded to PPE imports and they imposed restrictions on importing of PPE into countries. For two reasons, one was to protect the local industries who actually were producing PPE to stop people importing it from China, and also to make sure that the PPE that was being imported met the requirements of the local health authorities." (P1)	Importing trade restrictions		
"So we picked up, you know, a lot of freight forwarding customers because the freight forwarders, they have many challenge because, you know, the cargo aircraft were full. We used our buying power because we are, you know, one of the biggest, uh, one of the biggest, uh, express companies in the world, you know, we can use our buying power with our airline partners, but we can guarantee not guarantee that space, but we're up there with the, you know, getting our cargo on board and having those contracts in place.." (P4)	Increase in customers		
"And suddenly it was discovered that a lot of the material that they were exporting out of China was substandard, didn't meet the health requirements and actually was a counterfeit product. So, the Chinese government acted very swiftly, and they posed imposed stringent export requirements on PPE." (P6)	PPE exporting trade restrictions		
"But there was a lot of lobbying that we did with governments. Um, and, and again, that was a very interesting exercise, um, because some countries such as Swaziland, Botswana and Namibia, uh, are reliant on South Africa. Uh, Swaziland is surrounded by South Africa so everything in and out of	Industry Lobbying		

Raw data extracts	Codes	Sub-themes	Main themes
the city comes out of South Africa. So you had one set of legislation imposed by the south African government on the south African side of the border, but yet a more lenient approach from the other authorities. So essentially you could move a pen and pencil set out of the city, but you couldn't bring it into South Africa and you could move, you could move it out of South Africa into the city." (P6)			
"Yeah. So, um, I think in the first days of COVID, we started with a bang and we had the famous, uh, Mr. fekile flashing his phone, you know, and say, look, no fly zone well done what have you just done? And we had to get to a young Jed, to go and lobby, uh, on behalf of American express parcels association to say to him, what have you done? Um, because by basically, you know, making that no fly zone, no aircraft coming in, he basically cut South Africa off from the global supply chain for roughly a week." (P4)	Industry Lobbying		
" unfortunately we were one of the people at the receiving end of some of the nastiest KPIs during that time, we actually had to even, uh, hire new people, um, for the business to hire temps that would come in and solve a problem because our people got sick. Um, and that led to an even greater problem because we started managing KPIs. Yeah. But our quality to our customers with specific, um, customers are complaining more, the people that we had hired as Temps, didn't actually understand our business, they weren't in it for the long-term anyway." (P5)	Temporary staff not understanding the business during a critical time	Poor customer service	

Raw data extracts	Codes	Sub-themes	Main themes
“So typically what happened was we found that more and more customers wanted to use shipping solutions because a lot of people that were traveling and pre lockdown a lot of people that were traveling when they traveled, took things for family members. So they took, I kid you not, they took medication, they took clothing items. Um, they took chargers, they took laptops. You know, it's a whole range of things that, uh, customers were sort of taking on planes with them. So now when Lockdown happened and none of those flights were leaving the country, um, the only option you had was to use a courier like us to transport that stuff.” (P5)	Change in customer behavior w.r.t shipments		
“And so we started seeing a different behavior we started seeing vitamins being shipped out. We started seeing prescription medications being shipped. Um, and that obviously it comes with whole host of issues because you cannot just send prescription medication, they have rules and regulations about what goes what's allowed in different countries. Um, and if you send something that shouldn't be there, it gets destroyed, it didn't get returned. So it just created more havoc for customers. So what would happen is because of all of these queries and people wanting to speak to somebody to get answers as to how long it's going to take for a medication to reach a different country.” (P5)	Change in customer behavior causes an increase in queries		
“. Although we had to introduce new things like contactless delivery and, um, more phone calls to customers and even leaving shipments on the pavement and phoning a customer and then coming out of their house. So they	Change in customer behavior w.r.t shipments		

