

**Promoting the communication participation of  
vision impaired persons via digital inclusion:  
The role of a mobile network operator's processes.**

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## PLAGIARIASM DECLARATION

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Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

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## ABSTRACT

This study aims to determine how the processes of a mobile network operator (MNO) promote or hinder the digital inclusion of vision impaired persons in South Africa. It draws on the Diffusion of Innovation (DOI) theory and concepts in Inclusive Design, as well as the Social Model of Disability. Viewing the Diffusion of Innovation theory through a social model lens highlights critical gaps and enables the development of a framework for digital inclusion, making a significant contribution in the field accessible ICTs for persons with disabilities. A single case study with an embedded unit is used to identify and describe an MNO's processes in terms of whether they promote or hinder digital inclusion. The study includes documentary sources, semi-structured interviews with MNO management, and focus groups with vision impaired consumers.

Findings are presented under two themes, namely 'inclusive culture' and 'inclusive design'. The first theme proposes five processes that MNOs should implement to promote an inclusive culture. Firstly, MNOs must frame disability inclusion as a commercial opportunity and not as charity. Secondly, MNOs should distinguish between an integration and an inclusion approach in their processes. Thirdly, top management should display personal leadership when supporting disability inclusion. Fourthly, MNOs must recognise the role played by disability employment in promoting broader consumer inclusion. Fifthly, MNOs must adopt a purpose-led approach to ensure that staff render empathetic customer service.

The second theme outlines five key considerations when implementing inclusive design for promoting digital inclusion. Firstly, reliable connectivity and accessible devices are key to digital inclusion. Secondly, affordability is a barrier to digital inclusion for many vision impaired South Africans. Thirdly, vision impaired persons should be viewed as a viable consumer group. Fourthly, education and marketing are essential for raising awareness about accessible technology and services among both MNO staff and the public. Fifthly, promoting digital literacy enables vision impaired persons to use technology optimally.

This study proposes that MNOs implement processes that embed inclusion and inclusive design into their culture in order to meet the needs of vision impaired persons. This will ensure that vision impaired consumers not only become part of a connected society, but are also able to participate in it.

Keywords: mobile network operators; digital inclusion; processes; vision/visually impaired; accessibility; Global South, information communication technology

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## LIST OF ACRONYMS

ANC – African National Congress

BCODP – British Council of Organisations of Disabled People

CEO – Chief Executive Officer

DOI – Diffusion of Innovation

DPO – Disabled People’s Organisation

DPSA – Disabled People South Africa

GATE – Global Cooperation on Assistive Technology

GDP – Gross domestic product

GSMA – Global System for Mobile Communications Association

ICASA – Independent Communications Authority of South Africa

ICT – Information communication technology

LGBT+ - Lesbian, gay, bisexual, transgender, queer and intersex

MNO – Mobile network operator

SAHRC – South African Human Rights Commission

SARS – South African Revenue Services

StatsSA – Statistics South Africa

UCT – University of Cape Town

UK – United Kingdom

UPIAS – Union of the Physically Impaired Against Segregation

UNCRPD – United Nations Convention on the Rights of People with Disabilities

WHO – World Health Organisation

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# CHAPTER 1

## 1.1 Introduction

Chapter 1 introduces this thesis by orientating the reader to the focus of the study. This chapter provides the background to the study, explains the rationale of the study, describes the positioning of the researcher and the aim of the study.

## 1.2 Background to the study

The World Health Organisation's (WHO) 2019 World report on vision states that 2.2 billion people globally are vision impaired or experience blindness of whom at least 1 billion have a vision impairment that could have been prevented if people had access to eyeglasses or cataract surgery. This is a substantial problem in low- and middle-income countries, among older people and in women, and in rural and disadvantaged communities where access to health care services and medical intervention is limited or too expensive for the majority of poor people (WHO, 2019).

There are numerous implications of being vision impaired. The WHO (2011) states that in almost all societies persons with vision impairments are often marginalised and their lives characterised by prejudice, exclusion, poverty and discrimination. On a cultural level, there are often negative stigmas associated with blindness, that further isolate vision impaired people. Many disabled people are hidden by their families in order to protect them from stigmatisation and abuse (Reeve, 2012).

Due to barriers in the environment, many vision impaired persons may find it challenging to move around safely which maintains their dependence on others. Coupled with this, they often experience difficulties in organising and performing activities, such as shopping, which may limit their participation in society (Al-Mouh & Al-Khalifa, 2015). Hence persons with vision impairments may have to reorganise their lives and learn new ways of doing things.

Almost every aspect of people's lives and work is influenced by digital technology. Foley & Ferri (2012:192) mention that one of the ways that vision impaired persons seek to enhance their independence and to participate in society is through the use of mobile network operators (MNOs) and information communication technology (ICT). MNOs have a role to play to ensure

that processes are implemented that promote the digital inclusion of vision Impaired persons so that no one is left behind.

This is where the use of mobile technology has the potential to promote the independence of vision impaired persons and promote their integration into society (Kim, Han, Park & Park, 2016). Vision impaired people use ICTs for various purposes, such as education, work and recreation (Nierling, Maia, Hennen & Wolbring, 2018). Technologies enable disabled people to live productive, independent and dignified lives, yet most of the people who need them are unable to access them (Rohwerder, 2018). There has been an increased effort over the past few decades to ensure that mainstream mobile technology (hardware and software) has built-in accessibility features, such as screen reader software, which promotes the independence of vision impaired persons and their participation.

This study explores how the policies, practices and processes of an MNO in South Africa promote or hinder the digital inclusion of vision impaired consumers. 'Policies' refers to implementing corporate and government policies, 'practices' refers to a company's culture, whilst 'processes' refers to the processes that various business units implement such as affordable products, customer service and disability education. Should MNOs implement processes that promote the digital inclusion of vision impaired persons, it would enable them to access technology which will enhance their participation in society.

As part of the WHO's Universal Health Coverage project, the Global Cooperation on Assistive Technology (GATE) initiative was established with the aim of improving access to high-quality affordable assistive products globally. The GATE initiative focuses on five interlinked areas namely, people, policy, products, provision and personnel (5p's). This aligns with the notion of MNOs promoting accessible mobile technology and in doing so, promoting the digital inclusion of vision impaired consumers (Holloway, Austin, Barbareschi, Barajas, Pannell, Ramirez, Frost, McKinnon, Holmes, Frazer, Kett, Groce, Carew, Alghaib, Tebbutt, Kobayashi & Seghers, 2018).

### **1.3 Context of the study**

This section provides details on the state of mobile communications globally and in Africa, an overview of an MNO in the Global South as well as of technology use in South Africa. The context of technology and disability and vision impairment in the Global South is furthermore described. Thereafter I turn my focus to technology use in the Global South.

### **1.3.1 State of mobile communications globally**

By 2019, the number of mobile users globally had grown to 3.8 billion, whilst the penetration rate of smartphones was 65% and is expected to increase to 80% by 2025 (GSMA, 2020). A total of 5.2 billion people subscribed to mobile services, accounting for 67% of the global population (GSMA, 2020). Mobile technologies and services generated \$4.1 trillion of economic value, or 4.7% of gross domestic product (GDP) globally. This shows the huge impact that ICTs have on countries' economies, enabling societies and communities to participate in a digital society.

The global mobile ecosystem directly generated \$1.1 trillion of economic value in 2019, with mobile operators accounting for more than half of this, followed by device manufacturers, content, applications and other services, distributors and retailers, and infrastructure providers (GSMA, 2020). The ICT industry furthermore supported 30 million jobs directly and indirectly on a global level (GSMA, 2020). Smartphones have revolutionised the telecommunications industry by becoming the primary means of internet connectivity (Gillwald & Mothobi, 2019). However, despite progress having been made, the adoption of mobile internet continues to lag behind due to issues of affordability, lack of awareness, and a lack of digital literacy skills (GSMA, 2020).

### **1.3.2 State of mobile communications in Africa**

Perceptions of Africa are changing from the view that it is merely a continent of wars, famines, and entrenched poverty in the late 1990s, to being regarded as 'Africa rising' and being in an 'African 21st century' (Beegle, Christiaensen, Dabalén & Gaddis, 2016). Sub-Saharan Africa consists of low-, lower-middle, upper-middle, and high-income countries, eighteen of which are fragile or conflict-affected (The World Bank, 2020). In Africa, the rapid diffusion of ICTs over the past decade has enabled consumers to access technology and participate in a connected society. Notwithstanding growth in mobile technologies, almost half of the world's uncovered population lives in sub-Saharan countries (GSMA, 2020). At the end of 2019, 477 million people in sub-Saharan Africa subscribed to mobile services, accounting for 45% of the population (GSMA, 2020). Smartphone adoption continues to rise in the sub-Saharan region, reaching 50% of total connections in 2020, as cheaper devices become available (GSMA, 2020).

The rapid growth of ICT services enables developing countries to participate in the digital economy and to increase their economic competitiveness (Research ICT Africa, 2019). The

mobile ecosystem in sub-Saharan Africa supported almost 3.8 million jobs, directly and indirectly (GSMA, 2020). Mobile technologies and services generated 9% of GDP in sub-Saharan Africa in 2019 – a contribution that amounted to more than \$155 billion of economic value (GSMA, 2020). Despite affordability being a barrier, *The Final Technical in Understanding Digital Access and Use in the Global South Report* (2019) states that users in Africa spent between 11% and 27% of their income on mobile communications, whilst users in developed countries spent 2–3% of their income. Africa is predominantly a prepaid mobile environment, as affordability issues prevent people from considering alternative payment options such as contracts. One of the major MNOs in the Global South that focuses on the digital inclusion of vision impaired persons is situated in South Africa.

### **1.3.3 Overview of an MNO in the Global South**

This study focusses on one particular MNO in South Africa which is responsible for diffusing technology and services in seven countries on the African continent. Having a market share of 50% makes it the largest out of the four MNOs in South Africa. One of the world's largest communications companies has a 60.5% shareholding in the MNO.

The MNO group is based in South Africa, and its operations includes six other mobile networks operating across the African continent in Tanzania, the Democratic Republic of Congo, Mozambique, Lesotho and Kenya. The MNO is a communications and technology company which provides a wide range of communication services, including data, mobile and fixed voice solutions, digital, Internet of Things, financial services, enterprise technology and converged services to 123 million customers. The MNO's mobile networks reach a population coverage of 296 million people.

The company leverages technology to help bridge the digital divides that exist in society. The MNO's strategy is driven by a strong purpose-led culture that embraces 'connecting for a better future' which is at the heart of the company. The purpose-led strategy consists of three pillars, namely building a digital society, promoting inclusion for all and preserving the planet. The inclusion for all pillar entails ensuring that that the most vulnerable are not left behind.

Although South Africa is one of the richest countries in Africa, and the MNO is a powerhouse for technology and digital inclusion in Africa, the country is part of the Global South (Varrella,

2020). South Africa is a majority black, multiracial country and has a population of nearly 60 million people (StatsSA, 2014). The country is unique in that it has a history of apartheid which is specific to South Africa and is not shared by other countries in the Global South. The apartheid system discriminated against black people and denied their human rights, which resulted in South Africa becoming characterised by high levels of inequality. South Africa experiences a paradoxical status of being wealthy due to natural resources, yet the country continues to experience socio-economic challenges such as high rates of poverty, social inequality and unemployment.

The term 'Global South' refers to regions of Africa, Latin America, Asia and Oceania and forms part of a group of terms including 'Third World' and 'Periphery' which refer to most low-income countries outside Europe and North America (Dados & Connell, 2012). These countries and regions are characterised by underdevelopment and a history of colonialism which sustain inequalities in living standards (Dados & Connell, 2012). The 'Global North' refers to countries characterised by wealth, privilege and development. According to Lewis (2017), countries in the Global North have, since the colonial era, assumed that rich Western countries know best and that the transfer rather than exchange of knowledge, technology and expertise occurs from developed to developing countries.

Disability studies scholars Watermeyer, McKenzie & Swartz (2019) from the Global South emphasise that the foundation of disability studies is the politics of voice. They argue that disabled people's voices from the Global South are not heard and that their lived experiences are generally not shared, making self-representation difficult. For these scholars it seems that disabled people from the Global South 'were being spoken for and about, rather than speaking for themselves and being spoken with. They were not part of the conversation' (Watermeyer, McKenzie & Swartz, 2019:2). Hence understanding the lived experiences of vision impaired users adopting technology in the Global South will contribute towards giving voice to people with disabilities in the Global South.

#### **1.3.4 Technology use in the Global South**

According to Goggin (2018), technology plays an important role in the future of disability studies, as it will be continuously expanding whilst having an impact on people's lives. Not many technology studies have been conducted by disabled users within the Global South. There are few studies about the role and impact of technology in countries of the Global

South (Goggin, 2018; Dalvit, 2018). A study conducted in 2016 (Pal, Chandra, O'Neill, Youngman, Jones, Song, Strayer, & Ferrari) entitled *An Accessibility Infrastructure for the Global South* proposed an 'accessibility infrastructure' view to understanding accessibility in real-world settings for people with vision impairments.

In 2018 Avle, Quartey and Hutchful conducted a study of investigating usage patterns around mobile telephony in the global South to consider how research from the global north translates into the global South context. The study confirmed that data generated by everyday uses can be useful for research. A more recent study was conducted with vision impaired people and their use of mobile phones in an informal settlement in Kenya (Barbareschi, Holloway, Arnold, Magomere, Wetende, Ngare & Olenja, 2020). The study suggest that mobile technology shapes the creation of social infrastructure when people with vision impairments utilise their existing support networks.

Another study focused on understanding the impact of mobile technology in the lives of persons with disabilities in Kenya and Bangladesh (Jahan, Barbareschi, Aranda Jan, Mutuku, Rahman, Austin & Holloway, 2020). The study show that mobiles phones enabled disabled people to experience improved social connection, increased independence and access to opportunities. The studies conducted in low- and middle-income countries confirm the positive impact of mobile technology on the lives of disabled people. It is thus of critical importance that MNOs include the needs of disabled persons in their consumer strategies.

### **1.3.5 Vision impairment in South Africa**

The 2011 census indicates that approximately three million people or 7.5% of the South African population have disabilities (StatsSA, 2014). One of the most prevalent disabilities in the country is vision impairment. According to the WHO (2019), blindness is defined as a visual acuity of less than 6/12 in the better eye. This refers to a person who is six metres away from a standard eye chart can only read the same-sized letters that someone with 20/20 vision can read from further away.

People impacted the most by visual impairment are those from low- and middle-income countries and from underserved populations, such as women, indigenous peoples, disabled persons and those living in rural communities (WHO, 2019). In South Africa, 32% of the disabled population were persons with vision impairments. Statistics show that vision impairment increase with age (StatsSA, 2014). The prevalence of persons with severe

difficulty in seeing was the highest in rural areas, namely 1.9%, whilst the urban areas had the lowest proportion, namely 1.6%.

Persons with vision impairment are not a homogeneous group, as there are different levels of vision impairments, such as being blind, partially sighted or having low vision. Each of these groups has its own unique needs when it comes to using technologies to assist with daily life activities. Some people are born with a vision impairment, whilst others acquire it later in life from an accident or an illness (Atkinson & Castro, 2008). A report published in 2002 on the prevention of blindness in South Africa, shows that cataracts and glaucoma were the main causes of blindness. This trend continued, as cataracts remain the leading cause of blindness in low- and middle-income countries according to the latest WHO (2019) report. In South Africa, 80% of blindness is avoidable and treatable (WHO, 2019; Department of Health, 2002).

Vision impairment further impacts the lives of those who are affected by poverty. Blindness exacerbates poverty and can lead to financial insecurity and social isolation. In South Africa, limited transport, employment and access to ICT are some of the biggest challenges that vision impaired persons experience. According to the WHO (2019), persons with vision impairments tend to have lower rates of employment. The current unemployment rate of vision impaired persons is extremely high, at 97% as of 2010 (SANCB, 2010).

Regarding education, a report on education for vision impaired persons in South Africa indicates that education of vision impaired people is a failure (Fish-Hodgson & Khumalo, 2015). Some reasons for poor education are the lack of funds, qualified teachers, inclusive approaches, and understanding of the needs of vision impaired learners. The impingement upon vision impaired children's rights to basic education and equality impacts their human dignity.

#### **1.4 Policy context**

In an attempt to correct past discriminatory practices against persons with disabilities, South Africa has adopted a number of policies to promote their inclusion. The *Constitution of The Republic of South Africa* (1996) upholds the rights of disabled persons through equality, non-discrimination and human dignity. Most South African policies highlight access to information and communication as a priority. The South African government has included disabled

persons as equal citizens in their 2030 National Development Plan, which states that barriers to information and communication should be reduced. The South African Presidency has furthermore placed focus on promoting disability equality by establishing a Presidential Working Group where various disability organisations are represented. Disability rights and justice are upheld by *The White Paper on the Rights of Persons with Disabilities (2015)*, which states that society must provide an accessible, barrier-free environment to promote access to information and communication.

Government and the private sector work together to enable competitive markets and to help shape the digital environment according to consumers' needs. There are numerous regulatory policies which promote the digital inclusion of disabled persons. ICT legislation such as the *Electronic Communication Act (2005)* mentions that the needs and requirements of disabled people must be taken into account and that accessibility must be seen as a priority. The *Draft Code for Persons with Disabilities* published in 2020 by the Independent Communications Authority of South Africa (ICASA) encourages MNOs to ensure that their products and services are accessible to persons with disabilities.

South Africa is furthermore a signatory of the *United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)*, which states that accessibility should be considered in all elements of social, economic and information and communication with the aim of encouraging disabled persons to fully enjoy their human rights (*White Paper on the Rights of Persons with Disabilities, 2016*). Article 9 of the UNCRPD (2006) is dedicated to the issue of accessibility and states that access to ICT must be promoted and that inclusive design must be considered upfront when developing new systems and processes. The United Nations acknowledges that digital technologies contribute to all seventeen of its Sustainable Development Goals to varying degrees. The World Benchmarking Alliance (2019) acknowledges that digital inclusion is both a means and marker of sustainable development.

Despite South Africa having some of the best legislation and policies to promote the equality and inclusion of disabled persons, the impact has been minimal, with disabled people continuing to struggle to enjoy their rights, as many are still excluded by society. The failure of public and private organisations to prioritise disability could lead to the non-implementation of disability inclusion practices.

## **1.5 Positioning of the researcher**

The research focuses on the digital inclusion of a particular MNO in South Africa which is one of the key actors in the African ICT ecosystem. My position within the study is quite unique and multifaceted in that my insider status of being employed at this MNO has shaped my views from a business perspective, and from a lived experience perspective being a person with a disability. What makes my first-hand experience at this MNO so much richer is that as a woman with a physical disability I have been entrusted with leading the accessibility strategy from the front, which speaks to embracing gender and disability within the male-dominated ICT sector.

I have been heading up the Accessibility Office of South Africa's largest MNO for the past fourteen years, where my role is to design and lead the accessibility strategy for disabled consumers. I have established two divisions in the company which address aspects of disability. I established the Diversity and Inclusion office within the Human Resources group and the Accessibility Office within the consumer business of the MNO. Having been a social worker previously gave me a deeper insight into disabled persons' lived experiences. It may appear at first that social work and mobile communications do not fit together. However, my social work ethos of facilitating the fulfilment of people's needs, together with my passion for making a difference in disabled persons lives, caused me to quickly become attached to the MNO when I saw how technology could benefit people.

I joined the MNO when it was just three years old, and in my twenty-three years of employment there have held various roles within the billing systems, customer care, consumer business and human resources divisions. I have witnessed how mobile technology took the South African market by storm and have seen how technology has enabled previously excluded communities to become more empowered and part of a connected society. I have been fortunate to experience first-hand how access to ICT can empower disabled people and how a lack thereof can cause further isolation and exclusion.

Since the start of my study and during the different phases of the study, I have been aware that my insider status poses a potential risk of bias and that it would be a challenge to balance my dual roles as insider and researcher (Unlear, 2012). Guidance from supervisors and the ethics approval committee provided a spotlight on the benefits as well as the risks of my insider status which heightened my awareness of potential conflicts of interest. I have addressed this issue in Section 4.8 on ethics.

My passion for advocating for digital inclusion stems from experiencing an increased quality of life since beginning to use mobile technology. As a person with a physical disability, technology has increased my independence and participation in society. I was diagnosed with Juvenile Rheumatoid Chronic Arthritis at the age of three. This condition affects all of my joints such that I have to walk with the aid of crutches. Although the condition causes severe mobility limitations, it has been in remission since the age of fifteen when I became pain-free. Being pain-free has enabled me to lead a full life and to have a successful career and a family.

Being a disabled person and a mobile phone user, I gained first-hand experience of how liberated and secure the use of a mobile phone makes me feel. Walking with crutches makes it difficult to carry things, which means that attending meetings was challenging, as I find it difficult to carry, for example, a notebook, a pen and a diary. This changed when I started using a smartphone, as it fulfils many functions simultaneously, which means that I no longer have to carry a diary or a laptop. Further to my own lived experience, feedback and interactions with disabled persons at disabled people's organisations' (DPOs) have shown me that digital inclusion has opened up the world for them. Despite this, barriers to accessing technology continue to limit their opportunities and inclusion (Roulstone, 2016).

## **1.6 Problem statement**

When vision impaired persons access technology and services, they are directly exposed to an MNO's systems, policies and processes (Seiders & Berry, 1998). Having a poor understanding of disability could lead to technology companies failing to implement processes that promote the digital inclusion of persons with visual impairments (Halder & Assaf, 2017; Goggin & Newell, 2007). MNOs' processes can create barriers, such as high cost and lack of disability awareness (Foley & Ferri, 2012; Mairs, 2007). Other barriers that delay their digital inclusion include having to use inaccessible devices, and services offerings which do not address their access needs (Global Initiative for Inclusive Communication Technologies (G3ict) & International Telecommunication Union (ITU), 2014).

When technology and services do not meet a vision impaired persons' needs, they are excluded from being part of a connected society (Fullmer & Majumder, 1991). Barriers to accessing mobile technology impacts vision impaired persons' autonomy and independence negatively, as they prevent them from participating in societal activities such as social networks, education and job opportunities, thus contributing towards decreasing their quality of life (Abidi, 2017).

## **1.7 Research question**

The questions posed in this study have been influenced by my experiences as both a user and provider of technology and working with vision impaired consumers. By exploring a MNO's processes I am trusting that this study contributes to current disability theory by uncovering new concepts and ideas that need to be incorporated into existing knowledge about the topic.

Research question: How do MNOs' digital inclusion processes promote or hinder the communication participation of vision impaired persons?

### **1.7.1 Research objectives**

The aim of the research:

To determine how MNOs' processes promote or hinder the communication participation of vision impaired persons through digital inclusion.

The study objectives are as follows:

1. To identify, describe and analyse how an MNO's processes promote the communication participation of vision impaired persons,
2. To determine the communication participation needs of vision impaired persons, and
3. To identify barriers that hinders vision impaired persons' communication participation experiences.
4. To suggest recommendations that should be adopted to enhance communication participation of vision impaired persons through digital inclusion.

## **1.8 Rationale for the study**

This study addresses an important gap in research on disability and how MNOs' processes promote or hinder digital inclusion of disabled consumers. Tusler (2005) points out that the implementation of processes by MNOs to promote the digital inclusion of disabled persons have been sparsely documented. A study conducted by G3ict and ITU (2011) recognises that as technology (hardware and software) is becoming continuously more accessible, technology companies should start focusing on developing processes that better address the needs of consumers with disabilities.

Being an insider researcher working within an ICT company provides an opportunity to identify processes that promote the digital inclusion of disabled consumers. Implementing processes that promote digital inclusion benefits both ICT companies and persons with vision impairments. The benefits for companies include complying with policy, legislative, regulatory and shareholder obligations whilst also increasing their customer base. The benefits for vision impaired persons include assisting their communication by enabling them to belong to a connected society and to participate in online activities such as education, financial operations and social networking.

Scholars acknowledge that Disability Studies influences technology research, as it is able to identify new or different challenges which are applicable to the field of technology (Mankoff, Hayes & Kasnitz (2010). Although technology and disability studies are regarded as connected fields that have shared goals, there are differences in how they view certain issues (Mankoff et al, 2010). Therefore, the Disability Studies research process is of value as it focuses on the lived experiences of disabled persons within the context of a societal, medical and a disability discourse.

## **1.9 Significance of this study**

The significance of research is its potential to solve operational and planning problems in business and industry, as well as to solve various social problems (Bist, 2014). This study consisted of a case study at a large South African MNO which is one of the key role-players in the South African and African ICT industry. Although the research focuses on one case study, we can make general inferences about the broader situation of accessibility, which impacts digital inclusion and participation. Disability scholars Watermeyer and Goggin

(2019:178) state that the ‘virtually no empirical data on the consumer experience of vision impaired users in Global South contexts is in existence, and this lack needs urgent addressing’.

A benefit of the study is that it will contribute towards expanding the curriculums of disability inclusion of various disciplines such as Disability Studies, Information Systems, Health Care, Marketing, Business Science, Information Technology and Law at institutions of higher education. Furthermore, this study will have a positive influence on the ICT industry by increasing the body of knowledge around how to promote the digital inclusion of vision impaired persons. The regulator will also benefit from this study, and its influence on regulatory and disability policies may in turn encourage the ICT industry to implement processes that will remove barriers to ICT access (G3ict & ITU, 2014).

### **1.10 Terminology**

There are a number of ways of referring to disabled people which have been the focus of much debate (Lourens, 2018). According to Shakespeare (2014), arguments about disability terminology may detract from the real issue of promoting disability inclusion. I use a variety of terms in order to ensure that the study reads better than if I were to use only one specific disability term.

In the British Social Model of Disability, the term “disabled people” is preferred by people who value disability as an identity (Oliver, 1990). In this study I use the following terms interchangeably; ‘disabled people or persons’ and people with disabilities and ‘vision impaired persons’ and ‘persons with vision impairments’. The term ‘persons with vision impairments’ places the person first, thereby recognising that the disability is not the sole identity of the disabled person (American Psychological Association, 2010). I furthermore align my terminology with the terms used by participants in the study, such as ‘visually impaired’, ‘blind’, ‘partially sighted’ and ‘low vision’.

## **1.11 Presentation of the thesis**

This thesis consists of eight chapters.

Chapter 2 presents an analysis of the key theoretical frameworks and ideas that underpin this study.

Chapter 3 provides an overview of the literature review and considers relevant literature which has guided and influenced the research questions.

Chapter 4 describes the methodological framework I used and provides details of the methods used to conduct data collection and analysis.

Chapter 5, 'Inclusive culture - key driver for promoting disability inclusion' identifies and describes the practices which the MNO implemented that promote or hinder the digital inclusion of vision impaired persons.

The theme for the findings of Chapter 6, 'Embedding inclusive design to promote access to technology' continues to describe processes that promoted or hindered inclusion.

Chapter 7 presents the findings and discussions from the MNO case study which emerged from the data gathered through focus group interviews. The findings in chapter 7 relate to the two study objectives, namely, to determine the communication participation needs of vision impaired persons' and to analyse the factors that vision impaired persons experienced to promote or hinder their communication participation.

Chapter 8 provides a synthesis of information drawn from the preceding chapters. The conceptual framework presented in Chapter 2 is used to show how the research question has been answered and how it has contributed to new knowledge building. This chapter points out some implications of the study and suggests how the work could be expanded by including more ICT companies within the Global South. I end off with some personal reflections.

## CHAPTER 2

### Conceptual framework

#### 2.1 Introduction

This chapter outlines the conceptual framework that informs the primary research aim of the study. It presents the theoretical lenses I have used to identify and analyse how the processes of the MNO promoted or hindered vision impaired persons' access to ICT. Mertens (1998:3) points out that the theoretical framework one uses has implications for every decision made in the research process'. In order to define and explore the theoretical approaches I used, the chapter is organised into two sections.

First, I present the Social Model of Disability (Oliver, 2004), and second the Diffusion of Innovation Theory (DOI) of Rogers (2003). These approaches underpin my thinking around processes in terms of understanding and researching the issue of digital inclusion for vision impaired persons in South Africa. The DOI is a key theory in understanding the adoption of innovations such as technology and the internet, identifying user needs and encouraging the design of user-friendly systems (Miller, 2018; Rogers & Scott, 1997).

The Social Model of Disability views the environment as either enabling or disabling for persons with disabilities. According to Oliver (2004), the Social Model of Disability moves the focus away from individuals' impairments to the problems caused by disabling environments and cultures. In line with this, I explore how an MNO's processes can promote access to ICT for vision impaired persons in order to provide them with equal opportunities to participate in society. I also explain my use of the social model and its continued relevance for disability studies.

#### 2.2 The Medical Model of Disability

Prior to the Social Model of Disability there were a number of other models, such as the Medical Model, the Charity Model and the Welfare Model (Finkelstein, 1993). The Medical Model is also known as the Personal Tragedy Model as it views disability in a negative way (Thomas & Woods, 2003:15). Still today, society regards persons with disabilities as charity cases rather than independent and empowered individuals. It is the case even though some disabled people may have good qualifications or jobs. This is especially prominent in South Africa, where most disabled persons receive a monthly disability grant from government.

Society incorrectly regards disability grants as merely handouts and rarely regards it as a form of social protection. Society often fails to understand that socially produced barriers prevent disabled people from utilising opportunities such as finding employment, which makes them reliant on grants.

Olkin (1999:26) states that the Medical Model views disability 'as a medical problem that resides in the individual. It is a defect in or failure of a bodily system and as such is inherently abnormal and pathological'. The Medical Model of Disability regards disabled people as 'having something wrong with them', as their condition is the source of the problem (Oliver, 2004). South African society views disabled persons as less important, as people tend to focus on disability and physical appearance, which results in prejudice and perpetuates stereotypes (Faranani Facilitation Services Pty Ltd, 2013). Such internalised negative attitudes could influence interactions between frontline staff and vision impaired consumers.

According to Areheart (2008), an individual's disability is often viewed as the cause of them being incapacitated and dependent, which can only be rectified by rehabilitation or medical interventions to make them as 'normal' as possible. This view of disabled people's lives puts them in one of two categories which Areheart (2008) refers to as the 'pitiable poster child' and the 'inspirational "supercrip"'. When regarded as a pitiable poster child, a disabled person is seen as an object, whilst the inspirational supercrip view regards them as a hero who has overcome their disability. The Medical Model regards non-disabled people as superior to disabled people (Johnstone, 2012:16).

Areheart (2008) refer to society's view of disabled people as either 'pitiable poster child' or 'inspirational supercrip' – I refer to this as 'the zero to hero effect'. Disabled persons who have achieved success in different fields are seen as heroes, whilst those who have had fewer opportunities and have little to show are regarded as worthless. For these reasons, most disability scholars reject the Medical Model, as it ignores individuals' lived experiences of disability (Brisenden, 1986). The Medical Model is criticised for disabling people by disregarding their chance of equal participation and ultimately denying them an independent life. The following section discusses the social model.

### **2.3 The Social Model of Disability**

This section describes the elements, history and several criticisms of The Social Model of Disability (also referred to as the social model).

### 2.3.1 The History of the British Social Model of Disability

During the 1960s and 1970s a political movement of disabled persons in Britain gained momentum when they stood up against institutionalisation, discrimination, exclusion and a lack of choice and control (Oliver, 2004). Disabled persons started questioning their experiences and challenged the attitudes society displayed towards them in prescribing how they should live. This was the start of the Disabled People's Rights Movement in the United Kingdom (UK), which led to the formation of organisations such as the Union of the Physically Impaired Against Segregation (UPIAS).

The social model was born when UPIAS published *The Fundamental Principles of Disability* in 1976. It stated that 'In our view it is society which disables physically impaired people. Disability is something imposed on top of our impairments by the way we are unnecessarily isolated and excluded from full participation in society' (UPIAS 1976:14). For the first time disabled persons were in charge of their own advocacy organisation, which enabled them to develop their political thinking and advocate for equal human rights and opportunities (Oliver, 2004). Oliver called the social exclusion of disabled persons 'the social model of disability' in 1983, drawing on ideas coming from the disability movements (refer to Figure 2.1).



**Figure 2.1.** The Social Model of Disability (Inclusion London, 2015)

The social model was politically effective and resulted in the building of a social movement of disabled people (Shakespeare, 2013). Disabled organisations continued to grow in the 1980s, with most of them using the social model to advocate for disability equality (Oliver,

2004). The social model came to be the primary disability model, especially after being adopted by the British Council of Organisations of Disabled People (BCODP) (Oliver, 2004). In the 1990s the social model affected independent living, and disabled people's rights have become a key concern (Oliver, 2004).

### **2.3.2 Elements of the British Social Model of Disability**

The Social Model of Disability is often called 'the big idea' of the British disability movement (Hasler, 1993). Oliver (2004) argues that the social model was the first model to bring about radical change within the disability studies field. For Oliver (2004) the main aim of the Social Model of Disability is to move the focus from people's impairments to the barriers caused by disabling environments and cultures. He explains that the social model does not view the impairment of disabled persons as the cause of their social exclusion, but rather the way that society responds to persons with impairments. Disabled persons are therefore seen as an oppressed group (Oliver, 1996b).

The social model advocates that the barriers disabled people face are a result of social oppression and exclusion, rather than their individual impairments (Owens, 2015; Oliver, 1996b). This places the moral responsibility on society to remove the barriers which have been imposed, and to enable disabled people to participate. Shakespeare (2013), a disability scholar, is of the view that impairment can be distinguished from disability in that impairment is individual and private, whilst disability is a characteristic of the environment. The persons disability is transferred from the individual to the barriers and attitudes in society (Shakespeare, 2013).

Barnes (1991) regards impairment as a result of physical, mental or sensory condition, and disability as the lack of not having opportunities to participate equally in society as a result of physical and social barriers. Inclusion London (2015) identifies three types of socially constructed barriers, namely physical, attitudinal and informational or communication barriers. Physical barriers refer to inaccessible built environments, such as stairs; attitudinal barriers are characterised by the assumption that disabled people cannot work, cannot be independent, cannot have sex, should not have children, and are childlike; whilst communication barriers refer to a lack of accessible technology and services. When such barriers are present, Shakespeare (2013:217) argues that 'It is not the disabled person who is to blame, but society. She does not have to change, society does. Rather than feeling self-pity, she can feel anger and pride'.

Should society not blame disabled people for their problems, this could lead to society and companies recognising their human rights and taking responsibility to create a barrier-free environment. Oliver (2004) argues that the social model does not view barriers as separate entities, but sees them as part of a complete ecosystem where various elements contribute towards creating disabling environments. Oliver (2004) cites the example of unemployment and mentions that the problem does not lie only within the labour market, but is also impacted by dependencies on transport, education and culture. One could add to this list mobile technology, as most vacancies are nowadays advertised on numerous digital channels. Society has a moral duty to remove barriers to accessibility so that disabled people can have equal participation (Shakespeare, 2013). This would also change the way how disabled people are viewed by society (Shakespeare, 2013). Barnes (2012:12) concurs that the Social Model of Disability 'is a tool with which to provide insights into the disabling tendencies of modern society in order to generate policies and practices to facilitate their eradication'.

It is important to note that the social model does not disregard medical, rehabilitative, educational and employment interventions in the lives of disabled individuals (Oliver, 1996b). Oliver (2004) argues that when the social model advocates for providing a barrier-free environment to disabled persons, it also benefits other groups in society, such as people with prams and trolleys. Examples of barriers that disabled people experience are inaccessible work environments, discriminatory health services, as well as inaccessible transport, houses and public buildings (Oliver, 2004).

In addition to these barriers disabled people are further devalued through negative portrayals in the media. This gives rise to a negative cultural environment in which people are conditioned to think that impairment is unattractive and unwanted (Oliver, 2004).

Shakespeare (2013) argues that when the focus is on individuals and their physical and mental state, it leads to self-esteem and self-confidence issues, which is a major obstacle to disabled people participating in society. According to Shakespeare (2013), a huge benefit of the social model is that it strengthens disabled people psychologically, which leads to raised self-esteem and assists to build a positive collective identity.

Despite many disability scholars finding the Social Model of Disability beneficial, others have criticised it. These criticisms will be discussed in the next section.

### 2.3.3 Criticisms of the British Social Model of Disability

I will describe three critiques of the social model that Oliver (2004) has addressed and defended, inclusive of critiques levelled by other disability scholars. The first critique that Oliver (2004) addresses states that the social model does not take the realities and pain of an impairment into account. He responds by explaining that the social model arose from disabled activists' lived experiences in the 1970s. Oliver states that the meaning of impairment is not being interpreted correctly, as the social model is not about the experience of the individual, but about the collective experience of disability (Oliver, 1996b). According to Shakespeare (2013), it was not Oliver's intention to come across as rejecting medical prevention or curing impairments as it impacts our everyday lives (Shakespeare, 2013). I believe that people with impairments are disabled by society as well as by their bodies. The value of the social model is that it highlights that people are further disabled by society in that businesses and society in general neglect to provide inclusive environments and products and services.

Second, Shakespeare (2013) argues that a completely barrier-free world for disabled persons, as proposed by the social model is not feasible. He explains that despite the Universal Design approach, it is difficult to implement accessibility in all areas of the physical world because of resource constraints. Chapters 5 and 6 shed light on some of the challenges experienced by an MNO within a fast-paced, high-performing ICT company having to consider accessibility and inclusive design in every new product and service.

Finally, social model scholar Thomas (1999) is of the view that the social model did not expand further as it mostly focused on the built environment as a solution for disabled persons' difficulties. Discrimination against disabled people is a result of attitudinal barriers (Thomas, 1999). For Thomas (1999), the social model excludes the psychological and emotional aspects of disabled people's lives. She suggests that the oppression that disabled people experience occurs both on the 'inside' and the 'outside'. The former refers to disabled people feeling less valuable, worthless and unattractive, whilst the oppression on the outside is manifested when a person does not get a job because they are disabled.

Thomas (1999) shows particular interest in the social behaviours and relationships between impaired and non-impaired people, for example, in interactions in communities, and in encounters with health and education professionals. She questions who holds the power,

how it is used, what decisions are being made, what words are being spoken, and the meaning behind them in the network of people's relationships. Importantly, Thomas (1999) asks what the effects are on disabled persons' sense of self and self-esteem and proposes that the social model be expanded. The view of Thomas is relevant for this study as it highlights the important role that the attitudes of frontline staff play when dealing with vision impaired consumers. In Chapters 5 to 7 we see how relational aspects such as interactions between frontline staff and disabled consumers impact consumers' experiences of access to ICT. Hence, both the physical and relational environments are important in promoting the inclusion of persons with vision impairments.

Despite these criticisms, informed by my work in the ICT industry I argue that the social model continues to be valid, as the promotion of digital inclusion aligns with its values. I argue that when MNOs take responsibility to implement processes that remove barriers to ICT, they empower vision impaired people to participate in a digital society.

## **2.4 The History of the North American Social Model of Disability**

The British Social Model and the North American Social Model of Disability developed out of the disability rights movement (Owens, 2015). The latter developed in parallel with the Civil Rights Movement against racial segregation and discrimination during the 1960s (Frum, 2000). The North American Social Model views disability as originating from a structured social environment that excludes the needs and aspirations of persons with disabilities, and not from the inability of disabled persons to adapt to society (Hahn 1986:128). This led social theorists to criticise the medical model, as it did not just impact people; it produced disability. In other words, the medical model was seen as making people disabled (Owens, 2015).

The difference between the North American and the British Social Model of Disability is that the North American model takes a minority group rights-based approach that uses political action to focus on the disabled individual and therefore moves away from the more materialist focus of the UK model (Owens, 2015). Both models reflect the intellectual and political problems faced in these societies (Meekosha, 2004). Literature from the UK focuses on issues of equality in political and material participation, while the American literature focuses more on issues of identity, personal affirmation, moral development and psychology (Meekosha, 2004). Although these approaches originate during similar time periods, they emerged from different historical, political and intellectual positions (Owens, 2015).

However, a common thread which is found in both approaches, namely the issue of participation, whether in disabled people's everyday lives, in healthcare or in policies (Owens, 2015).

It is notable that the Social Model that was established in the Global North applies to disability in the Global South. Disabled persons in South Africa want to be seen as first-class citizens who want to be able to exercise their human rights to have access to technology. They do not want society and organisations to ignore their communication needs, but rather want it to be met as consumers. Du Plessis (2013) reviewed the role of the social model and rights approach in providing disabled people in South Africa access to education. He mentions that disability is caused by society which means that the social model resulted in a rights discourse which advanced the interests of disabled people. Disabled people everywhere (north and south) want to be firstly seen as a whole person with human rights and therefore want to have equal opportunities to participate in a barrier-free society.

Meekosha (2011) takes it a step further and proposes that the social model should be applied to the Global South by thinking about it in a decolonised way. Decolonisation is not just about political independence. It is also about how former colonial powers encouraged former oppressed people to think in post-colonial countries (Oelofsen, 2015). During colonialism as well as post-colonialism, disabled people continue to be marginalised as disability lags behind race and gender. According to Fischer (2007:11), most South Africans tend to think of themselves in racial terms first before they think of other aspects of their identity. This could play a role in companies not prioritising disability inclusion in a consistent and systemic manner as the technology needs of disabled persons are not considered upfront.

While aspects of the social model must be recognised as valuable, it cannot be uncritically applied in the global south context. In this study, I have used the Social Model of Disability to demonstrate that MNOs have the responsibility to ensure that their environments are accessible for vision impaired persons in order to promote their independence, which leads to greater freedom and quality of life. Next I will discuss the relationship between technology and the social model.

## **2.5 Technology and the Social Model of Disability**

Discussing disability and technology, Goggin (2018) acknowledges that the impact of the Social Model of Disability remains important and relevant in the field of disability studies. In this study the Social Model of Disability underpins the notion of MNOs acknowledging disabled persons as consumers. This would enhance their understanding of consumers' needs, which would assist them to implement processes and practices that create inclusive and accessible environments. This is where access to ICT can promote the digital inclusion of vision impaired persons, which will increase their participation.

According to Roulstone (2016), the Social Model of Disability has reframed disability, creating a methodology that enables the study of external barriers, which has contributed more to technology studies than any other social approach. The reframing of disability from being an individual person's problem to being a social one is discussed in Oliver's work as per Section 2.2.4 of this chapter. For Roulstone (2016), research on technology for disabled people would not be complete without discussing the structural, institutional and technological issues including the role that technology plays in promoting accessible environments. This study builds on Roulstone's argument by investigating how the systemic and technological processes of an MNO can promote or hinder the digital inclusion of vision impaired persons.

Technology research in the UK before the 1980s was mostly concerned with rehabilitation (Roulstone, 2016). The 1980s was a turning point as a new way of thinking embodied developing narratives of the role of technology in the lives of disabled persons (Roulstone, 2016). Over the past few decades there have been numerous studies conducted on the intersection of disability and technology. Researchers started questioning how technology could be used to promote the independence and social participation of disabled persons (Helle, 1987).

Warschauer (2003) confirms that ICT is integrated in a complex manner into social systems and processes. This acknowledgement of complex ICT processes plays a role in determining to what extent the inclusion approaches within companies can promote disability inclusion. In line with the Social Model of Disability, the Diffusion of Innovation Theory encourages the diffusion of technology. The next section will describe Rogers's (2003) Diffusion of Innovation Theory (DOI) and show how it applies to the study of an MNO's processes.

## **2.6 The Diffusion of Innovation (DOI) Theory**

Rogers (2003) has, since the publication of his book *The Diffusion of Innovations* in 1962, been at the forefront of studying the technology adoption process. His contributions to diffusion research are highly regarded as they provide a theoretical understanding of changes in human behaviour at the level of practice and policy. The next section will provide an overview of the history, elements and criticisms of the DOI Theory of Rogers (2003).

### **2.6.1 History of the DOI theory**

Diffusion of innovation refers to the process that occurs when people adopt a new idea, product or practice. According to Rogers, the Diffusion of Innovation Theory was first observed in 1903 when the French sociologist Gabriel Tarde noticed that the rate of adoption of new innovations followed an S-shaped curve over time. Rogers regards Tarde as one of the European fathers of the diffusion field. In the late 1950s, diffusion studies were conducted by European scholars who generally followed the classical diffusion paradigm pioneered by Ryan and Gross in 1943. It is interesting to note that the concept of innovation diffusion originated from the study of agriculture rather than of technology.

While studying the adoption of agricultural innovations among farmers in Iowa in 1957, Rogers (2004) realised that the concept of diffusion was generalisable, applicable to any type of innovation. Diffusion research expanded and was conducted during the 1960s in developing nations in Latin America, Africa and Asia. Rogers (2003:118) mentions that many of the studies in developing countries were conducted by scholars from Europe, Latin America, Africa and Asia and notes that a strong stamp of 'made in America' characterised these studies. This important observation is discussed in more detail in Section 2.2.3. Studies that were done on the diffusion process in developing countries were found to be generally similar to those in developed countries such as America and those in Europe (Rogers & Shoemaker, 1971).

Rogers (2003) built on previous studies and was among the first to recognise the study of diffusion across various disciplines. His is the most recognised name associated with the diffusion of innovations (Miller, 2018). By evaluating and comparing diffusion studies across disciplines, Rogers merged the findings that each discipline had produced independently. By organising common findings in diffusion research, the theory's framework emerged, as well

as standardised descriptions of related elements, such as adopter categories. Nine major areas of diffusion research were identified, of which the most research has been done in the areas of rural sociology, marketing and management, communication, and public health (Rogers, 2003). This has been expanded to other areas such as development studies, where the emphasis is on the political or technological context of the innovation and on improving health.

## **2.6.2 The Elements of the DOI theory**

In this section, the four main elements on which the DOI theory is built – innovation, communication channels, time and members of a social system – are discussed.

### **2.6.2.1 Innovation**

According to Rogers, an innovation is an idea, practice or object that is perceived as new by members of a social system. He uses the words innovation and technology synonymously. Rogers (2003:13) defines technology as ‘a design for instrumental action that reduces the uncertainty in the cause–effect relationships involved in achieving a desired outcome’. A technology usually has two components: (1) a hardware aspect, consisting of the tool that embodies the technology in the form of a material or physical object, and (2) a software aspect, consisting of the information base for the tool’.

For Rogers (1995) there is a difference between diffusion and adoption. Diffusion occurs within a diverse society, whilst adoption pertains to the individual's feelings and needs. To ensure adoption of products and services, MNOs should embrace accessibility as part of innovation. In doing this, disabled persons are regarded as consumers and not charity cases. This stance aligns with the Social Model of Disability that advocates that ICT organisations should meet the needs of disabled consumers.

When introducing new accessible technologies, MNOs should consider who the potential disabled consumers are, their reasons for wanting to adopt the technology, and whether they have the need to adopt it (Nedevschi, Sandhu, Pal, Fonseca & Toyama, 2006). This way, it will assist the MNO to ascertain to what degree accessible technology can be adopted by

vision impaired persons. To truly understand the needs of disabled consumers, Pullin (2009) advocates for user involvement in the early design phase and throughout the design process. According to Pullin (2009), active user participation will enable designers to design and develop solutions for disabled users whose lived experiences differ from theirs.

Diffusion of innovations research has shifted towards understanding the behaviour of organisations and broader systems including studies of organisational processes, context and culture, and knowledge-based approaches to innovation in organisations (Greenhalgh, Robert, Macfarlane, Bate & Kyriakidou, 2004). Robinson (2009) makes the point that in the diffusion of innovations it is not the people who change, but the innovations. Instead of focusing on persuading individuals to change, he sees change as being primarily about the evolution or reinvention of products and behaviours to make them better suited to the needs of individuals and groups (Robinson, 2009).

Innovation of technology and services is important to removing inequalities and to promoting the accessibility of ICTs (Buchanan, Cole & Keohane, 2009). Bettencourt (2017) states that disability is interdisciplinary and that theories should be drawn from all disciplines. Accessibility and digital inclusion should be seen as innovation which can improve the lives of disabled persons by meeting their needs. Innovation and accessibility should not be regarded as merely a tick-box exercise.

### **2.6.2.2 Communication channels**

The communication channels element refers to a process in which participants design and share information about an innovation with one another in order to reach an agreement (Rogers, 2003). A channel is the means by which a message gets from a source to a receiver. Examples of communication channels are mass media channels such as radio, television and newspapers.

The benefit of mass media channels is their ability to reach large audiences quickly, creating knowledge, spreading information and changing people's attitudes towards an innovation. According to Rogers, when interpersonal channels are used to diffuse an innovation and create awareness, the rate of adoption is slowed down. In the case of vision impaired people, interpersonal channels play a role in influencing the adoption of accessible technology.

### **2.6.2.3 Time**

The third element is time of diffusion, which has three dimensions, namely the decision-making process, an individual's innovativeness, and the rate of adoption (Rogers, 2003). The time of diffusion element describes factors that answer the question: Why do certain innovations spread quickly while others fail? Should technology or processes not be accessible, the adoption rate of technology and services will be slow among vision impaired persons.

### **2.6.2.4 Social system**

The final element of the DOI theory is the social system: a set of interrelated units, such as individuals, groups and organisations, that are engaged in joint problem-solving to accomplish a common goal (Rogers & Scott, 1997). The units within a social system are not all identical in their behaviour depending on the type of structure that exists within the system. Within MNOs, the structural inclusion of various business units will determine the extent to which the processes will be implemented, which influences the promotion of digital inclusion.

The structure of an MNO's social system can facilitate or impede the diffusion of innovations in the system (Rogers, 2003). Structure gives regularity and stability to human behaviour in a social system; for example, a bureaucratic organisation, like a government agency, that consists of hierarchical positions. Various business units have different strategies and focus areas; hence, Rogers proposes that companies should consider making systemic changes in order to promote digital inclusion. An MNO's ecosystem is wide and consists of many internal business units and outsourced partners that have their own cultures and structures. This could impact the joint effort of achieving the goal of promoting digital inclusion.

### **2.6.2.5 Successful change agents**

Rogers (2003) explains that change agents must have certain characteristics in order to diffuse technology successfully to consumers. According to Rogers (2003), the role of

change agents is to influence customers' decisions by adopting new ideas. In this study I regard frontline staff as change agents, as they are mostly responsible for interacting directly with customers when diffusing technology and services. Frontline staff may, however, slow the diffusion process down and prevent the adoption of certain innovations with negative effects. For Rogers, frontline staff find it difficult to diffuse new ideas to disabled consumers and to assess their needs. He asserts that frontline staff should be aware of disabled consumers' felt needs in order to avoid negative consequences such as unhappy consumers. This view agrees with my statement in Section 1.3.3 that the lived experiences of disabled persons in the Global South are generally not visible to others, as they are spoken about and do not speak for themselves (Watermeyer, McKenzie, & Swartz, 2019).

Another characteristic that frontline staff should display is empathy. Rogers (2003) argues that staff will create better experiences when they empathise with consumers. He defines empathy as 'the degree to which an individual can put himself or herself into the role of another person' (Rogers, 2003:376). Frontline staff find it difficult to display empathy when consumers are very different to themselves, as in the case of persons with visible disabilities (Rogers, 2003). To increase empathy among staff, Rogers (2003) suggests that the right people be selected, especially people who have experience of their customer's needs. This means that staff who have disability experience or who are disabled persons themselves should be employed, as they would be in a better position to empathise with disabled consumers. Without applying empathy, companies will find it difficult to ensure that disabled consumers have positive customer experiences.

There is alignment between the Social Model of Disability and the DOI, as both frameworks state that it is not disabled people that must change, but rather systems and processes. The Social Model of Disability states that when barriers are present, society must change, whilst the DOI states that in the diffusion of innovations, technology and products must change to meet the needs of individuals (Shakespeare, 2013; Robinson, 2009). Companies and staff who are responsible for developing products, technology, processes and systems must become educated about disability inclusion and accessibility, as this will facilitate the development of inclusive processes and systems that will bring about digital inclusion.

## **2.7 Adopter categories**

According to the DOI theory there are five adopter categories.

### **2.7.1 Innovators – Venturesome**

According to Rogers (2003), innovators are the first individuals to adopt an innovation. They are social and move beyond local circles to establish global networks. Innovators have financial resources, which helps the industry by absorbing failed innovations. The defining characteristic of the innovator is venturesomeness, as they are daring and willing to take risks. Within the ICT industry context, innovators refer to companies that take the risk of implementing inclusive technology and services first and without knowing whether the technology will be adopted by disabled consumers.

### **2.7.2 Early Adopters – Respect**

Rogers (2003) explains that early adopters are mostly part of the local system and have the highest degree of opinion leadership among all five categories. An early adopter is considered to be 'the individual to check with' before considering adopting a new idea, and is respected among their peers (Rogers, 2003:283). They have a high social status and have greater empathy than later adopters. Early adopters minimise the uncertainty of new ideas by adopting them and providing feedback about the innovation to their peers via interpersonal networks.

In the MNOs case, the accessibility lead is considered as the early adopter as she is the 'go to person' for any accessible initiatives. She influences, guides and educates the business about implementing new accessible ideas. As an early adopter the accessibility lead takes the lead in making decisions on the implementation of accessible solutions. Vision impaired individuals and DPOs can also be considered as early adopters as they conduct continuous research on new technologies and are often aware of the latest accessible technologies. Being aware of the latest accessible technologies, results in many vision impaired people being early adopters as they adopt accessible products as soon as it becomes available.

### **2.7.3 Early Majority – Deliberate**

Rogers (2003) describes the early majority as those who adopt new innovations just before the average member of a system, and generally make up one third of all members in a system.

This group is situated between the very early and the relatively late adopter groups, which makes them an important link in the adoption process. This group is initially skeptical and will first study an innovation before adopting it.

#### 2.7.4 Late Majority – Skeptical

Rogers (2003) explains that the late majority adopt new ideas just after the average member of a system, and they also make up one third of the system. The late majority adopts a new idea out of economic necessity or as a result of peer pressure. Due to having scarce resources, late majority members approach new ideas with skepticism and will only adopt an idea once others in their system have done so. Peer pressure plays a huge role in convincing them to adopt a new idea. A portion of the vision impaired consumer segment who are skeptical about new technology, can be regarded as late majority adopters. Such persons will usually adopt technology much later and once they have seen that their peers use new technology with ease.

#### 2.7.5 Laggards – Traditional

Rogers (2003) states that laggards are the last ones in a social system to adopt a new idea. Laggards are the oldest of all adopters and are suspicious preferring to focus on the past and interact with others who have traditional values. Due to having scarce resources they want to be sure that a new idea works before adopting it. Elderly vision impaired people and other disabled people who are unable to use the latest technology because of limited dexterity and functional issues could fall into this group. Figure 2.5.5 shows an outline of the adopter categories. Vision impaired people who have a low income could fall into the category of laggards as many are unable to afford technology – meaning they need to wait a long time to receive a second-hand used phone from someone else.



Figure 2.2: Adopter categories (Rogers, 2003)

## **2.8 Criticism of the DOI theory**

During the 1970s, American, European and developing world scholars raised their voices and questioned the importation of diffusion research into developing countries (Rogers, 2003). A concern was raised about the suitability of the social science diffusion research in that it was applied under very different socio-cultural conditions within developing countries (Rogers, 2003). A reason that diffusion research is particularly subject to criticism in developing nations is that compared to any other field of behavioural science, it has received much more attention in Latin America, Africa and Asia (Rogers, 2003). Even though diffusion research got under way much later in developing nations than in the United States and other developed countries, it caught up quickly. African scholars such as Mapi, Dalvit and Terzoli (2008) used Rogers's diffusion of innovation theory to study the adoption of ICTs in a marginalised South Africa, whilst Kamau applied the DOI theory in an investigation technology training for secondary mathematics teachers in Kenya.

A further criticism is that the DOI does not adapt to changing market segments because it is not about people changing, but the technology itself (Robinson, 2009). This is due to customer expectations changing in a digitally developed world (Robinson, 2009). The Apple iPhone is a prime example of a product that was instantly attractive to various segments and achieved simultaneous rapid adoption, thereby defying the traditional growth curve (Rogers, 2003). New digital communication channels can positively impact upon the adoption rates of innovations, dramatically reducing the time it takes to reach the mainstream market. For example, when accessible mobile phones became available for vision impaired persons in South Africa the uptake was instant, as consumers had been waiting eagerly for accessible technology to become available. Inclusive design plays a huge role to ensure that devices are accessible for vision impaired persons.

## **2.9 Applying inclusive design to promote accessibility**

The term 'inclusive design' was first used in 1994 and has proliferated since then (Coleman, 1994). The inclusive design approach has been studied extensively with inclusive design practitioners not only focusing on accessibility, but also exploring the role of design in social inclusion and social justice (Goggin, 2018). The purpose of inclusive design was to link design and social need and to question 'misguided but deep-seated assumptions about ageing, disability and social equality' (Clarkson & Coleman, 2013:2). Hence, its primary objective is to create equality within society through the eradication of social exclusion

(Clarkson & Coleman, 2013). The inclusive design approach aligns with the Social Model of Disability, as it empowers disabled persons to voice their concerns when experiencing barriers to accessing ICT as a result of inaccessible environments and poor customer service.

For the purposes of this study, inclusive design refers to ensuring that companies' processes around accessible technology and services take the needs of disabled consumers into account upfront. The Design Council defines inclusive design as 'a general approach to designing in which designers ensure their products and services address the needs of the widest population possible, irrespective of age and ability' (Design Council, 2008). This study expands this definition by stating that inclusive design refers not only to implementing accessible hardware and software, but also to implementing deliberate processes; for example, inclusive customer service that promotes access to ICT.

Our world is shaped by designers and engineers, where human interventions can enable or disable people. Therefore, it is important that designers and companies focus on meeting the needs of diverse populations. Realising the crucial role that upfront design plays in creating enabling environments, companies and designers can develop strategies that meet the needs of disabled persons. The Centre for Inclusive Design in Australia (2019) adds that inclusive design can increase companies' revenue by expanding the size of their target market.

Inclusive design of technology and services takes the needs of disabled consumers into account at the beginning of the design process in order to ensure that their needs are being met. A huge benefit of applying inclusive design is to prevent the need to retrofit products and services, as it is expensive to make changes after completion. Retrofitting of technology and services can reach up to 20% of the original cost (UNICEF, 2014; WHO, 2011). It is generally feasible to meet accessibility requirements at 1% of the total cost (WHO, 2011). When the design of products and processes is not inclusive, it could lead to complaints, legal challenges and may negatively impact brand reputation (Centre for Inclusive Design, 2019).

When inclusive design is applied, it is important to understand which needs to meet and how best to do so (Waller, Bradley, Hosking, & Clarkson, 2015). The benefit of using an inclusive design approach for the design process is that accessibility and inclusion are built into the design naturally, without burdening the process (Godin, 2017). In previous years it was more of a challenge to develop specialised technology for disabled persons, and it was also more

costly, meaning that fewer vision impaired persons could get access to mobile technology (Morris & Mueller, 2014). The shift from analogue technology to digital technology has eliminated many of these barriers. The reason for this is that digital information can easily be converted into voice and text, allowing the development of many more affordable and readily available devices that can also be used by vision impaired persons (Atkinson & Castro, 2008). Handset manufacturers are leaders in applying inclusive design principles, as they are building accessibility features into devices such as smartphones and tablets.

## **2.10 Linking the Social Model of Disability and DOI**

The DOI theory as well as the Social Model of Disability theory have guided the way that I framed my methodological approach. These theories assisted me to plan the research process in terms of the recruitment of participants and the types of questions that I asked and guided the data analysis process. The DOI theory framed the case for the MNO whilst the Social Model of Disability supported my view that organisations should ensure that their environments are accessible to vision impaired persons.

I draw these frameworks together by viewing the DOI theory and the inclusive design approach through the lens of the social model in order to expand its relevance not only to the inclusion of disabled persons, but to inclusion generally. Both the Social Model of Disability and the DOI theory are applicable to this study. The DOI theory links with the social model, as it presents a model for ensuring that processes are diffused in a way that promotes the adoption of technology among users.

## **2.11 Summary**

This study supports the view that companies must consider implementing processes that promote the digital inclusion of disabled persons (Oliver, 2004). This chapter described the conceptual frameworks used in this study in detail, as well as the history of the two frameworks, namely the Social Model of Disability and the Diffusion of Innovation Theory. The Social Model applies to this study as it advocates for society to ensure that barriers are removed in order to enhance digital inclusion. I have furthermore considered how the

inclusive design approach can make MNOs' environments become more accessible by getting users involved upfront.

The next chapter provides a literature review of research relating to the various aspects of reducing barriers to ICT access in order to promote the digital inclusion of vision impaired persons.

## CHAPTER 3

### Literature review

#### 3.1 Introduction

The literature review provides a critical narrative of the work that has been done internationally and nationally to understand the processes MNOs implement to bring about the digital inclusion of disabled or vision impaired persons. The time frame of the literature research was from the inception of the study until November 2020.

The process I followed to search for information involved identifying the research question I wanted to answer. I browsed the A-Z list of databases and entered key words and phrases which assisted to identify databases that were most relevant to my research. Key words and phrases consisted of the following: digital inclusion, accessibility, barriers to ICTs, visually impaired, disability, technology for disabled people, benefits of ICTs and MNOs' processes. I collected literature from various sources such as textbooks, industry reports, scholarly peer reviewed journals and online databases (such as PubMed, ResearchGate, Springer) in the fields of technology, social science, disability studies and communications.

#### 3.2 The history of the disability movement in South Africa

Under the apartheid system disabled people's basic human rights were denied, which led to all disabled people experiencing discrimination due to a lack of socio-economic opportunities, as they were regarded as being sick and were not seen as equal citizens (Howell, Chalklen, & Alberts, 2006). Black disabled people, especially, experienced discrimination in the form of violence, poverty and exclusion, on top of their disability (Howell et al, 2006). They therefore experienced physical rejection both in terms of exclusion and segregation (Jackson, 1994).

South Africa's disability movement was born during this time out of the struggle for liberation, equality and inclusion. This led to the formation of organisations that comprised a disability rights movement in South Africa (Howell et al, 2006). During 1984, disabled activists established Disabled People South Africa (DPSA), the first disabled people's organisation in the country. The organisation rejected the apartheid government's understanding of disability

and advocated for freedom and equality for disabled persons (Howell et al, 2006). DPISA established itself as an organisation for people with a variety of disabilities and did not follow the Global North model of organising themselves according to disability type (Howell et al, 2006).

Using self-advocacy, the leaders of DPISA created a voice for disabled people and facilitated their economic participation (Howell et al, 2006). DPISA's strategy of advocating for freedom for disabled people was interwoven and aligned with the manifesto of the anti-apartheid movement. The organisation's alignment with the African National Congress (ANC) government in the early 1990s assisted with driving the inclusion agenda of disabled people. In 1992, DPISA facilitated the adoption of the Charter of the Rights of Disabled People of South Africa, which outlined the needs of disabled people and recognised their rights to have their needs met in a non-discriminatory society (Howell et al, 2006).

The efforts of DPISA's advocacy for recognising disabled people's rights came to fruition when South Africa became a democracy after the successful dismantling of the apartheid system. Black disabled people were able to vote for freedom and equality for the very first time on 27 April 1994 during the country's first democratic election (Howell et al, 2006). The rights of disabled people were recognised for the first time when the new government adopted its new Constitution in 1996. Having their disability rights acknowledged enabled disabled people to participate in economic opportunities and become part of an inclusive society. However, twenty-six years later, disabled people in South Africa continue to face societal barriers which limit their participation.

### **3.3 The current state of disability in South Africa**

Currently, disabled people in South Africa struggle to participate in economic opportunities and as a result many are excluded from society. Fewer than 2% of South Africans with disabilities are employed, with barriers such as inaccessible public transport making it very difficult for disabled persons to apply for and maintain jobs in SA (Department of Employment and Labour, 2020). An exploratory study conducted by the International Labour Organisation (Buckup, 2009) of the macroeconomic costs of excluding disabled people from employment indicates that the economic losses related to disability in South Africa amount to \$17.8 billion - 7% of South Africa's 2006 GDP. A more recent report from the International

Labour Organisation (2017) indicates that disability exclusion result in economic losses of between 3 and 7 per cent of GDP.

Society continues to regard disabled persons as charity cases and not as first-class citizens. More than one million unemployed disabled people in the country receive a monthly government disability grant of approximately R2000. Society continues to display negative attitudes towards disabled people despite the fact that most of the barriers experienced by disabled persons are imposed by society when it fails to embrace an accessible environment and create opportunities (Oliver, 1990). Disabled persons confronted with such negative attitudes often regard physical and attitudinal barriers more disabling than their actual disability.

Disability advocates and organisations work hard to influence the mindsets in society and the workplace by promoting disability awareness education. In South Africa, companies have numerous diversity requirements, such as gender, race and LBGTQ+, which makes prioritising disability a challenge. The impact of this is that disability inclusion strategies are often overlooked.

In some African countries, less than 10% of disabled children under the age of 14 years attend school (UNESCO, 2007). In South Africa, our constitution states that every child has the right to receive basic education, yet up to 70% of disabled children of school-going age are not attending school even though school attendance is compulsory for all children between seven and fifteen years of age (Donohue & Bornman, 2014). Most disabled children are in special schools (Donohue & Bornman, 2014). One reason given for the dismal picture of disability education is the failure of the Department of Basic Education to properly understand the particular needs of vision impaired learners (Fish-Hodgson & Khumalo, 2015). Low levels of education are as a result of and exacerbate poverty among disabled persons.

Disabled people in low- and middle-income countries are poorer than non-disabled persons in terms of access to education, employment and income (Groce, Kett, Lang, & Trani, 2011). Many disability studies scholars regard disability as both a cause and consequence of poverty, resulting in a cycle of poverty and disability. Poverty and disability strengthen each other, contributing to increased vulnerability and exclusion (Trani & Loeb, 2012). Disability reinforces

poverty because the systemic institutional, attitudinal and environmental barriers that disabled people experience daily result in social exclusion (Groce et al, 2011). This leads to isolation, discrimination, unemployment and insufficient access to healthcare and credit. In South Africa, disability studies scholars acknowledge that systemic issues remain associated with apartheid as they uphold the connection between race and poverty (Watermeyer, 2019).

Disability can reduce disabled people's income, which makes it difficult for them to acquire assistive technology (Rohwerder, 2018). This is of great importance, as the use of assistive technology enables disabled people to perform daily tasks and to become more productive. Acquiring assistive technology in South Africa is problematic due to the high cost of devices, and therefore most disabled people cannot afford assistive technology, which causes them to function at lower levels. This is where affordable ICTs have an important role to play in promoting the participation of disabled persons.

### **3.4 The benefits of having access to technology and the internet**

Digital inclusion through technology enables vision impaired persons not just to be connected but also to be empowered to engage digitally on a level that promotes their independence and participation in society (SA National Planning Commission, 2012). The digital era has led to many advances in technology that have markedly improved the quality of life for the vision impaired community. It is readily accepted that accessible mobile technology contributes towards the digital inclusion of disabled persons (Khetarpal, 2014; Broadband Commission for Digital Development, 2013; Warschauer, 2003).

Unwin (2017) argues that disabled persons have far more to gain from using ICTs than non-disabled people. Vision impaired persons often experience challenges gaining access to ICTs, but when they do access ICT's, they experience a significant improvement in their lives. Mobile technology is seen as the 'great equaliser' for persons with visual impairments, the biggest benefit being that it becomes possible for them to perform many tasks that were previously impossible (Keating, Nagai & Hadder, 2007; Goggin & Newell, 2007). This is especially the case in this age of mobile devices, which have become almost fully fledged computers. Accessible devices enable vision impaired persons to access healthcare, education and jobs, and facilitate their participation via social networking platforms (Walton et al, 2013; Chigona et al, 2009).

The independence of vision impaired persons has increased hugely since accessibility has become a standard feature of the operating systems of smart devices. People with low vision can benefit from large screens and magnifying software, whilst blind persons can use applications to identify money and colours (Watanabe, Yamaguchi, & Minatani, 2015). This has a significant impact on the dignity and privacy of vision impaired persons, as they are now able to navigate email, social media and applications (Falk et al, 2014; Harper et al, 2011).

Mobile technology provides vision impaired persons with the opportunity to, for example, connect independently with people on social media and to pursue employment and educational opportunities (Hoskins, 2014). Services such as mobile banking and M-Pesa in Kenya have given disabled persons greater financial inclusion and independence as they are able to manage their own bank accounts without having to depend on others (Raja, 2016). The demand for internet access is increasing, and Sheldon (2004) states that having services delivered directly to people's homes, reduces the need to ask others to assist with transport. Although this statement was made more than a decade ago, it still holds true, as transport remains inaccessible within South Africa. Despite these potential benefits, vision impaired persons continue to experience barriers when accessing ICTs.

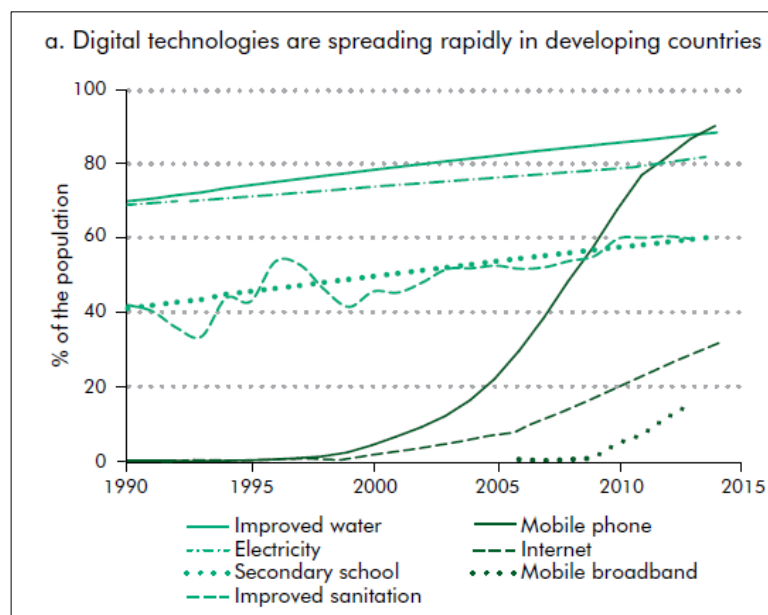
### **3.5 Barriers to accessing ICTs**

Although the democratisation of technology in South Africa and Africa has contributed towards increased access to ICT, the digital inclusion of vision impaired persons seems to be lagging behind. Barriers that vision impaired consumers face when accessing ICTs remain despite the fact that their right to information and communications technology is considered a fundamental right according to the UNCRPD (2006), of which South Africa is a signatory. This causes vision impaired persons to be disconnected and unable to participate in society, as a result of being unable to access the internet and social networks.

Despite the large vision impaired community in Africa, many are excluded from the digital revolution because of their limited access to ICT (UNESCO, 2013; WHO, 2011; Khetarpal, 2014). This is due to barriers being experienced when engaging MNOs in order to obtain technology and services. In South Africa, vision impaired people struggle to find accessible and affordable devices, not being aware of accessible offers and services, not being able to

communicate with call centres, and not being able to use websites and applications (GSMA, 2019; G3ict & ITU, 2014).

There seems to be a consensus that one of the biggest barriers to ICT access remains the cost of technology and services (GSMA, 2019; Rohwerder, 2018). In South Africa most disabled persons are unable to afford technology due to most being unemployed. In 2010 the Independent Communications Authority of South Africa (Pygma Consulting) conducted a study on ICT access which showed that only 57% of disabled persons owned a mobile phone. The ICASA report (2010) indicates that 96% of disabled consumers use prepaid payment plans, with only 4% being able to qualify for a contract. Disabled people choose an MNO based on the cost of their technology and services (ICASA, 2010). The report also found that 67% of disabled people spend between R51 and R100 per month on mobile communication. Despite 85% of disabled persons receiving less than R2000 per month, they spend 10% of their income on mobile technology. A World Bank report (2016) confirms that more people in developing countries own a mobile phone than have access to electricity or sanitation (refer to Figure 3.1).



**Figure 3.1.** The uptake of technology in developing countries in comparison with access to sanitation (World Development Report, 2016).

### 3.6 The business case for accessibility

Within the context of globalisation, it has become common for companies to drive and achieve their organisational goals using a lens of diversity and inclusion. When companies encourage a diverse and inclusive workplace, they become more competitive (Accenture, 2018). Disabled persons present companies with opportunities for growth and innovation, as they are the world's largest minority group, consisting of more than one billion people – a market size equivalent to that of China. Therefore, it is important for companies to recognise the value of such a large group and to take steps to facilitate inclusion.

A good place to start is to include disability in the company strategy to ensure the adoption of inclusive technology (Goggin & Newell, 2007). By following a diversity and inclusion approach, companies will reap the benefits of embracing disability inclusion. An Accenture report called the *Disability Inclusive Advantage* (2018) shows that companies that seek to improve their inclusion of disabled persons are over four times more likely to have total shareholder returns that outperform their peers. The *Return on Disability Report* (2016) mentions that disabled persons are gradually being integrated as consumers and employees, which creates economic value. A key finding of this report is that disabled people, together with their family and friends, have a spending power of \$8 trillion.

Should companies focus on meeting the needs of disabled consumers, they will be in a position to attract and retain disabled consumers. Excluding disabled people costs the South African economy up to 7% of its GDP, whilst also affecting the company's bottom line (Yin, Shaewitz, Overton & Smith, 2018; Buckup, 2009). Disability is included in a number of the targets of the 2030 Agenda for Sustainable Development; hence, it would be beneficial for companies to embed disability inclusion in their business strategies. This requires employing of disabled people to increase the diversity of their workforce. An extension of disability inclusion is the inclusion of consumers.

Kindt & Bruhn (2008) note that should the requirements of specific groups not be met, they could be excluded due to a perception of no potential return on investment. It is recommended that tailored solutions be implemented according to market segment. The benefits for companies that embrace disability inclusion as a business case are increased innovation, an increased customer base, improved experiences for all consumers, and greater workplace productivity (Casey, 2020; Rush, 2018).

### **3.7 MNOs' processes to promote inclusion**

Companies need to embrace accessibility and inclusive processes if they want the widest possible audience to feel included (Ratliffe, Rao, Skouge, & Peter, 2012). In order to minimise barriers and improve the quality of life of persons with visual impairments, they need greater access to mobile technology (Keating, Nagai & Hadder 2007; UNCRPD, 2006). Therefore, it is important that MNOs consider implementing processes that promote their communication participation (Accessible Ontario Customer Service, 1998). Tusler (2005) points out that the implementation of such processes have been poorly documented.

Only a few case studies describe the internal processes that MNOs have implemented with the aim of promoting the communication of vision impaired persons. G3ict (the Global Initiative for Inclusive ICTs) together with ITU (2011: 5) conducted case studies with five MNOs in America, Asia, Europe and North-East Africa. These case studies describe the internal processes that these MNOs have implemented to promote the communication participation of persons with visual impairments.

G3ict (2011:5) has also conducted a review of American Telephone & Telegraph's (AT&Ts) processes to promote inclusion. The first process that was identified entailed leadership agreeing to focus on consumers with disabilities by making it part of the company's strategy. Second, the study described an internal culture of diversity and inclusion processes which allow disability advocates to have their voices heard. Tusler (2005) adds to this, mentioning the importance of establishing a central unit or person, referred to as an accessibility champion, in the company who can advocate for the digital inclusion of disabled people.

Furthermore, it is important for an MNO to include vision impaired persons in the company's consumer segmentation process. This means that an MNO should value disability and persons with disabilities by recognising them as a consumer segment (G3ict, 2011; Tusler, 2005). The fourth important matter is to manage the product accessibility process by driving the implementation of accessible products and services along the product management life cycle (G3ict, 2011; Tusler, 2005). This will increase their quality of life and make them more part of the connected world (Khetarpal, 2014).

### **3.8 Summary**

This chapter describes the concepts from existing literature that have informed this study. The history of the disability movement is described, which highlights the systemic barriers disabled people faced during the apartheid era and the efforts of disability rights advocates to advance equality and human rights for disabled people. Nowadays however disabled people in South Africa continue to experience economic exclusion as a result of unemployment or being denied access to education. The outcome of this is that disabled persons remain poor and can often not afford assistive technology. Access to ICT can enable vision impaired persons to become independent.

Although using ICT can be beneficial, people experience barriers, such as high cost, when trying to gain access to assistive technologies. Companies can decrease barriers to access when the needs of disabled people are included in the company's consumer strategy. There is a limited number of studies that have identified and reviewed MNOs' processes. These studies highlight the importance of MNOs promoting inclusion by implementing processes and practices such as leadership buy-in and fostering an inclusive culture.

The next chapter describes the methodology that was used in this study.

## CHAPTER 4

### Research Methodology

#### 4.1 Introduction

The purpose of this chapter is to introduce the research methodology for this qualitative case study. Methodology is the broad term used to refer to the research design, methods, approaches and procedures to investigate the question of interest (Keeves, 1997). In designing the methodology for the study, I considered how to go about obtaining the desired data and knowledge that would enable me to answer my research question and thus contribute to existing knowledge (Kivunja & Kuyin, 2017).

The approach employed a deeper understanding of vision impaired persons' experiences accessing the MNO's technology and services. Doing a case study enabled the developing of a theory from the data in order to understand how the MNO's processes can promote or hinder the digital inclusion of vision impaired persons. The research plan and protocol, including the research paradigm, research design, study sample, data gathering methods, research procedures, data analysis data coding and rigour concerns are also addressed in this chapter.

#### 4.2 Research paradigm: reflecting on my positionality

A paradigm is defined by the researcher's worldview and comprises the beliefs and principles that shape how the researcher sees the world – it is the conceptual lens through which the researcher sees the world (Kivunja & Kuyin, 2017). People's beliefs affect the way they understand the reality of the world that we study (Rehman & Alharthi, 2016). In this study I view the world of digital inclusion through the lens of the Social Model of Disability. I believe that society – in this case, the ICT industry and all other businesses and organisations – should take responsibility to promote inclusion by considering the needs of disabled persons.

According to Lincoln & Guba (1985), a paradigm comprises four elements, namely epistemology, ontology, methodology and axiology. Epistemology is how we come to know something, especially with regards to the ultimate truth about reality. Regarding the epistemology of this research, I considered whether knowledge about an MNO's processes could be acquired or if it is something which has to be personally experienced. I furthermore examined my role as an insider researcher already having some knowledge of digital inclusion.

My insider status enabled me to view digital inclusion of vision impaired persons from the perspective of a disabled mobile user, whilst at the same time being a provider of accessible technology and services. As discussed in Chapter 1, my experiences of being a mobile phone user myself as well as a provider of accessible mobile services have influenced the questions I posed in this research. My theoretical positioning of having the experience of working for an MNO whose ethos is one of leaving no one behind by providing accessible mobile technology and services has shaped my questions about how the MNO's processes could impact the digital inclusion of vision impaired persons. I was also aware that although the MNO's intention was to promote inclusion, some inaccessible processes had the opposite effect on vision impaired consumers.

This led me to ask MNO participants questions about the company's culture and operational processes in order to identify how they promoted or hindered digital inclusion. Being part of the MNO and having experience in diffusing accessible ICTs shaped questions about exploring and understanding how the ICT industry's processes could enhance or hinder vision impaired persons' communication participation in society. These questions enabled me to position myself in the research context, and to discover and to add to existing knowledge in this field (Kivunja & Kuyin, 2017). Enabling vision impaired persons to experience barrier-free access to ICT is rooted in my own experience of wanting society, and businesses in particular, to include disabled persons in their consumer strategies. To answer the research question, I formulated questions for vision impaired participants about the challenges and benefits they experienced when accessing the MNO's technology and services.