Raw data extracts	Codes	Sub-themes	Main themes
offered to come and collect on the pavement." (P6)			
"I would say COVID-19 has changed our approach to the design of certain, uh, applications. Uh, we'd like right now. We have what we call the lockers, the swip boxes. We're looking at how we can make use of them, um, more and more, and now we can bring them into SSA. And, uh, right now the utilization is low." (P3)	Change in customer behavior w.r.t shipments		
"So I think change management in general is a problem…They'd start to wake up at seven 30, for example, and get delayed and not start at eight o'clock. Now this was not a widespread issue. These segmented issues with certain individuals in the team, then you had the supervisors that were mostly working because of the new inductees, but their staff were working from home and they will only be able to support with the new inductees. So the problem with the supervisors then was a trust issue because they were wondering, you know, now that our staff are working from home, you know, how much work are they actually doing? Are they working as efficiently as they should? And we started to see certain things go down in measure. For example, we've got, um, some issues with, uh, uh, average handling time. So when, when a call gets answered, we've got a reasonable timeframe that we deem is reasonable to end the call with. And what started to happen was people took longer on calls." (P5)	Change management		

Raw data extracts	Codes	Sub-themes	Main themes
"So they would just go up, secondly the two weeks training was never no way near enough for these guys. So because again, the systems are all completely different, as you know, lots of in-house built systems, so that I struggled quite a bit. Um, and we found the pressure being put on the poor supervisor who had to be stretched between various different people to ask for help. Um, we then had to ask most of our supervisors to return to the office and just be available. And I remember there were days where these new people would just raise their hand or stand up and they'll be, you know, waving a flag, whatever they could find." (P5)	Too many systems, training too short.		
"So we went to the, for people that are highly skilled and brought them onboard. And of course the repercussions of that were terrible. One was that those people were too skilled to be in our environment, so the first chance they got to get a permanent role, they left." (P5)	High call centre staff turnover		
"I think the one thing that we potentially can do better is to integrate these systems to work better, because like I said, it's various systems. And, um, I believe in, you know, the future that we want to get to, we should have one or two systems, not these various different systems." (P5)	Independent systems, not integrated.		
"And our training process is actually one that gets conducted over a six week period. That's how it should be done. However, because we were in a pandemic and our people just getting sick one after the other, we had absolutely no cover. They were days that we just weren't meeting service levels. I mean, there were	Decrease in training duration leading to poor service levels		

Raw data extracts	Codes	Sub-themes	Main themes
months on end not meeting service levels." (P5)			
". They were days in April that I remember where we had 700 abandoned calls in one particular day and it went on and on and on like that." (P5)	Increase in abandoned calls		
"There was technological issues that we had where not everyone had a laptop, they had desktops. Um, we didn't have 3g cards to give out to people. Our people did not have fiber connection at home." (P5)	Lacking tools	Working remotely and measures to reduce physical contact	
"Another thing, we also implemented employee rotation. That's actually something I'm exceptionally proud of in Africa. At no time during COVID-19, have we lost more than four hours in any facility in Africa, despite the outbreak and the peaks that we had. We managed to maintain, just about a 24/7, 365 of our time in Africa." (P6)	Employee Rotation		
"So we were then all using teams and we were virtually engaging with all our customers. Um, and, and obviously having a lot of data at our disposal that we will be able to target specific customers in specific countries, predicated on the, the frequency of use the, they need the views, um, the urgency of use of, for example, a customer like Siemens, that, that uses us across the continent for, um, critical care medical equipment that's required in hospitals and things like that. So, um, um, equipment in cat scans and x-rays and all that kind of stuff, but we were able to explain to them quite clearly what the impact would be and what kind of changes they	Communicating digitally with customers		