Ontology refers to 'the nature of our beliefs about reality' (Richards, 2003:33). I looked for foundational concepts that would make sense of the themes that emerged from the research data. Ontological thinking helped me to consider the significance of the research problem and how I could approach it to answer the research question (Kivunja & Kuyin, 2017). It assisted me to review literature to understand the challenges that MNOs experience in diffusing processes that promote digital inclusion.

Axiology is the subject area that deals with the ethical issues that need to be considered when planning a research proposal. It considers the philosophical approach to making decisions of value or the 'right' decisions (Kivunja & Kuyin, 2017). The outcome of this way of thinking is to value and respect all participants' rights. I conducted the research in a socially just, respectful and peaceful manner to avoid harming of participants, whether physical, psychological, legal,

social, economic or other (Kivunja & Kuyin, 2017). Section 4.8 describes the measures I have taken to avoid all risks to vision impaired participants when conducting interviews.

### **4.3 Research design**

The overview of the case study and the type of case study is addressed in the next section.

#### **4.3.1 Overview of the case study**

Using a case study approach helps to generate an in-depth, multifaceted understanding of a complex issue in its real-life context; in this case understanding a MNOs processes to promote digital inclusion (Crow, Cresswell, Robertson, Huby, Avery & Sheikh, 2011). Case studies are intended to present the details from the viewpoint of the participants by using multiple sources of data (Tellis, 1997). According to Rebolj (2013), a case study method is relevant when describing and analysing the processes of a particular organisation in detail. To conduct my case study, I firstly identified a topic, whereafter I determined what is already known and not known about the topic by reviewing the literature, see Chapter 3. This established the conceptual foundation for the study, which impacted the drafting of research questions.

Starman (2013) mentions a few characteristics of case studies. Firstly, it is regarded as valuable when doing research in practice-oriented fields such as management, social work and education. Case studies are more qualitative in nature, although not exclusively as it can be quantitative or a combination of both approaches. Qualitative research is characterised by an interpretive paradigm that focuses on the subjective experiences and meanings they have for an individual. As a result of this, the subjective views of a researcher on a particular topic play an important part in the study results. A final characteristic of a case study is its idiographic approach which emphasises an individual's perspective on the problem being investigated.

#### **4.3.2 Single case study with an embedded unit**

A case study approach is beneficial when the focus of the study is to answer 'how' and 'why' questions (Yin, 2003). I used a single case study with an embedded unit to describe themes that identified the MNO's processes that promoted or hindered the digital inclusion of vision impaired persons. This facilitated the examination of a sub-unit that are located within a larger case (Yin, 2003). This kind of case study enabled me to explore the case concerned with the

MNO's processes, whilst the embedded unit enabled me to consider how the experiences of vision impaired consumers promoted or hindered their digital inclusion. (Gustafsson, 2017; Baxter & Jack, 2008).

As an insider researcher, I selected the case based on my interest and prior knowledge of disability inclusion within an MNO which helped to develop a strong theoretical base for the research. The case study method enabled me to conduct research within a real setting of a MNO which assisted to get the input of management firsthand. The case or the unit of analysis is an important factor and in this study the unit of analysis is the MNO's processes that hindered or promoted the digital inclusion of vision impaired persons (Tellis, 1997; Miles & Huberman, 1994).

Once I determined the units of analysis, I bounded the case in space and time to avoid answering a research question that is too broad (Baxter & Jack, 2008). Doing this ensured that I was able to focus on identifying and describing how the processes of one specific MNO in South Africa promoted or hindered the digital inclusion of vision impaired persons from when the company was established in 1994 up until the current day. The study did not consider the MNO's many independent retail stores, but only focused on its internal business units. I selected vision impaired participants from one specific DPO.

I furthermore used the intrinsic case study as I wanted a better understanding of a specific case, which in this study refers to the MNO's processes. Within the intrinsic case study, the case is dominant and of the highest importance. The intrinsic case study type required the input of participants to be properly understood (Stake, 2003). In this manner, I considered the voices and perspectives of participants from both the MNO and the DPO (Cronin, 2014). Listening to participants' voices enabled me to develop deeper insights into the role that an MNO's processes play in promoting or hindering the digital inclusion of vision impaired persons (Stake, 1995).

#### **4.4 The study sample: population and sampling**

The study population is the target population used in the research (Bickman & Rog, 1998). This study focuses on two populations, namely fifteen management participants at an MNO and twelve vision impaired persons from a DPO, of whom some were employed and others

were undergoing skills development training. The main site of the MNO's participants were from one particular MNO in South Africa. The reason for selecting this MNO is that it has focused on providing accessible technology to persons with vision impairments for almost two decades (Saumure & Given, 2012; Daymon & Halloway 2011). Other MNOs in South Africa at the time have not considered the digital inclusion of disabled persons to be a priority (Busuulwa, Baguma, Wakabi, Kimumwe & Kalemera 2020).

In addition, I wanted to use my insider status and accessibility knowledge to develop a deeper level of understanding of what can be done to further promote the digital inclusion of disabled persons. As an insider researcher, the selected case study site allowed me to access a group of management participants that have been involved in accessibility. Access to participants is a central consideration; being an insider researcher meant that I knew the case study site well, which assisted in getting buy-in to conduct the study relatively easily. My insider status furthermore gave me access to data such as the MNO's documents.

My insider status helped me to recruit MNO participants as I had existing trust relationships with them. Being a colleague meant that I had to be careful to view the MNO critically by divorcing myself from my role as colleague and taking on the new role of researcher. This was initially very hard, but as I immersed myself more in the study it became easier. The MNO's mandate of being serious about improving accessibility for disabled persons helped me to be objective. I did find it challenging at times to not come across as being too celebratory when noting what the MNO was doing well in promoting digital inclusion. Even though the MNO was doing certain things well, I had to remain critical at all times in order to be able to conduct a deeper level of analysis while maintaining objectivity.

Having had a relationship with the DPO enabled them to select a group of focus group participants for the study. It was important that the voices of vision impaired participants were heard by sharing their lived experiences openly and freely. I navigated my insider status at the DPO by encouraging focus group participants to view me as a researcher and not as a partner who supported the organisation. Four of the twelve vision impaired focus group participants who were known to me were permanently employed at the DPO. The other eight vision impaired focus group participants were students and were unknown to me, which helped me to maintain my role of independent researcher.

A purposive sampling method was used to identify participants at the MNO as well as at the DPO. Purposive sampling entails identifying and selecting participants that have knowledge and experience of a particular phenomenon (Cresswell & Plano Clark, 2011). Besides having experience and knowledge, scholars note the importance of participants being available and willing to participate (Bernard, 2002). The purposive sampling method enabled me to select participants who were knowledgeable about promoting the communication of vision impaired persons (Flick, 2007). This method furthermore enabled the selection of vision impaired participants from the DPO who were users of the MNO's technology and services.

Table 4.1 show that research was conducted with a sample of thirteen members of management from various business units within the selected MNO. The thirteen MNO participants consisted of five top managers, four senior managers and four middle managers. A second, smaller, sample from the MNO consisted of two employees who had been previously employed at the MNO. I was fortunate to have been in contact with these ex-employees through social media as they had left the company many years ago. The selected ex-employees had both played critical roles in assisting the MNO to consider embracing disability inclusion. One of them was the first disabled employee to be appointed in the company's call centre when the MNO started operations in 1994. The other was the product manager who led the initiative to investigate and implement the accessible speaking phones initiative for vision impaired persons in 2004.

**Table 4.1** Sample of the MNOs management participants

| Management level  | Number of participants | Employee status |
|-------------------|------------------------|-----------------|
| Top management    | 5                      | Permanent       |
| Senior management | 4                      | Permanent       |
| Middle management | 4                      | Permanent       |
|                   | 2                      | Ex-employees    |

The second sample consisted of twelve vision impaired persons from a DPO, who participated in two focus group interviews. This particular DPO was selected because it had a relatively large staff and student compliment of approximately fifty staff members and

students on-site daily, which facilitated the selection of twelve vision impaired participants who were users of the MNO. Four of the vision impaired participants were permanent employees of the DPO, whilst eight of them were students attending skills development courses.

The total sample size of the study is twenty-seven participants. The sample size is sufficient to ensure data saturation as the study aim is narrow and relevant participants were selected to achieve the study aim, and because the study is supported by established theories (Malterud et al, 2015; Guest, Bunce & Johnson: 2006).

#### *Inclusion criteria for the MNO's participants*

- Top, senior and middle managers: Top managers comprised of executives who were responsible for the overall function of groups within the MNO; for example, the Marketing Group or the Consumer Business Group.  
Senior managers headed up divisions within groups, such as the communications division or the training division.  
Middle managers were responsible for implementing initiatives on various operational levels.
- Permanent managers from various business units that the Accessibility Office has interacted with, such as brand marketing, device management, customer services, product development, human resources and segmentation.
- Managers who were responsible for implementing accessibility initiatives for disabled consumers.

#### *Inclusion criteria for participants of the DPO*

- Aged between 18 and 65 years
- Permanently employed
- Students attending training courses at the DPO
- Users of the selected MNO's technology and services, as questions were asked regarding their experiences when interacting with MNO staff
- Vision impaired, for example blind or partially sighted

#### **4.4.1 Recruitment of MNO participants**

I sent an email inclusive of an information sheet to the chief executive officer (CEO) of the MNO requesting permission to conduct a case study on digital inclusion at the MNO - refer to Addendum A. Once the CEO had approved the request, I sent an email with information about the study to management staff to request their participation in the study – refer to Addendum A (Gill et al, 2008). Being an insider researcher helped me to select key participants that have dealt with implementing accessibility within the MNO. The interested participants were asked to sign the informed consent form prior to their interview - refer to Addendum B (Gill, Stewart, Treasure & Chadwick: 2008). In addition, two of the MNOs previously employed participants who were involved in disability inclusion agreed to participate in the research. I sent an email and provided them with the information of the study.

#### **4.4.2 Recruitment of DPO participants**

I sent an email inclusive of an information sheet to the CEO of an organisation for vision impaired persons requesting permission to interview members of their organisation – refer to Addendum C. The CEO gave permission as well as the contact details of the DPO's liaison who helped to contact and identify vision impaired participants who might be interested in participating in the focus group interview sessions. The DPO preferred making the interview arrangements with the participants as they were on site daily. I provided the details of the study and the information letter to the DPO contact person to provide it to interested participants – refer to Addendum C. The participants were requested to read the documents to become familiar with the aim of the study.

The study information letter requested vision impaired persons to confirm their preferred method of receiving information so that I could provide the information and documents electronically or in hard copy (large font and Braille) according to their accessibility needs. Participants indicated that they prefer receiving information via email as the screen reader software on their devices read the information. The DPO contact person selected the twelve participants according to the recruitment criteria, their availability and willingness to participate. Participants were informed that the informed consent forms must be signed before the start of the focus group sessions – see Addendum D.

### 4.4.3 Profiles of MNO participants

This section shows the demographic details of the MNO participants. When analysing data, the privacy of participants was respected by assigning pseudonyms. In reporting the findings, I avoided disclosing any information that might harm participants (Allen & Wiles, 2015). The demographic details of the participants are shown in Table 4.1. Only one of the participants, at middle management level, was vision impaired.

**Table 4.2:** Demographic details for each MNO participant

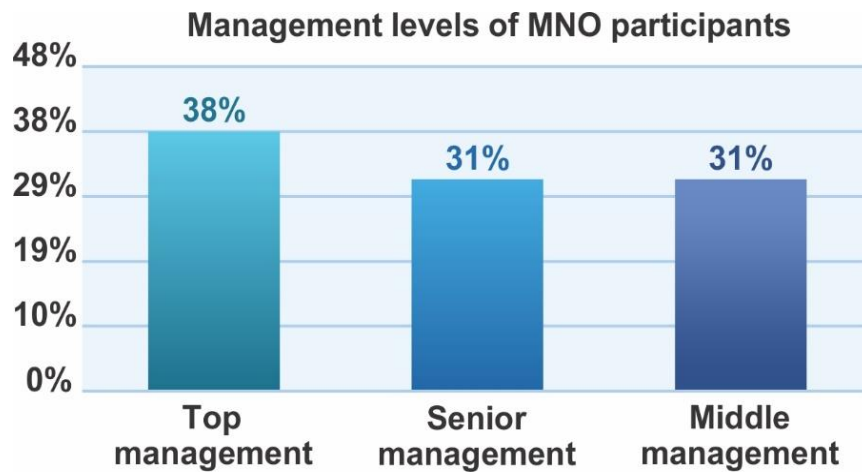
| Management level  | Gender | Pseudonym | Race  | Age   | Disability status |
|-------------------|--------|-----------|-------|-------|-------------------|
| Top management    | Male   | Hendrik   | White | 60–69 | Non-disabled      |
|                   | Male   | Mandla    | Black | 40–49 | Non-disabled      |
|                   | Male   | Pedro     | White | 40–49 | Non-disabled      |
|                   | Female | Anna      | White | 40–49 | Non-disabled      |
|                   | Male   | Yadgar    | White | 40–49 | Non-disabled      |
| Senior management | Female | Jayshree  | Black | 30–39 | Non-disabled      |
|                   | Female | Kate      | White | 40–49 | Non-disabled      |
|                   | Female | Fatima    | Black | 40–49 | Non-disabled      |
|                   | Male   | Muneer    | Black | 50–59 | Non-disabled      |
| Middle management | Male   | Andre     | White | 50–59 | Vision impaired   |
|                   | Male   | Matthew   | White | 40–49 | Non-disabled      |
|                   | Male   | Simon     | Black | 30–39 | Non-disabled      |
|                   | Male   | Sipho     | Black | 30–39 | Non-disabled      |

The demographics of the previously employed participants are shown in Table 4.1.

**Table 4.3:** Previously employed participants of the MNO

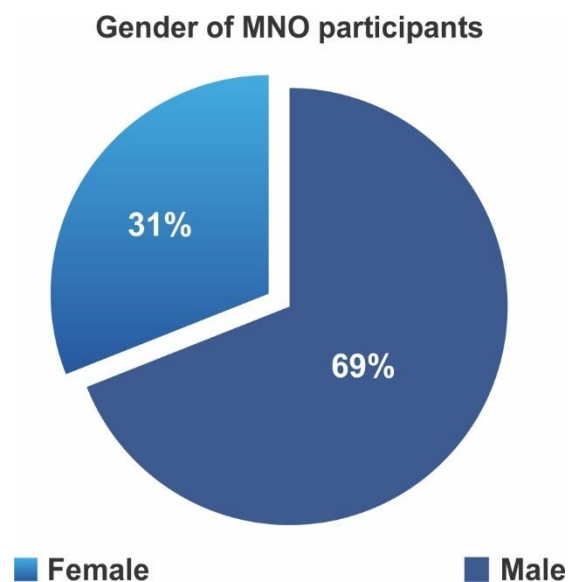
| Gender | Pseudonym                  | Race  | Age   | Disability status |
|--------|----------------------------|-------|-------|-------------------|
| Male   | Disabled call centre agent | White | 40–49 | Disabled          |
| Female | Product Manager            | White | 50–59 | Non-disabled      |

The percentage of management levels of MNO participants are shown in Figure 4.1.



**Figure 4.1:** Percentage of management levels of MNO participants

The gender of the participants is shown in Figure 4.2. These figures align with information that state that the ICT industry is male-dominated. In South Africa, 28% of the technical workforce are woman (Code Institute).



**Figure 4.2:** Gender of MNO participants

#### 4.4.4 Profiles of DPO participants

Table 4.3 shows the demographic data of the focus group participants. All the participants were vision impaired and from the same DPO. The majority of the black participants were partially sighted and attended training courses at the DPO.

**Table 4.4:** Demographic details for each DPO participant

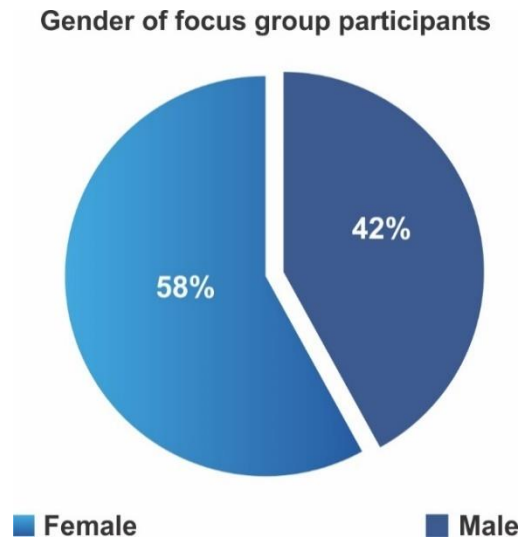
| Focus group 1   |        |           |       |       |                   |
|-----------------|--------|-----------|-------|-------|-------------------|
| Employee status | Gender | Pseudonym | Race  | Age   | Disability status |
| Permanent staff | Female | Eleanor   | Black | 50–59 | Partially sighted |
| Student         | Female | Nita      | Black | 40–49 | Partially sighted |
| Student         | Male   | David     | Black | 30–39 | Partially sighted |
| Student         | Male   | Mark      | Black | 50–59 | Partially sighted |
| Permanent staff | Male   | James     | Black | 20–29 | Blind             |
| Permanent staff | Male   | Yusuf     | Black | 50–59 | Partially sighted |
| Focus group 2   |        |           |       |       |                   |
| Employee status | Gender | Pseudonym | Race  | Age   | Disability status |
| Student         | Female | Sandy     | Black | 50–59 | Partially sighted |
| Student         | Male   | Xolani    | Black | 20–29 | Blind             |
| Permanent staff | Male   | Stevie    | Black | 60–69 | Blind             |
| Student         | Male   | Achmat    | Black | 30–39 | Blind             |
| Student         | Female | Buhle     | Black | 50–59 | Partially sighted |
| Student         | Female | Unathi    | Black | 30–39 | Partially sighted |

Figure 4.3 show the roles of the participants.



**Figure 4.3:** Roles of the focus group participants

Figure 4.4 shows the gender of the participants.



**Figure 4.4:** Gender of focus group participants

## **4.5 Data gathering methods**

The aim of data gathering is to generate quality evidence that translates to rich data analysis in order to construct credible answers to the questions that have been posed (Kabir, 2016). For this study I used multiple types of data sources such as documents, semi-structured interviews and focus group interviews (Yin, 2014; Baxter & Jack, 2008). All information that was collected is stored on my personal computer, which is password protected so that the information remains private and confidential.

### **4.5.1 Document reviews**

Document analysis is a complementary data gathering method, the purpose of which is to ensure triangulation (Bowen, 2009). It is a systematic procedure for reviewing printed and electronic documents which provides contextual and historical background (Bowen, 2009). Secondary data is often readily available, due to the internet and electronic media. (Kabir, 2016). In this case study, the document analysis provided information about accessibility initiatives the MNO has implemented to promote the adoption of technology among the vision impaired consumer segment. The document analysis provided insights into the MNO's policies

and processes around the implementation of accessibility initiatives. Once the research questions were formulated, I searched for documents within the organisation as well as online.

In developing the research questions, I kept the problem statement in mind as the research aim is derived from the research question. My prior knowledge of the challenges of disability inclusion within the organisation and documents that were available for analysis of the problem, guided me in developing the main question with four sub questions. I developed the following set of questions for the document analysis:

- Why has the MNO strived to provide accessible technology for disabled persons?
- When and how did the MNO go about implementing accessibility?
- How are the needs of vision impaired persons positioned within the company's processes?
- To what extent has accessibility been considered when developing new technology and services?

As an insider researcher, and being part of the Accessibility Office, I had no problem accessing the relevant documents. Most of the documents were kept at the Accessibility Office, and consisted of reports from various divisions about their accessibility initiatives, for the purpose of marketing or informing management. A total number of eighteen documents were analysed from different business areas within the MNO. The documents and articles were dated from 1994, when the organisation was established, and included reports up until 2020.

#### *Types of documents analysed*

A total number of eighteen documents were analysed from different business areas within the MNO. Of the eighteen documents analysed, ten were operational reports consisting of departmental reports, product advertising information, accessibility roadmaps and training processes for accessible phone features. Other documents analysed were organisational documents such as company policies, Disability Policy, Employment Equity Policy, the Declaration of Human Rights at Work Policy, the company's vision, diversity and inclusion strategy and the company's annual performance reports.

#### **4.5.2 Semi-structured interviews with MNO participants**

The purpose of using semi-structured interviews was to explore and ascertain to what extent the design of the MNO's processes had considered the inclusion of vision impaired persons (Gill et al, 2008). The semi-structured interviews conducted with participants were considered to be the most important source of data. Using semi-structured interviews when interviewing MNO participants provided reliable, comparable qualitative data (Kabir, 2016).

According to Adams (2015), the disadvantage of using semi-structured interview process is that they are time-consuming and labour-intensive, as it takes effort to prepare the interviews, set up the interviews, conduct the interviews and analyse volumes of notes and transcripts. Adams (2015) furthermore notes that the interviewer needs to be knowledgeable about the topic, sensitive and alert. This suited my case study well as, being an insider researcher, I have been exposed to the topic of the digital inclusion of vision impaired persons. It should be noted that my knowledge of the topic of digital inclusion was industry-based, meaning I did not necessarily have a full understanding of vision impaired persons' lived experiences of accessing technology and services. Being knowledgeable about the topic contributed towards my interviewing skills as it assisted me to think of questions during the interview and to probe further to get clarity. I used my interview and listening skills acquired through experience to focus on actively listening to the voices of participants in order to gather data about their lived experiences.

Eight of the manager interviews were held at the MNO's offices at different dates and times that were convenient for the participants. Five of the thirteen interviews were held via video conference, as the participants were based at the head office in a city in the north of the country. Each interview took place in a single session of one hour, and one interview was conducted with each participant (Gill et al, 2008).

In developing the research questions, I kept the problem statement in mind as the research aim is derived from the research question. My prior knowledge of the challenges of disability inclusion within the organisation guided me in developing the main question with five sub questions.

I compiled the following research questions:

- Why has the MNO strived to provide accessible technology for disabled persons?
- When and how did the MNO go about implementing accessibility?
- How are the needs of vision impaired persons positioned within the company's processes?
- To what extent has accessibility been considered upfront when developing new technology and services?
- What role does culture and leadership play to promote digital inclusion?

I used an interview guide with questions that covered the topic of the study - refer to Addendum E. Questions were standardised and I used my discretion when selecting the order in which to ask them. The semi-structured interview guide included a questionnaire collecting demographic data such as division name and role. This helped the participants to get used to the idea of regarding me as a researcher and not as their colleague during the interviews.

During the introduction of each interview session, I made it clear to the participants that my role for the duration of the one-hour interview was that of a researcher and not of a colleague as it impacts participants interactions (Orb, Eisenhauer, & Wynaden, 2001). Regarding me as a researcher and not as a colleague enabled the participants to answer the questions openly and honestly. Clearly defining the role made it easier for me to take on the researcher role, which guided my thinking process. Having a trust relationship with most of the participants assisted them to answer questions as honestly as possible and even to be vulnerable at times.

After breaking the ice with the demographic questions, I asked open-ended questions about the company's culture and inclusion of disabled consumers. It allowed participants the freedom to express their views in their own terms. The style of the semi-structured interviews was conversational, which enabled me to delve deeply into a topic and to understand the answers thoroughly, resulting in detailed information being collected. I did not ask questions in any particular order, but adapted the order according to the participants' responses. Although the questions were similar for all participants, some pertained to the participant's area of experience and expertise; for example, some of the questions asked to a participant from the marketing group centred around how marketing-related initiatives considered consumers with disabilities.

In this manner participants were able to answer questions confidently and to expand, where necessary, on certain topics, which kept the interviews flowing and provided rich data. This was important in order to determine the MNO's understanding of the needs of vision impaired persons and how they were addressed. All interviews were digitally recorded with the permission of the participants. No interviews were conducted without confirming the written and verbal consent of the participants.

The two previously employed participants were interviewed using email because one participant was based in another country and the other participant was located in a different province of South Africa. I adjusted the questions for these interviews to focus specifically on the history of accessibility within the MNO, as both of these ex-employees were employed at the MNO at the time when the company introduced disability inclusion and accessibility. The mobility impaired call centre agent was the first disabled person to be employed at the MNO and the then product manager was responsible for facilitating the implementation of the first accessible mobile phones for vision impaired persons at the MNO.

#### **4.5.3 Focus group interviews**

A focus group entails conducting group interviews in order to identify the perceptions, thoughts and impressions of a selected group of people regarding a particular topic of investigation (Kairuz, Crump, & O'Brien, 2007). The group interviews were perceived by the participants as nonthreatening and they felt free to express any kind of opinion, regardless of whether it was shared or not by the other participants (Adams, 2015). Focus group interviews generate valuable information, especially when the participants represent niche interests, in this case promoting digital inclusion. The size of a focus group can be between six and twelve participants, as this is sufficient to ensure data saturation (Lasch, Marquis, Vigneux, Abetz, Arnould & Bayliss (2010).

A note-taker, who was vision impaired, signed a confidentiality agreement prior to taking notes in the two focus group sessions - refer to Addendum F. The purpose of having a note-taker was to build rigour into the research process by ensuring that the researcher asked questions in a consistent manner with both focus groups. The note-taker captured specific quotes and important answers in a pre-designed template and took notes during the sessions using her accessible hardware and software. The notes taken were used as

additional information and served as a backup in case the recordings have failed (Mack, Woodsong, MacQueen, Guest & Namey, 2005).

In developing the research questions, I kept the problem statement in mind as the research aim is derived from the research question. A literature review and my prior knowledge of understanding barriers vision impaired persons experienced to access technology, guided me in developing the main question with three sub questions.

I compiled the following research questions:

- What are the barriers experienced when accessing the MNOs products and services?
- What are your most important mobile communications needs?
- Why is it important that technology and services are accessible?

I used an interview guide with questions that covered the topic of the study - refer to Addendum G. The focus group interviews began with demographic questions whereafter I continued with open-ended questions about the participants' experiences using the MNO's services. More probing questions followed, the intention being to gather data with more depth on their experiences accessing the MNO's technology and services (Charmaz, 2006). I listened carefully to their responses and encouraged each participant to share their thoughts. Some of their comments led to the next question which required the researcher to carefully steer the discussion in order to cover all the questions.

Two focus group sessions were held, each with six participants. They were held in a private venue at the premises of the DPO. Familiarity with the venue enabled participants to feel comfortable and to share their experiences freely. One session was held in the morning and another session was conducted in the afternoon on the same day. Each session was ninety minutes long and was conducted in English, and the sessions were digitally recorded once participants had given consent. Prior to the start of each session, two sighted persons from the DPO assisted the vision impaired participants to sign the consent form. The details of the forms were read aloud to the participants prior to them signing the form.

#### **4.6 Data analysis**

This section describes the data analysis processes I used to generate the findings in Chapters 4 to 6. I used the inductive approach to analyse the data by deriving codes and

categories from it (Kondracki & Wellman, 2002). A diverse set of documents from the MNO for the period 1994–2020, as well as the open-ended questions asked during the interviews with management participants from the MNO and vision impaired participants from the DPO, provided rich data. Table 4.4 outlines the framework for organising the data.

**Table 4.5:** Framework for organising data

| Objectives  | Data source  | Methods and duration  | Data gathering instruments   | Type of data   | Analysis type                           |
|---|--|---|------------------------------|--|---|
| <b>MNO PARTICIPANTS</b>   |  |   |                              |  |   |
| Identify and describe processes that could promote or hinder digital inclusion of vision impaired persons.              | Five top managers, four senior managers and four middle managers                                 | Interviews:<br>- In person<br>- Video conference<br>Duration:<br>60 minutes     | Semi - structured interviews | Written data:<br>13 Transcripts<br>Primary source                    | Inductive content and thematic analysis |
| Describe the factors that lead to the MNO implementing digital inclusion in 2004  | One ex-employee: the then Product Manager who first conceptualised and implemented accessibility | Interviews:<br>- E-mail   | Semi - structured interview  | Written data:<br>One set of data<br>Primary source                   | Inductive content and thematic analysis |
| Describe your experiences as the first disabled employee  | One ex-employee: the first disabled person to be employed by the MNO                             | Interviews:<br>- E-mail   | Semi - structured interview  | Written data:<br>One set of data<br>Primary source                   | Inductive content and thematic analysis |
| Identify and describe processes that could promote or hinder the digital inclusion of vision impaired persons.          | 18 documents (strategy, operational, news articles)  | Document analysis   | Non - technical literature   | Written data:<br>18 documents<br>Secondary source and primary source | Inductive content and thematic analysis |
| <b>DPO PARTICIPANTS</b>   |  |   |                              |  |   |
| Describe your experiences of accessing and using the MNO's technology and services<br>Describe your accessibility needs | 12 vision impaired participants  | Two focus groups interviews of six participants each<br>Duration:<br>90 minutes | Semi - structured interviews | Written data:<br>Two transcripts<br>Primary source                   | Inductive content and thematic analysis |
| <b>RESEARCHER</b>   |  |   |                              |  |   |
|   | Researcher   | Reflective diary  | Reflective notes             | Written data:<br>Primary source                                      | Inductive thematic analysis             |

My data analysis process comprised three levels. Level one described codes derived from the documents and interviews collapsed into categories. Level two consisted of evaluating the data using abstraction to process data further to identify recurring concepts and themes. At level two, field notes and interview transcripts were combined before the analysis stage, and then analysed together (Denzin, 2009). Level three involved further abstraction by using the evaluated level two data and my understanding of existing literature and the theoretical lens for the study.

#### **4.6.1 Document analysis**

According to Bowen (2009), document analysis involves skimming (superficial examination), reading (thorough examination), and interpretation (Bowen, 2009). The document analysis findings were integrated as supplementary data into the interview findings of Chapters 5 and 6. As per Yin (2003), I combined the document analysis with the interview findings to understand the overall case better. I used content analysis by means of coding in order to identify a variety of patterns that were linked to the research problem (Bowen, 2009). Content analysis is a flexible method for analysing text data that involves of organising information into categories related to the key research questions (Bowen, 2009).

I began the first level of analysis by grouping the various types of documents together. I utilised probability or judgement sampling with documents that were too large to be analysed in their entirety (United States General Accounting Office, 1996). Following an inductive approach, I carefully read and reread the data to ensure that I was familiar with the contents of each document, looking for keywords, trends and themes, which helped with outlining the analysis before any analysis took place. Once I had read the documents and had a good understanding of their contents, I identified units of analysis or codes (Guthrie et al, 2004). Codes are small pieces of information, and coding is an essential part of analysis (Creswell, 2013). The purpose of creating categories was to provide a means of describing the phenomenon, to increase understanding and to generate knowledge (Cavanagh, 1997).

As part of the second level analysis in order to develop codes, categories and sub-themes, I immersed myself in the data to allow new insights to emerge (Kondracki & Wellman, 2002). The categories developed from the data were not preconceived categories (Kondracki & Wellman, 2002). I copied the codes from the documents into a Word template that consisted

of a table with columns for codes, categories and sub-themes. I grouped all similar codes together and used interpretation to develop categories (Stake, 1995). Once the categories were completed, I grouped similar categories together into sub-themes. During the data abstraction I decided how many sub-categories and sub-themes I would include (Evans, 2018).

Third level analysis occurred when I linked my findings to the literature and used the theoretical lens of the study. No insights or theories were developed from the data without me becoming completely familiar with them (Polit & Beck, 2004). This resulted in the data once evaluated eliciting meaning, producing understanding, and developing empirical knowledge (Corbin & Strauss, 2008).

#### **4.6.2 Interview analysis**

According to Yin (2009), data analysis of case studies consists of examining, categorising and tabulating evidence to draw empirically based conclusions. This method of content analysis was useful for analysing transcripts of semi-structured interviews (Burnard, 1991). The advantage of the content analysis is gaining direct information from study participants without imposing preconceived categories (Hsieh & Shannon, 2005; Cavanagh, 1997). Content analysis, which is similar to constant comparison analysis, describes themes or codes, and helped to identify the most common concepts (Baškarada, 2014). First level analysis commenced by transcribing the raw interview data from the audio recordings, which was done by a professional transcribing company that had signed a confidentiality agreement.

The second level analysis entailed making sense of the transcribed interview data by encoding the data. Upon receiving the transcripts, I read through them a couple of times to become familiar with the data. Identifying units of meaning as codes linked to raw data enabled me to examine how the interview data supports or contradicts the theory that was guiding the research. I used codes to develop categories and sub-themes as described in Section 4.6.1. Once I had grouped the sub-themes together, I divided them into two main themes (see Chapters 5 to 7). Thematic analysis was used to identify recurring themes, events and patterns in the interview data (Braun & Clarke, 2006). I compared the interview data with the sub-theme and categories of the document analysis and found that similar categories and sub-themes appeared across the data sets.

During the third level of analysis, I established whether findings were linked to the theoretical framework and evaluated what was already known in existing literature. I used the constant comparative method to create theories that are grounded in the data, and worked inductively to discover the patterns in participants' words (Boeije, 2002). It is interesting to note that some of the MNO and DPO findings found the same elements to be important – for example, empathy.

#### 4.7 Rigour of the study

Rigour entails demonstrating the plausibility, credibility and integrity of qualitative research (Moule & Goodman, 2009). The concept of rigour portrays quality in qualitative research and underpins both rigour in the research process and the relevance of and confidence in the research outcome (Baillie, 2015). To ensure rigour in this study, I applied the following criteria recommended by Lincoln & Guba (1985): credibility, dependability, confirmability and transferability – refer to Table 4.5.

**Table 4.6:** Techniques to determine rigour

| Approaches to rigour | Techniques                              |
|----------------------|---|
| Credibility          | Prolonged engagement<br>Member checking |
| Dependability        | Audit trail                             |
| Confirmability       | Triangulation<br>Reflexivity            |
| Transferability      | Thick descriptions                      |

##### 4.7.1 Credibility

I utilised prolonged engagement and member checking techniques to promote credibility. Prolonged engagement occurred in that as an insider researcher I was familiar with the culture and phenomena of interest in the MNO. During my tenure at the company, I have been able to build relationships and rapport with colleagues from various business units. This enabled me to have insights into the roles that business units played to promote digital inclusion. Having worked with the interview participants helped them to feel comfortable to disclose

information openly. As I have worked with the DPO on an initiative, I have been exposed to the organisation and understood their culture of uplifting vision impaired persons to lead independent lives. Working with the DPO gave me the opportunity to build trust relationships with the permanent staff members. This enabled the DPO participants to feel comfortable to share their lived experiences openly and honestly.

The second technique I used to establish credibility was member checking, which forms an integral part of creating rigour in qualitative research (Candela, 2019). Member checking occurs when data, categories, interpretations and conclusions are tested with the participants from whom the data was originally obtained. In this study, the findings reflect the voices of the participants and are shown in Chapters 5 to 7. Member checking provided a way to ensure the accurate portrayal of participant's input by allowing them review and confirm the accuracy of the data (Candela, 2019). After conducting document and interview analysis, I emailed key participants to check the accuracy of my findings. Participants validated the accuracy of the data by confirming that they approved of the findings of the document and interview analyses and interpretation.

#### **4.7.2 Dependability**

This technique is linked to both credibility and confirmability. Using an audit trail allows for transparency so that readers can follow the research process when it is documented and described. Through the application of a systematic procedure, a trail of evidence was established during the data gathering process. The evidence for the semi-structured interviews was interview schedules. Case study as a method allowed me to use multiple sources of data that helped to explain the complexities of this study. The process of triangulation aided the dependability and confirmability of the study. The study could be deemed dependable if the study findings were replicated with similar participants under similar conditions.

#### **4.7.3 Confirmability**

The triangulation of methods serves to verify data and validate findings which reduces the potential bias that might occur when using a single case study design. Triangulation refers to the convergence of data obtained using several methods to study one phenomenon. I used

three methods of data gathering which serves to substantiate findings by using one method and confirming the outcome with another. Using multiple sources of evidence enhanced the validity of the study. Using the three methods of document analysis, semi-structured interviews and focus group interviews facilitated the exploration of the research question. This ensured that the research question was not explored through only one lens, but through a variety of lenses, allowing for multiple aspects of the phenomenon to be revealed and understood (Baxter & Jack, 2008).

#### **4.7.4 Reflexivity**

In most qualitative research, the researcher is considered part of the research instrument. My background, beliefs and experiences influenced the investigation of digital inclusion. To mitigate concerns associated with having an insider status, I conducted detailed reflection and continual internal dialogue on the subjective research process, with a close awareness of my own biases, feelings, thoughts and perspectives (Teusner, 2016). To reduce bias, I acknowledged my biases and used a reflective diary throughout the research journey. It was important for me to be open, authentic, honest and deeply interested in the experiences of the research participants, as this encouraged honest participation.

Feedback from supervisors and peers helped to minimise potential bias displayed from my side. I kept meticulous records throughout every phase of the research process (Teusner, 2016). The thoughts and ideas documented during data gathering helped in the development of the themes and sub-themes, which allowed my observations to contribute towards the building of this study. Through reflection I became aware of potential bias when interviewing MNO participants by preparing myself psychologically to switch between my roles of operational accessibility expert and researcher. I visualised my interview sessions with participants and how I would ask them to view me as a researcher during the interviews. I also wrote reflections and questions in the journal after each interview which helped me to identify potential bias. I kept a fieldwork journal, which was helpful to make me aware of how my insider status may have impacted the way I interviewed participants and analysed their responses.

Having worked closely with most of the MNO interview participants, they knew that I was a person with integrity, as I had openly engaged top management to consider embracing disability inclusion as part of my role. I observed that the MNO participants were eager to participate in the study, as all of them accepted my request unconditionally and prioritised the

interview sessions. The management of the MNO regarded the study in a positive light and viewed it as an opportunity to learn where there are gaps and how the company's processes can better promote digital inclusion. As a result of having an honest and open relationship with MNO participants, I felt confident to lay the ground rules in an open manner from the outset of the interviews.

I asked both the MNO and DPO participants to regard me as a researcher during the interviews and to answer questions honestly, otherwise the outcome of the study would be compromised, as it would not reflect the real issues. Because of my honest and authentic values, I am fully committed to represent the participants' experiences and input accurately and adequately (Dwyer & Buckle, 2009). Some of the benefits of being an insider researcher are having understanding the culture being studied and having an established intimacy which promotes both the telling and the judging of truth (Bonner & Tolhurst, 2002). I have knowledge of accessibility, know the hierarchy of the organisation, know how things work and know how to best approach management, which would take an outsider researcher a long time to acquire (Smyth & Holian, 2008).

On the other hand, there are also disadvantages to being an insider researcher. In my case, my familiarity with MNO participants caused me to experience some loss of objectivity by viewing the data in a positive light and not being critical enough. As a new researcher doing my thesis part-time, I struggled initially to change hats from being a researcher to being an employee of the MNO. This meant that during the day I was operationally involved in accessibility projects, whereafter I had to completely change my mindset to being a researcher after hours and on weekends. At first my thinking was clouded by a business operational way of thinking, which impacted my ability to think critically about the findings of data. Here, the ongoing research journey, reflections and acting upon feedback from supervisors helped me to become fully immersed in the role of researcher and to start thinking critically and to separate myself from my MNO employee role.

I was further aware that my status of being a disabled person and having interacted with the DPO on previous occasions may have positively impacted my research relationships. Having been familiar with the DPO and having had a trust relationship with a few of the participants contributed towards them feeling comfortable to answer questions openly and honestly. To minimise the risk of DPO participants answering questions only in a positive manner, I

openly requested participants to regard me as a researcher and not as someone they were familiar with. I specifically mentioned that the outcome of the study was dependent on acquiring valuable data from them and appreciated their compliance with the request. Although I only knew four of the twelve DPO participants, it was still important for me to clarify my researcher role, as these four persons were experienced staff members.

#### **4.7.5 Transferability**

Transferability in qualitative research suggests that findings from one study can be applied to other settings or groups of people. The learnings of my case study could be transferred to other organisations who find resonance with my thesis. It should be noted that qualitative research is not generalisable.

'Thick description' refers to providing a detailed account of field experiences, in which the researcher identifies patterns of cultural and social relationships and puts them in context. I created thick descriptions by describing the phenomenon in sufficient detail, including accounts of the context and research methods. This facilitated the process of evaluating whether conclusions drawn are transferable to other times, settings, situations and people. I provided a rich and strong presentation of the findings in Chapters 5 to 7, with appropriate quotations, which enhances transferability (Graneheim & Lundman, 2004). I described the context of the study in Chapter 1 and provided participant information, such as demographic information and the methods used to recruit the sample, in Section 4.4.1. To demonstrate transferability, I ensured that the selection and recruitment of the samples were based on knowledge of participants.

### **4.8 Ethical considerations**

Qualitative researchers focus their research on exploring and describing people and their natural environments (Orb, Eisenhauer, & Wynaden, 2001). When I conducted research, I focused on adhering to ethical principles throughout the research process. The study furthermore adheres to the ethical principles as outlined in the Declaration of Helsinki (World Medical Association, 2013). This study received ethical clearance from the Human Research Ethics Committee of the Faculty of Health Sciences at the University of Cape Town on 18 June 2018 (reference number: HREC 284/2018).

This study adhered to the following ethical principles as outlined by Jelsma and Clow (2005):

*Respect for persons:* Persons should be treated as autonomous beings, capable of making an informed decision about whether to participate in the research. I treated participants respectfully by providing them with sufficient information about the aim of the study beforehand, which helped them to make an informed decision about participating in the research. I furthermore provided an informed consent form that allowed each participant to decide whether or not to participate in the study.

*Beneficence:* I ensured that I took the needs of vision impaired persons into account to ensure that they would not be distressed about negotiating travelling challenges and struggling to access information about the study. Potential challenges for the study included vision impaired participants finding it difficult to read information in documents such as the informed consent form and information sheet. I mitigated this risk by requesting vision impaired participants to confirm the format in which they would prefer to receive information and documents. I provided information and documents electronically according to the choices of the vision impaired participants. To further mitigate risks, the two focus group sessions were held at the premises of the selected DPO, which were well-known to vision impaired participants and made them feel safe and comfortable. This enabled the participants to express their views freely and openly when participating in interviews.

There was no apparent risk to the MNO participants. I informed participants that should they become distressed during interview or focus group sessions, I would interrupt the session to determine if the participant required it to be stopped, paused or rescheduled. MNO and DPO participants were free to withdraw from the study at any time without giving any reasons and without any negative consequences that would be to their disadvantage. Participants received no monetary or other direct benefits for participating in the research. However, the study will have an indirect benefit in that it will enable the researcher to contribute towards academic knowledge. This new knowledge could contribute to the formulation of policies promoting the digital inclusion of vision impaired persons.

*Justice:* The principle of justice requires that participants be selected fairly. The power relationship between researcher and participant is considered an important issue in qualitative research. This principle is especially pertinent when investigating the lived

experiences of those who are marginalised. During interviews I ensured that participants were not disempowered or exploited, by putting them at ease and giving each of them an equal opportunity to provide input.

*Non-maleficence:* During the interviews I established an atmosphere of trust and openness. I made it very clear that my role was that of a researcher and requested that participants view me as such. Clarifying my role was important as I inquired about their experiences accessing the MNO's mobile technology. Being an insider researcher meant that I already had a relationship with participants, which helped them to share openly and honestly. At the MNO I made sure my colleagues understood that for the one-hour interview I was not their colleague but a researcher who wanted to get their honest feedback. Getting honest and open responses enabled me to collect good data, which enhanced the outcome of this study.

#### **4.8.1 Informed consent**

Denzin & Lincoln (2011) state that the cornerstone of ethical research is informed consent. The informed consent process can be seen as a contract between the researcher and the participants (Fleming & Zegwaard, 2018). It is essential to obtain informed consent before any participant is enrolled in a research project. In this study, participants who volunteered to participate in the research received a consent form to sign prior to the research commencing. Participants' decisions to participate were based on having received sufficient information about the study, which gave them an adequate understanding of both the proposed research and the implications of participating in it.

The information sheet clearly states that participants' input will be kept confidential and that they will not be identified in the study. Participants' consent was also obtained for the recording of the focus group sessions and to allow the note-taker into the session after her role was explained – see Addendum D. By providing consent to participate in the research, participants were made aware of their rights to access the information and to withdraw from the study at any point.

## **4.9 Summary**

The purpose of this chapter is to describe the method used to answer the research questions. The various parts of the methodology are discussed, comprising of study design, research procedure, study participants, data collection, and data analysis. The rigour and trustworthiness section described the techniques of triangulation, credibility, dependability, confirmability and transferability I employed to ensure rigour of the study. I disclosed my biases and the steps I took to minimise the bias derived from my insider status. In the section on ethical considerations. I explained the importance of adhering to ethical principles when conducting research. Chapter 5 describes the findings of the study, as they relate to the research question.

## CHAPTER 5

### Findings and Discussions Part 1

#### THEME 1: INCLUSIVE CULTURE – A KEY DRIVER FOR PROMOTING DISABILITY INCLUSION

##### 5.1 Introduction

This chapter describes the findings of Theme 1, which emerged from the data gathered through document and interview analysis. The findings relate to the study objective to identify, describe and analyse how the MNO's processes promoted or hindered the communication participation of vision impaired persons via digital inclusion.

From the analysis of the data, two key themes emerged, namely *Theme 1: Inclusive culture: a key driver for promoting disability inclusion*, and *Theme 2: Embedding inclusive design to promote access to technology*. Theme 2 is discussed in Chapter 6. This chapter describes Theme 1, which examines the role that the MNO's culture played in promoting or hindering the digital inclusion of vision impaired persons. Theme 1 consists of three sub-themes each with three categories, which are shown in Table 5.1.

**Table 5.1:** Inclusive culture - a key driver for promoting disability inclusion

| Sub-themes   | Categories  |
|--|---|
| <b>Connecting society through digital inclusion</b>                | Mobile technology and votes amplify South Africans' voices          |
|  | New beginnings for disability employment                            |
|  | The ten-year accessibility drought                                  |
| <b>Pioneering the recognition of disabled persons as consumers</b> | DPOs advocate for disability inclusion                              |
|  | Tapping into leadership's collective consciousness                  |
|  | 'They are not in our world': the value of the Accessibility Office  |
| <b>Embracing an inclusive strategy that values everyone</b>        | 'The fish rots from the head': the importance of leadership support |
|  | Utilising integration or inclusion to incorporate accessibility     |
|  | 'Your job is not just moving boxes': creating a purpose-led culture |

## **5.2 Sub-theme 1: Connecting society through digital inclusion**

This sub-theme comprises three categories, which are displayed in Table 5.1. The next section describes how the birth of new technology and a new government connected South Africans.

### **5.2.1 Mobile technology and votes amplify South Africans' voices**

From data that was analysed, the sub-theme of giving all South Africans access to mobile technology emerged as key for participants. Yadgar, a top management participant stated: *We are the pioneers of leading, cutting-edge technologies to make it easier for people to access the latest technologies, because we know it's going to have a very big positive impact on their lives.* Prior to 1994, South Africans had unequal access to telephone technology, based on race and geographical location, with only 1% of the black population owning landline telephones which, according to Nelson Mandela, inhibited economic growth (van der Walt, 2003). Matthew, a middle manager participant, acknowledged the role the MNO played in connecting people in order to decrease the digital divide. He stated: *I think it's critical for anyone to have access to technology because if you haven't got that access you're going to get left behind as the years roll on.*

Between 1992 and 1994 the African National Congress (ANC) decided to get involved in standardised mobile communication. By that stage a European standard for mobile telecommunications had been developed called Global System Mobile (GSM) technology. Digital cellular technology enabled the transmission of voice and data services in a more affordable manner, which had the potential to give everyone access to communications (van der Walt, 2003). As a result, the new government commercialised their telecommunications monopoly by implementing GSM technology. Government regarded mobile technology and competition in this industry as enabling connectivity for the broader population (Horwitz, 2014). The diffusion of the new GSM technology aligned with the innovation element of the Rogers's Diffusion of Innovation Theory (2003) in that it was adopted rapidly by consumers.

The document analysis shows that an article written by Hogg (2009:1) reveals that the founding CEO of the MNO, also called the 'father of South Africa's mobile industry', emphasised that the idea to establish GSM in South Africa was 'not imported ideas, but

intellect from Africa 'and that the company and industry were built by both black and white South Africans, meaning that the idea to use this new technology was born in South Africa. The MNO was established on 1 June 1994, with the aim of giving every South African access to a telephone. A top management participant, Hendrik, acknowledged the role that the MNO played in making this a reality. He stated: *I think the biggest or the most important thing is we are in the business of providing connectivity.* Besides connecting people with technology, Hendrik noted further the importance of the MNO providing a quality network with the aim of retaining consumers. He explained : *Our company's vision is really to keep you connected, keep you on the air, from when you start with us and as long as you choose to continue to stay with us.* The MNO invested heavily in creating a quality network to ensure that consumers would be connected throughout their time as users of the company's services.

The commitment which the MNO has displayed since 1994 to connect all South Africans remains, as this goal has become embedded in the company's culture over time. Fatima, a senior manager participant, put it this way: *The company ethos is one of making a difference. Being a participant and not just an onlooker of the community, of the broader macro and micro environments socially, is really what drives the business.* The MNO's 'Vision 2020' strategy document confirmed its commitment to leave no one behind by empowering the digital lives of all customers through world-class digital solutions.

Results in this section show how the new democracy presented an opportunity to promote the digital inclusion of all South Africans during a critical time in the country's history – after apartheid was dismantled in 1990. Rogers's theory (2003) explains that such political changes can result in new ideas being diffused and adopted, which leads to changes within the social system. During 1992, the African National Congress identified access to telecommunications as a basic need and regarded it as a major facilitator in the development of all socio-economic sectors (Van Audenhove, 1999). At the time, Telkom – a government-owned company, was South Africa's only landline telecommunications service provider, with very few people having access to telecommunications.

The need to give more South Africans access to telecommunications prompted Telkom to investigate commercialising telecommunications, and a decision was made to implement GSM technology from Europe, as it had the potential to democratise communications to the benefit of all South Africans and, later on, all people on the African continent. (van der Walt, 2003). Speaking at the ITU's Telecom 95 conference, President Nelson Mandela addressed

the importance of eliminating economic and other inequalities between North and South, and to improve the quality of life for all humanity.

In order to ensure a competitive environment, Knott-Craig, the lead investigator for implementing GSM technology in South Africa, proposed that licenses should be issued to at least two MNOs (van der Walt, 2003). The then South African government supported the idea of adopting the new GSM affordable technology solution, as it had the potential to address inequality by ensuring that marginalised South Africans coming out of a system of oppression and marginalisation would be able to access mobile technology. In 1992, the Minister of Posts and Telecommunications reached out to a MNO from the Global North to become an investor, together with Telkom and Rembrandt, in the newly established MNO (van der Walt, 2003).

With investors on board, the MNO was the first mobile operator in South Africa starting operations on 1 June 1994. The events that shaped the birth of mobile telecommunications in South Africa resulted in MNOs embracing the vision of ensuring that all South Africans are able to access mobile technology in order to enable communities to participate in socio-economic activities, which promoted leaving no one behind (Hernandez & Roberts, 2018:23; van der Walt, 2003). The birth of mobile communication in South Africa was summed up as follows:

*The process was unique in the world. Nowhere else had political leaders participated to this extent in the licensing of cellular networks. It linked the establishment of the cellular industry to the establishment of South Africa's democracy.*

Lyndall Shope-Mafole, Chairperson of the Presidential National Commission on Information Society and Development (van der Walt, 2003)

Once established, the MNOs worked together to create an independent telecommunications regulatory authority, which later became known as the Independent Communications Authority of South Africa (van der Walt, 2003). For politicians, the regulator has an important role in ensuring that access to universal services will bridge the divide between information rich and information poor communities. Doing this, meant that services could be provided to the most marginalised and vulnerable persons in society (Horwitz, 2001; Van Audenhove, 1999). According to Mansell (2012), political influences often impact policies, which in turn drive technological innovation.

Telecommunications was implemented within the context of global neoliberalism, which shaped the political economic order of global communications (Oyedemi, 2009). Neoliberalism, which promoted capitalism, where markets were expected to govern all sectors of society, dominated debates over policy and regulation (Mansell, 2012; Oyedemi, 2009). This put telecommunications companies under pressure to be inclusive of all customers whilst also being obliged to shareholders to make a profit. This showed the contradictions of mobiles and the role that companies played in meeting societal goals. Mansell (2012), a communications scholar who critiques communications policies, argues that paradoxes of scarcity and complexity help us to evaluate whether communications is in line with the goals of the 'good society'. She suggests that policies can help to ensure that innovations are implemented that could contribute towards achieving economic growth while also achieving social justice.

Findings further reveal that vision impaired consumers were included in having access to mobile technology, from a connectivity point of view, from the outset of the adoption of GSM technology in South Africa. However, vision impaired consumers were excluded from using mobile phones independently, as accessible mobile phone technology was not yet available when the MNO was established in 1994. The MNO's vision of connecting all South Africans to mobile technology supported the argument that inclusive processes of access for all would reduce barriers, and promote digital inclusion. On the other hand, due to the inaccessibility of mobile phones at the time, barriers to access remained, which hindered the digital inclusion of vision impaired persons for the first ten years – refer to Section 5.2.3.

The next section describes the MNO's efforts to ensure that disability inclusion became part of the company's culture by employing disabled persons in their call centres. In order to drive the implementation of the new GSM technology in South Africa for the first time, the MNO's first ever call centre played a crucial role in helping customers to become connected and to become familiar with the new technology.

### **5.2.2 New beginnings for disability employment**

Findings indicate that disability inclusion in the area of employment formed part of the company from the outset. For Pedro, a top management participant, it was important for the MNO to have an employee base that included persons with disabilities:

*You put your money where your mouth is. You become quite hypocritical as a culture or as a company if you say we're really for everybody, but you don't have a gay person, you don't have a transgender person, you don't have a disabled person. Then you're saying the right stuff but you're not really doing the right stuff.*

To understand the MNO's journey of disability inclusion, it is important to understand what factors enabled the MNO to focus on disability and how disability employment led to promoting the digital inclusion of disabled consumers. As the MNO was brand new, the call centre was instrumental from the outset in assisting customers to adopt the new mobile technology. The call centre at that time was small and was managed by two female managers under the then CEO. One of the call centre operators, who was employed at the MNO from its inception and later became a call centre manager, had a severe mobility impairment. He reported that the call centre management displayed a good understanding of disability, as the spouse of one of the call centre managers also had a mobility impairment. These two call centre managers together with the founding CEO, who the mobility impaired call centre participant regarded as 'an absolute legend and visionary', advocated disability from the outset.

The positive attitudes and empathy that they displayed towards employing disabled persons was a result of having been familiar with disabled people and their needs. According to the disabled call centre participant, management created a barrier-free environment by making reasonable accommodation within the call centre from the very beginning: *With my challenges of transport I could never have stayed on without management's help, and other barriers experienced with regards to facilities and the building were resolved quickly.* The participant explained that by employing him, the MNO's management went beyond embracing the new labour laws. He stated: *A conscious decision was made to be diverse and accommodating. They probably experimented with my appointment and realised that the call centre was the perfect equal playing ground for disabled people.* Despite not knowing if disabled persons would be suitable for the call centre environment, the MNO's management displayed a positive attitude towards disabled persons by taking the opportunity to employ call centre agents with disabilities.

Besides interacting with call centre management and peers on a daily basis, the mobility impaired participant on one occasion interacted closely with the chief executive office on the first day of customer service operations, which was chaotic. In his book, *Second is Nothing*, the MNO's founding CEO described his interaction with the mobility impaired participant and

recalled how 'he sped towards me in his wheelchair and shouted instructions '(Knott-Craig & Afonso, 2009:70). The CEO mentions that he 'swung into action and did everything he was told 'as the participant was the boss in the call centre and he respected that. Later on, when calm was restored, the participant apologised to the CEO: 'Sorry man', he said with a worried frown, 'I didn't know you were the CEO '(Knott-Craig & Afonso, 2009:70). The CEO responded that the call centre was the participant's territory and that he was happy to be of service (Knott-Craig & Afonso, 2009: 70).

The positive relationship between the CEO and the mobility impaired participant is testament to the CEO embracing persons with disabilities from the outset and for the duration of his tenure at the company. One reason why the CEO related easily to disabled persons could be because there was a time in his life when he was physically disabled for a number of years. He was five years old when he contracted Perthes disease, a disease of the hip joint, and wore calipers until the age of ten (Knott-Craig & Afonso, 2009).

The evidence presented above shows that the MNO embraced the employment of disabled persons when the company started in 1994, which resulted in disability inclusion becoming part of the MNO's culture from the outset. Taken from the analysis of interviews and documents, possible reasons for call centre management employing disabled persons from the start are shown in Figure 5.1. Having first-hand experience of the challenges of disabled persons enabled the MNO's CEO and management team to have a good understanding of the needs and capabilities of disabled persons, which resulted in managing disability as a business case. This meant management regarded disabled persons as capable and was prepared to give them the opportunity to prove their skills and capabilities in the new call centre environment.



**Figure 5.1:** Reasons for employing disabled people in the call centre environment

The head of the MNO's first call centre was open-minded and willing to employ a person with a mobility impairment to establish whether the call centre environment was suitable for disabled persons. Once management made accommodations for disabled staff, the call centre environment proved to be beneficial for employing persons with mobility impairments (Silver & Koopman, 2000). Another reason for employing disabled persons was to enable non-disabled persons to work alongside them, which created a heightened awareness of disabled persons among the staff (Westwood & Graham, 2003). As the MNO's business grew, disabled persons were employed in other divisions within the company, such as consumer business, human resources, technology and finance.

Note that all leadership should embrace disability inclusion irrespective of having been exposed to disability or not. A current example of a CEO of a global ICT company that embraces accessibility solutions fully is Satya Nadella from Microsoft, as he has the personal experience of having a child who is severely disabled (Casey, 2020). This is in line with literature that states that when the leadership of organisations have had experiences of persons with disabilities, their attitudes towards disabled persons are changed, which enhances inclusion within their companies (Tusler, 2005; Carroll, Choo, Dunlap & Isenhour: 2003).

The MNO's Diversity and Inclusion strategy document shows that its diversity and inclusion strategy was expanded to include accessible technology and services for disabled customers, meaning that the MNO focused on ensuring that neither colleagues (internal) nor customers (external) were left behind. Subsequently, the MNO's culture of disability employment has enabled the MNO to become a disability confident employer. Disability employment laid the foundation for embracing the consumer disability inclusion narrative within the MNO, which contributed towards expanding their disability policies to start addressing the needs of disabled consumers. Hence, implementing inclusive processes such as disability employment resulted in the MNO being able to focus on disabled customers at a later stage. This supports the argument that inclusive processes could promote the digital inclusion of disabled persons.

The following section provides insights into the reasons why the MNO was not able to embrace accessibility during the first ten years of the company's existence.

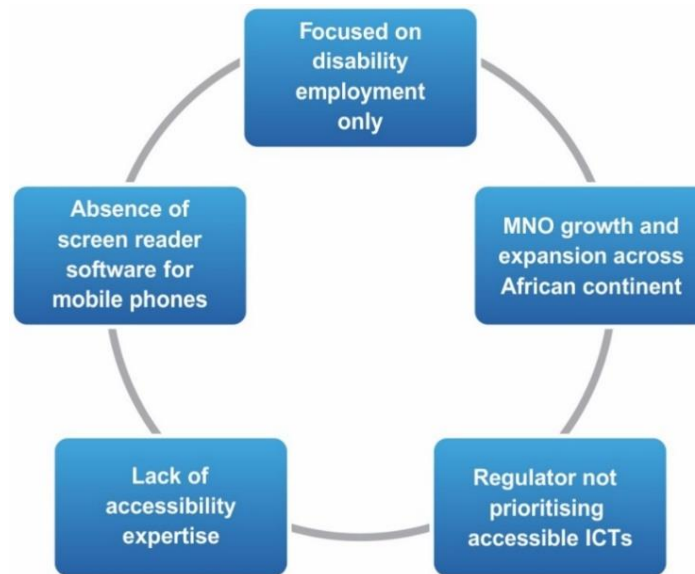
### **5.2.3 The ten-year accessibility drought**

Although the MNO's vision was to connect and empower all South Africans from the outset of becoming a democracy, vision impaired persons were only given the opportunity to participate

in a digital society after ten years of mobile technology being established in South Africa. Recognising that vision impaired persons must have equal access to ICT, the MNO understood the necessity to go beyond mere compliance to actively promoting accessible communications. According to Pedro, a top management participant, it was viewed as a basic human right for disabled persons to access technology in order to enable them to participate in society: He stated: *Everyone has the right to connect to information and the services that would really improve their lives, their lifestyle and their future prospects. And this includes people with any disabilities.*

In order for vision impaired persons to access the available information and services, it was of the utmost importance that mobile phones become accessible such that they could be used independently by vision impaired persons. The MNO acknowledged that vision impaired persons were part of society and that their needs should be catered for by providing accessible technology. However, in contrast with the MNO's vision of ensuring that everyone becomes connected, vision impaired consumers were not immediately able to experience the full benefits of using mobile technology. The document analysis furthermore indicated that prior to screen reader software becoming available for mobile phones in 2004, the MNO gave very little consideration to exploring accessible services for disabled consumers. It is imperative that devices have screen reader software built in, as it converts text to speech. Screen reader software for mobile phones was not available during the period from when the MNO was established until 2004 which caused vision impaired people to use mobile phones that were inaccessible. This caused them to be dependent on sighted people to, for example, read and write messages and insert contacts on their phones, which compromised their privacy, independence and dignity. According to the MNO's first accessibility brochure, published in 2004, the MNO started focusing on accessibility and disability inclusion as soon as screen reader software became available for the first time in South Africa.

Findings show that there were several reasons why the MNO implemented accessibility ten years after its founding. First, the MNO focused on embedding disability employment within the organisation's culture. By 2004, disabled persons were employed in all divisions of the company and not just in their call centres. Figure 5.2 shows the reasons why the MNO focused on disabled employees for the first ten years and why there was little focus on disabled consumers.



**Figure 5.2:** Reasons for the MNO’s ten-year accessibility drought

Once the MNO diffused the new GSM technology, it was adopted rapidly by South African consumers, in line with the innovation element of Rogers’s DOI theory’ (2003). The rapid adoption of mobile technology was further accelerated by the MNO launching the world’s first prepaid solution in 1996, which made mobile technology affordable for a much wider segment of the population. Notwithstanding the fact that vision impaired consumers were excluded from using mobile technology and services for the first ten years, the MNO implemented accessibility as soon as accessible screen reader software became available for mobile phones. It is important to note that accessible technology (hardware and software) for mobile phones was the trigger that enabled the MNO to start catering for disabled people. Accessible hardware and software play a huge role in enabling MNOs to meet the needs of disabled consumers.

I am of the opinion that disability employment is a forerunner to providing accessible technology and services for the disabled consumer market. Disability employment literature largely focuses on aspects of disability within the workplace, such as making accommodations, and rarely points out the correlation between disability employment practices and the disability inclusion of consumers. Once the MNO understands how to remove barriers to access in the workplace, this can contribute towards identifying and removing barriers to accessing technology for consumers which will promote the digital inclusion of disabled persons.

### 5.3 Sub-theme 2: Pioneering the recognition of disabled persons as consumers

This sub-theme has three categories as per Table 5.2.

**Table 5.2:** Sub-theme 2: Pioneering the recognition of disabled persons as consumers

| Sub-theme   | Categories   |
|---|--|
| Pioneering the recognition of disabled persons as consumers | DPOs advocate for disability inclusion                             |
|   | Tapping into leadership’s collective consciousness                 |
|   | ‘They are not in our world’: the value of the Accessibility Office |

#### 5.3.1 DPOs advocate for disability inclusion

According to the product manager interview participant who was responsible for implementing accessibility for the MNO in 2004, organisations for persons with disabilities such as the South African National Council for the Blind (SANCB) played an important role in raising awareness of the first ever screen reader technology for mobile phones as soon as it became available globally in 2003. She stated: *The MNO received requests from vision impaired persons to provide accessible mobile phones.* Upon receiving requests for accessible mobile phones, she started investigating accessibility, and in particular screen reader software, for the very first time in 2004.

A newspaper article (Suzaki, 2004) as part of the document analysis revealed that upon launching the new accessible phones with screen reader software, the then executive director of the South African National Council for the Blind (SANCB) regarded accessible mobile communications as the first step towards digital inclusion. He commented: *This is critical to building a united South Africa whose people benefit equally from the technological developments witnessed in cellular communications.* It was of critical importance for the executive director that vision impaired persons were getting equal access to mobile phones after being deprived of access for the past ten years.

Data suggests that one of the main roles of DPOs was to raise awareness of disability within society and organisations (Young, Reeve, & Grills, 2016). This was indeed the case when DPOs drew attention to the new screen reader software. Should the DPOs not have raised

awareness, it could have taken the MNO longer to learn about this new screen reader software and about accessibility in general. However, the CEO and product manager at the time took the request of the disability sector seriously and investigated the screen reader option with a sense of urgency. In doing so, the MNO complied with the DPOs' slogan of 'Nothing about us, without us' by inviting the input of persons with visual impairments (Al Ju'beh, 2015). It is important to note that the DPOs request in 2004 that the MNO consider providing accessible screen reader software resulted in the MNO implementing accessibility for the very first time in South Africa and Africa. Before this innovation could be put into effect, the product manager participant needed to obtain leadership buy-in.

### **5.3.2 Tapping into leadership's collective consciousness**

According to the product manager participant, the support of top leadership buy-in to implement the screen reader software was a result of the company's vision to promote inclusion for all. She stated: *The MNO believed that everyone should have access to telecommunications.* The product manager participant elaborated that buy-in from the MNO's top leadership was necessary for the introduction of accessible mobile phones as it was new to Africa. She stated: *Without the buy-in from the CEO and managing director at the time we would not have been able to move forward on implementing the accessible screen reader solution.*

In order to obtain this buy-in from leadership it was important for the product manager participant to educate and convince leadership of the commercial benefits of the new screen reader software. In addition to this, the MNO's commercial model at the time caused some of the leadership to be skeptical about the idea of installing third-party screen reader software onto mobile phones. She stated: *Some executive committee members were initially unsure whether providing accessible devices with third-party software would be sustainable and viable for the company.* Hence, the product manager participant requested the MNO's United Kingdom-based shareholder company's accessibility specialist, who was himself vision impaired, to present the benefits of the screen reader software to the MNO's CEO and the leadership team.

At that stage the shareholder company in Britain was the first telecommunications company to have launched accessible mobile phones with screen reader software (Staff Reporter,

2004). Further to getting support from leadership, the product manager participant disclosed that she personally felt passionate about influencing the company to approve the accessible mobile phones. She reflected: *I felt bad that blind people had to struggle such a lot to use a mobile device; my stepmother was blind and not being able to use a mobile phone was unacceptable.*

Data suggests that buy-in from leadership from the outset was crucial in order to implement accessibility. The participant's personal experience with vision impaired persons enabled her to understand the challenges of vision impaired mobile phone users, which inspired her to advocate for digital inclusion. The theme of the MNO staff being familiar with disability on a personal level began at the MNO's creation – Section 5.2.2 mentioned top management's positive attitude towards employing disabled people from day one.

Once leadership realised that vision impaired persons were overlooked and their communication needs unmet, a commitment and passion was ignited within the MNO to provide accessible mobile phones. Consequently, ten years after the MNO was established and once the support of top leadership was obtained, the MNO was the world's second MNO – after its UK-based shareholder – and Africa's first MNO to launch accessible mobile phones and services for vision impaired persons in September 2004 (Staff Reporter, 2004).

As the MNO was born out of a system of oppression where most South Africans were excluded, it was their vision from the outset to be inclusive of all people, including those with disabilities. Figure 5.3 summarises the main elements that enabled the MNO leadership to embrace consumer disability inclusion. By ensuring that technology and services became accessible to vision impaired persons, the MNO complied with the Social Model of Disability.



**Figure 5.3:** Elements that enabled the MNO to embrace disability inclusion

With the introduction of accessible mobile phones for vision impaired persons in 2004, the MNO’s accessibility portfolio grew, which necessitated the creation of an Accessibility Office. The next section describes the role and added value of the Accessibility Office in promoting the digital inclusion of disabled persons.

### **5.3.3 ‘They are not in our world’: the value of the Accessibility Office**

Hendrik, a top management participant, confirmed that the MNO’s Accessibility Office played a crucial role in ensuring that the company promoted consumer disability inclusion. He stated: *Of course the Accessibility Office is beneficial; I mean, without that we would have had no focus in the disability area.* When the MNO launched its accessibility solutions in 2004, the Accessibility Office did not exist, as the disability portfolio formed part of the product division’s overall product portfolio. However, due to the exponential growth of the company, the product division had to develop numerous product offerings rapidly in order to respond to market competition, which distracted their focus from accessibility.

Hence, upon the request of the CEO, I established the Diversity and Inclusion Office in 2007, which enabled me to champion disability inclusion and accessibility for both employees and consumers. It was important for top management that the disability champion was someone with a disability who had the relevant accessibility knowledge and was passionate about

advocating for disability inclusion. For Mandla, a top management participant, it was positive that I was prepared to challenge the status quo by advocating for the inclusion of disabled persons. He summed it up in this way:

*It is very encouraging because the Accessibility Office is being led by people like yourself. Being a high-performance organisation, we are very fortunate to have you. Fortunately, as you are a driver, you drive us. You help in a much different way and you have got a unique way of getting us to think through what is it that we need to do. You're a driver as you know, so I must be honest, we're very fortunate to have you and I wish we could replicate many of you throughout the business.*

Besides having a champion driving accessibility, the top management participant mentioned that a major positive aspect of the position of the Accessibility Office was that the office was placed within the commercial group. Mandla stated: *I will rather have the Accessibility Office be in a functional area outside of support functions. Because when it's in support functions, you would not be able to reap the benefits of the proximity of the commercials and the customers.* Hence, it was beneficial that the Accessibility Office was placed within the consumer business group of the company, which enabled the Accessibility Office to drive accessibility within a commercial model rather than using a charity or corporate social responsibility approach. This meant that the MNO regarded disabled persons as consumers, which aligns with the MNO's strategy of catering for the needs of everyone.

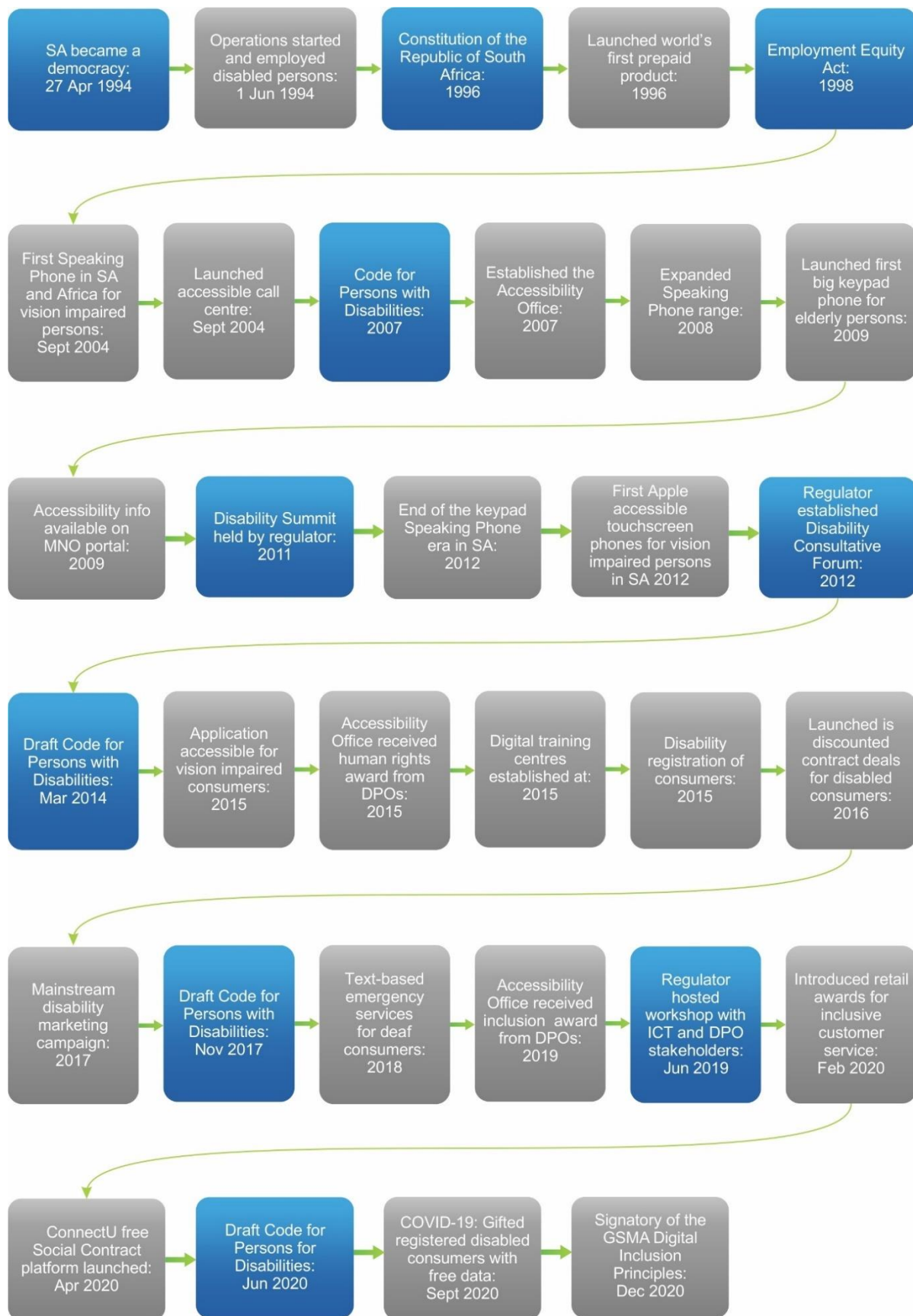
Mandla asserted that the visibility of the accessibility team was important. He stated: *You give the accessibility team a high level of visibility at the senior level because that's how you create success.* However, according to Matthew, a middle manager participant, the Accessibility Office lacked visibility because of its reporting structure. He stated: *I think the Accessibility Office should be positioned higher up in the organisation to have the desired impact and awareness within the MNO company and amongst staff. The office is not visible enough because of its position.* Matthew mentioned that the accessibility office would have been more visible if it was recognised as a standalone division that reported to the top management of the commercial business unit.

This comment aligns with my analysis of an internal staff article which referred to the Accessibility Office as the 'hidden gem' of the company. As the Accessibility Office was not consistently visible to the relevant divisions, the accessibility champion had a responsibility to ensure that accessibility was implemented and maintained by various business units. This

aligned with the company's strategy mentioned in Section 5.4.2, which stated that the MNO followed an integration approach and not a full inclusion approach, as the Accessibility Office took responsibility for other divisions' accessibility initiatives.

Results suggest that by implementing an Accessibility Office the MNO's approach supported the social model in that it established a central unit that would advocate for accessible technology and services solutions for disabled consumers. Furthermore, the results build on existing evidence from Tusler (2005), that having a central Accessibility Office and champion played a critical role to ensure that disability inclusion as a narrative was embraced within the MNO. My advocacy role as accessibility lead was the glue that kept disability inclusion intact among the various business units within the company. Due to the specialist nature of accessibility, I worked closely with relevant business units to provide disability expertise in every detail of their initiatives. This was of the utmost importance, as the disability sector would respond with a backlash if, for example, the MNO did not use the correct disability terminology in communications or within product content.

Importantly, this study adds to Tusler's (2005) article by finding that promoting accessibility was more effective when the Accessibility Office was situated within the commercial business unit rather than within a support function with a corporate social responsibility focus. Establishing an Accessibility Office fosters a culture of accessibility and inclusion by ensuring that disabled consumers' needs are met. Figure 5.4 shows a timeline from 1994 - 2020, when the MNO implemented accessibility within the context of the new South Africa. The grey blocks indicate the MNOs' activities, whilst the blue blocks indicate regulatory and legislative activities.



**Figure 5.4:** The MNO's accessibility and disability inclusion journey from 1994 - 2020

To take disability inclusion forward, the MNO had to ensure that it was committed to a strategy that values disabled persons. The next section describes the sub-theme ‘Embracing an inclusive strategy that values everyone’.

### 5.4 Sub-theme 3: Embracing an inclusive strategy that values everyone

The following sub-theme comprises three categories shown in Table 5.3.

**Table 5.3:** Sub-theme 3: Embracing an inclusive strategy that values everyone’

| Sub-theme  | Categories  |
|--|---|
| Embracing an inclusive strategy that values everyone | ‘The fish rots from the head’: the importance of leadership support |
|  | Utilising inclusion to incorporate accessibility                    |
|  | ‘Your job is not just moving boxes’: creating a purpose-led culture |

The next section describes the authentic and personal leadership support that was required to successfully promote digital inclusion.

#### 5.4.1 ‘The fish rots from the head’: the importance of leadership support

For Hendrik, a top management participant, it was imperative for the MNO’s leadership to understand what disability inclusion entailed. He stated: *If you look from a leadership perspective, disability inclusion needs to be firstly conceptualised by leaders.* It was important for leadership to recognise the value of ensuring that the communication needs of vision impaired persons could be met by including their needs in the provision of services. For Simon, another middle management participant, it was important that leadership needed to lead the accessibility strategy. He mentioned: *I think leadership does have a role to play there in terms of promoting more or giving us strategic direction when it comes to disabled communities.* Data from the interviews was consistent with the document analysis, which agreed that leadership played an important role in taking responsibility to establish an inclusive environment and drive the accessibility strategy. The document analysis indicated that the MNO’s diversity and inclusion strategy was championed from the very top and had clear commitment from the CEO.

Leading by example meant that leadership built disability inclusion capability in an authentic manner in order to establish a more inclusive and diverse environment. Pedro, a top management participant, felt strongly about authentic leadership. He reflected:

*If leadership is not committed to and sincere about inclusion then it won't filter through the organisation. And for me the most important part is: it's got to be authentic. Anyone can tick a box, but if it's not genuine and authentic, people see right through that and you probably do more damage than good in there in the first place. So, you just genuinely have to believe in this cause and then it will filter through in that way, and whether we do enough of it, it's always questionable, there's always this feeling that we don't do enough, and I say a feeling not by anyone, but ourselves.*

Pedro acknowledged that not all business unit leaders embraced disability inclusion to the same extent, and therefore disability inclusion was not fully diffused throughout all business units, which could have hampered the implementation of accessibility.

According to Mandla, a top management participant, personal commitment and leadership from the CEO was required in order to embed a culture of digital inclusion within the company. He stated: *Buy-in from leadership to drive disability inclusion is absolutely critical. And I think we're fortunate because for our CEO disability is one of the things that is actually very close to his heart.* The CEO showed personal commitment to implement tangible measures to support disability inclusion from the top down. One of the most transformative steps the CEO took was to establish the Accessibility Office, described in Section 4.3.3. The CEO being personally committed to promote disability inclusion is a recurring theme in the interview and document analysis and showed that both the founding and current CEO was committed to promoting disability inclusion.

Data described in this section indicates that the founding and current CEOs of the MNO displayed personal commitment to disability inclusion, which contributed towards their employing disabled persons from day one, establishing an Accessibility Office, and enabling the provision of accessible technology for vision impaired persons. Johnson (2017) supports the statement that a CEO's personal commitment enables the promotion of accessibility within an organisation. Another benefit of leadership committing personally to disability inclusion is that it motivates business unit teams to follow the CEO's example, which helps them to better understand the needs of disabled customers.