Raw data extracts	Codes	Sub-themes	Main themes
would have to expect in the business model." (P6)			
"And I think another thing that really helped DHL was whilst we such a big organization, the leadership is actually a very flat structure. So the people who really control DHL, there's very few in number. So the GMB, which is global management board is 10 people. And then there's six regional boards. So the, the control span whilst there's thousands of people in between all of these people that the communication channel from John Pearson global CEO to Hennie is a direct phone call. There's no layers to go through. So we were able to quickly make decisions. So for example, I directly report Hennie, but equally, my boss really would most probably be Travis who runs global operations and aviation. So, but I have the same access to Travis as what I have to Hennie. So we were able to, as a group talk very quickly amongst ourselves every day to make decisions." (P6)	Importance of a flat structure	organizational structure	
"And also the more people you go through, the more opinions there are, the message gets diluted and the more conflict there is. So I then didn't have to convince Travis's three people on what I wanted to do, I had to convince Travis and if others agree, then I could do it. But I didn't have to spend my time wasting time in trying to convince layers and layers of people, it was a very direct command and control. I could say Travis, that's my situation. That's what I want to do. That's my suggestion. What do you think? He could say, well, you know, um, maybe we should do it on Tuesday, not Wednesday. That was the debate, but very rarely will be second-guessed. And, and I	Less conflict in flat structure		

Raw data extracts	Codes	Sub-themes	Main themes
think that that really allowed us to respond in a, in what was ever changing dynamic world." (P6)			
			Relevant digital tools
"So, uh, I certainly think our customers actually, um, benefited hugely. And the big theme for me was that normally when we are talking to a customer, um, it would be through an Email and we'd send them a letter, an email, the sales person would call them up and have a chat to them. I think what this did for us was it expanded our reach. So we had webinars where we had eight or 900 customers on those webinars from the biggest to the smallest. So there, so we were able to actually talk to eight or 900 people with a very consistent message." (P6)	Increasing customer reach with virtual communication	Virtual communication	
"You know, if I travelled to Kenya and I was in Kenya for a week, well then that's where I was and I wasn't anywhere else. I wasn't anywhere else with COVID. I was able to be everywhere and I'm still actually using a lot of digitalization to get everywhere. So people that I'd never spoken to in my entire five years in DHL, uh, in Africa we were suddenly talking to the couriers in The Gambia or in equatorial Guinea, or in Liberia, you know? COVID actually gave us the opportunity to go through digitalization, to actually get into those countries, join the PDs in the countries every day and actually talk to the troops. So, so I actually think it was really a great benefit for us. And whilst we didn't travel from our chairs, we probably did a million more miles then we would have been able to physically do." (P6)	Ensuring continuity through virtual communication		
"So we, we now have to engage people more remotely, and that is	Back draw to virtual communication		

Raw data extracts	Codes	Sub-themes	Main themes
when digitalization comes and we spend most times now on calls and meetings, online meetings. Engaging these people, we now have to do things remotely online when we have to travel as much as we did. So our approach has changed, has changed our approach to things. I mean, probably we spend more hours doing things more, but we're still getting things done despite the fact that we can't travel, we have to do things remotely. So the change is there. We, we, we certainly can't go and get into those countries and support them as much as we used to or the way we used to because of, of travel ban and getting into the countries, looking at the ops process. But now we now have to engage them on online meetings and they have to take us through that process, uh, you know, online and remotely." (P3)			
"Um, we've got a bot intervention where the bot will be trying to answer questions before handing that over to, um, an advisor, which are what my staff are called. We also have a, uh, another RPA bot, which is a WhatsApp bot. So there is a WhatsApp phone number that our customers can utilize, um, and contact us to get any information on shipments that they need." (P5)	RPA Bot	RPA	
"So we've got a process called a trace, long story short. What the trace actually does is, um, it is an opportunity for us, um, to query where a customer's shipment is. Now this trace process like I say, it's very reactive, we have now a proactive way of doing this by using a bot so what the bot does is there is a a system called NPTS in our, in our business. And in that	Trace Bot		

Raw data extracts	Codes	Sub-themes	Main themes
space, um, you know, the customer would, the customer wouldn't know what we are seeing, but on our side, we'll be able to see the shipment should have, uh, a scan code by now, based on the time that this, uh, plane was due to land in that country. And if it doesn't have an update code, the bot automatically opens up this trace. Um, and so it will go to the Team with the trace being opened automatically to the customer's contact details from the waybill data. And when the customer hears from us, it's actually the tracing team following up on a shipment saying Mr. Customer or Mrs. Customer, there is are problem here. Um, you know, we, we are trying to track down where your shipment is. This is what we found. It is delayed at customs, there isn't an update on the system as yet, because there was a problem with the scanner. So it proactively allows us to go and contact the customer and give customers feedback rather than wait for the customer to phone us and say, did you miss up my shipment?." (P5)			
"There is also an optical character recognition, uh, project, which is, this has been integrated with a few applications also where invoices can't, uh, or your invoices. Uh, this OCR goes and look at certain information, picks it in, uh, gets it into about one or two applications." (P3)	Basware OCR		
"Another initiative that we are running is called speech analytics. So basically in a call center, you handle thousands and thousands of calls on a daily basis, right? I mean we've had days where we kid you not, handled 4,000 calls a day, um, you know, center. And	Speech Analytics	Big Data Analytics	