The importance of authentic leadership is upheld by the literature, which shows that when a company announces its purpose and values but the words do not govern the behaviour of

senior leadership, they ring hollow and everyone recognises the hypocrisy (Quinn & Thakor, 2018:6). To become a leading digital company and empower a connected society inclusive of vision impaired persons, it was important for the company to demonstrate authentic leadership. It is notable that whilst the Social Model of Disability encourages the removal of barriers to technology, it does not mention the important role that leadership plays in creating an enabling disability inclusive environment. This could be because social model scholars and activists were skeptical of able-bodied-led organisations and the idea of being spoken for. However, the data shows that leaders who did not display personal commitment towards embracing accessibility delayed or even prevented the digital inclusion of vision impaired persons.

The following section differentiates the processes of integration and inclusion as the MNO's business units incorporated disability inclusion in their roadmaps.

#### **5.4.2 Utilising integration or inclusion to incorporate accessibility**

For Hendrik, a top management participant, it was important for leadership first to recognise how disability inclusion fits into the company's overall strategy of promoting inclusion and, second, to show accountability and display a conscious will for ensuring that disability inclusion formed part of this strategy. He mentioned: *On the disability side you start saying this is an important aspect of our strategy and we want to do it. It is the responsibility of senior leadership to include the provision of services within a telecoms company such as ours to ensure disabled people with special needs are part of the company strategy.* By incorporating disability inclusion into the company's strategy, leadership ensured that the needs of vision impaired persons would be taken into account. Hendrik continued to explain that should disability inclusion not be included within the company strategy, the needs of disabled consumer segments would be overlooked. He stated: *If it is not a natural inclusion inside the strategy, you will find that the other strategic views and goals that the company is chasing will always supersede the requirements in terms of people with special needs.*

According to the document analysis the MNO's strategy indicated that it strived to be inclusive of all people, which aligns with the participants' notion to include accessibility as part of the MNO's strategy. According to Kate, a senior management participant, the goals of the Accessibility Office should be integrated into the roadmaps of the various business units. She stated: *The dedicated Accessibility Office should be integrated into the business.* Should

accessibility not form part of business units' roadmaps, opportunities to meet vision impaired customers' needs could be missed.

Pedro, a top management participant, agreed that disability inclusion should form part of relevant business units' roadmaps, as part of their responsibility is to contribute towards making a difference within vulnerable communities, such as vision impaired persons. He summed it up as follows:

*Not everywhere, but in certain business units, accessibility maybe gets treated as a project, a quick beginning or an end task – and then it never gets looked at again or reviewed, and so on. So that would be my suggestion: to bring it more mainstream in the conventional things that we do – performance discussions, targets, strategy. And as an inclusive company and purpose-led company it should be the strategy of each business unit and it should be very specific; in this case it's for someone with visual impairment. But, in general, it should be 'What is this business unit doing for an inclusive society?', which means including people with disabilities. So very much this strategy is to say we are a company for everyone.*

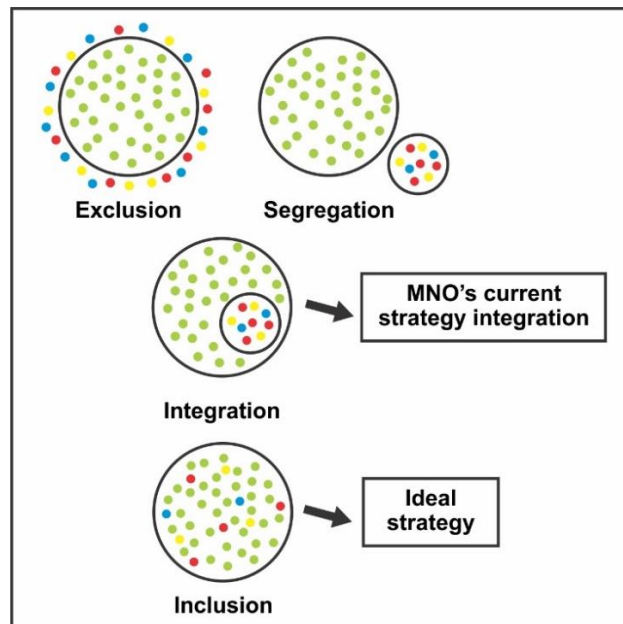
Pedro acknowledged that some business units did not embed disability inclusion into their roadmaps consistently, because they did not fully understand how to integrate accessibility initiatives into their current projects, meaning that some accessibility projects were treated as ad hoc projects with a start and end date. This approach caused disability inclusion to not be consistently prioritized within some business units, which created a delay in implementing accessibility solutions.

These results provide new insight into the relationship between the approaches of integration and inclusion within an ICT environment. Following an integration approach meant that business units did not include accessibility within their roadmaps and handled disability on an ad hoc basis, whilst an inclusion approach would have enabled accessibility to form part of business units' processes and systems. Nickols (2016) mentions that strategy exists on three levels: company, business unit and functional. The MNO's top management indicated the importance of ensuring that disability inclusion formed part of the company's various business units' roadmaps, as disability formed part of the company's 'inclusion for all' pillar strategy.

Some of the MNO's business units and retail stores found it challenging to consistently embed disability inclusion within their respective roadmaps. This was a result of the business units and retail partners having to keep up with the relentless pace of the ever-changing ICT environment, which caused disability inclusion not to always be top of mind. The MNO's business model was such that the network and retail partners were completely separate, as retail stores were independently owned by franchisees and national chain stores, which had their own organisational cultures. The MNO made huge efforts to align its purpose-led culture with that of the franchisees so that consumers could experience a unified brand. This was sometimes challenging due to the nature of the retail business, as franchisees employed their own staff and staff turnover was high within the sales environment.

Results show that the MNO followed a diversity strategy of integration rather than a strategy of inclusion, as some business units, as well as retail partners, omitted disability inclusion from their respective roadmaps, which meant that systemic reform and structural changes were not fully embraced at all times. As a result, inclusion fell by the wayside when business units regarded disability inclusion as requiring additional attention, intention and practice (Ferdman & Dean, 2014:549).

In an effort to promote inclusion, the Committee on the Rights of Persons with Disabilities provided a diversity model in their discussion in Article 24 of the *Convention on the Rights of Persons with Disabilities* (UNCRPD, 2016). The diversity model in Figure 5.5 highlights the importance of recognising the differences between types of diversity strategies, namely exclusion, segregation, integration and inclusion (UNCRPD, 2016). In the context of this study, exclusion occurs when disabled consumers are directly or indirectly denied access to mobile technology. Segregation occurs when products and services are provided in separate environments. According to the diversity model, integration refers to a process of placing disabled persons in mainstream educational institutions where the expectation is that disabled persons must adjust to how things are being done (UNCRPD, 2016). Inclusion involves a process of systemic reform that enables MNOs to effect changes that would include modifications of methods, approaches, structures, processes and strategies to embed disability within the company's culture (UNCRPD, 2016).



**Figure 5.5:** The diversity models of inclusion

(Committee on the Rights of Persons with Disabilities, 2016)

To this end, should business units and retail have embraced disability inclusion as part of their roadmaps by creating an enabling environment, the needs of disabled customers could have been met by default and not on an ad hoc basis or merely when the Accessibility Office presented a case for inclusion. On the other hand, following an approach of integration was indeed meaningful, as it enabled the MNO to promote the digital inclusion of disabled persons. Due to business units requiring accessibility expertise constantly, the accessibility lead was obliged to do hand-holding when implementing accessibility solutions. This meant that the Accessibility Office mostly shared the responsibility of driving accessibility and disability inclusion across all levels of the organisation.

Besides ensuring that the company's strategy should be inclusive of disability, it was also important for the MNO to follow a purpose-based approach that enabled staff to implement accessibility solutions. This is explained in the next section.

### **5.4.3 'Your job is not just moving boxes': creating a purpose-led culture**

The concept of empathetic staff within a purpose-led organisation selling experiences emerged as a theme for participants. With regards to changing people's lives, Jayshree, a senior manager participant, mentioned that the MNO's purpose was to improve people's lives. She stated: *Our purpose is that we connect for a better future; so key is how do we make sure*

*that every person in society has an opportunity to reach their future potential through our engagements with them. That is absolutely critical.* By changing people's lives through technology, the MNO empowered people to participate in society. According to Pedro, a top management participant, a purpose-led approach enabled the MNO to change people's lives whilst simultaneously generating profit, which ensured that technology was implemented in a sustainable manner. He summed it up as follows:

*We are in a technology environment. We have technology capabilities that could to a large extent improve or eliminate some of the disabilities or neutralise them, if I can call it that way, in totality. So, it fits a good business decision, it fits a good social decision, it fits a good blend to making sure that we are aligned to be a purpose-led organisation; and if we can change lives and add value to the world at large and generate reasonable profit from it, it really makes a good sustainable model.*

The data from the interviews was consistent with the findings of the document analysis, which indicated that purpose and profit was a recurring theme. As Section 5.3.3 mentioned, disability inclusion was driven from the MNO's commercial business unit and was not treated as a charitable initiative, as disabled persons were regarded as consumers with communications needs.

Furthermore, the company's diversity strategy as revealed by the document analysis aligned with the content of the interviews, as it shows that the purpose-led approach was about encouraging staff to become aware of their purpose: to enable disabled persons to communicate and become part of a digital society. For example, someone working in a warehouse moving boxes is not just moving boxes, as the task is purpose driven and the real value is that the technology will enable vision impaired persons to access employment and education. This was summed up by Pedro, a top management participant, who stated:

*For me, it's about understanding as a culture – understanding what we unlock in terms of capabilities. As an example, someone working in a warehouse should not see that they're just moving boxes around. What they should see is that 'I'm going to create an opportunity for someone – in this instance someone with a disability – to experience something which they may never have experienced before. It will enable communication with family and loved ones that will be so emotionally impacting that there is no doubt in their mind that they are working for an organisation that has a purpose-led culture.*

In order for staff to embrace a purpose-led culture by understanding the value of their daily tasks, staff had to develop empathy in order to understand the impact of accessibility on the lives of vision impaired persons. For Muneer, a senior manager participant, empathy meant understanding how inclusive processes connected people to be part of society. Reflecting on inclusion, he stated: *Disabled people look at people and they think, how do I get into that inner circle. Once you're in it you just feel inclusive and you don't feel 'but I'm different to those people; you know what, I'm part of them'.* Providing accessible technology to vision impaired persons levelled the playing field for them, as technology has the ability to overcome barriers of physicality, time and space (Brooks, 2017). Pedro, a top management participant, noted that although the MNO's culture encouraged empathic behaviour towards the needs of vision impaired persons, staff empathy levels could be more consistent. *He stated:*

*So, in principle I'd like to feel that, certainly in the circles and the people that I interact with, that the culture is conducive and allows for empathy. Practically I don't always see it, so I think there's room for improvement. So, the heart is in the right place, the intention is in the right place, but I always feel that execution can be a little bit more.*

Pedro highlighted that it seemed that staff sometimes lacked empathy when not delivering accessibility solutions consistently, timeously and inclusively. The complex and competitive nature of the ICT environment caused staff to be continuously under pressure to respond quickly to market trends, which caused the MNO at times to overlook accessibility requirements. In general, data from the interviews was consistent with the document analysis. The MNO's diversity and inclusion strategy encouraged staff to promote inclusive service by engaging with customers who were different to them, by welcoming them, by asking questions, and by putting themselves in the shoes of others. Staff was encouraged to challenge the assumptions they make about others and not assuming that their perspective is the only right one, but being open to different ideas.

The data provides a clearer understanding of how the MNO's purpose-led approach embodied the company's goal to improve the lives of vision impaired persons by connecting them to a digital society.

Kantar Consulting (2020) argues that companies who pursue a purpose-based approach gain a competitive edge in the market, which stimulates business growth. For this reason, the MNO linked the company's commercial objectives with social purpose by addressing vision impaired persons' needs, in order to create economic value for society whilst

sustaining profit for the company (Mackey & Sisodia, 2014). The MNO furthermore did not confuse a purpose-led approach with corporate social responsibility, as disabled customers were treated as consumers and the Accessibility Office was situated within the commercial business group – see Section 4.3.3 (Kantar Consulting, 2020). This approach enabled the MNO to develop a business case for inclusion which regarded vision impaired persons as consumers who were willing to pay for accessible technology and services that met their needs.

In order to successfully establish a purpose-led company culture, participants indicated the importance of staff being empathetic to the needs of disabled persons by helping to connect them to a digital society. Empathy was considered to be an important factor with the potential to alleviate the negative experiences of vision impaired consumers. Hence, the degree of empathy displayed by the MNO staff, including retail staff, upon engaging with disabled consumers, determined whether the disabled consumer experienced inclusion or integration and whether they felt valued as a consumer of the MNO. Chapter 6 discusses customer experience feedback from vision impaired consumers when engaging with the MNO via various channels. This feedback will indicate the level of empathy that staff displayed towards these consumers.

The MNO's diversity and inclusion strategy encouraged staff to see people's differences as opportunities and not threats, with the intended result of delivering inclusive customer service. This was necessary, as most people find it easier to be empathetic towards people like themselves, because personal experiences shape and define one's empathic understanding (Williams & Stickley, 2010). Although most staff displayed empathy in providing accessible solutions, one participant felt that the staff's empathy levels needed to increase for them to understand the needs of disabled persons in order to deliver a consistently good customer experience. It seemed that due to the fast-paced and pressurised high-performing ICT environment, staff often had to focus on delivering high-priority initiatives, which could have given the appearance that they lacked the motivation to implement accessibility initiatives. By taking the responsibility to embrace accessibility, the MNO complied with the Social Model of Disability. However, although the social model encourages organisations to provide accessible solutions and environments, it omits to mention the importance of empathy, which is required to understand the needs of disabled persons, because it does not address the internal life of disabled persons.

## 5.5 Summary

This chapter describes how the MNO was born out of a political system where government used mobile technology to provide access to everyone. This enabled the MNO to promote digital inclusion, which became part of the company's culture and strategy from the outset. The MNO was established during the time that South Africa became a democracy after the dismantling of the apartheid system, the new government provided a mandate to MNOs to make telecommunications accessible to all South Africans, as this was previously an underserved area. The MNO was the first company in Africa to have generated the idea to implement the GSM technology model from Europe, as it was more affordable and could reach people quicker than the existing technology.

Right from the start of their operations, the MNO employed disabled persons in their call centre. Call centre management and the founding CEO were positive towards disabled persons, and employing disabled persons was the most natural thing to do even before it was mandated by labour legislation. A promising finding was that personal experiences with disabled persons encouraged centre management and the CEO to employ disabled persons from inception. This results in management understanding disability which plays a huge role to embrace disability inclusion.

Accessible screen reader technology was the key driver that enabled the MNO to embrace accessibility ten years after the MNO was established. Data revealed that prior to 2004 the communications needs of vision impaired persons were unmet due to a lack of accessible technology and accessibility expertise. The appearance of this technology in 2004, together with DPOs advocating for accessing technology, caused the MNO to embrace the vision impaired consumer segment by providing accessible phones. Furthermore, the MNO's authentic and personal leadership encouraged the implementation of disability inclusion.

The MNO established the Accessibility Office in 2007, which resulted in their promoting accessibility on a continuous basis. The Accessibility Office regarded vision impaired persons as consumers, and therefore it was positioned within the consumer business unit. Some business units and retail stores omitted accessibility from their roadmaps, indicating that the MNO followed an integration approach rather than an inclusion approach. Business units and retail mostly treated accessibility on a project basis, instead of establishing

accessibility as a permanent business function. Data revealed that the accessibility champion was, overall, responsible for driving and managing accessibility, instead of divisions including accessibility on their roadmaps.

To further promote the digital inclusion of disabled persons, the MNO embraced a purpose-led approach that combined profit and purpose to connect disabled persons to a digital society. It was important for staff to understand that their jobs had an empowering effect on disabled customers' lives. The MNO's diversity strategy encouraged staff to be empathetic towards disabled persons in order to create positive customer experiences for disabled customers. An important finding was that the fast-paced and complex ICT environment was challenging and, at times market competition was prioritised over accessibility. This caused accessibility to be diffused at a slower rate, which caused accessibility to lag behind where it could have been.

Finally, findings suggest that inclusive culture plays an important role in enabling MNO's to embrace disability inclusion. Participants acknowledged that despite having embraced a disability inclusive culture, the digital inclusion of vision impaired persons could be improved.

# CHAPTER 6

## Findings and Discussions Part 2

### THEME 2 – EMBEDDING INCLUSIVE DESIGN TO PROMOTE ACCESS TO TECHNOLOGY

#### 6.1 Introduction

The findings in this chapter relate to the study objective to identify, describe and analyse how the MNO's processes promoted or hindered the communication participation of vision impaired persons. Chapter 5 showed the role that the MNO's inclusive culture played to promote disability inclusion. In this chapter I present the inclusive design theme that describes how the MNO's inclusive design efforts promoted or hindered access to technology. I argue that when MNOs implement inclusive processes that reduce barriers to access, the communication participation of vision impaired persons will be promoted. The inclusive design theme describes a holistic approach that the MNO followed for integrating accessibility and disability inclusion into the organisation's processes.

In this study, the definition of inclusive design goes beyond focusing only on applying inclusive design to the development of hardware and software. Inclusive design should also be applied to designing processes such as providing accessible and affordable technology and disability awareness raising. I've divided the inclusive design theme into two sub-themes, with four and five categories respectively, shown in Table 6.1.

**Table 6.1: Theme 2 - Embedding inclusive design to promote access to technology**

| Sub-themes                      | Categories   |
|---------------------------------|--|
| Design with differences in mind | 'One shoe does not fit everybody': a heterogeneous segment                 |
|                                 | 'As humans we tend to design for ourselves': developing inclusive products |
|                                 | Inclusive design eliminates retrofitting                                   |
|                                 | 'Data must fall': promoting affordability                                  |
|                                 | 'People are just not aware': ongoing awareness raising                     |

|  |  |
|--|--|
| <b>Building capacity for promoting education</b> | 'Do not follow call centre processes rigidly'        |
|  | Feeling comfortable during face-to-face interactions |
|  | 'Start spreading the news': marketing efforts        |
|  | Promoting digital literacy                           |

The next section deals with the sub-theme 'Design with differences in mind'.

## **6.2 Sub-theme 1: Design with differences in mind**

This sub-theme consists of four categories as per Table 6.1, namely 'One shoe does not fit everybody', 'As humans we tend to design for ourselves', 'Inclusive design eliminates retrofitting' and 'Data must fall: promoting affordability'.

### **6.2.1 'One shoe does not fit everybody': a heterogenous segment**

According to Yadgar, a top management participant, the MNO regarded disabled persons as an important consumer segment and acknowledged that implementing accessibility could impact the lives of disabled persons in a positive manner. He stated: *This is such a key segment where we can have the biggest impact in the lives of these consumers.* The MNO understood the huge positive impact that technology has on the lives of vision impaired persons as it was the first MNO to provide accessible technology in 2004. Muneer, a senior manager participant, agreed that disabled persons are consumers too, as they pay for technology and services like everyone else. For this reason, the participant asserted that the MNO had the responsibility to meet the needs of disabled consumers. He stated: *Anyone who's a paying customer is a customer, no matter who he is or how many vision impaired people there are, if there's only three or three million, we need to see how do we accommodate their needs.*

A top management participant, Mandla, took it a step further by stating the importance of the MNO not only focusing on disability employment internally, but also focusing on meeting the needs of disabled consumers. He stated: *It's not just about an inclusive workplace, but also about how to fulfil the needs of people that use our services.* Section 5.2.2 identified and described how the MNO focused on disability employment from the outset and indicated that it served as a springboard to embracing digital inclusion more generally. The MNO's Integrated Report (2018), reflected in the document analysis, revealed that one of its

strategies was to develop segmented propositions that identify customers' needs, wants and behaviours.

Pedro, a top management participant, stated that vision impaired persons were considered a viable consumer segment because of their unique requirements. He summed it up as follows:

*We became a much more segmented customer focused organisation, and what that means is that we can't treat every single customer in the same way, as they have different needs. One shoe does not fit everybody, and hence we've created a segment for people with disabilities, as they have specific needs.*

Realising that there were approximately two million vision impaired persons in South Africa enabled the MNO to acknowledge that vision impaired customers were a viable consumer segment. Besides recognising vision impaired persons as a viable consumer segment, the MNO further acknowledged that the vision impaired segment could be divided into sub-segments, such as blind persons, partially sighted persons and persons with low vision, which assisted to deliver technology and services appropriately. Yadgar, a top management participant, understood that vision impaired persons is not a homogeneous segment. He explained: *Everyone is different, especially when it comes to impairments and when it comes to the degrees of impairments, even for the visually impaired. So, a person with no vision and a person with partial vision being able to see light are different people and they have different needs.*

In order to identify the various disability consumer segments and to build up a database of disabled consumers, the MNO implemented a process for disabled persons to register their disability. Developing a database enabled the MNO to analyse disabled customers' usage behaviour, which led to deeper insight into this consumer segment. Yadgar, a top management participant, questioned the value of creating such a database. He asked: *How can we create a database? How can we actually use the existing databases for identifying who has the types of impairments we are talking about?* The registration process was completely voluntary, and when a disabled customer registered their disability, it enabled the MNO to identify their disability by their mobile number. The disability status was the only indicator by which the MNO could identify vision impaired customers on their systems. Once registered, disabled consumers qualified for certain benefits, such as preferential rates and

offers. Furthermore, this database assisted customer care agents to service customers with disabilities in an appropriate manner. Disability registration has been used in various industries within the country to identify and provide benefits for disabled consumers. An example of an entity that was using disability registration was the South African Revenue Services (SARS), as it enabled registered disabled tax payers to claim disability benefits when submitting their tax returns (SARS, 2020). Figure 6.1 provides a summary of the benefits of segmentation for identifying vision impaired consumers' needs.



**Figure 6.1:** Benefits of the segmentation process

Despite using the segmentation approach to develop customer insights, it seemed that the needs of vision impaired persons were not consistently considered up front, as business units mostly designed customer processes that represented segments that were familiar to them. A top management participant, Anna, summed it up as follows:

*It's not always top of mind when processes get designed – asking 'How do we make this an accessible process or not?'. It is almost like it's accidentally left out because we design for the people we interact with. That is why our youth products are pretty good, because we all have kids that use technology and we observe and see how they use it. You do not think of the special needs person because you do not necessarily have a person close to you that constantly reminds you 'I have to think about this segment', and I think that is something we need to drive a bit more.*

According to Roulstone (2016), technology for disabled persons in most instances is designed by non-disabled persons, who do not often have a good understanding of disabled persons' needs. The data revealed that the MNO regarded the vision impaired consumer segment as an important consumer segment because it realised that disabled persons were part of society and that they too would benefit from using technology. Hidayat (2016) confirms that segmentation has benefits because it enables matching their needs with the

appropriate products whilst giving the company a competitive advantage. Waite (2018) asserts that inclusivity is becoming an increasingly important business driver, as disabled people are part of a growing consumer base.

Importantly, before the MNO focused on providing accessible technology and services to disabled persons, the company had to become aware that disabled persons were part of their customer base as they were part of society. As a result, the MNO decided to expand disability inclusion from employment to also meeting the needs of disabled consumers. It is interesting to note that Tusler (2005) and Langdon, Lazar, Heylighen & Dong (2014) did not identify segmentation as a relevant process that could promote accessibility. Segmentation enables MNOs to identify the unique needs of the vision impaired, which assists in the development of usable products for consumers across a variety of sub-segments.

The MNO regarded vision impaired consumers as a viable consumer segment consisting of various sub-segments with diverse needs. Participants stated that the vision impaired segment was not a homogenous segment in that it consisted of various sub-segments, such as persons who are blind, partially sighted or have low vision (Kuyini, Otaah, Mohamed, Mumin, Mashod, Alhassan, Mahama, Zakaria, Brennan, Wallace & Kilbourne, 2015). By considering the needs of vision impaired users, the MNO took steps towards removing barriers to communication participation, which supports the Social Model of Disability (Oliver, 2004).

These findings align with those in Section 5.4.2, which show that the MNO followed an integration approach as opposed to an inclusion approach. Segmentation of disabled customers was not consistently at the top of the agenda when insights and processes were first developed, as disability was not as visible as other consumer segments, such as youth. This aligns with Section 5.3.3 that states that the disability and the Accessibility Office was not visible enough and was regarded as the 'hidden gem' of the company. As a result, it took overall responsibility for driving the segmentation of the disabled consumer base. The segmentation approach aligned with the inclusive design approach, which caters for the diversity of persons by including their needs up front (Centre for Inclusive Design, 2019).

Once the MNO had utilised segmentation to understand the needs of disabled consumers, appropriate products and services could be developed. The next section describes the MNO's product development process.

### 6.2.2 'As humans we tend to design for ourselves': developing inclusive products

A top management participant, Anna, mentioned that it was of the utmost importance that inclusive product development should meet the needs of disabled consumers, especially in a country like South Africa where there are high levels of inequality: She explained: *Tailored products and services for the vision impaired segment is absolutely not just viable, but it is a necessity in the country.* Providing accessible products that meet the needs of vision impaired persons enabled the MNO to include a bigger market segment and promoted customer satisfaction. The MNO took the needs of vision impaired persons into account when certain services were developed in order to ensure positive customer experiences. According to Pedro, a top management participant, excellent service delivery was dependent on how inclusive the company was. He stated: *The more inclusive you are as a company, the better service you will deliver.* Pedro acknowledged that should the MNO follow an inclusion approach instead of an integration approach, it would be able to deliver improved customer services.

To promote inclusive design and accessibility, Anna, a top management participant, mentioned the importance of including the needs of vision impaired consumers up front during the design process. She summed it up as follows:

*It is always easier if you design products up front than it is when you are trying to include it at the end. When we are designing journeys for the vision impaired segment, we must ask how would we help the journey, not only from a support perspective, but also through the whole customer life cycle. How do they buy it? How do they use it? How do they get support? And how do they eventually renew or leave the product? Those are all things in the journey in the customer's life cycle that we have to consider of how do we do that for a customer with a visual impairment.*

For this participant it was important for the MNO to understand the customer journey in order to identify their requirements when doing business with the MNO – how to purchase technology, what type of technology is available and where and how they get it. Another top management participant, Hendrik, agreed that product development should include developing user-friendly processes for customer touchpoints such as retail and call centres by ensuring that the needs of disabled persons were taken into account up front. He stated: *It is quite clear that in every aspect, whether it is product development, whether it is execution in stores, whatever customer touch point where you might touch a person with a*

disability, there must always be a tag which says: 'What have we done to ensure that we cover all people with disabilities?'

For Kate, a senior management participant, it was important that the MNO engage with disabled persons to understand their needs and to include their needs up front in product design. She stated: *By collaborating with disabled people, by considering their needs in your product design, you have the power to make sure that no disabled consumer is left behind.* Section 4.3.1 describes how the MNO has been engaging with vision impaired persons from DPOs since accessible technology first became available; this partnership with DPOs has been ongoing.

Yadgar, a top management participant, stated that it was beneficial for the MNO to engage with vision impaired users up front when developing products. He mentioned: *'Nothing about us without us', which means you need to keep us close; we want to have a voice as well when you think of developing products.* Disabled persons use this slogan to insist on being included in policy and decision-making processes that impact their lives. Yadgar agreed that disabled persons' voices should be heard so they could benefit from being included up front in making recommendations for how their needs could be met. Besides engaging disabled users in the product design process, Anna, a top management participant, mentioned the importance of also including the Accessibility Office. She mentioned: *When we start the design to make sure that the Accessibility Office is included, because the office represents those customers and can guide us along the way when designing the product.* Figure 6.2 provides a summary of how inclusive product development benefited both the MNO and the vision impaired consumer.



**Figure 6.2:** Benefits of the inclusive product development process

However, it seems that the MNO found it challenging at times to engage with the Accessibility Office to include the needs of disabled persons up front. According to Matthew,

a middle manager participant, a frequent barrier to implementing inclusive product development was the inconsistency of prioritising accessibility solutions. He stated: *We need to be a little bit smarter in terms of our commercial processes, but time–resource constraint is a challenge. But that’s to me a bit of a lame excuse because if you make a priority, you will find time for the whole thing.* When designing for the mass market, the product development process did not consistently take the needs of vision impaired persons into account up front for each and every product or service. The MNO found this challenging as the demands of the competitive ICT landscape occupied its time and resources.

Another reason for implementing accessibility solutions retrospectively was that accessibility had not been fully integrated into business units’ roadmaps. One example of such a process was the installation of lower counters (instead of bar-type counters) in retail stores for use by persons with certain disabilities. This is an example of retrofitting, as the needs of disabled customers were not taken into account from the concept stage. Despite the Accessibility Office’s input not always being taken into account up front, most products met the needs of the vision impaired consumer market by default. This has been especially the case since manufacturers have, for example, built screen reader software into their devices’ operating systems, which means that vision impaired persons have the same range of phones to choose from as everyone else. Table 6.3 gives a brief summary of the challenges the MNO encountered in consistently implementing inclusive product development.



**Figure 6.3:** Challenges experienced in implementing inclusive product development

The data suggests that the MNO recognised that providing inclusive product development was imperative to ensuring that no one was left behind, that a wider market could be included, and that vision impaired consumers could have a positive customer experience. According to the Diffusion of Innovation theory of Rogers (2003), a product is created as a result of an innovation that begins at an idea. By developing products that are more inclusive, the MNO's market share could increase, and it could reach a wider market, improve customer satisfaction and drive business success (Yin, Shaewitz, Overton & Smith, 2018). Participants mentioned that besides keeping inclusive design in mind when developing new products, it was important to also keep inclusive design of support processes in mind.

Trackmaven (2019) confirmed that the provision of accessible products to the vision impaired market segment resulted in reduced barriers to entry. It was furthermore important for the MNO to engage with the Accessibility Office up front when developing products and services, as it made no business sense to make changes after the fact. When users are involved in the product conceptualisation, design and testing phases, it results in providing differentiated products that increase access to products (Yin et al, 2018). By applying inclusive design up front, problems of excessive customer support costs, disability rights lawsuits, costly rectification work, customer dissatisfaction and brand damage can be avoided (Waller et al, 2015). Literature agrees with participants that inclusive design principles should be applied at the start of the development cycle in order to avoid the costs of retrofitting later on (Yin et al, 2018).

Inclusive design is based on the principle that all mainstream products should be accessible to as many people as possible (Preiser & Ostroff, 2001). However, the MNO found applying inclusive design in each and every product and service impractical. Literature states that new technology and products must be designed with accessibility for persons with disabilities in mind, but that this is often forgotten (Atkinson & Castro, 2016:53). I want to add to Atkinson & Castro's statement that implementing accessibility within businesses is often 'forgotten'. It is also a question of MNOs having to deliberately prioritise accessibility. In the case of the MNO there was indeed an awareness of having to meet the accessibility needs of disabled persons, which it has been doing since 2004.

However, the main reason the MNO could not apply inclusive design consistently and for every product and service was because of the complexity and fast pace of the ICT industry.

Especially in South Africa as an emerging market, the mobile industry was highly competitive, resulting in the MNO having to respond quickly and constantly to market competition. The MNO was also continuously under pressure to respond to regulations which required compliance projects to be prioritised above accessibility initiatives. It is recognised that to apply inclusive design in every area is made harder by the constant pressures of a fast-paced, high-performing and highly regulated environment. The very first accessible product the MNO launched was a mobile phone for vision impaired persons. The next section describes how providing accessible phones promoted the communication participation of vision impaired persons.

### **6.2.3 Built-in accessibility eliminates the need to retrofit devices**

Andre, a middle manager participant who is himself vision impaired, emphasised the importance of having access to and being able to use an accessible mobile phone. He stated: *If it wasn't for accessibility and accessible technology and apps, my mobile phone would be basically completely useless. It makes a difference of utilising my mobile phone a hundred percent compared to maybe just using five or ten percent of the basic features.* An accessible mobile device is of critical importance for vision impaired persons as it enables the use of devices independently, which enables participation in a digital society. The MNO provided the first ever accessible mobile phone in Africa in 2004 when Speaking Phones were launched. A senior manager participant, Fatima, shared that once top management approved accessible screen reader software for phones, the MNO's device management team engaged with a particular phone manufacturer, that was the only producer of phones compatible with screen reader software. She stated: *It was from senior management that we became more aware that there is the need for accessible phones, so we started engaging with the handset manufacturers.*

Because the MNO was not in the business of designing and building hardware and software solutions, it purchased screen reader software licenses in bulk from a third-party software supplier, as this software was compatible with the mobile phone it was supplying (Staff Reporter, 2004). In 2004, retrofitting mobile phones was the only option to ensure that mobile phones became accessible for vision impaired persons. This entailed the warehouse staff manually loading the screen reader software onto particular mobile phones. Once the screen reader software was loaded, the phone would read out information that appeared on its screen, such as contacts and messages. The cost of the screen reader software was

waived, and vision impaired consumers were not charged for purchasing the software licence and installing the software onto the mobile phone.

When the phone was launched to market at a live launch event in September 2004 at the MNO's head office, the reaction of the vision impaired community and their outburst of applause when they could for the very first time listen to an SMS being read aloud is forever etched on my mind. The MNO's accessible speaking phones enabled vision impaired persons to use their devices independently for the very first time, without having to request the help of a sighted person. The MNO was the first and only operator in the country and in Africa to sell the accessible speaking phones to vision impaired persons prior to the appearance of the touchscreen smartphone. Fatima, a senior manager participant, stated: *If I recall, we were first to market with launching the phone.* Newspaper articles from the document analysis align with participants' comments that the MNO had been providing accessible technology for vision impaired persons since 2004 (Suzaki, 2004). The benefit of pre-loading accessible screen reader software was that the phones were accessible out of the box, which made it easy for consumers to start using the phone in audio mode.

After the era of the Speaking Phone, Apple became the first phone manufacturer to provide an inclusive design touchscreen mobile phone with built-in screen reader software in South Africa in 2012 (Burton, 2019). Today, most iPhone and Android touchscreen devices have screen reader software built into their operating systems, which is a great example of device manufacturers embracing an inclusive design approach (GSMA, 2018).

Most of the MNO's vision impaired customer base used touchscreen devices with great success, although it took some time for them to get used to using a touchscreen device. However, a minority portion of the vision impaired community, such as elderly persons and those who are not touch sensitive, continued to use accessible keypad phones instead of touchscreen devices. It remained a challenge, though, to obtain accessible keypad smartphones, as they were limited in number and very expensive for emerging market consumers, which put them beyond the reach of most people.

The middle manager participant mentioned that besides providing accessible devices, the MNO expanded its focus to providing accessible applications. Andre stated: *Every time business makes improvements, I get the beta version; I test it to make sure that it is still working with my text-to-speech on my phone. And yes, currently it is fully accessible. I can*

buy data bundles, I can check my data balance, my voice balance, my SMS balance and everything on my phone. The participant also spoke about the importance of the MNO's website being accessible. He stated:

*It's no use having good information available on the website if the website is not accessible to a person using text-to-speech software; then it presents even a bigger frustration and problem rather than being helpful. You need to make sure that your website can be accessed by a person using text-to-speech software on their device; in other words, accessing information by not using a mouse, but by using the keyboard only.*

Using the MNO's self-service application empowered vision impaired consumers to access its services. The MNO's portal was another accessible self-service channel which vision impaired consumers could use to access information. The portal was written in a programming language that supported the text-to-speech software that vision impaired persons use on their computers and smartphones.

Data confirmed the MNO's efforts to ensure that technology such as mobile phones, applications and the MNO's portal were accessible for vision impaired persons. Importantly, findings revealed that the retrofitting of mobile phones ceased in 2012 when the MNO started selling touchscreen iPhones with inclusive design features such as VoiceOver, which is the screen reader software built into the operating system of the device. Manufacturers and developers applying inclusive design principles in mainstream mobile phones is a good example of their compliance with the Social Model of Disability by promoting barrier-free access to technology. Literature confirms the importance of mobile devices being made accessible for vision impaired consumers by incorporating accessible features into the the design of their hardware and operating systems (G3ict & ITU, 2012).

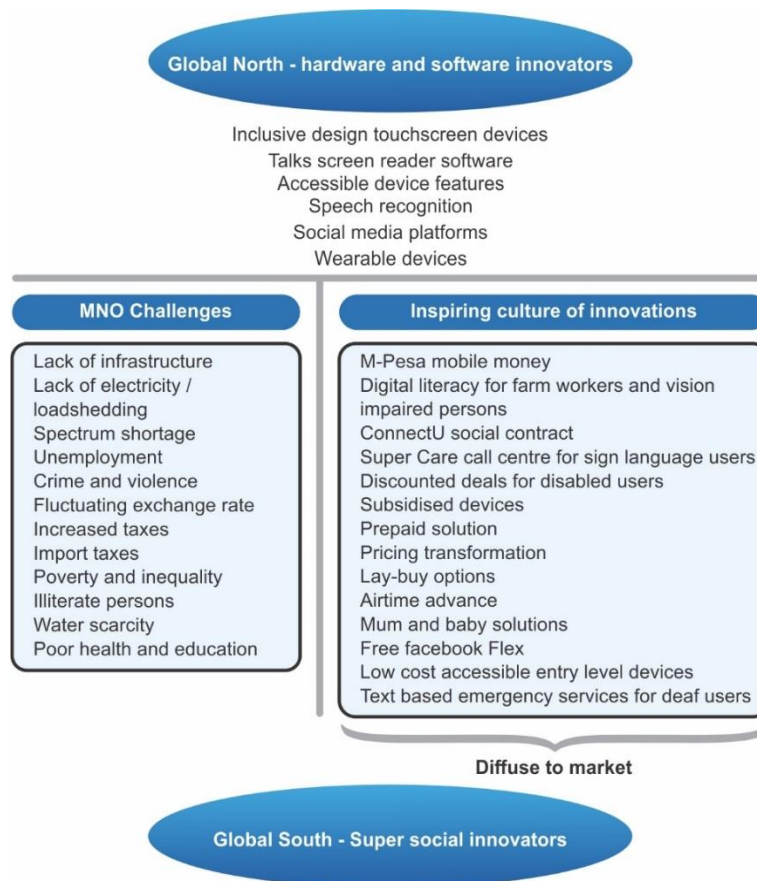
The findings in this section align with the Diffusion of Innovation (DOI) Theory of Rogers (2003), which describes the diffusion of accessible technology and innovation – in this case mobile phone hardware and software to a social system which consisted of the vision impaired community. The elements of Rogers's (2003) DOI theory are (1) an innovation which is communicated through (2) certain channels, (3) over time, (4) among the members

of a social system. The MNO has been providing accessible technology for the past sixteen years, which is the 'time of diffusion' element according to Rogers's (2003) theory.

It's interesting to note that the time of diffusion element will be ongoing as long as new innovations are introduced. I have noticed that whenever new accessible mobile technology has been introduced to the vision impaired community, there have been early adopters and laggards. Early adopters were the larger group and consisted mostly of younger vision impaired persons and persons up to the age of about sixty years. Laggards, on the other hand, consisted mostly of elderly vision impaired persons above the age of seventy who took longer to get used to the idea of using new technology such as touchscreen phones (Rogers, 2003).

I agree with Roy and Lewthwaite's (2016) view that the technological experiences of disabled people within the Global South remain mostly unknown, with no understanding of whether technology brings about real benefits or further disability. By describing the MNO's diffusion of accessible mobile technology, this study answered Roy and Lewthwaite's (2016) question about how MNOs in the Global South utilise accessible technology to benefit the local vision impaired community. The study furthermore complied with Roy and Lewthwaite's (2016) request to include disabled people in the Global South as users of mobile technology; hence, giving a voice to critical silences in the Global South.