Raw data extracts	Codes	Sub-themes	Main themes
the problem is that when you assist in quality, you only assess a small percentage of the quality from those 4,000 calls. You probably only listening to 60 of those to do quality assessments and manage the quality aspect. And the problem with that obviously is the obvious, you know, um, you're not listening to majority of the calls from your customers. You don't actually know whether your customers are happy or sad. So the speech to text analytics, what it does is it creates these word clouds that tells you negative versus positive words, what our customers are saying about the brand and it can measure on all calls that are coming into the center." (P5)			
"And then Big Data Analytics is also happening, uh, in our business. Um, there's another system that we are using and using Big Data Analytics. So it can take huge amounts of data and formulate it into graphic illustration, where you have bar charts, pie, charts, um, donut chart, um, and it breaks down the information and shows you already, you know, where the major areas of focus, uh, on a high level. And you can go down into the actual finite detail of an air waybill." (P1)	Big Data Analytics for information availability		
"From a shipment level, uh, all the details of the shipment, the weight, um, the, I mentioned the origin, the destination. Um, so from, from a shipment point of view, in terms of shipment numbers and volume by weight, um, that information is definitely critical because we really need to know what is currently in our network right now at any given point in time, what volumes of parcels are coming in, uh, to the region or to a country, what	Big Data Analytics for information availability		

Raw data extracts	Codes	Sub-themes	Main themes
parcels are going out of country or region, and by having big Big Data Analytics available, having an integrated dashboard, uh, that can show us, uh, data in real time, it's really critical for us to be able to manage how we process those shipments, um, and those, those, uh, cargo in an outbound." (P1)			
"So Tableau is another online platform that is working in integrated with our data and it'll build automatic automated dashboards, um, and take the data and visualize it for you in graphs, et cetera. And then there will also be no need for manual intervention. Once you customize your dashboard for how you want it, it'll then be fully automated and no, uh, manual intervention will be required." (P1)	Tableau/Dashboards		
The purpose of Big Data Analytics is to effectively utilize all the data collected by Company X to create value for the company. Building on their strong Business Intelligence (BI) platforms under IT, driven by the BI CoE. It allows Company X to achieve higher productivity and drive down costs (DHL International, 2020).	Purpose		

Raw data extracts	Codes	Sub-themes	Main themes
"…something called a conversational AI, It is the next big thing, uh, for contact centers, but it incorporates all of your back office services, your back office teams. So for example, if I'm a customer and I am phoning in the telephone line, which is an 0860 number, and as I dial I realized, oh, I really need a smoke. I could select an option on the, the phone line that says, um, please, can you transfer this call as a WhatsApp to me? And we'll continue the conversation via WhatsApp. Then the system would ask you to type in the phone number, um, that you wanted to utilize for, uh, your WhatsApp conversation. Then whilst you're on the line, the message gets sent to your phone via WhatsApp saying, you have asked us to contact you via this channel. Please confirm with this as a channel you want to use by clicking on this link and whatever the case is, you click on the link, you go into WhatsApp call or WhatsApp chat, or WhatsApp call depending on your, um, on your preference. And so conversational AI takes effect. And so you, you know, you can, you can contact, uh, your service provider on your terms and the way and the manner in which you want to contact them. "(P5)	Conversational AI	Artificial Intelligence	
"We had a problem a few years ago with the quality of, uh, Clearance and the data that our, uh, declarants were inputting when doing the, uh, the clearances for IBM. So all they wanted to do is they want to find a way to eliminate all the clerical errors, et cetera, wrong codes, or country of origin. So they came, they actually came to us and said, look, DHL. And we're actually building a block chain. Uh, we'd like you to be	IBM	Block Chain	