Figure 6.4 indicates that major technologies were mostly designed in the Global North, not taking into account some of the needs of users in the Global South. Although the majority of South Africa's vision impaired community embraced touchscreen devices, some of the technology needs of South African vision impaired persons have not been addressed, namely the need to continue using affordable accessible keypad smartphones with built-in screen reader software. These phones, however, are not mainstream and are too expensive for emerging market consumers. In Figure 6.4 I refer to the MNO as a 'Super Social Innovator' of the Global South because it has consistently realigned its technology to serve socio-economic purposes. Due to the unique circumstances in the country, the MNO was continually forced to customise its solutions to suit the needs of a diverse population that includes vision impaired persons.



**Figure 6.4:** The MNO as a ‘Super Social Innovator’

Source: Karen Smit, 2020 from study

Besides the fact that it was critically important that mobile technology was accessible for vision impaired persons, it was of the utmost importance that it was also affordable. The following section describes the MNO’s efforts to implement processes that promoted affordability.

#### **6.2.4 ‘Data must fall’: promoting affordability**

The MNO’s Integrated Report (2018) mentioned in the document analysis outlines the MNO’s pricing transformation strategy, whereby the cost of smart devices has become much more affordable enabling more people to access the internet. The MNO acknowledged the importance of providing affordable device and usage offerings for vision impaired persons to access technology and become part of a connected society. Fatima, a senior device participant stated: *We are constantly working on our vision to drive down price points, because that’s the only way that we make devices more accessible to the market.* One way the MNO has managed to lower the cost of devices was to subsidise them. According to Pedro, a top manager participant: *We have a massive investment that goes into physical hardware. We’ve*

*been a catalyst in driving prices down and we subsidise hardware hugely to make sure that basic services are available in the hands of the population at large.*

To further increase the affordability of smartphones the MNO provided affordable entry-level smartphones for the lower end of the market. The MNO ensured not only that the cheaper range of Android phones were affordable, but that the screen reader technology was accessible for vision impaired persons. Andre, a middle management vision impaired participant, summed it up as follows: *We now have devices in a low price range that are one hundred percent accessible. So a blind person can buy a touchscreen smartphone with screen reader software for below five hundred rand.* According to GSMA (2018), accessible entry-level smartphone processors have become faster and their internal memory bigger, which enabled a larger portion of vision impaired persons to purchase a smartphone for about R499, thereby giving them access to the internet and applications. Access to cheaper smartphones has translated into life-changing opportunities for disabled persons globally (ITU & G3ict, 2012).

As illustrated in Figure 6.5, the MNO overcame challenges in order to sustain the provisioning of lower cost devices. Fatima, a senior device participant, stated: *We find that we're having to subsidise devices more to make it affordable, as our import duties have increased, we have fluctuating exchange rates, and we've had an increase in value added tax. We can't influence these macro factors.* Despite the MNO having implemented strategies to reduce the cost of devices, and despite many vision impaired persons considering Apple devices to be the most accessible, these users remain excluded from purchasing these smartphones as they remain too expensive for the vision impaired market. The majority – 79.8% – of the vision impaired segment are unemployed or earn a very low income (World Report on Vision, 2019). A further one million disabled South Africans receive a monthly disability grant of R1,860 rand, which makes purchasing Apple devices challenging (Western Cape Government, 2019).



**Figure 6.5:** Challenges the MNO has navigated to improve affordability

In order to promote affordability and to make contract options more affordable, the MNO launched monthly special contract deals for vision impaired persons, which consisted of

reduced subscriptions and extra free data and airtime. However, besides advocating for more affordable devices, vision impaired focus group participants as part of the broader public requested affordable data in order to be able to access the internet consistently. To influence MNOs to reduce data costs, a high-profile '#datamustfall' social media campaign was launched in South Africa in 2016 (Mphahlele, 2016).

The MNOs integrated report for 2020 revealed that it has been reducing the cost to communicate since 2017 by making data more affordable to consumers). In March 2020 the MNO launched the Social Contract programme after it reached an agreement with the Competition Commission following the release of their Data Market Inquiry Report (Noik, 2020). The Social Contract lowered the cost to communicate and promoted digital inclusion by providing a zero-rated platform that provided free internet access to essential service portals such as education, employment and health services).

By April 2020 data prices were reduced by nearly 40%, which has resulted in R2.7 billion in additional savings for customers. According to Simon, a middle manager participant: *There's cheaper data bundles, cheaper voice bundles, which in essence means I can get connected more to my family while paying less.* What made the launch of the Social Contract even more beneficial was that it was launched during a critical time, when the COVID-19 pandemic struck South Africa and a hard lockdown was imposed, which led to increased unemployment. The Social Contract proved to be highly beneficial for consumers as it assisted to keep them connected and facilitated their working from home. The MNO integrated report (2020) state that the company implemented lower data rates despite being impacted by a flat GDP growth rate, a credit rating downgrade and volatile exchange rates (MNO Integrated Report, 2020). It is notable that when the MNO reduced data costs and added more value to its offerings to the general public, vision impaired persons benefited by default as they form part of broader society. Figure 6.6 provides a summary of the MNO's efforts to drive down costs and promote affordability.



**Figure 6.6:** The MNO's efforts to promote affordability

Research indicates that although affordability was key to promoting digital inclusion, communication services have not been affordable to the majority of South Africans, as prices have remained a barrier in developing countries such as South Africa (GSMA, 2018; Gillwald, 2018). This section highlights that inclusive design went beyond ensuring that devices were merely accessible for vision impaired persons. In this case, inclusive design also included the responsibility of the MNO to ensure that accessible devices were affordable. The MNO did not include the additional cost of screen reader software in the price of phones in 2004, when the software had to be manually loaded onto mobile phones to make them accessible. This cost was not added because the MNO wanted to keep the playing field level for vision impaired persons; in other words, vision impaired persons were not 'penalised' for requiring retrofitted devices.

The MNO initially focused primarily on making devices more affordable by investing heavily in hardware. However, with smart devices becoming more data hungry, consumers, including vision impaired consumers, requested more affordable data in order to access the internet and use applications on their devices. The MNO responded favourably to the regulator and Competition Commission reports by giving consumers significant discounts (Noik, 2020). Another key initiative for the MNO was to implement awareness-raising initiatives to educate staff and customers about accessibility. The next section describes these initiatives.

### **6.3 Sub-theme 2: Building capacity for promoting education**

The following section, as summarised in Table 6.2, describes training and awareness interventions that the MNO implemented to educate staff about disability in order to ensure that vision impaired persons had a positive customer experience when interacting with staff.

**Table 6.2:** Sub-theme 2: Building capacity for promoting education

| Sub-theme                                 | Categories   |
|---|--|
| Building capacity for promoting education | 'People are just not aware': ongoing awareness raising |
|   | 'Do not follow call centre processes rigidly'          |
|   | Feeling comfortable during face-to-face interactions   |
|   | 'Start spreading the news': marketing efforts          |
|   | Promoting digital literacy                             |

The next section discusses the importance of conducting awareness with staff from business units.

### 6.3.1 'People are just not aware': ongoing awareness raising

For Jayshree, a senior manager participant, the MNO needs to create awareness within the organisation so that staff can have an understanding of what disability means. The participant stated that awareness raising should entail teaching staff that addressing disability is about utilising opportunities to create differentiated accessibility solutions which impact people's lives positively. She stated:

*We have an opportunity to drive awareness and understanding of what disability means. It should not be seen as an impediment or something disadvantageous. It should be seen as an opportunity of how we can make a difference and what it means to look at each other in a way that we are equal.*

Further to this, most participants agreed that disability education and awareness raising was imperative to ensure that accessibility formed part of business units' initiatives. According to Anna, a top management participant, disability was not visible enough for staff, as the majority staff consisted of non-disabled people. She stated: *The biggest thing needed is awareness of disability. People do not think of it and if you keep on making people aware it becomes top of mind at all times. Awareness raising is a big thing because people are just not wired to think about disability because they do not have that specific need themselves.* Figure 6.7 summarises the reasons for raising disability awareness among the business unit staff.



**Figure 6.7:** Reasons for raising disability awareness

A reason for low disability awareness among staff could be that some staff may not have been exposed to disabled persons or have experienced permanent or temporary disability themselves. Another reason could be that staff do not consider disability inclusion as a priority area. According to Matthew, a middle manager participant, the awareness levels of disability among the staff of various business units varied. He stated: *It makes it very easy for our department to be more aware because we are in the learning business and you're very aware of people's learning needs because you're in that environment. I think for people within the IT department it doesn't come naturally.*

For Fatima, another senior manager participant, not all staff may be aware of the Accessibility Office due to the continuous growth and evolution of the organisation. According to her, the Accessibility Office should raise more awareness about itself. She stated: *The organisation has grown massively; there's lots of new people that have come in. Some staff may not understand that there is an Accessibility Office. So I think there's a bit more of an awareness campaign that the Accessibility Office needs to do.*

Matthew, a middle manager participant mentioned that once the Accessibility Office has raised awareness, business units should take the initiative to engage with it to increase their understanding of the needs of disabled consumers. He stated: *I think the Accessibility Office is a vehicle that staff can use to find out more, because I think there's a lack of knowledge around disabled customers.* For Anna, another top management participant, the Accessibility Office played an important role to raise disability awareness with business units. The participant had a good relationship with the Accessibility Office, as she utilised the accessibility expert advice from the disability champion. She also mentioned the disability

awareness events that the accessibility hosted for staff company wide. She stated: *What the Accessibility Office brings to the table is a lot of awareness, such as having disability days. I have never had a company where I have been able to talk to people with disabilities and understand exactly their specific needs.*

These findings indicate that although disability awareness initiatives have been part of the company's culture, most participants agreed that not enough disability awareness was being done with business units. It seemed that the Accessibility Office has not conducted consistent awareness sessions with business units, which is why, according to the document analysis, the Accessibility Office has been referred to as a 'hidden gem', as many staff were not aware of the MNO's accessible solutions for consumers. According to the South African Human Rights Commission (2015), disability awareness raising should be conducted on a continual basis with all staff, including software developers. Only the business units that the Accessibility Office interacted with regularly were aware of the accessible solutions and the Accessibility Office. An interesting finding was that both business units and the Accessibility Office should take responsibility to promote disability awareness. This entails the Accessibility Office reaching out to business units to raise awareness, and business units engaging with the Accessibility Office to learn more about accessibility. This approach aligns with the Social Model of Disability, which advocates for a barrier-free environment. The MNO conducted awareness raising of products through channels such as television, cinemas, social media and radio. The following section describes the importance of providing training to call centre staff.

### **6.3.2 'Do not follow call centre processes rigidly'**

According to Muneer, a senior manager participant, there should be a targeted training programme for call centre agents that equips them with skills to deal with disabled persons. He stated: *I think there should be a specific curriculum and awareness about how to deal with people with specific needs.* Matthew, another middle manager participant confirmed that training was provided to call centre agents that specifically focused on how to treat disabled customers in an empathetic manner. He stated: *Our training programme is dedicated to behavioural training and also addresses the needs of disabled customers.*

The MNO provided training to equip staff with relevant skills and product knowledge in line with its strategy of providing world-class customer service to vision impaired persons. However, despite having a training programme in place, the middle manager participant

mentioned that the training department could be more proactive by updating the disability training curriculum content more consistently. Matthew mentioned: *To give you an honest answer I think we can do a lot more around updating disability training content up front. We do not do that as regularly or as often as we could.*

For Muneer, a senior manager participant, it was important for call centre agents to be flexible when dealing with vision impaired customers. He stated: *One important thing is how alert the agent is. He should realise when he deals with a vision impaired customer that he should not merely follow a process as it might cause him not to deliver the best customer service.* According to the participant, agents should not stick to call centre scripts strictly, as it could become a barrier to understanding the customer's needs. Hicks (2019) agrees that call centre agents' priority should not be to follow the script or process rigidly, but to provide the best customer experience.

One challenge that the MNO faced was that some of the call centre tasks were outsourced to third-party partners, and it therefore did not have direct control over call centre agents during their daily tasks. According to Muneer, a senior manager participant: *Outsourcing plays a big part and you don't have direct control, as implementation must be done by the third party.* To ensure that these agents delivered world-class customer service, the MNO maintained a close partnership with third-party call centre partners and provided continuous in-depth training on disability and accessible technology. Seamless communication between the call centre agent and customer can result in a positive customer experience.

It is a known fact that call centre staff are the face and voice of the business. The MNO regarded the third-party call centres as key stakeholders, as these businesses interacted with the MNO's customers on its behalf. Furthermore, training was of critical importance as it sought to align the people, systems and processes of the MNO with that of the third-party call centre partner, which was a prerequisite for rendering excellent customer service. It is important to note that the MNO's training did not just consist of product and services training, but also included behavioural training. This meant that disability awareness increased among the agents and that they learned how to deal respectfully with disabled consumers. One valuable benefit that call centres provide to vision impaired persons is to save them having to ask someone to drive them to a store when wanting to purchase products and services.

Participants experienced a few challenges when applying inclusive design in training initiatives. The pressure on the training department to conduct training on numerous programmes, products and services for call centre staff caused the disability training curriculum to not be updated timeously. Often the business priorities of the mass market took priority over ensuring that agents understood how to deal with disabled persons and provide the latest product information, which could have resulted in them providing incorrect information to consumers.

Another finding indicated that the MNO outsourced a number of call centres, which made it challenging to ensure that the outsourced call centres' agents provided the same standard of customer service as the MNO. Furthermore, the call centre industry has a high staff turnover, which causes a break in skills continuity (Chowdhury, Diba, & Hasan, 2012). Together with call centre staff, store staff, as part of the front-line staff, played a critical role in rendering customer service to vision impaired persons. The next section describes the training and awareness raising of store staff.

### **6.3.3 Feeling comfortable during face-to-face interactions**

The retail environment was another front-line touchpoint where vision impaired consumers dealt directly with staff. For Hendrik, a top manager participant, it was important that the MNO created disability awareness within the store environment, as consultants were often not aware of disabled persons' needs. He stated: *I think a challenge is that not everybody within stores is always sensitive towards supporting people with special needs. So, we need to create awareness and to have the tools to help store staff to be able to service disabled customers.* The MNO's retail training programme focused on training new store consultants on how to treat vision impaired persons. The disability awareness and product training equipped new consultants to understand that disabled persons were consumers too, and that they should be treated with dignity and respect. Matthew, a middle manager participant, stated:

*Our training programme that we roll out focuses on onboarding new store staff in raising awareness around customers with disabilities, so that our new consultants are aware that they are also our customers and that they need to be treated equally from a customer experience perspective.*

Matthew continued to explain that most store consultants were young digital native millennials. Some of the young consultants were mostly experienced in communicating digitally and had little experience of interacting with people on a personal level, especially interacting with disabled consumers. He summed up the consultants' interactions as follows:

*The human interaction component of some staff is lacking, because they communicate and interact digitally on a phone, WhatsApp and Instagram. We find on the training side that some of these young people do not know how to properly communicate with other people. I'm just generalising, yes. Because they grew up in this digital world; it's all about typing short messages that you and I would probably struggle to decipher and read. So, it's a digital language that gets developed and its embedded in their upbringing. All of a sudden now they need to interact with a customer face to face, which is a very difficult and strange concept for some of them.*

Part of the customer service training entailed doing behavioural training which incorporated role playing with store consultants so that they could gain practical experience of dealing with disabled consumers. Matthew, the middle manager participant, stated:

*So it's role playing and scenarios. It's putting the store attendee in front of a 'disabled consumer', who will be the facilitator mirroring a customer with a disability. So they're putting the store attendee in a very difficult situation because it's the first time that they actually start to think about assisting disabled persons. Because these young people coming into our stores as consultants, they need to start thinking about 'how do I treat a disabled person? How do I interact with this person? How do I build rapport with a disabled person?'*

Furthermore, staff turnover presented a challenge as new staff were continually being employed, and they were not equipped with disability knowledge right from the outset.

Matthew, a middle manager participant, stated:

*It is difficult because retail is a very fluid environment. Staff turnover is high because it's young people coming in. So, to maintain that you might train someone today; then a month after that they're gone and then there's a new person in the store, and that person hasn't come for training, so that person wouldn't know how to interact with a disabled customer.*

As stores were considered critical stakeholders, the MNO worked closely with franchisees to implement initiatives to decrease staff turnover, which enabled consistent development of skills.

Another challenge store staff experienced was that consultants did not deal with vision impaired persons on a continual basis, which meant they did not get enough opportunities to engage and interact with vision impaired persons. This caused some staff to feel awkward or uncertain when dealing with vision impaired persons with a white cane or guide dog when they entered the store. Pedro, a top manager participant, stated: *'A store might have been trained on the process, but then they do not see a vision impaired customer every single day. So by the time the person walks in, everybody looks at each other and goes 'what do we do with them?'*. McCormick (2002) mentions that when consultants initially do not know how to act and communicate with vision impaired consumers it results in consultants feeling awkward. Figure 6.8 presents a summary of the challenges of providing inclusive training to store staff.



**Figure 6.8:** Challenges that impacted effective customer service training in retail

Findings in this section indicate that the MNO had a targeted disability product and process training programme for store consultants. The MNO and franchisees worked closely together to ensure that consultants received training, notwithstanding the ever-changing nature of the retail environment. It was important for both stakeholders that all people, regardless of gender or ability, were treated with the same respect and dignity (Accessible Ontario Customer Service, 2019). However, not having the opportunity to serve disabled customers consistently posed a challenge for consultants, which impacted customer service.

The MNO implemented various customer service initiatives and incentives to promote an excellent customer service culture among its franchisees. Some of the challenges experienced were typical for the retail sector, such as high staff turnover and presenting updated disability content timeously (Sieckze, 2014). This section describes how both the MNO and franchisees complied with the Social Model of Disability by incorporating inclusive design into training programmes to ensure that consultants would be able to deliver great customer service. The following section describes how marketing and advertising should be expanded to reach vision impaired persons and their families and friends.

#### **6.3.4 'Start spreading the news': marketing efforts**

A top manager participant, Anna, mentioned that during 2017 the MNO launched a national mainstream marketing campaign to raise awareness of its accessible products and services in broader society. She stated:

*I remember we did a series of advertisements around what we provide. One that stood out for me was the vision impaired runner and how he used his iPhone to make his life easier. I found the video campaign incredibly impactful around all the customers and how they deal with our products from a special needs perspective. I loved that series. If we can redo that almost on an annual basis, because it is not just making our staff aware, but it is making our customers aware. We really have an opportunity to drive our brand, not just as a caring brand but as the brand that if you have any disability this is the brand for you. We should continue with that because it is a good news story from a customer and from a staff perspective.*

The campaign showcased how technology benefited vision impaired persons, and was broadcast on various national public and private television channels and social media platforms, as well as in cinemas countrywide, which is an example of an inclusive advertising approach (Yin et al, 2018). The impact of the campaign was positive, as feedback was received not only from vision impaired persons, but also from the general public and MNO staff (Model ICT Accessibility Policy Report, 2014:65). People became aware of accessible solutions for vision impaired persons, and the general feedback was that they had been unaware that the MNO was committed to accessibility. The national above-the-line marketing campaign was a once-off national campaign and helped to break the 'hidden gem' status by raising awareness of the MNO's accessible solutions and Accessibility Office.

Kate, a senior manager participant, indicated the importance of leadership allocating budget to accessibility marketing initiatives. She stated: *I think the business leadership has to commit to a marketing spend that is specific to the special needs segment and that there is a commitment around how that money gets spent above the line.* She continued to mention that not enough marketing of the MNO's accessible products was being done to make customers aware of its technology due to budget constraints. To overcome the issue of budget constraints, the participant suggested using digital advertising platforms, which are more cost effective. Kate stated: *I think the role of the digital advertising platform is important because it's fairly cheap and has a high reach.* On the other hand, the Accessibility Office utilised its relationship with DPOs to communicate information about accessible products and special deals.

The data provided a clearer understanding of how the MNO's marketing efforts benefited vision impaired persons. Findings showed that above-the-line media campaigns was scarce due to insufficient budget. The MNO used digital channels such as social media platforms to market accessible products, as these reached the intended audience quickly. However, this type of advertising was done inconsistently as a result of the competitive nature of the business, having to continually market new or updated products. Should vision impaired consumers be under- or misrepresented in marketing communications, it could be perceived that the brand is sending non-inclusionary messages (Bennett, Hill, & Oleksiuk, 2013; Tadjewski, 2012). Inconsistent marketing has resulted in vision impaired consumers not always being aware of the MNO's products and services. The MNO's use of digital platforms to market products aligns with the communication element of Rogers's (2003) DOI Theory. Once vision impaired persons become aware of accessible technology, they want to purchase it and learn how to use it.

### **6.3.5 Promoting digital literacy**

The MNO established a smart digital training centre in partnership with organisations for vision impaired people (Mjekula, 2018) with the aim of providing digital literacy training to vision impaired persons. For Hendrik, a top management participant, it was beneficial to offer digital literacy training at organisations that vision impaired persons engage with on an ongoing basis. He stated:

*You must look at which touchpoints are the touchpoints that people who are vision impaired or deaf will go to first. If you can enable them with your product and services at*

*that point, they do not have to run around. So, if they have a distribution point or a support point at their own touchpoints where they get all of their other requirements, then it is the ideal place to do it.*

The smart digital training centre can be seen as a communication channel whereby information is shared about accessible devices (Rogers, 2003). This digital literacy training benefited a portion of vision impaired persons, as for some the transition from using accessible keypad devices to using accessible touchscreen smartphones was a huge change and a challenge. Hence, the digital literacy training centre fulfilled an important role in giving vision impaired persons the opportunity to feel and use touchscreen devices. Once vision impaired persons were able to use a touchscreen device, they enjoyed having access to the benefits that a smart device offers, such as accessing the internet and using social media. Another benefit of the smart digital training centre is that stores can refer vision impaired customers to the training facility where they can receive in-depth practical training on how to best use smart devices. Literature states that once vision impaired persons understand how to use smart devices to access the internet and use applications, they become better able to find employment and access an array of services (Simsek et al, 2010:5).

## **6.4 Summary**

Results from Theme 2 describe the inclusive design processes that the MNO has implemented. The MNO has hugely focused on providing accessible technology to vision impaired persons, as this was the first step towards enabling vision impaired persons to use technology. The MNO's customer processes, such as product design and segmentation, did not consistently take into account users' needs up front, although there was a focus on delivering targeted accessible products for the vision impaired market. Affordability was seen as an important issue, as the majority of vision impaired persons were unemployed; hence, the MNO implemented pricing transformation strategies such as cheaper devices and data. Regulatory processes and pressure from society also played a role in reducing the cost of data. Awareness raising was seen as important and various channels were used to market accessible offers. Data identified that awareness campaigns and education were implemented, but these initiatives should be applied in a more consistent manner.

The MNO had been driving disability inclusion for the previous sixteen years and it was evident that steps were taken to raise disability awareness, although not on a consistent

basis. The Accessibility Office had the primary responsibility for driving awareness initiatives in partnership with the brand marketing and internal communications teams. Awareness raising and disability education mostly targeted staff from call centres, store staff and even vision impaired customers. A retail programme was implemented for call centre and store staff to ensure that front-line staff were able to render excellent customer service to vision impaired consumers. Results demonstrated that despite implementing training and awareness processes, the MNO experienced challenges in ensuring that front-line staff would render excellent customer service. Call centres and retail outlets were mostly managed by third parties that employ their own staff, making it difficult to ensure that all staff receive disability training. Another challenge is that staff are not consistently exposed to dealing with vision impaired persons, as some visit stores only a few times a year. Due to the nature of the retail sector staff turnover is high, which makes it difficult to ensure that all staff are equipped to treat disabled consumers in a positive manner.

The findings show that the MNO had a complex ecosystem consisting of a UK-based parent company, manufacturers, retail outlets and third-party stakeholders. Together with the above-mentioned challenges, the MNO's ever-changing and fast-paced business resulted in the digital inclusion of vision impaired persons not always being implemented up front. The MNO's motivation to promote digital inclusion by going beyond compliance, with the strategic intent to empower a connected society, was evident. By using technology from the Global North the MNO displayed a 'super innovative' spirit to implement technology and services that could be accessed by vision impaired persons.

# CHAPTER 7

## Findings and Discussions Part 3

### THEME 3: 'UNDERSTAND OUR NEEDS IN ORDER TO CATER FOR THEM'

#### 7.1 Introduction

This chapter describes the findings and discussions which emerged from the data gathered through the analysis of focus group interviews conducted with vision impaired participants from an organisation for vision impaired persons. Although I will be focusing on presenting findings from the focus group interviews, I am also drawing on data from Chapters 5 and 6. In the focus group interviews the theme of 'Understand our needs in order to cater for them' emerged as key for participants. The findings relate to the two study objectives, namely to 'Determine the communication participation needs of vision impaired persons' and to 'identify barriers that hinders vision impaired persons' communication participation experiences'.

In this study, communication participation means more than just making phone calls, it also refers to vision impaired persons being able to access information online to gain employment and education. There are three sub-themes for each of the two objectives, which are presented in Table 7.1. In this study I argue that when MNOs implement inclusive processes that reduce barriers to access, the communication participation of vision impaired persons will be promoted via digital inclusion. Note that all the names and quotes mentioned in this chapter refer to focus group participants of the DPO.

**Table 7.1:** Theme: 'Understand our needs in order to cater for them'

| Sub-themes                     | Categories  |
|--------------------------------|---|
| 'Connectivity keeps us online' | 'Don't leave us behind'   |
|                                | A reliable network creates peace of mind                              |
|                                | 'Socio-economic participation via the internet promotes independence' |

|   |   |
|---|---|
| <b>Accessible and affordable products increasing the adoption of technology</b> | 'It's kind of hard to just pick up the newspaper and read it': accessible devices |
|   | 'I would love a new phone, but I do not have a job'                               |
|   | 'Tell us about your latest technology and services'                               |
|   | 'I want to know how to use my new smartphone'                                     |
| <b>Inclusive customer services promoting positive experiences</b>               | 'Call centre staff must understand who they are talking to'                       |
|   | 'Use empathy and not pity when serving us across various stores'                  |
|   | 'Some consultants don't know about accessibility features': training              |

The sub-theme 'Connectivity keeps us online', which is outlined in Table 7.1, is described in the next section.

## **7.2 Sub-theme 1: 'Connectivity keeps us online'**

The sub-theme describe three categories, namely 'Don't leave us behind', 'a Reliable network creates peace of mind' and 'Socio-economic participation via the internet promotes independence'.

### **7.2.1 'Don't leave us behind'**

Technology is an enabler that empowers people to connect with the world via various digital platforms and channels. In the focus group interviews, participants indicated the importance of being part of a connected society. This was summed up by Eleanor who stated:

*You are connected to the world in a sense that you can use WhatsApp, Facebook, Twitter, you can download your own apps. Your phone assists you to navigate yourself around the place, to help you identify colours, have access to information; and when you have that, you can actually be part of society.*

It was important for participants to access technology in order to not be left behind. Fortunately, technology such as inclusive design smartphones have become more accessible for vision impaired participants which contributes towards their digital inclusion. Participants

acknowledged the efforts that the MNO made to ensure their inclusion in society. Stevie stated: *The MNO tried very hard to create full integration for people who can't see.* Chapter 6 describe how the MNO embraced digital inclusion by starting to cater for the needs of vision impaired persons. For Eleanor, it was important to experience enhanced accessibility, which is why disabled people's organisations assisted to raise awareness of accessibility. She mentioned: *I don't think there's any network that assists blind and vision impaired people better. They have always been the forerunners of trying to assist our blind sector for accessibility.*

Similar results were obtained from the analysis of the MNO interviews (Chapter 5), which showed that it had been promoting societal inclusion of vision impaired persons since 2004, when the MNO launched the first ever accessible mobile phones for vision impaired persons in Africa. Although the MNO has promoted the inclusion of vision impaired persons for more than a decade, there is still room for further improvements to systems and processes due to the complexities of integrating technology and services with disability inclusion.

When the inclusion of disabled persons is not prioritised, they are left behind, which maintains the digital divide. Hence, should disabled persons not be seen by MNOs as valuable members of society, there is a risk that they will be excluded from participating in society. When their inclusion into digital society was promoted, participants experienced an increase in their quality of life. In order for participants to belong to a connected society, they need access to a consistently good network. This is addressed in the next section.

### **7.2.2 A reliable network creates peace of mind**

One very surprising finding was that eleven of the twelve participants expressed that their biggest need and requirement for successful communication was that their MNO have a strong network signal and good coverage. For Eleanor it was important that the MNO had a great network as she wanted all of her calls to be connected. She stated: *The signal is always on and it's clear. You don't get dropped calls very easily, and even when there are dropped calls, you get connected again and that is for me important.* Hence, it was important that the network should always be available whenever the participant needed to use her phone. Good connectivity resulted in consumers displaying an 'always-on' mentality, meaning that they could go online and engage with organisations and other people at any hour of the day and from anywhere (Kaftzan, 2017).

This resulted in the MNO's network infrastructure having to support the growing demand for reliable technology with minimal or no downtime. Having a good signal and coverage was also highly favoured by another participant. Nita stated: *My family use MNO X, and when they need connection, they grab my phone.* Xolani mentioned that he required a good signal as he uses the internet very often. He stated: *I like to always be on the internet, always surfing. So far, I haven't had a problem with the network; it's always good.* Although the majority of participants experienced a good network signal, one focus group participant, Buhle, experienced network problems when she visited a big metro in the north of the country. She stated: *The network is terrible, especially when you phone family in the evening.* As the economic hub of the country, some areas within the metro were known for experiencing network problems due to congestion.

Findings show that most participants valued a reliable network with a good connection as their most important need, followed by accessible technology. It was important for participants to experience connectivity at all times in order to contact anyone at anytime which created peace of mind. Participants' need for a good network connection could be a result of feeling vulnerable due to their disability, especially as violence and crime are high in the country, which puts them at greater risk. For these participants, a strong signal and good connectivity meant that they experienced less anxiety, because they were able to be contacted and contact others most of the time (Hui Lu et al, 2014).

Being connected furthermore enabled participants to plan their day independently by, for example, contacting online taxi services and organising daily activities. A similar pattern of results was discovered from the document and MNO interview analysis, confirming that it was a priority for the MNO to invest in network infrastructure to ensure that people stayed connected. Having a reliable network was the cornerstone of the MNO, as it played a critical role in ensuring that their services can be accessed anytime. Having a good network enabled consumers with an always-on mentality to access the internet at any time. This enables vision impaired persons to participate on a socio-economic level via the internet.

### **7.2.3 Socio-economic participation via the internet promotes independence**

Most participants mentioned that the internet provided many benefits, such as access to information. Stevie, stated: *I really think that having access to the internet is opening up a completely new world of being able to get information.* Most participants accessed the internet to get information, to look for jobs, and to perform financial transactions. The Internet Society's (2012:1) motto is the 'Internet is for everyone', meaning that it provides opportunities for disabled persons to participate on an equal basis within a global society. Another focus group participant, Yusuf, experienced a sense of independence and empowerment when he was able to access the internet independently anywhere and anytime. He stated: *It gives me independence, as I don't need to ask people to read for me. I can go on Google and search for myself what I want, and not go to anybody for assistance.*

By using the internet, many participants experienced financial independence and empowerment, as they preferred to be in charge of their own finances. Unathi, indicated that internet access enabled her to receive her monthly statements from the MNO. She stated: *I'm benefiting a lot from the internet because I'm receiving my statement from my MNO through email.* For Yusuf it was great being able to do mobile banking as it saved him time not having to ask someone to take him to a bank. Yusuf mentioned: *So, and I'm doing internet banking myself now. It gave me a great advantage to handle my own finances.*

Another very important benefit of using the internet according to most participants was being able to search and apply for jobs. Unathi mentioned: *I'm using my WhatsApp, my Facebook and Googling or doing research about the jobs that I can apply for.* Besides searching for jobs, a number of participants used the internet to help them with their current jobs by doing research. Nita stated: *I do aromatherapy. I need to do research on different oils, so I use the internet a lot for it and I am enjoying it.* Yusuf enhanced his job by using social media platforms to market his awareness work in schools. In this manner he received new requests from various special needs schools that became his clients. He stated: *I do awareness sessions at schools, and most of my awareness work goes onto Facebook. That's where 80% of the schools get hold of me, and on WhatsApp.*

Besides engaging in financial and job activities, participants also used the internet to participate in educational activities. For Buhle, a huge benefit of having access to the internet was being able to study online. She stated: *A distance education university sent information online, so you need to get access online.* Hence, accessing distance education online made it easier for the vision impaired participant to receive a tertiary education as it eliminated having to rely on others to get transport to a university. Figure 7.1 shows the reasons why vision impaired participants used the internet.



**Figure 7.1:** Reasons for accessing the internet

According to Thomas, Barraket, Wilson, Ewing, MacDonald, Tucker & Rennie (2017:7): *At its heart, digital inclusion is about social and economic participation: using online and mobile technologies to improve skills, enhance quality of life, educate, and promote wellbeing across the whole of society.* Results confirm that vision impaired participants regarded access to the internet as critical, as it enabled them to participate in a digital society. Most participants regarded access to the internet as a huge benefit, as it enabled them to participate on a socio-economic level, which gave them independence. Accessing the internet enabled participants, via social media channels, to stay connected with friends and family, as well as to access information about jobs, health, news and education (Thomas et al, 2017).

Participants could access information at their fingertips on their devices, which they found to be empowering as they could do it at any time. Accessible smart devices enabled vision impaired persons to connect to the internet quickly and easily and using their smart devices as ‘all-in-one’ devices meant they didn’t have to also purchase a computer (Donner, 2015; Stork et al, 2013). The internet is going mobile, as many people are using their smartphones as their primary means of accessing the digital world (Correa, Pavez and Contreras, 2018). Findings demonstrate that vision impaired persons wanted to be included in order to participate

in social and economic activities. To be able to connect to the internet, vision impaired persons required accessible and affordable technology.

## 1. Sub-theme 2: Accessible and affordable products increasing the adoption of technology

**Table 7.2:** Sub-theme 2: Accessible and affordable products increasing the adoption of technology

| Sub-theme   | Categories  |
|---|---|
| <b>Accessible and affordable products increasing the adoption of technology</b> | 'It's kind of hard to just pick up the newspaper and read it': accessible devices |
|   | 'I would love a new phone, but I do not have a job'                               |
|   | 'Tell us about your latest technology and services'                               |
|   | 'I want to know how to use my new smartphone'                                     |

### 1.1. 'It's kind of hard to just pick up the newspaper and read it': accessible devices

Sandy explained how an accessible smartphone enabled her to read anything: *For me, an accessible phone is something great because at the end of the day I can read. At the moment I am print blind, so I can't see a thing on a piece of paper.* It is no good having smartphones that are inaccessible and can't be used by vision impaired persons, this sustains exclusion. Most participants mentioned that inclusive design smart devices with screen reader software already built into the operating systems were more beneficial for vision impaired persons, as it enabled them to choose from a greater selection of devices. Eleanor mentioned that inclusive design has made it easier to get hold of a variety of accessible mobile phones. She explained: *From my side, inclusive design phones make it much easier because you don't have to now go look for a specific phone because most of the phones have accessible features.*

Another participant mentioned the need for device manufacturers to obtain input from vision impaired persons as well as MNOs when designing devices. Stevie stated: *I wonder how often and how much input the manufacturers get from blind people and I wonder if service providers*

*and MNOs are able to influence the manufacturers when designing phones.* The MNO has on a few occasions provided certain phone manufacturers with feedback, which has led to them enhancing the accessibility of screen reader software. This was more successful when new mobile phone manufacturers entered the mobile market. Manufacturers as designers of devices took the initiative to engage the disabled community on a global level to include their needs up front, but the MNO had little or no influence over the extent of accessibility that was incorporated into devices.

Smart devices with inclusive design features have become a lifeline for vision impaired persons. According to Nita she felt lost when she did not have her smartphone with her, as it gave her a sense of empowerment and security. She stated: *There were times where I've lost my phones; then I really felt lost, as having a phone that is accessible helps me a lot. It really helps with independence.* Hence, without a mobile phone, the participant felt more vulnerable, as without a device she was more dependent on others for accessing information and staying in contact with others.

The aim of digital inclusion is to enable everyone to access and use digital technologies effectively (Thomas et al, 2017). Vision impaired persons can only use smart devices if manufacturers keep accessibility in mind when designing hardware and software. A few participants vividly recalled when the MNO introduced accessible phones into the country for the first time. Stevie has been a customer since the MNO introduced accessible mobile phones. He stated: *I'm probably one of the oldest MNO users from when accessible phones came into existence in South Africa.* When the MNO launched accessible mobile phones with screen readers in 2004, after partnering with the vision impaired community, vision impaired persons in South Africa could access and experience using accessible phones (Staff Reporter, 2004). This section aligns with Sections 4.3.2 and Section 5.2.3, which describe how the MNO was the first MNO in Africa to make mobile phones accessible for vision impaired persons.

Findings indicate that accessible devices were of crucial importance for vision impaired persons to gain access to the internet. Thanks to accessible smart devices, they were able to use and navigate applications and functions to the same extent as sighted people. It was important for participants that devices were manufactured with accessible features so that accessibility is not just an afterthought (Waller, 2015). Including the needs of vision impaired people from the outset made better business sense as it avoided having to make expensive changes later on. Some of the benefits of designing inclusive products up front are mitigating

business risk, reaching a wider audience, offering simple solutions, and achieving greater user satisfaction, which can result in a competitive advantage (Waller et al, 2015; Clarkson, 2007).

Participants confirmed that vision impaired persons should provide input and co-design accessible hardware and software at the start of the design process (Waller et al, 2015). Co-designing accessible solutions would entail researchers, developers and users who are experts on their experiences working together to develop accessible technology that makes provision for the needs of persons with disabilities (Visser, Stappers, van der Lugt & Sanders, 2005). Companies such as Microsoft and Apple are great examples of companies that apply inclusive design by engaging the disabled community up front. Participants furthermore suggested that the MNO provide feedback to manufacturers about vision impaired users accessibility experiences. Customers using current technology have feelings, impressions and sometimes negative experiences, so providing feedback could help manufacturers to understand customers' preferences and improve their products (Fundin & Bergman, 2003). The MNO's Accessibility Office had the responsibility of communicating customer feedback to the local device department, which in turn escalated the feedback to the parent company's global device division.

### **7.3.2 'I would love a new phone, but I do not have a job'**

Buhle stated: *For a person with a disability it's hard to get a job, so you'll find that the devices for us blind people are very expensive.* Nita suggested that the cost of accessible mobile phones should not exceed a certain amount so that most vision impaired persons would be able to purchase a phone. She stated: *I would say phones should not cost more than R1000, especially for someone like me who is unemployed. I would love to have a smartphone to use Google search. So I need a smartphone, but I won't be able to afford it.* Findings of my study highlight that most participants found that the cost of mobile phones remain a challenge.

Vision impaired participants cited unemployment and receiving small monthly government disability grants as reasons for not being able to afford the kind of phone they require. Although the MNO sold affordable entry-level accessible smartphones for less than R500, participants indicated that they were unaware of these phones, which excluded them from the opportunity to purchase an affordable phone. Sandy mentioned: *None of us knew of these phones.* Hence, participants developed the perception that sales staff seemed more

interested in selling more expensive devices, in order to earn a higher commission. Stevie stated: *It's not always sales staff's pockets that must be the issue; it's the need of a person who wants to get a cheaper phone in their hand that's important.*

In order to get an affordable device, vision impaired participants could use various payment options, such as contract or prepaid. About half of participants preferred the prepaid option, which relied on purchasing airtime and data with cash. The participants preferred the prepaid option, as it enabled them to be more in control of their finances, plus they enjoyed getting the free minutes that were gifted to prepaid customers when buying airtime. Buhle mentioned: *Prepaid is more convenient. When I don't have money, I don't have it; plus, it's useful to get free minutes.*

The other half of participants, who were mostly employed, were in favour of paying off a contract over twenty-four months, as both the airtime and device were included in the monthly subscription. Eleanor explained that having airtime included in a contract was so much more convenient, as she was not reliant on others to assist her with entering the paper-based airtime on her phone. She stated: *A contract makes it easier to have access to airtime without the admin of paper and you don't need assistance to load it.* Nita stated: *I'm using prepaid at the moment, but I prefer a contract, but unfortunately I can't afford it.* According to Yusuf: *The MNO would like you to be employed in order for you to get a contract.* Participants found it challenging to purchase a contract because most were unemployed, which meant they could not comply with the financial criteria such as providing a salary statement and having a good credit rating.