Raw data extracts	Codes	Sub-themes	Main themes
involved, uh, as our logistics partner. Um, yeah. So I've been on that project now probably two years, two and a half years actually. Um, and went it live in the go live. It went live in February. Yeah. We went live in February and as far as we can see, it's looking good." (P4)			
"It's Nigeria, Nigeria, Ghana, Mauritius, Kenya. Okay. There they're the countries that have gone live with it." (P4)	Countries		
"And basically it fills out the single administration documents, all the data required to fill that out, so it limits the human interaction and mitigates mistakes, there is still human interaction because none of the custom systems in the region are mature enough to actually have that data and connect." (P4)	Aim		
"I think from a DHL perspective, I think block chain is a little bit far off." (P4)	Block chain is far off in SSA		
Centers of Excellence (COE's) are teams with dedicated experts and resources that work across, or within BUs to accelerate digitalization. Block chain evaluates the use of block chain technology, such as for automated billing, smart contracts, document processing, and shipment tracking. The current lack of end-to-end (E2E) integration (retail, Custom, end-consumer) generates unnecessary complexities and low levels of trust amongst stakeholders, leading to an excess in administrative costs (DHL International, 2020).	COE's		
Block chain can provide unique solutions to create value and reduce cost by providing shared data in the eco-system that is	Value of block chain		

Raw data extracts	Codes	Sub-themes	Main themes
trusted and peer-to-peer communication. Block chain also depicts the unique true value of the goods, shared from shipper to customs and clear liability of clearance as well as full traceability of the E2E process. Additional block chain benefits include the integration of existing internal services, data transparency towards end-consumer and enhanced data quality for clearance (DHL International, 2019).			
Block chain POC_x-Border e-commerce demo internal documents DHL-SPO import MEA-TOBEprocess in Details-for Calls – internal presentation	Proof of concept and process		
"We found there were a lot of manual interventions taking place and lots of paper lying around in warehouses. Um, and some of the feedback that came out of that was customs feel that the customs officers feel certain that if digital platforms are more leveraged, they will lose their jobs, but they are not seeing that it will actually improve the way they do their work.." (P1)	RTC	Paperless Trade	
Paperless Trade in SSA – Internal document mapping the Countries in which PLT has been deployed	Progress		
"So we, everything we sort of, we do the online book booking. So the airline will know, okay, today DHL will be, uh, having one pilot, uh, the waybill no is so forth and so forth. So everything gets done online. So we do the block bookings." (P2)	CAMS		
"So that in itself, paperless trade has helped us to facilitate our import and export, in a speeded way. Because during that time, we did not want to waste time, right.	PLT speeds up the process		

Raw data extracts	Codes	Sub-themes	Main themes
In the ramp, trying to sort out the manual load to plan manual, uh, paperwork. So the flight will come in, get offloaded and we'll load and It goes, okay, while customs is there facilitating that while the other carriers are there. So it has really helped us in a big way, because the other airline partners five hours before, before the, the, the operation, or before the flight take off, they will know the estimated weight. So they can start planning the fuel as to how much fuel do they need to put into their aircraft. Okay. Um, how many crew members do they need for that operation? Okay. So it really had helped them to, to, to, to speedy their plans, as well as their operation. So it was just touch and go. So that in itself, it has really helped us." (P2)			
"But the problem is everyone likes hard copies, blue stamps, make sure it's, uh, make sure it's proper. So there are only, um, how many they are, but I'll share it with you. Um, there are only certain countries and then mostly the, the more mature companies, uh, countries, um, South Africa for one, they can do it, um, Nigeria for, for another, they can't, uh, because they want to see the original invoice." (P4)	Deployment		