Besides finding smartphones expensive, both employed and unemployed participants mentioned that the price of data was too expensive. David stated: *For me, data prices are too high because I can't afford it.* The sub-theme of affordability was consistent with the document and interview analysis which confirmed that the cost of certain smartphones and data were too high for lower-end consumers. Table 7.2 shows the affordability barriers that vision impaired persons experienced.



**Figure 7.2:** Affordability barriers

For some participants the MNO's prepaid loyalty programme was a big help, as they could use their loyalty points to purchase airtime when they were cash-strapped. Buhle, stated: *That is something very good and I really appreciate that.* Participants stated that in order to save data he used the MNO's free Facebook service, which also excludes images, and is favoured by a few participants. Xolani, a group participant, stated: *I don't use data on Facebook; I use that free Facebook because it already excludes pictures and videos. The message is still there, but as for the pictures and the videos, I'm fine without those because I won't see them anyway.*

Literature shows that it is generally accepted that the cost of technology could be a barrier for vision impaired persons to obtain mobile devices (GSMA, 2019). Findings show that most participants mentioned that affordability, in terms of the cost of devices and data, was a barrier when accessing technology. Most of the participants owned smartphones, with only two owning a basic feature phone. Half of the participants received monthly disability grants, as they were unemployed. Some of the participants purchased phones with their grant money, whilst others received second-hand phones from family members. The findings cast new light on affordability because previous studies mostly focused on the affordability of the hardware. Not much is written about the types of payment options available for vision impaired customers to get devices and their respective benefits.

Often the most accessible phones for vision impaired persons were the most expensive, which limited their choice of phones. Furthermore, the criteria for purchasing a contract were also a barrier, as participants who received grants or had a low income did not qualify for a contract, as the MNO has to comply with credit legislation. Despite the MNO launching affordable entry-level smartphone ranges below R500, most of the participants were not aware of these devices. This was a missed opportunity for them to be able to own an accessible and affordable smartphone. Findings show that student participants in particular benefitted from using certain free services that the MNO offered, such as their loyalty programme and free Facebook offers, which enabled them to remain online when money was scarce. Although affordability played a huge role in determining access to technology, participants regarded inclusive customer service of critical importance. Their experience receiving customer service is described in the section below.

### **7.3.3 ‘Tell us about your latest technology and services’**

Participants wanted to experience marketing campaigns that visibly advertised information about accessible products and services. Stevie suggested that the MNO should embrace inclusive marketing. He stated:

*Look at it in a very inclusive kind of way which says, ‘We’re doing no specific promotion about blindness’, but you can gear all the adverts in such a way that almost by default people with visual loss can know they can knock on the MNO’s door. The way in which marketing is maybe done by a big corporate like the MNO needs to consider that disability is a percentage of our population. Maybe the way in which you approach advertising is to say to people who can’t see that we’ve got some phones that can maybe help you.*

Participants mentioned a few channels that the MNO could use to advertise services. Buhle mentioned: *Use the same channels that you’re using now to do your adverts, but add more information for us on your adverts.* Participants listed their preferred advertising channels for vision impaired persons and their families. Yusuf explained: *Most of the people have smartphones these days, so social media is a priority. We use social media a lot, such as Facebook, because some families might pick it up and to help their families, and that’s the way news can spread.* Eleanor provided reasons for using certain advertising channels. She summed it up as follows:

*Because we are vision impaired and blind, we make use of the radio and TV because it's voice activated. Marketing via the radio will reach more blind and vision impaired persons. The other media is the TV because your ads and your promotions that you put on TV can be verbalised and inclusive to say that we are catering for persons with special needs. Do not just advertise your products, but also mention if you are vision impaired or blind or you have special needs, the MNO can assist. So, your marketing through the print media is a no go; we don't read hard copy print.*

The fact that smartphones and most social media applications were accessible made it easy for vision impaired persons to utilise social networking platforms. However, one participant pointed out that Instagram is not a preferred medium for vision impaired persons. Xolani stated: *We don't use Instagram a lot because it's all about pictures.* The screen reader software in smartphones is unable to read images, although this is changing as a result of image description and the alt text functions. Alt text gives the user the most important information while image descriptions provide further detail. For example, alt text tells someone that there's a puddle on the floor, and image description tells someone that the puddle on the floor is in the middle of the floor and its orange juice (Perkins School for the Blind, 2018).

Findings indicate that most of the participants were not always aware of the affordable accessible smartphones and discounted deals and promotions. This suggests that participants were not aware of accessible product offers due to limited marketing and advertising campaigns. Not feeling part of a brand can make consumers feel frustrated, which may lead to a loss in consumer buying power and market share (Bennett et al, 2013). When brands try to make vision impaired persons feel part of their target market, they tend to become loyal to these brands (Vergos, 2019).

Consumers with disabilities are paying consumers just like other consumers, and therefore participants wanted to see accessible information represented in companies' advertising. During 2017 the MNO hosted a nationwide mainstream marketing campaign that included vision impaired persons and information about accessible products. Such marketing campaigns targeting vision impaired persons with accessible products were conducted in an inconsistent manner, which discouraged them from taking up the MNO's product and services offers. Participants mentioned that advertising should include information about accessible products and services in a more inclusive and consistent manner. Besides using social media

as a preferred source of information, radio emerged as one of the best advertising channels to use, according to participants, as radio and television use voice output (Office for Disability Issues, 2018).

#### **7.3.4 'I want to know how to use my new smartphone'**

Participants indicated that they have a need to understand how to manage data usage on their smart devices so that data does not 'disappear' unexpectedly. Eleanor stated: *They don't teach you how to switch off your data, how to switch off your apps, and all those things.* Many consumers lack the knowledge to understand that many apps and background features, such as automated downloads, consume data in the background. Another student agrees that it is difficult to manage airtime as, even when she hasn't been using data, the balanced seems to run out quickly. Sandy mentioned: *This morning I had no data left and yet I had data left on my phone. Then when my new airtime came in the old airtime just vanished. That I can't understand.*

A few participants stated that they struggle to use some of the latest touchscreen smartphones. Sandy mentioned: *I'm still struggling with the touchscreen phone, and previously I had a Nokia speaking phone; there was a keypad on it which I controlled myself, but now I am totally lost and I'm struggling but I'm getting somewhere.* Prior to touchscreen smartphones, vision impaired persons used keypad smartphones. For some, it was a huge challenge to adjust to touchscreen phones. Stevie stated: *It was an extremely difficult transition to go from the keypad phone to an iPhone 4 and finding your way about it even though it is speaking. It was very difficult to manipulate the iPhone on the touchscreen.*

Getting used to new technology is often a challenge for many vision impaired persons; hence, there is a need for digital literacy. The term 'digital literacy' was first used by Gilster, who defined it as 'literacy for a digital age' (Fulton & McGuinness, 2016). Spires and Bartlett (2012) have divided digital literacy into three categories, namely locating and consuming digital content, creating digital content, and communicating digital content. In order to get skills in these three areas, vision impaired persons need to become familiar with their devices, which will empower them to interact with online resources more fully (Paul, Spires & Kerkhoff, 2017).

Most participants expressed that they would like to receive education on using smartphones effectively. According to participants, vision impaired persons had been used to using accessible keypad smartphones for almost ten years in South Africa. When touchscreen phones were launched in South Africa in 2012, vision impaired persons had to learn from scratch how to use accessible touchscreen phones with built-in text-to-speech software. A few participants, especially older vision impaired persons, stated that they found the transition from using an accessible keypad smartphone to using touch screen devices challenging. The way that touchscreen smartphones are used is different from keypad phones in that one must swipe with two or three fingers. In order to get to know how to use a touchscreen phone for the first time, participants required an understanding of the various settings and features of devices.

When vision impaired persons obtained touchscreen phones for the first time, many verbalised their uncertainty of using the phones. Participants were unfamiliar with the newer touchscreen smartphones, and it became clear that there was a need to implement a digital literacy programme for vision impaired persons. To ensure that the digital literacy needs of vision impaired persons were met, the MNO partnered with various organisations for the vision impaired to launch smart digital training centres. Digital literacy programmes were implemented, whereby dedicated vision impaired technical staff at organisations were trained to provide accessibility training to any vision impaired person requesting it. Those who were interested in becoming adopters of touchscreen smartphones found the digital centres beneficial. They gained first-hand experience of using touchscreen phones by having the opportunity to handle the phones at the centre whilst getting their questions answered.

In addition to receiving training on accessible smartphones and tablets, vision impaired persons were taught about how apps work, how to download them and how to access the internet. Smartphones in general are data hungry, and therefore users need to manage the settings on their devices to prevent data from continually 'disappearing'. So, besides learning to find, use and disseminate information on the internet, they were also educated about managing data usage and using affordable data bundles, which impacted affordability and spending in a positive way.

## 7.4 Sub-theme 3: Inclusive customer service promoting positive experiences

The findings for the sub-theme 'Inclusive customer service' are divided into three categories, which are shown in Table 7.3.

**Table 7.3:** Sub-theme 3: 'Inclusive customer service promoting positive experiences'

| Sub-theme   | Categories  |
|---|---|
| Inclusive customer service promoting positive experiences | 'Call centre staff must understand who they are talking to'                         |
|   | 'Use empathy and not pity when serving us across various stores'                    |
|   | 'Some consultants don't know about accessibility features and disability': training |

The category 'Call centre staff must understand who they are talking to' is discussed in the next section.

### 7.4.1 'Call centre staff must understand who they are talking to'

Sandy stated: *The call centre staff don't really understand what we need, and you can explain it to them and explain it to them; they don't understand.* Not being aware of disability and not understanding the needs of vision impaired consumers is a recipe for delivering poor customer service. I suggest that call centres should focus more on ensuring that agents address consumers in a dignified manner rather than merely prioritising call centre menus, scripts and the number of calls taken. Findings show that participants felt that third-party sales and call centre staff were often not aware of their communication needs.

Stevie agreed with the previous participant as he stated: *I think people who are picking up those phones in call centres, they have no idea who the person is on the other end; if they are able to, they should first see the profiles of the people.* He suggested that agents should, prior to calling a customer, have an idea of the customer's profile in order to establish their payment method status, whether they have a disability, and when they are due for an upgrade. From the participant's comments it seems that certain call centres were given a list of mobile

numbers with the sole aim of just selling a product or service – thus sales were prioritised over customer experience. Stevie related his experience of this:

*The other gripe that I do have about call centres is the amount of people who phone you up who would like you to take another contract out and another contract. My problem is when you tell them, 'Can you not look at my history on your computer? Can't you go to my profile? Then you can see what I already have and what I don't want,' they tell you a long story about needing to have the promotion and that it's important for you.*

A further source of negative experiences for participants was the lack of accessibility awareness that agents displayed. According to participants, it seemed that staff were more interested in pushing sales and promotions than trying to understand their needs. Sales agents were persistent and kept enticing them to take out another contract, even if they pointed out that the phone might not be accessible. When agents recommended incorrect accessible phones for vision impaired consumers, they ended up with an inappropriate contract which did not meet their needs. Contracts were valid for a period of two or three years, which resulted in an unnecessary expense for participants and left them frustrated. Stevie continued to explain:

*The promotion might sound very good to me, but when you ask the agent questions around the accessibility of devices they have, then they do not know. So you end up with making big, big, big mistake by saying, 'It sounds like it can work for me,' and then you end up with contracts which you wish you didn't take.*

The Accessibility for Ontarians with Disabilities Act (AODA, 2019) indicates that agents should rather not guess and pretend to know what vision impaired persons are saying, and if they do not understand their accessibility request, they should take their details, get the correct information, and provide accurate and prompt feedback at an arranged time.

Besides not being aware of accessibility, it seemed that some agents were not aware about disability and how to engage with vision impaired users over the phone. Sandy mentioned that agents sometimes made inappropriate comments whilst in conversation with a vision impaired person. When agents made inappropriate comments, participants felt patronised and disappointed. According to Sandy: *The call centre agent said, 'I know what it's like when you blind.' They tell you that their stepmother was blind.* When agents spoke telephonically with vision impaired persons, it was different than when speaking with someone face-to-face. With telephonic engagements the person's disability was invisible for the agent, even though they mentioned their disability. This made understanding the persons disability and needs more difficult when the agent was not knowledgeable about disability and accessibility.

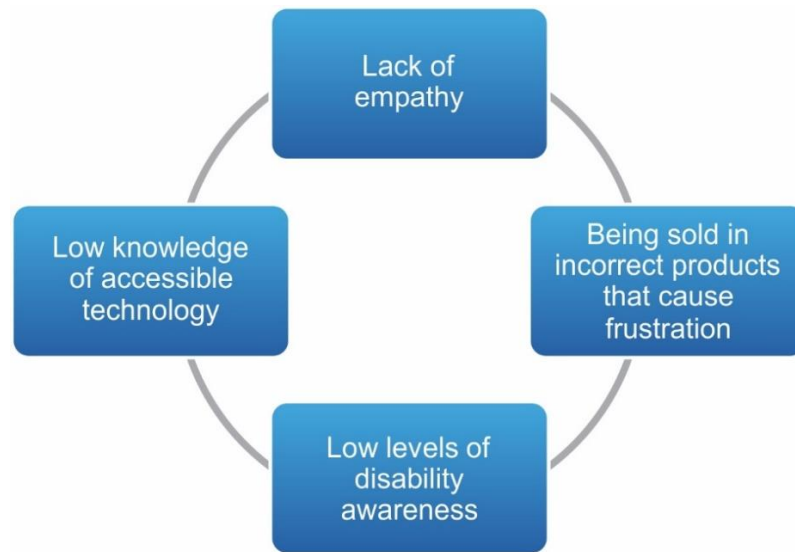
Literature confirms that call centres have been a growing business and that MNOs often use call centres as a centralised point of contact to process transactions and to service the needs of their customers (Amazon Technologies, 2017). The above examples describe the experiences participants had of outsourced sales and third-party call centres. On the other hand, when some of the participants called the MNO's in-house call centres, their customer experiences seemed more positive than when they dealt with agents of outsourced call centres. Buhle, a student participant, stated: *I phoned the MNO's call centre several times, but I never had a negative experience; agents are always assisting. When you're finished talking, they will ask if there's anything more that you want to know.*

Findings show that the MNO utilised a dual call centre model which consisted of in-house as well as outsourced call centres which provided customer care support or performed sales services. After stores, participants indicated that call centres were their second channel of choice for engaging with the MNO, especially when making purchases. One of the main benefits for using call centres to make purchases or resolve queries is that it enables vision impaired persons to buy a product independently without having to rely on others, which hampers their independence. It can be seen from participants' experiences that the best customer service was received when dealing with the MNO's in-house call centres, and that poor customer service was often received when interacting with outsourced call centre agents.

It should be required for call centres to have a high reliability status, as this was a focal point for customer interactions with the MNO, and when consumers experienced poor service, it damaged the company's reputation, which could have resulted in an immediate loss of sales and revenue (Ezerzel et al, 2013). Outsourced call centres are independent entities, each with their own culture and staff. In Section 5.3.2, the data from the interviews is consistent with the focus group findings, which confirm that although the MNO regarded outsourced call centres as important partners, and aligned training, processes and systems, it had no direct control over implementation and staff turnover.

Literature mentions that staff turnover in call centres is a serious and ongoing issue which can be attributed to the fact that these environments are very demanding on staff (Chowdhury, Diba, & Hasan, 2012). Hence, I am of the opinion that disability awareness and training must be ongoing and prioritised so that agents can be skilled in delivering great customer service.

Figure 7.3 displays the barriers that participants experienced when engaging with outsourced call centres.



**Figure 7.3:** Barriers experienced when interacting with consultants from outsourced call centres

Besides call centres, another channel that vision impaired persons interacted with was stores, and this is described in the following section.

#### **7.4.2 'Use empathy and not pity when serving us across various stores'**

Service inclusion is defined as 'an egalitarian system that provides customers with fair access to a service, fair treatment during a service and fair opportunity to exit a service' (Fisk, Dean, Alkire, Joubert, Previte, Robertson, & Rosenbaum, 2018). Stevie mentioned that should store staff embrace inclusive customer service, it would be easier for vision impaired persons to do business with the store. The participant used an example to illustrate how embracing inclusivity would attract people from all customer segments. He stated: *A couple of years ago, the city bought a bus which was aimed at transporting people with severe disabilities. But you know what? People with no disabilities used that bus far more because it was so easy to access the bus.*

Vision impaired participants expected to receive customer service in an equal and fair manner. In order for store staff to successfully render inclusive customer service to vision impaired persons, they need to display a level of empathy towards them. Stevie stated: *Staff think they need to say shame on us. We don't need that. We just need assistance; that's all we need.* The Australian Network on Disability (2019) confirmed that the attitudes of staff are regarded as the most important indicator of evaluating customer service experiences. Hence, the theme of empathy emerged as important for participants, meaning they wanted to receive dignified customer service when dealing with stores.

When interacting with staff, participants mentioned that the attitudes of staff should reflect empathy in order to be able to understand their needs, which should result in rendering great customer service to them as paying customers. Stevie ardently stated that store staff should display empathy when engaging with vision impaired customers. He said: *The person behind the counter may not have accessibility knowledge, but he might have human empathy.* Stevie rated the ability of store staff to display empathy during interactions higher than staff having accessibility knowledge of technology and services. He emphasised that when staff lacked empathy and treated customers poorly, it felt as though his dignity and human rights were being disregarded. When staff seemed ignorant and did not know how to treat a vision impaired consumer with empathy, participants felt discriminated against. For vision impaired persons, experiencing feelings of being treated unfairly was difficult to rectify, as it devalued their worth as a person.

A very interesting finding of the study is that all participants indicated that they preferred purchasing products at franchise stores above call centres, as they valued personal interaction with sales staff. Eleanor mentioned: *At a store you'll speak to a face and not just to a voice, so there's better communication.* Being at a store allowed participants to explain their needs directly to sales staff. Another important reason why participants visited stores was to be able to touch and hold phones that were on display. Eleanor continued to state: *For blind people, touch is very important. You can't touch a phone online.* Purchasing the most appropriate accessible devices was very important for participants as this was the entry point for them to experience inclusion and independence. It was crucial that store staff displayed empathy by showing consumers that they were doing their utmost to meet their needs. This was the case even when staff displayed low accessibility knowledge, as the vision impaired participants placed a high premium on personal interactions with store staff.

Besides wanting to receive positive customer service, vision impaired participants felt strongly about receiving the same level of customer service when interacting with staff at stores in different provinces. All stores should strive to have a unified inclusive mindset in order to render great customer service to vision impaired customers. Stevie explained: *If you go to McDonalds, you have this thing of the McDonalds burger must be the same everywhere. The MNO must strive for this because we've been hearing how different shops provide different customer service. They must have the McDonalds burger mentality.* Decisions consumers made were largely based on buying into an experience rather than just buying a product or service.

Most participants indicated that they had received different levels of customer experience at different stores, which created frustration. Unathi mentioned: *Sometimes staff treat you right; it depends at which store. When they're treating me right, I'm feeling good. Then when they're treating me wrong, I feel bad.* For another focus group participant, the location of the store had an influence on customer service. Yusuf stated: *I found out that in the bigger malls the people are more clued up than in the smaller MNO shops.* These findings are important in understanding the type of franchise and retail model the MNO follows, which could contribute towards consumers having inconsistent customer experiences.

Results highlight that the MNO's retail model consisted of franchise stores which were owned and managed by independent franchisees, and within franchise stores staff performed different roles such as sales and technical roles. When participants visited different stores, findings show, they experienced the following barriers, shown in Figure 7.4, when receiving customer service. Possible reasons for having different customer experiences were: some store staff may have found it challenging to understand the needs of vision impaired persons; some store staff had no experience dealing with vision impaired consumers, which could have made them feel uncomfortable and scared of saying the wrong thing; some stores were seldom visited by vision impaired persons.

The impact of the stores' staff uncertainty was that participants did not receive the best service, which caused feelings of distress. Yusuf summed it up as follows:

*We don't need to feel frustrated when we leave shops, because when you're frustrated you blame the MNO for it, and it's not really the MNO's fault that we don't*

*get the services from the various outlets where your phones are, because what I first do, I want to just cancel my contract or cancel my SIM with the MNO.*

Participants were well aware that the stores were independently owned, but felt that the MNO had a critical educational and monitoring role to play to ensure that all stores were able to render consistent and positive customer experiences. Figure 7.4 display the customer service barriers experienced at stores.



**Figure 7.4:** Customer service barriers experienced at stores

Participants were well aware of the various roles of staff, as they described their experiences with reference to the roles of staff that assisted them. A few participants mentioned that technicians within franchise stores were often helpful. Half of the participants indicated that they received good service from certain staff members at particular franchise stores, especially the stores they visited more often. Yusuf stated: *Three staff members came to me at one stage and said, 'Can we help you?' And when I said, 'I am visually impaired,' they said, 'Right sir, sit down.'* It can be seen that when participants had positive customer experiences at a particular store, they preferred to do business only at that store.

Findings show that should stores implement inclusive customer service practices, this would enable vision impaired persons to participate in a digital society. However, when service providers deliberately or unintentionally fail to include or adequately serve customers in a fair manner, service exclusion occurs (Fisk et al, 2018). This can be mitigated by designing service solutions that respond to human diversity, and by making available to consumers resources that facilitate access to services (Fisk et al, 2018).

Another important way to promote positive customer experiences is that staff should display empathy when dealing with vision impaired persons. According to the Cambridge Dictionary

(9/08/2020), empathy is 'the ability to share someone else's feelings or experiences by imagining what it would be like to be in that person's situation'. Glia (2019) stated that empathy would empower store staff to deliver excellent customer service, as it is about seeing the situation through the eyes of the customer. Embracing service inclusion and empathy would mean that all customers have the ability to receive the same level of service (Fisk et al, 2018). Data shows that some store staff seemed to have displayed low levels of empathy when engaging with vision impaired customers, which resulted in poorer customer experiences. Hence, when store staff respond with apathy, these exclusionary practices result in poor service, which hampers access to technology (Fisk, 2009).

The finding that vision impaired consumers preferred shopping in-store rather than online aligns with the findings of a consumer study, conducted by IPSOS in South Africa, of the shopping habits of disabled persons (Vergos, 2019). These results demonstrate two things. First, participants valued speaking to sales staff face-to-face as they felt it enabled them to explain their needs in a personal manner. Glia (2019) confirms that customers seeking answers wanted to connect with store staff in order to be understood. Second, being able to touch devices on display gives vision impaired participants an idea of what the products look like and what they can do. The COVID-19 pandemic has driven many more consumers to start shopping online, as many stores were closed during the lockdown period. This impacted vision impaired consumers, as it limited their ability to visit stores, and may affect a behaviour change in that more of them are likely to embrace online shopping going forward.

Participants suggested that stores should embrace accessibility and disability inclusion, and that it should form part of a franchisee's contract to ensure that quality customer service is delivered in every customer facing activity. McCoy (2017) mentions that customers have a preconceived notion about what to expect, and that each franchise has a responsibility to fulfil that expectation (McCoy, 2017). In order for stores to comply with the MNO's customer service mandate of providing excellent customer service, McCoy (2017) suggests closer customer service alignment between the MNO and the franchise stores for the benefit of the MNO's brand. Franchisors, in the case of the MNO, provide a framework of the organisation's culture in order to establish similar behaviours and attitudes across the franchise system (McCoy, 2017). Should franchisees not comply with the MNO's culture, strategy and framework, there is unlikely to be a consistent and positive customer experience across stores. An accessible retail environment that embraces a culture of inclusive customer service will promote customer loyalty.

In order for store staff to show empathy and have an understanding of disability and accessibility, they need to be trained to render consistent positive customer experiences to vision impaired persons. Training and disability awareness are described in the following section.

### **7.4.3 ‘Some consultants don’t know about accessibility features and disability’: training**

The training and development of staff in organisations is a critical success factor, as it enables an organisation to maintain business growth and success (GetSmarter, 2019). In the focus group interviews, the sub-theme of awareness raising and training on disability and accessibility emerged as important for participants. Participants stated outright that store consultants should be trained, as many did not know how to treat disabled persons. Sandy stated: *Please teach and educate your store staff to be more understanding, to be empathetic, to understand where we come from, because they look at you as if you’re not for real, thinking, ‘What are you doing with a phone?’*

Participants indicated that training should aim to debunk the myths about vision impaired persons so that store staff would be able to view them as customers who are capable of using mobile phones. According to participants, when consultants were not aware of accessible devices, and how to treat vision impaired persons, they experienced feelings of frustration when not being able to complete a purchase successfully. This was summed up by Yusuf as follows:

*Just to reiterate, the staff of the various shops should be trained so that we don’t need to feel frustrated when we leave their shops, because it leads to blaming the MNO for it. And it’s not really the MNO’s problem or the MNO’s fault that we don’t get the services from the various outlets where your phones are, because what I first do, I want to just cancel my contract or cancel my SIM with the MNO. Take it up with MNO, because it’s an MNO phone, the MNO must take responsibility for staff that’s inadequate to assist us. I think that should be rectified, and then you’ll have more customers that way.*

Stores would attract more customers if their consultants displayed an attitude of wanting to provide the best service by being welcoming and interested in consumers. As a result of their

experiences described in the previous section, participants perceived that store consultants were not well trained. Eleanor stated: *People in franchise stores are not well trained. You could stand there for half an hour; nobody will assist you.* It has happened occasionally that when vision impaired consumers visited stores, there was a delay in welcoming them, as consultants were not able to identify them as vision impaired, even though they used a guide dog or a white cane.

Besides showing empathy when assisting vision impaired consumers, it is important for consultants to have some knowledge of the phones' accessibility features. When store consultants displayed limited knowledge of the accessible features of devices, they provided inaccurate or incomplete information, which caused frustration among participants. This was summed up by Stevie: *You can have all the devices displayed on a table – the most fanciest of phones – but if nobody knows how the phones work, that phone becomes a useless thing, even the cheaper one or the expensive one; it doesn't matter.*

It was important for vision impaired participants that store consultants have an understanding of accessibility, as phones provide the very first opportunity for vision impaired persons to participate in communication independently. For another focus group participant, Sandy, consultants should have product knowledge about the range of accessible and affordable phones that the MNO sells. She stated: *Please educate your staff about the entry-level phones, and then the MNO will remain the better place to be.* Data from interviews with the MNO in Section 5.3.3 about training, is consistent with the focus group analysis, and confirms that training for consultants was of the utmost importance for the MNO.

In order to equip consultants with the relevant skills, the MNO implemented an extensive soft skills training programme for internal and retail staff, and attending training was mandatory. The MNO's Retail Hero programme for store staff included not only technical training, but also behavioural training on topics such as empathy, attitude and product knowledge. Providing such holistic training is something that is supported by literature. Brady and Cronin (2001) mention that consultants' attitudes (e.g. willingness to serve), behaviour (e.g. helpfulness) and expertise (e.g. product and service knowledge) are key attributes that influence customer perceptions. However, despite the MNO's training interventions, participants did not seem to benefit from the training, as poor customer service was experienced at times.

Findings show that participants linked their poor or inconsistent customer service experiences directly to a lack of staff training. A LinkedIn Workplace Learning report found that training for soft skills was the number one priority for talent development in 2018, which shows that modern organisations require adaptable, critical thinkers who can communicate effectively (Spar & Dye, 2018). Participants perceived disability awareness and accessibility training of store and call centre consultants as one of the most important factors to ensure that staff understood their needs and were able to treat them with dignity. The importance of training for employees is rapidly growing and organisations are using this to compete with their competitors in the market (Spar & Dye, 2018).

In Section 5.3.3 interview participants from the MNO cited that the high turnover of staff in the retail environment posed a challenge to maintaining a reasonable standard of product knowledge. I agree that this is indeed a challenge; however, I am of the opinion that even if store consultants had never been exposed to disabled consumers, their basic customer service skills and welcoming attitude would still give vision impaired persons a positive customer experience. Even in the event that store or call centre consultants know nothing about a particular product, they can put the consumer at ease by promising to find the correct information and get back to them. In such a scenario, the consultant’s attitude towards the consumer is the deciding factor as to whether they experience dignified treatment. Figure 7.5 shows a summary of the training requirements for both call centre and store staff.



**Figure 7.5:** Training requirements for frontline staff (call centres, stores and online)

## 7.5 Summary

This chapter addresses the two study objectives that relate to the communication needs of vision impaired persons and the digital inclusion elements that promoted or hindered communication. Findings reveal that the three main communication needs of vision impaired participants were to belong to a connected society and not be left behind, to have access to a reliable network, and to use the internet to access information. A surprising finding is that most participants regarded a reliable network as their most important need.

Literature mostly identifies accessible hardware and software as the most important need when it comes to digital inclusion of disabled people. In this study however, participants indicated that their most important need was to have access to a reliable network as this provided them with peace of mind.

Table 7.4 summarises the communication needs of vision impaired participants.

**Table 7.4** Communication needs of vision impaired people

| Communication needs of vision impaired participants |
|---|
| Belong to a connected society                       |
| Experience an always-on network                     |
| Use the internet to access information              |
| Access affordable and accessible devices            |
| Experience dignified customer service               |

Table 7.5 provides a high-level overview of the of the processes that promoted or hindered digital inclusion of vision impaired persons and is interlinked with Table 7.4.

**Table 7.5:** Processes that promoted or hindered digital inclusion

| Processes that promoted communication              | Processes that hindered communication                                   |
|--|---|
| <b>Connectivity</b>                                |   |
| Reliable network                                   | Experience an always-on network   |
|  | Use the internet to access information                                  |
| <b>Accessible technology</b>                       |   |
| Accessible digital technologies                    | Being left behind and ignored   |
| Inclusive design touchscreen smartphones           | Inaccessible devices  |
| <b>Affordable technology</b>                       |   |
| Affordable entry-level smartphones                 | High cost of smartphones  |
| Loyalty rewards programme                          | High cost of data   |
| Prepaid option for low-income persons              | Contract criteria disqualified grant beneficiaries                      |
| ConnectU – zero-rated platform                     | Unaware of the zero-rated platform                                      |
| <b>Empathetic frontline staff</b>                  |   |
| Inclusive customer service                         | Exclusionary customer service   |
|  | Unempathetic customer service consultants                               |
|  | Inconsistent customer experiences across stores and call centres        |
|  | Nature of the outsourced environment; different organisational cultures |
| <b>Awareness raising, marketing and education</b>  |   |
| Training and disability programmes frontline staff | Consultants' lack of accessibility and disability knowledge             |
| Inclusive marketing and advertising                | Limited advertising targeting disabled persons                          |

## CHAPTER 8

### A FRAMEWORK FOR ENABLING DIGITAL INCLUSION OF VISION IMPAIRED CONSUMERS: THESIS BUILDING

#### 8.1 Introduction

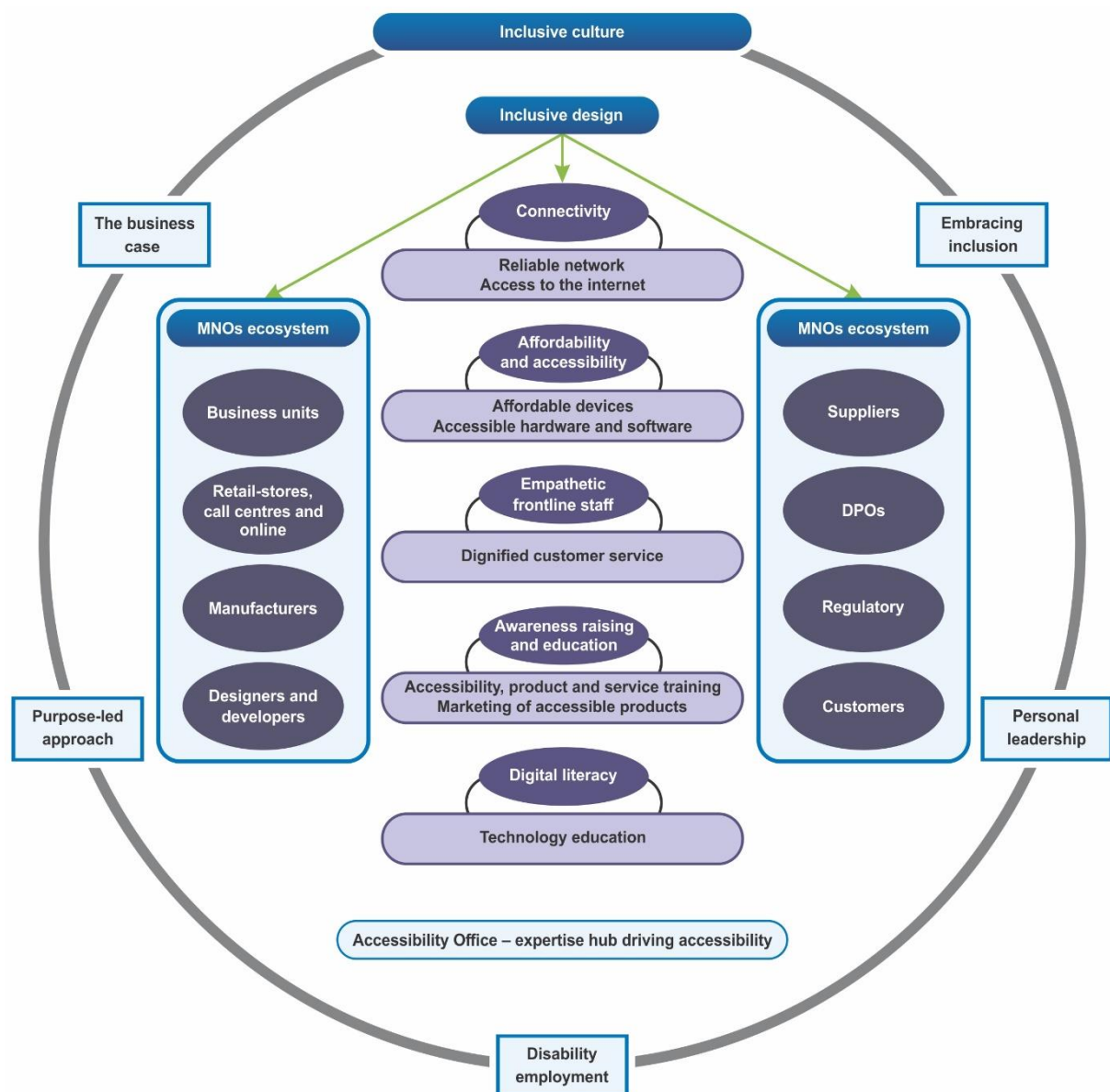
Roy and Lewthwaite (2016) refer to disabled experiences in the Global South as critical silences in that experiences of disabled persons remain unknown; hence, my study attempts to give a voice to the experiences of vision impaired persons in the Global South. In this study, vision impaired consumers described their experiences accessing the technology and services of an MNO in South Africa. Mobile technology has become a lifeline for vision impaired participants and their experiences have hugely influenced their adoption of accessible technology and services.

The findings of the previous chapters are grouped into three main themes. The first theme described in Chapter 5, 'Inclusive culture – a key driver for promoting disability inclusion', shows how an MNO's culture can set the scene to either facilitate or impede digital inclusion. The second theme described in Chapter 6, 'Promoting inclusive design to facilitate access to technology', recommends that the MNO apply an inclusive design approach when developing processes that promote accessible technology and services. The third theme described in chapter 7, 'Understand our needs in order to cater for them', highlights the importance of the MNO understanding the needs of vision impaired persons and to identify the barriers that delay digital inclusion.

We have seen in the foregoing chapters that vision impaired participants were directly exposed to the MNO's processes through visiting stores and phoning call centres. This resulted in vision impaired participants having both positive and negative experiences when accessing technology and services which impact digital inclusion. This chapter concludes with a discussion of the limitations of the study, the implications of the study, and closing reflections.

## 8.2 Framework for digital inclusion

Figure 8.1 proposes a framework for the digital inclusion of disabled consumers. The framework shows how the elements of an inclusive culture and inclusive design approach promote the digital inclusion of disabled persons. Inclusive culture includes embedding elements such as personal leadership, inclusion and a purpose-led approach. Inclusive design suggests focusing on embracing elements of connectivity, affordability and empathetic retail staff.



**Figure 8.1:** Framework for promoting the digital inclusion of disabled consumers

Source: Karen Smit, 2020 from study

In some instances my framework in figure 8.1 aligns with the GSMA model that provides activities MNOs should include in their disability inclusion strategies (GSMA, 2019).

During December 2020, the MNO became one of the first signatories to support the digital inclusion principles of the GSMA.

When vision impaired participants experienced fewer or no barriers to accessing ICT, they felt empowered and included to participate in a connected society, which increased their independence. However, when they experienced barriers to accessing ICT, such as receiving poor customer service or not being able to afford technology, it evoked feelings of frustration and helplessness, which threatened their independence. These challenges were experienced despite the MNO's ongoing efforts to promote the digital inclusion of disabled persons.

I propose that MNOs frame accessibility and disability inclusion as a commercial opportunity and do not regard disabled consumers as charity cases, especially at a retail level. This can be done by becoming aware of the types of solutions that meet the needs of disabled persons in order to encourage the adoption of technology that promotes their participation in society. Therefore, I suggest that technology companies make an effort to embed inclusion and accessibility in their organisations' cultures, as well as to increase their understanding of the needs of disabled consumers in order to diffuse processes that promote access to ICT. It should also be noted that the full potential of mobile technologies cannot be realised without the active participation of governments and regulatory authorities (GSMA, 2020).

Ultimately this will result in disabled persons not only becoming part of a connected society; but also being able to participate in it. Disabled persons will then not only own a device, but will also be able to participate in educational and employment opportunities online. In this manner disabled persons will not be left behind, as they will have access to information that will enable their participation in socio-economic activities and to connect with others.

### **8.2.1 How theory guided the framework for digital inclusion**

The Social Model and DOI theories provided a lens for identifying inclusionary processes that promote the digital inclusion of vision impaired persons. Chapter 2 describes the alignment between the DOI theory and the Social Model of Disability. These two models provided the foundation to develop my framework for digital inclusion as it encourages the study of barriers to ICT. It aligns with my viewpoint that MNOs must view disabled persons

as consumers and take responsibility to implement accessible processes that will eradicate barriers to digital inclusion. In doing this, the Social Model of Disability encourages MNOs to play their role to make positive changes within society, whilst the DOI theory advocates that the diffusion of technology entails meeting disabled consumer's needs.

The theoretical contribution of this work is twofold. Firstly, pertaining to DOI, the study has shown the importance of including consideration of diverse needs and accessibility in the diffusion of innovation. Secondly, aligning DOI with the social model approach requires that we recognise disabled people as a viable consumer segment. This study has shown that when MNOs deliberately apply an inclusive culture and inclusive design approaches, the digital inclusion of disabled people will be promoted.

Although this study has shown the value of the social model approach noting inclusive practices, there are limitations to this approach that must be recognised. The social model has been criticised for not dealing satisfactorily with the emotional aspect of disability experience, as it has insufficient focus on impairment and its consequences (Reeve, 2004). The experiences of vision impaired participants in this study suggest that there are emotional consequences to being denied access to technology, as this effects the dignity of vision impaired persons. The thesis proposes that these are addressed and further explored in future work.

When organisations are genuinely focused on embedding a culture of inclusion, there is a greater chance of including disabled persons in the company's employee and customer base. The next section presents various aspects of digital inclusion that impact the communication participation of disabled persons.