Raw data extracts	Codes	Sub-themes	Main themes
“you'll find technology drives, you know, uh, value in business in, in about four ways I can think of, uh, one is announced connectivity, um, automation of manual tasks, um, and improved decision-making as well as product and service innovation. So that's where the e-commerce market and due to our innovative ways, um, the e-commerce platforms were being developed and customers have the online means of going and being able to ship with DHL.” (P1)	Technological value	Strategy 2025 – “Digitalization”	
The basis of strategy 2025 has been created in close collaboration with a diversity of group partners worldwide, that form part of both the frontline workers as well as management and executive level to bolster a shared view (DHL International, 2019). As part of strategy 2025, they will be expansively refashioning its Information Technology (IT) systems, incorporating new IT technologies and ensuring employees have access to progressive training that will be able to permit them to use the aforementioned technologies. (DHL International, 2019).	Strategy 2025		

Raw data extracts	Codes	Sub-themes	Main themes
“So what we were trying to do is all the clearance data so how much have I paid over the last year, or how much duties did I pay, you know, all that data we didn't really have that we had to, we had to go in and we had to do it manually. So it was long laborious. And a lot of our competitors they have them, because remember DHL is and express parcel business. So the way we did it was we based it around the waybill, which was, you know, it was probably logical at the time. Now the people that copy this obviously looked through all the processes and said, well, actually you need to base it around the, the clearance. Yeah. Because everything is about the clearance, so our competitors, they can do what GCCR does, they can do everything. So we are chasing, you know, them now saying, well, we need this reporting because every, all the big companies, the global companies, they're all asking for this kind of reporting,” (P4)	Aim	Global customer clearance reporting	
With assurance from the Global IT architects, the designed solution will not disrupt the current process and data flow between country clearance and local Clearance authorities. As such, the other components of the Clearance Reporting Program are being built and/or enhanced in parallel with GCCR, and these need to be ready for the clearance data archive to auto-flow into GCCR (DHL International, 2020).	GGCR		

Raw data extracts	Codes	Sub-themes	Main themes
". So the courier has a handheld it's now, you know, a scanner that looks like a mobile device. So it's definitely a smart device, um, that are now used in the warehouses. So it's no longer one. That's probably like your traditional infrared or RFID scanners. So you have now one, which is a mobile, like a mobile device, and it connects to the internet. It's got, uh, uh, network connection points in it. So even if the courier is not in the warehouse, it won't need the wifi to still connect to an external network. So it's a smart, a smart device that gives the courier a number of functionality in it. So he's able to have, for example, Google maps and he can see his route. He can plan his route, et cetera, within the scanner. And then obviously once he comes back to the office, there'll be through wireless connection that you can transmit all the data from the scanner to our systems previously, maybe you will need to connect it physically into a device from the scanner itself to a laptop or desktop, and then download your data. But now that can be done, uh, that can be done, uh, wireless wirelessly." (P1)	IoT Courier Scanners		
The Internet of Things (IoT) aims to virtually connect anything to the internet, permitting everyday objects to process and store information. IoT will facilitate far-reaching payoffs for logistics companies (DHL International, 2020).	Aim		

Raw data extracts	Codes	Sub-themes	Main themes
GCCR UAT Kick-off Overview and Progress internal documents (PPT)	Overview		
Smart Workspace refers to Company X's digital ecosystem of the future. It consists of platforms, tools and applications designed to enable comprehensive collaboration and improve communication and productivity (DHL International, 2021).	Aim	Smart Workspace	The culture of Company X towards digitalization
Smart Workspace not only brings all this together under a single "brand," but also ensures the various applications are intelligently linked. Company X believes that it is not just about access to the latest applications; it is about the impact these tools can have for each employee and for the company (DHL International, 2021).	Linking Applications		
"I'm going to say 50 50 because yes, people are seeing the benefits, the value of digitalization definitely. And they can see, you know, how it can improve the way we do things or we can become more efficient. Um, so definitely I would say people are embracing it and are also welcoming it, but then on the other side, I would say, and I'm only, I'm just giving you this based off, you know, how I would be perceiving it right now. And I would say the other 50%, uh, probably, you know, people are	Job Security	RTC	

Raw data extracts	Codes	Sub-themes	Main themes
thinking, you know, does this now put our jobs at risk." (P1)			
"Some are taking it positively or positive while others are really skeptical about it too, because they, they believe that it will take away their jobs. Okay. I have had a contest with some of my team members who are doing this online bookings because what they were doing even before, so they will call the airlines and they were doing it manually when they were paying, they were paying the, we're doing the reconciliation manually. the work that they used to do it in five days, they can now do it in less than in less than an hour. Okay. So the, they are worried they might lose their jobs." (P2)	Job security		
"In respect to the people I interact with, I would say people are there to, to ensure the success of digitalization. I've not seen anyone who's been threatened by it so far." (P3)	Job security		
"And the problem is, is the guys up at the top. So the ministers, they get it, they see digitalization as the way to go, okay, they're understanding. But when it comes to the officers on the ground, you know, they see it as a threat, they see it as the threat to the, their jobs. It's not, it's just going to make them more efficient, but they see a computer and they see technology is coming to take their jobs." (P4)	Job Security		
"There is an aspect called change management. It's difficult sometimes to change the mindset of costumers, who is used to couriers printing waybills for them writing waybills for them in certain places. So it is a mindset change or mind, or, you know, the gap, there is a gap right now, and we just	Change Management		

Raw data extracts	Codes	Sub-themes	Main themes
need to fill in that gap by engaging these guys properly and making them know that this is the benefit we bring to you as a customer, as shipments get delivered quickly, because Clearance starts even before the shipment leaves the origin country and all of that" (P3)			
Company X believes that Digitalization needs to be driven by the business itself. Project Campfire is their bottom-up approach to make all Digitalization initiatives visible in one place and provide more autonomy to execute it locally. It is supported through their company portal with the first version live and accessible to all employees. Campfire absolutely relies on the people of Company X to continue working on the great local initiatives, and to share them via the portal (DHL International, 2020).	Aim	Project Campfire	
". There needs to be an introduction to that already at high school level. So, and then universities as well, for instance, need to probably my view that providing courses or modules or subjects on, on these. And that's just the way to start upskilling our people locally, because right now I feel there's still a lot of quiet for that resource, that resource of labor in those fields, or that expertise will be very low right now. So if technology is moving at such a rapid pace, it's going to be difficult for most countries to even keep up, if you don't even have the technical skills, uh, in line with the technological advancements." (P1)	Not ready for 4th IR	The African skill force	
"I've had people, they, the, the leave university today, uh, but day to day do not possess, or they do not have the skills that the	Not ready for 4th IR		

Raw data extracts	Codes	Sub-themes	Main themes
business required today. Okay. So many colleges and universities are, are producing graduates, but do those the question, is, are those graduates, uh, really in line with what the current market, or the current employers are looking for, right. Essentially in terms of the digitalization. So the universities, colleges, schools, I think they just have to be serious with, uh, um, the digitalization courses." (P2)			

APPENDIX G

- Interview Matrix -

Research Aim:	Critical Research Question:	Theory Questions	Interview questions
The aim of this research was to assess the role of digitalization in supporting business continuity amidst the COVID-19 pandemic within Company X.	How does digitalization support business continuity amidst the COVID-19 pandemic within Company X?	What disruptions occurred as a direct result of COVID-19?	1. Can you please tell me about your experience and current role at company X? 2. How long have you been in your current role? 3. How is managing COVID-19 related disruptions a part of your role? 4. What departments are involved in managing COVID-19 related disruptions?
		What digital tools can address COVID-19 related disruptions?	1. What is your personal understanding of digitalization? 2. Do you think digital tools such as cloud computing, PLT, RPA, Big Data Analytics and AI could benefit Company X? 3. Do think PLT is feasible to implement at Company X? 4. Do you think PLT will affect employee performance at Company X? 5. In your opinion, how could PLT provide value during turbulent times such as COVID-19? 6. What main challenges did you experience during COVID-19 and how did you

Research Aim:	Critical Research Question:	Theory Questions	Interview questions
			ensure business continuity?
		What is the company's attitude towards digitalization?	1. How would you describe the culture of organization X towards digitization? 2. Would you say employees show a high degree of resistance to change?