### **8.3 Promoting a culture of inclusion**

The following section describes the five elements of an inclusive culture that promotes inclusion: the business case, inclusion strategies, personal leadership, purpose-led culture and employment of persons with disabilities.

### **8.3.1 The business case for acknowledging disabled persons as viable consumer segments**

Vision impaired participants felt strongly about being recognised as consumers and not as charity cases when they access and pay for technology and services like everyone else. Vision impaired consumers want to exercise their rights by being able to access ICTs in a barrier-free way and as first-class citizens. Disability scholars such as Casey & Onasanya (2020) agree that disability and accessibility should not be confined to a corporate social responsibility project, as disability is not pity or charity but a human rights issue. Dealing with vision impaired consumers through a business case approach acknowledges their human rights and contributes towards promoting digital inclusion. I utilise inclusive culture and inclusive design to frame the adoption of ICT as a business case rather than from a charitable viewpoint. The business case approach aligns with the Social Model of Disability and Pullin's Design theory, as both frameworks place the onus on the MNO to ensure that their technology and services are accessible.

Technology companies that regard disabled persons as valuable consumers and include their needs in their consumer inclusion strategies will experience business benefits such as improved customer ratings, an expanded consumer base, uplifting society, and an increased market share by creating loyal customers. Including disabled persons in consumer strategies will equip product designers to develop innovations that meet the needs of disabled consumer segments. The buying power of disabled consumer segments will remain invisible if companies fail to acknowledge disabled persons as consumers. Ignorance will result in companies not being able to meet the needs of disabled consumers, which will lead to unsatisfied consumers and a missed opportunity for the company to generate revenue and to promote loyalty among their consumer base.

For MNOs, meeting disabled consumers' needs should not be considered 'something special', but should be seen as a business imperative which ties in with the company's customer experience strategy. It is proposed that MNOs consider establishing an Accessibility Office that can act as a central point for driving digital inclusion in partnership with various divisions within the company. I further suggest that the Accessibility Office be positioned within the consumer side of the business, where the focus is on implementing products and processes intended to meet the needs of consumers. In this way, digital inclusion is less likely to be treated as a charity or ad-hoc project. It is furthermore important that disabled consumer segment initiatives are situated at all levels within the organisation,

even when there is a central office (such as the Accessibility office in this case study) so that all business units become aware of accessibility and disability inclusion.

Being regarded as consumers is empowering for vision impaired persons, as it enables them to experience equality. When staff treat disabled persons as consumers, their prejudices are diminished and they realise the benefits of designing technology and services that meet their needs. By including the particular needs of vision impaired consumers in the company's consumer strategy, both the company and the disabled consumer benefit. Benefits for disabled consumers include experiencing dignified customer service and being able to use technology and services that meet their needs, which makes them feel included when they access the company's technology and services.

When developing products, insights of disabled consumer segments must be taken into account if the products are to be appropriate (Kuyini et al, 2015). Identifying key insights of disabled consumer segments will show the importance of focusing on ensuring that technology (hardware and software) is accessible. Together with designing accessible technology and services up front, insights should be further developed which will assist to introduce processes such as customer service to ensure that disabled consumers are able to access technology and services in a barrier-free manner. To operationalise disability inclusion within an organisation, technology companies can use either the integration or inclusion approach.

### **8.3.2 Embedding inclusion into a complex ICT ecosystem**

It is important for technology companies to realise that including disabled persons as part of their company's diversity and inclusion strategy will benefit both the company and disabled persons. Using the integration or inclusion approaches determines the extent to which vision impaired participants are able to participate in a digital economy, which could either promote or impede their digital inclusion. The study shows the complexities of an MNO's environment when implementing processes across a complex ICT ecosystem that consists of a majority shareholder company in the Global North, internal business units, outsourced partners, service providers, retail channels, designers and developers. This study agrees with and builds on the work conducted by G3ict (2011) in that it explains that the diffusion of processes to promote disability inclusion within the MNO industry is a complex process.

The degree of complexity within technology companies determines to what extent a company can realistically follow an approach of inclusion successfully in a high performing technology company where implementing quick solutions for the mass market often overrides meeting the needs of minority groups. I have been grappling with whether implementing and truly living an inclusive approach that keeps accessibility up front within a high-performance and fast-paced technology organisation is fully achievable in a consistent manner. This is because the ICT environment is a fluid one where technology, strategies, staff, systems and processes are continually changing. Therefore, I am acknowledging that the MNO's ecosystem is wide and complex with numerous role-players, such as business units, retail and outsourced partners, and manufacturers. All of these need to work together seamlessly in order for the end user to have a positive customer experience.

As described in Section 5.4.2, technology companies could follow a dual approach when including disabled persons in their organisations, combining the integration and inclusion approaches. Working across a diverse ICT ecosystem that embraces different values makes it more difficult to promote digital inclusion seamlessly, and results in following an integration approach. The integration approach should only be considered when the CEO empowers the Accessibility Office through a direct mandate to drive inclusion, and when the accessibility lead as an accessibility expert is able to influence disability inclusion confidently across business units.

Integration in the context of a technology company refers to accessibility being included in the company, but not being fully and consistently part of the company structures. With the integration approach accessibility does not appear on all business units' roadmaps as it is regarded as an initiative that functions separately and where accountability is mostly left to the Accessibility Office. It should be noted that when utilising an integration approach which is not systemic inclusion, there is a risk that a disconnect will remain between the processes that promote accessibility and the experiences of vision impaired consumers. When embracing a culture of integration, the door remains open for stakeholders, such as internal business units and franchisees, to neglect accessibility and disability inclusion.

One unintentional consequence of not embracing disability inclusion is disablism, which creates institutional discrimination that enforces the belief that disabled persons are not

valuable consumers and full citizens. The impact of this is twofold. First, the behaviour of internal staff could result in a lack of urgency to conceptualise and develop accessible products, and second, the uncertain manner in which frontline staff treat disabled consumers at times could be perceived as negative by disabled consumers. Hence, the biggest downfall of the integration approach is realised at the customer experience level when vision impaired persons experience barriers to accessing technology.

The inclusion approach is characterised by accessibility being fully embedded in the company's systems, structures, processes and roadmaps, with business units automatically sharing the responsibility to promote the digital inclusion of vision impaired persons. Should a company embrace inclusion, disabled people will get opportunities to participate in educational, employment, consumer, recreational, community and domestic activities. When business units include the Accessibility Office in their teams as a critical stakeholder and expert disability advisor, it can contribute towards accessibility proactively, which will also increase the visibility of the office (Horton & Sloan, 2014). The biggest benefit of business units and stakeholders applying accessibility in a proactive manner is that disabled consumers will experience fewer barriers to accessing technology.

Casey (2020) proposes that disability-related objectives and actions should be mapped and measured across a company in order to sustain economic value creation. Hence, when business units embrace a culture of inclusion, strategies, processes and practices become aligned across the MNO's business ecosystem to ensure that end users can access technology and services without experiencing barriers. This uniform approach to inclusivity across the MNO's ecosystem will be the catalyst that ensures that the needs of vision impaired persons are met up front and in a more consistent manner.

As a person with a disability myself, and being familiar with the MNO environment, I do believe that a full inclusion approach would promote accessibility across the business ecosystem, as aligned and coordinated strategies, cultures and efforts would increase the visibility of accessibility, which would result in positive solutions for disabled consumers. The everyday business reality within ICT, which is a demanding and fast-paced environment, should not deter ICT companies from striving to implement full inclusion, as only then can they claim to be a truly diverse and inclusive organisation that strives to meet the needs of diverse customers at all times. Another important factor in promoting digital inclusion is personal leadership.

### **8.3.3 Personal and authentic leadership accelerates digital inclusion**

When CEOs display personal and authentic leadership in promoting inclusion, it accelerates the inclusion of disabled employees as well as disabled consumers. The personal and authentic leadership of CEOs plays a critical role in ensuring that disability inclusion is embedded within the company's culture. CEOs and leadership teams that visibly care about everyone in society, and understand and encourage inclusion, play a huge role in encouraging digital inclusion. Johnson (2017) notes that the level of commitment of CEOs can contribute towards either promoting or ignoring the digital inclusion of disabled persons. When CEOs realise the impact of their personal commitment towards digital inclusion and act accordingly, the rest of the leadership team will be empowered to embrace the same behaviour.

An important factor that often inspires personal leadership is when a CEO, or any senior leadership team member, has personally experienced disability, whether themselves or through others. Having had a personal experience of disabled persons makes disability more real and enables the leader to identify better with disabled persons. This results in the CEO having a better understanding of how accessible solutions can meet the needs of disabled persons and consumers, which is a driver of digital inclusion.

As mentioned in Chapter 5, a focus on leadership to facilitate inclusion is lacking in the Social Model of Disability. Therefore, the model could contradict itself in that it advocates for accessible environments, but it neglects to acknowledge the important role that leaders can play to facilitate enabling environments. The theme on leadership is about more than complying with Social Model principles, it is about MNOs promoting social justice, and the interdependence between vision impaired persons and the MNO divisions together with its franchisees. The MNO's ecosystem, although complex, can achieve disability inclusion through reciprocal learning and relationships. Promoting inclusion is not only up to the leadership, but also depends on the staff embracing a purpose-led culture.

### **8.3.4 Purpose-led organisations increase empathy towards disability**

When employees realise that their actions have an impact on the lives of disabled consumers, they work towards delivering solutions that remove barriers instead of adding more barriers on a disabled customer's journey. They need to understand that their role and contribution is

about more than just achieving targets and meeting deliverables; it's also about contributing towards promoting the communication of disabled persons, which impacts their lives positively. When employees realise the difference their actions make in the lives of disabled people, they become more motivated to view customers' needs through a lens of empathy, which gives them a sense of fulfilment. It is interesting to note that both the MNO participants, from an organisational viewpoint, as well as the vision impaired participants, from a consumer viewpoint, regarded empathy as critical to understanding and promoting digital inclusion. The MNO regarded empathy as critical for staff to become sensitive to the needs of disabled consumers, whilst vision impaired participants expected empathy displayed by frontline staff to result in consistent dignified customer experiences.

Another positive impact of a purpose-led approach is that it aims to provide technology and services that are of real value, and that benefit communities, not developing products just to make a profit without understanding their impact on consumers. The MNOs document analysis show that a purpose-led approach contributes greatly towards ensuring inclusion for all, which aims to bridge the digital divide in society through socio-economic inclusion. Hence, purpose-led organisations have a clearer and deeper understanding of disabled customers' needs, as they design solutions that take the challenges of the disabled community into account. The purpose-led approach is especially valuable in an emerging market economy within the Global South, as being purpose-driven enables MNOs to become super social innovators. MNOs can add real value when they use ICT solutions to address societal issues in a sustainable manner. When profit and purpose are combined, they create a sustainable model for businesses to reinvest profits into consistently providing innovative solutions. A GSMA report (2020) about how telecommunications companies can unlock value, refers to a purpose-led approach as total societal impact (TSI). When this happens, companies can deliver financial returns whilst delivering positive societal benefits. A purpose-led organisation has the ability to recognise the value of employing disabled persons.

### **8.3.5 Disability and employment: a powerful trigger to expand inclusion to consumers**

By first focusing on the employment of persons with disabilities, companies will increase their disability confidence, which will result in expanding their inclusion strategy to their external consumer base. To enable the implementation of disability employment, disability must form

part of the company's comprehensive diversity and inclusion strategy. The strategy must encourage staff to respect those who are different to themselves and to see disabled persons as equal to them, as this is key to reducing prejudice and could open up a path to including others. I refer to this as the 'no more them' strategy. This is especially important, as disabled people are often regarded as being inferior and unable to occupy the same roles as non-disabled employees and consumers. This view aligns with the Social Model of Disability, which states that it is the negative perceptions of people that cause the barriers that prevent disabled people from participating in society.

Disability employment enables an organisation to experience disability, which leads to the realisation that disabled people have much to offer, and will result in staff feeling comfortable when interacting with disabled colleagues. Once disability is embedded in the organisation's culture – when experiences and conversations around disability become commonplace – awareness raising around disability inclusion among staff could expand to considering the needs of diverse consumers. A study done by Accenture (2018) confirms that disabled employees offer real benefits, such as increased innovation and productivity. The MNO's approach to disability employment is a good example of how an internal focus on disability employment led to them expanding their focus externally by embracing consumers with disabilities.

Scholars agree that employing disabled people plays an important role in promoting an inclusive organisational culture (Bonaccio, Connelly, Gellatly, Jetha, & Martin Ginis, 2019). Companies should guard against only focusing on race and gender equality so that disability does not become an afterthought. Companies should endeavour to get the balancing act of diversity right by not allowing various diversity elements such as race, gender and disability to compete with each other, otherwise disability inclusion will continue to lag behind.

To further promote disability employment, top management should create a platform for open and honest conversations, starting at the executive committee (exco) level. Disability inclusion should be openly discussed at board level and should not merely appear as a subheading of the diversity section within a human resources report. Leaders and management should not use the excuse that they are not qualified to speak about disability because they lack experience in this area. To remedy this situation, I suggest that exco members, managers and leaders speak with and get to know disabled staff members within their organisation, join their organisation's disability and employment equity forums, and even connect with external organisations for persons with disabilities. In the case of the MNO, leadership was exposed to

disability on a personal level, and therefore felt confident to employ and embrace disabled persons right from the beginning. Another way of becoming disability confident is to apply my golden rule for understanding and embracing diversity and inclusion in general, which is that management and staff should consider internalising that all people, irrespective of age, disability, gender, LGBT+ status or race, have human rights and should be treated equally and included in all diversity efforts.

To improve disability inclusion across business units, management should see their team through a diversity and inclusion lens. By doing so, management could become aware of the gaps in their diversity approach. The demographics of their team will reveal its diversity status in terms of race, gender, disabled persons and Lesbian, gay, bisexual, transgender, queer and intersex (LGBT+) persons. When teams have no disabled employees, that team lacks diversity, which means that the company cannot say that it is an inclusive company. Often, achieving disability inclusion goals falls flat at middle management level, as line managers focus more on achieving operational targets rather than on promoting diversity and inclusion. Line managers should try to have conversations about disability with their team on a regular basis. Choosing to remain silent about a topic such as disability will keep ignorance about disabled persons intact. This is especially the case when it comes to employing disabled persons which is often regarded as extra effort.

Recently, the COVID-19 pandemic has shown the world and South African companies that remote working can be effective when supported by top management and when employees are provided with the correct tools. The pandemic has accelerated the digital transformation of the workplace, as it has proved that work can be done from home or any other location. Working from home has now become the norm after having been resisted by companies for decades (Singh, 2020). This is especially valuable for the South African workplace, which has been struggling to access the talent of a wider pool of disabled persons, as scarce and inaccessible transport remains one of the biggest barriers for disabled persons to finding employment (Ndopu, 2020).

Together with inclusive culture, inclusive design will ensure that the digital inclusion of disabled persons is promoted.

## **8.4 Promoting inclusive design to facilitate access to technology**

As shown in this study, there are various factors that influence ICT adoption among vision impaired persons in South Africa. Inclusive design encourages companies to take the needs of disabled persons into account up front, which eliminates the need to retrofit and promotes access to technology and services. The next section provides insights into the importance of connectivity, affordability, empathetic frontline staff, awareness raising, and digital literacy when developing technology and services that increase access to ICT.

### **8.4.1 Connectivity via a network and accessible devices are crucial entry points to the digital world**

Connectivity via a quality network using accessible hardware and software enables vision impaired persons to experience numerous benefits, such as accessing the internet to apply for jobs, participating in online education, mobile banking, and being able to contact anyone at any time. A quality always-on network is considered one of the most critical elements for enabling vision impaired persons to experience an improved quality of life, which in turn promotes equality and digital inclusion. One of the most surprising findings from the study is that vision impaired participants considered the MNO's quality network and connectivity to be meeting their biggest need related to their communication participation. I was under the impression that accessible technology or customer service would be at the top of participants' lists. Upon further reflection, I realised that having a trustworthy network met their need to feel secure. Vision impaired participants placed a high premium on having peace of mind to be able to connect with anyone, from any place, at any time. To trust an MNO is of great importance for vision impaired persons, especially in a country such as South Africa where the rates of crime and violence are high. Hence, the MNO is not merely selling hardware and software; it is in the business of selling experiences that empower people to improve their lives whilst feeling safe and secure.

Besides needing a quality network, vision impaired persons are further dependent on accessible devices such as smartphones with built-in screen reader and text enlargement software. As shown in this study, accessible smartphones were the trigger that enabled the MNO to focus on the digital inclusion of vision impaired persons. Without accessible phones, vision impaired persons are unable to utilise MNOs' networks and are cut off from connecting

with others. A huge benefit of accessible smartphones is that vision impaired persons can use their phones independently without having to rely on others for assistance. Accessible smartphones enable vision impaired persons to stay in contact with others and to access the internet. There were 36.54 million internet users in South Africa in January 2020 (Kemp, 2020). Vision impaired persons value having access to the internet highly, as it provides access to information that empowers them and enriches their lives on many different levels – education, employment and health, to name a few. A total of 86% of online South Africans use a smartphone to access the internet (Popimedia, 2019). The recent COVID-19 situation has shown that connectivity has become even more critical for consumers (Singh, 2020). Going forward, the need for connectivity via a quality network and accessible devices will become more and more part of people's basic needs.

Once connectivity has been established, MNOs should keep affordability in mind when diffusing technology and services to the disabled consumer market.

#### **8.4.2 Affordability is key to promoting the adoption of technology**

Due to high unemployment levels and many disabled persons in South Africa receiving a disability grant, they are at risk of being left behind as a result of not being able to afford technology. When disabled persons are disconnected from being online, they feel further disadvantaged, powerless, and dependent on others, whilst being prevented from participating on a socio-economic level. Literature states that affordability is an issue for most South Africans due to high unemployment and poverty levels (Gillwald, Mothibi, & Rademan, 2018). According to the GSMA Intelligence 2016 consumer survey, 64% of participants in Africa mentioned that the cost of mobile phones was the biggest barrier to purchasing a device (GSMA, 2017). Goggin & Newell (2003) confirm that the cost of technology remains a key barrier for disabled persons; so there is a cycle of poverty and inaccessibility. To promote affordability among disabled persons within emerging markets, technology companies could implement deliberate pricing transformation programmes, such as the Social Contract implemented by the MNO.

Such schemes need to provide more affordable and accessible smartphones as well as a zero-rated platform whereby disabled consumers can continue to access information on the internet when they have run out of data. A zero-rated platform enables consumers to access

information, such as news, jobs, health and educational information, for free, which maintains online activities. It should be noted that all low-cost, entry-level devices and zero-rated platforms must also be accessible for vision impaired persons, otherwise they will still not be able to access ICT. Part of the pricing transformation programme should entail enabling those disabled persons who receive remuneration to apply for a low-end contract that includes the monthly device payment and airtime, which is beneficial for disabled persons.

Although the majority of disabled persons belong to the low-end consumer segment, vision impaired persons regard mobile communication as a priority, and will spend money on purchasing a phone, airtime and data. It is interesting to note that the unemployed and grant recipients request discounted and affordable technology but do not expect to get products completely free, as they are aware that this would not be sustainable. According to a World Bank report (2016), among the poorest 20% of households, seven out of ten people in Africa own a mobile phone, and these households are more likely to have access to phones than to sanitation and clean water. This shows the importance of affordability in enabling disabled persons to access ICT and to remain online. The DOI theory does not take affordability into account when technology is diffused to the disabled consumer market which leads to a slower uptake and widens the digital divide. I am suggesting that when applying the DOI theory to Africa, we look at it in the context of extreme poverty, otherwise we will be missing something important. In light of the discussion in Chapter 2 about the roots of the DOI theory in the Global North, we must expand it to the Global South for it to be relevant in the African context. In order to increase the adoption of ICT, frontline staff play a critical role in facilitating the increased uptake of technology and services.

### **8.4.3 Empathetic frontline staff are crucial to enabling access to ICT**

This study has shown that companies can achieve their broader inclusion goals more easily when they start employing disabled persons. When dealing with frontline staff face-to-face or telephonically, vision impaired participants regarded empathy as one of the most important factors. Vision impaired participants felt strongly that empathy is necessary to ensure that customer service provided by frontline staff is fair, non-discriminatory and dignified. Empathy is the secret ingredient that will enable frontline staff to treat vision impaired persons as consumers, rather than merely pitying them because of their disability. Vision impaired persons expect dignified treatment when doing business with companies. Whilst vision impaired

participants acknowledged that accessible hardware, product knowledge and affordability play a huge role in promoting access to ICT, they regard positive customer service as the most critical aspect, and the primary factor influencing their purchasing decision. How frontline staff make them feel during their engagement is more important for vision impaired participants than getting the best deal.

They feel strongly about not being discriminated against, as they want to be treated as worthy of receiving dignified treatment when they are considering spending their money on ICT products and services. According to Ndopu (2020), a disability activist from South Africa, technology in itself does not facilitate communication, but rather empathy and connecting with people of all abilities. Literature confirms that disabled consumers should be treated in a fair manner (Langdon, Lazar, Heylighen, & Dong, 2014). A disabled consumer's loyalty will be lost when frontline staff do not treat them with respect, irrespective of whether the company has the best product or service available at the time.

The attitudes and awareness of frontline staff towards disabled persons plays a crucial role in ensuring that staff feel comfortable dealing with disabled persons. Often, though, frontline staff seem to unknowingly disregard disabled persons as consumers, as they seem to focus more on the disability and not see the person or consumer behind the disability. This could cause frontline staff to view disabled consumers as special or pitiful, and they might assume that disabled persons cannot pay for purchases (van de Ven, Post, de Witte, & van den Heuvel, 2005). Such ignorance causes frontline staff to not act in a disability confident manner, which can result in staff making inappropriate comments or showing negative behaviour towards disabled consumers.

For store and call centre staff to become more disability confident, they should receive behavioural and product training more regularly and be exposed to conversations about disability more often. Once-off disability training is not sufficient to promote disability confidence; disability education needs to become woven into stores' and call centres' customer service culture. When frontline staff are unsure how to treat disabled consumers, I suggest that they apply my golden rule that all people, irrespective of who they are and what they look like, have human rights and should be treated equally and in a dignified manner. Frontline staff must, whilst focusing on making a sale, listen actively to the customer's technology requirements to be able to recommend the correct device and package. This will prevent consumers from purchasing inaccessible devices that do not meet their needs and will lead to great unhappiness and a poor customer experience.

Franchisors, as in the case of the MNO, must provide a framework of the company's culture in order to influence inclusive behaviours and attitudes within the franchise system (McCoy, 2017). The MNO's partners represent the MNO's brand, and when vision impaired consumers have poor experiences accessing technology, they blame the MNO, which results in complaints. Should franchisees not comply with the MNO's framework of building a culture and customer strategy, consistent and positive customer experiences across stores is unlikely to be the norm, which will result in the ongoing delivery of poor customer service. As mentioned in Chapter 7, vision impaired participants referred to wanting to experience 'the McDonalds burger' mentality, which indicates that they want to receive consistent service and products across all stores. When disabled consumers feel that the MNO truly cares about them, the MNO wins their loyalty, thereby increasing their market share. The work of both Thomas (1999), a social model disability scholar, and Rogers (2003), a DOI scholar, mention the importance of taking empathy into account when dealing with consumers. Rogers (2003) furthermore proposes that frontline staff should be selected who are able to identify with the needs of others. Thomas (1999) advocates that the Social Model of Disability be expanded to include relationships between non-disabled and disabled persons in the context of service delivery exchanges. She takes the dynamics of relationships into account by focusing on the impact of people's attitudes – in this case, between frontline staff and disabled consumers – as the meanings behind conversations can hinder or promote access to ICT. To make engagements between frontline staff and consumers more meaningful, it is important that awareness raising efforts are conducted with MNO staff at all levels of the organisation.

#### **8.4.4 Raising awareness about disability: a never-ending story**

Awareness raising remains vital for ensuring that vision impaired persons experience barrier-free access to ICT. Awareness raising entails having conversations about disability and accessibility in order to influence people's perceptions about disability and disabled persons. In order for technology companies to be able to focus on disability it is imperative that awareness raising efforts form the foundation of disability inclusion initiatives. Article 8 of the UNCRPD (2006) states that awareness raising about accessibility is of the utmost importance, and encourages organisations throughout society to implement awareness initiatives (CRPD, 2006; McCormick, 2002). Awareness raising produces the benefits of promoting respect and

dignity for disabled persons, combatting prejudice, stereotypes and harmful practices, and an increased recognition of disabled persons' capabilities (UNCRPD, 2006).

I have identified three key stakeholders that require continuous awareness raising, namely the MNO's internal business units, outsourcing partners, and vision impaired consumers. For internal business units and outsourcing partners, awareness raising draws attention to attitudinal barriers with the aim of combating prejudice and practices that create barriers to ICT access. Awareness sessions need to focus on increasing staff's level of understanding about disability and accessibility. I have experienced first-hand that often management and staff are not unwilling to promote accessibility; they are simply not aware that disabled persons are part of society and their consumer base. Once they are made aware of and understand the needs of disabled consumers, staff become inspired to fulfil the company's purpose of providing inclusive products. Raising awareness about disability with frontline outsourced call centre partners and retail staff on a consistent basis is absolutely crucial, as they interact directly with disabled consumers, and it is here that disabled consumers have negative experiences.

Another element of awareness raising entails the MNO taking the initiative to raise awareness about its products and services among the vision impaired consumer segment. Being made aware of the MNO's accessible technology and services may help to foster positive attitudes towards the MNO among vision impaired persons. Informing vision impaired consumers about the latest accessible technology and services empowers them to make informed decisions when purchasing technology.

In the MNO's case, vision impaired participants in this study encouraged the MNO to embrace inclusive marketing and therefore awareness raising about technology and services. When MNOs do not embrace awareness in their marketing efforts, it could cause disabled persons to feel excluded from the MNO's overall brand. This could create feelings of frustration which could result in a loss of consumer buying power and market share (Bennett et al, 2013). The DOI theory does not emphasise the importance that awareness raising efforts play in breaking down barriers such as prejudice and negative practices towards disabled consumers. Instead, the theory mostly focuses on the use of mass media channels, such as radio, to diffuse information. For the DOI theory to apply to the Global South it should take into account the inequality of disabled persons, which is a major contributor to the digital divide. Therefore, to adapt the DOI theory to the African context, I suggest that its concept of communication

channels be expanded to include awareness raising about disability, accessibility, cost and affordability.

#### **8.4.5 Facilitating digital literacy promotes independence**

Digital competence is both a requirement and a right of citizens if they are to be functional in today's society. By learning how to use touchscreen devices confidently and understanding how applications consume data, vision impaired persons are able to use their devices independently, which promotes their participation in online activities. A digital skills report from the International Telecommunication Union (2019) confirms that a lack of digital literacy limits ICT adoption. When technology companies provide digital literacy interventions, vision impaired persons are empowered to become confident users of technology and services. Using and understanding how technology works enables users to become confident, which empowers them to get the full benefits from using smart touchscreen devices and other technologies. Besides getting to know how the devices work, disabled persons also acquire the skills to download applications and manage their device's settings to prevent data being consumed unnecessarily.

### **8.5 Limitations of the study**

This study focuses on determining how the MNO's processes could promote or hinder the digital inclusion of vision impaired participants. It could be extended to ascertain how the MNO's processes hinder or promote the inclusion of persons with other disabilities, such as hearing impairments. This work can be expanded in different ways in order to build new knowledge of how MNOs can promote the digital inclusion of disabled consumers. Interviews were conducted with a sample of vision impaired participants from one DPO and with the management of one MNO. It would be of great benefit if interviews were extended to include management from other MNOs in South Africa and elsewhere in Africa. I would also suggest including a critical stakeholder of the MNO such as franchisees, as they represent the retail side of operations and deal directly with the MNO's customers. It would be interesting to discover what challenges they experience when engaging with the MNO as a business partner, and how they perceive the support they receive from the MNO. By including the MNO's main stakeholders, the range of questions could be expanded, which would provide a more complete picture of how the digital inclusion of disabled consumers is promoted or hindered.

The retail environment is a fluid environment, which makes rendering positive customer service for accessible technology challenging, especially across stores with different owners and cultures. It would be beneficial to do a study to determine how the MNO could clone their inclusive culture and apply it to the independent franchise stores. A further application is to determine how MNOs' processes across the African continent promote or hinder the digital inclusion of disabled persons. By doing this it would be possible to see how the different African regions promote accessibility and digital inclusion. I touched on the intersectionality of gender and disability within the ICT industry, as disabled women experience double barriers. Research on this intersectionality could shed light on the barriers experienced by disabled women working and progressing within ICT environments. This research could have implications for policies in the disability sector.

## **8.6 Implications of the study**

The findings from this research have several key implications for ICT actors, to transform their processes and policies in order to promote digital inclusion.

*Practice implications for technology companies:*

- Pursue inclusion, which will accelerate accessibility.
- Employ disabled persons, as this will promote disability confidence, which leads into consumer inclusion.
- Establish an Accessibility Office to drive digital inclusion.
- Within inclusion policies, disabled persons must be recognised as a viable consumer segment.
- Position accessibility within the commercial side of the business and do not treat it as a corporate social responsibility project.
- Treat disabled persons as customers and not as charity cases.
- Consider how the company's policies of inclusion and empathy are aligned across outsourcing partners and frontline operations in order to ensure that customers with disabilities are consistently treated with dignity and respect.
- Present ongoing awareness raising initiatives that cut across the complete business ecosystem, including internal business units as well as key external stakeholders.

- Affordable products must be accessible, and disabled persons should be made aware of them.
- Build partnerships with DPOs to promote digital literacy.
- Technology companies should partner with DPOs in order to include disabled persons in the conceptualisation stage of developing accessibility solutions.
- DPOs represent disabled persons and when technology companies partner with DPOs and get their guidance and input, they comply with the slogan 'Nothing about us, without us'.
- Engaging DPOs can result in getting a better understanding of the needs of disabled persons, which would enable the company to provide relevant and usable products and services.

*Institutions of Higher Education:*

- Build accessibility and disability inclusion into the university curriculum.
- Student disability offices should become familiar with how to use mobile technology to enhance disabled students' learning.
- Research the impact that barriers to technology have on the dignity and emotional well-being of vision impaired persons.

*Policies:*

- Policies should address the digital inclusion of disabled persons.

## **8.7 Closing reflections**

This study has greatly helped me to develop a better understanding of the dynamics involved in promoting the digital inclusion of disabled persons within an emerging market in the Global South. Although I am an insider researcher, a few of the results are an eye-opener for me. I am of the opinion that stepping away from my operational role into that of researcher enabled me to discover some gems in my own world of driving accessibility within an MNO. The research helped me to make sense of some of the issues in the ICT operational business environment that were not clear to me previously. Conducting research on a deeper level brought the research world and the business world together and helped me to identify the gaps in promoting the digital inclusion of disabled persons within an MNO. The

study outcome contributed towards heightening my own knowledge of digital inclusion and identified areas where I can improve my approach to influencing digital inclusion within technology companies.

Some of the findings of this study I found very interesting. It was surprising for me to learn that vision impaired participants regarded a quality network as their biggest need, followed by dignified customer treatment and affordable and accessible technology. This made me realise how important a good quality network and connectivity is given that disabled persons consider mobile phones to be a source of security. It was interesting to learn that most vision impaired participants preferred visiting stores in person as they felt their needs would be better understood and because they could physically touch the demo devices in the stores. This speaks to wanting to be heard and seen in a society where disabled people are mostly invisible and overlooked. For many disabled people, their daily experience is akin to living under the restrictions of COVID-19 lockdown, as barriers in society prevent them from living their lives freely and participating in society. This is where ICTs have a valuable role to play in ensuring that disabled people are included in all aspects of life.

Going forward, and in light of the COVID-19 challenge, vision impaired participants in South Africa have to consider accessing technology and services via online channels. More importantly, technology companies should ensure that their online platforms, such as websites and applications, are fully accessible to vision impaired persons. This is especially relevant in the current COVID-19 pandemic situation, where retail shops were closed during lockdown and technology could only be accessed via online channels. The accessibility of these channels is critical so that disabled persons can access and use technology in barrier-free ways.

Being in the unique position of working as a female disabled person and driving digital inclusion within an MNO, and listening to the voices of vision impaired participants, has enabled me to gain a deeper understanding of the barriers that hinder digital inclusion. Being a disabled person myself and working with disabled consumers, I understand well how disheartening it can be to experience barriers to ICT and to be cut off from participating in the digital world. The study provided a clearer picture of the MNO's complex business model and illuminated the challenges in getting inclusion embedded across a wide and complex ICT ecosystem.

It shows how the elements of a fast-paced and complex MNO ecosystem can often be misaligned, which makes it challenging to promote digital inclusion in a consistent manner. Because of these challenges, technology companies need to make a deliberate effort to promote digital inclusion. Implementing digital inclusion is possible when there is the necessary will from top leadership, and when the CEO shows personal leadership. The study highlights that when top leaders are personally involved in promoting inclusion, disability will become part of a company's strategy and culture, and won't be treated as an afterthought. Disabled people are customers too, and part of a community and society; they have money to spend on the products they need. Companies that understand that disabled consumers represent a commercial opportunity, and use a diversity and inclusion approach to drive innovations, will increase their consumer base and revenue by connecting disabled people and enabling them to become part of a digital society.

The above reflection relates more to my role in the business. The following is a more personal reflection. I was transported back in time when I attended some of the disability seminars in the Disability Studies Division, which is situated in a building which was previously a well-known hospital. The hospital has been converted into an administration building for various faculties of the University of Cape Town. Walking from the parking area to the seminar venue was like reliving my childhood hospitalisation journey when I used to walk to the ward where I would be hospitalised for months and even up to one year at a time. It was almost as though I was retracing my footsteps. Walking in the long, wide passages and standing in the big old lift, I could in my mind's eye see someone lying in a hospital bed going for X-rays, to theatre or to physiotherapy.

Walking past the various seminar rooms, I wondered which of them used to be the orthopaedic unit, or the occupational therapy unit, or the hydrotherapy unit. I wondered which rooms were the sister's station and the sluice room. Coming into the seminar rooms were professors – academic professors and not orthopaedic surgeon professors. I was never scared to see my specialists because I inherently knew they would make me better and help me to walk again, although the journey was very painful. Now coming into the seminar venue, the academic professors came to examine my research and not my body, although my research does have to do with disabled persons and their needs. Attending seminars in the venue, I knew that academic professors would assist me to learn to walk the academic journey, as I had done my master's degree almost twenty years ago and I am nearly sixty. Initially I felt that I had lost the skill to write a thesis and I needed to learn this skill from the

beginning. Working full-time and studying part-time made the process more difficult as my thought processes were continuously interrupted.

In one of the venues where we had a seminar, there were leg and foot splints on top of a shelf. It reminded me of a time as a child when I wore splints on both my legs for a long period of time. I wondered if the people who wore those splints are walking now, or if they are being used to train medical students. It struck me that my disability journey has come full circle – that, although I have overcome my childhood disability it is still continuing through adulthood. That disabled child spending many months in a hospital ward has now been spending time in a repurposed (ward) venue learning to walk again academically speaking. I fell many times during my academic journey and felt like giving up once or twice.

The academic splints were uncomfortable at times and I was frustrated when progress was not quick enough. My supervisor's favourite saying was 'you're on a journey' – I was indeed. Now that I'm close to completing my thesis, I feel that I can take off the splints, as the academic journey has become easier and I am able to walk with more confidence. Life is a journey for disabled and non-disabled people alike. I am grateful to have done this study. I have enjoyed discovering the results and seeing how I can further improve my role and position so as to influence society to be inclusive of disabled persons in every respect, so that they can have equal opportunities for participation.

## **8.8 Summary**

This chapter shows how digital inclusion can be promoted through a culture of inclusion and of applying inclusive design. The theme of an inclusive culture identified and highlighted the importance of treating disabled consumers as a business case and not as a charity. To successfully implement the business case of disability inclusion, I propose that companies use the integration and inclusion approaches, with the latter being the ideal approach to embed systemic inclusion.

The study shows that personal leadership accelerates digital inclusion, and a purpose-led organisation can increase empathy towards disability. To encourage companies to focus on digital inclusion, I propose that companies first focus on employing disabled persons, which will start and support disability conversations.

The second theme of promoting inclusive design to facilitate access to technology identified elements that companies must focus on to ensure that their operational processes are able to enhance digital inclusion. Through these elements vision impaired persons can become part of a connected society through accessing a quality network and accessible devices.

Findings show that affordability and empathetic frontline staff are key to increasing the adoption of technology. Awareness raising efforts should be a never-ending activity for staff to be continually educated about disability, as without it, disability will just become more invisible, which will increase exclusion. To empower vision impaired persons to use devices independently and to become aware of accessible technology and services, companies must facilitate digital literacy. I end this chapter with closing reflections and by providing several points on the implications of the study.

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## ADDENDUMS



### **Addendum A – Introduction and information sheet for the MNO**

Division of Disability Studies  
Department of Health and Rehabilitation  
Sciences  
Faculty of Health Sciences  
University of Cape Town

**TITLE OF PhD STUDY:** Promoting the communication participation of vision impaired persons via digital inclusion: The role of a mobile network operator's processes.

#### **Who is the research team?**

My name is Karen Smit and I will lead the research project. I am doing my doctoral studies at the University of Cape Town, in the Disability Studies division of the Health Sciences Faculty.

#### **Why is this research being done?**

There are 285 million persons with vision impairments globally, and this is continuously increasing (WHO, 2010). Due to barriers in the environment, many vision impaired persons find it challenging to move around safely, contact their friends and family on the go, and access information and services, which maintains their dependence on others. One of the ways that vision impaired persons strive to enhance their independence and participate in society is to access and use mobile network operators' (MNOs') information communication technology (ICT).

I will be conducting case study research in order to identify and describe how an MNO's processes promote or hinder the communication participation of vision impaired persons through digital inclusion.

#### **Why are employees within your company being invited to take part in the study?**

Your organisation was selected to conduct a case study as it has been promoting the communication participation of persons with vision impairments since 2004. Therefore, it seems that staff show a commitment towards the digital inclusion of vision impaired persons. Due to promoting the communication participation of vision impaired persons, the organisation has data, such as documents and processes, which is available to analyse. Being employed at the organisation is beneficial, as I will be able to identify suitable participants.

Once the study has been approved, I will introduce details of the study to managers via email. Staff who agree to participate in the study will be requested to sign an informed consent form. I will identify thirteen management participants from various business units such as Device Management, Customer Care and Brand Marketing. I will ask several questions which will enable participants to share their experiences in promoting the digital inclusion of vision impaired persons. The interviews will each be one hour long and only one interview will be scheduled with each participant.

Participants can decide what date and time is convenient for them to have the interview, and prior permission will be requested to record the interviews. In order to protect the participants' privacy, pseudonyms will be used in the written dissertation. All information collected will be stored in a safe place so that it will remain private and confidential. To ensure validity of the data, participants will be asked to read the interview transcript to establish whether they agree with the themes that the researcher has identified.

**Are there any benefits for employees or for the company for taking part in this research?**

There are no direct benefits for employees who participate in the research. However, participating in the study has an indirect benefit in that it will enable the researcher to contribute towards academic knowledge. This knowledge could illuminate the digital inclusion of vision impaired persons, which will promote their communication participation.

**What are the risks and discomforts for participants taking part in this research?**

There are very few risks for participants. Some participants may find it challenging to answer questions in an open manner because of the insider status of the interviewer. I will ensure that participants are aware that my role will be that of a researcher. When doing the interviews, I will continue to be authentic and honest, as I am deeply interested in the experiences of the participants.

Should participants become distressed during an interview, I will interrupt the interview to determine if they require the interview to be stopped or rescheduled. Participants are also free to withdraw from the study at any time without giving any reasons and without any consequences that would be to their disadvantage.

**Who will see the information collected about participants during the study?**

The information participants share will be kept confidential so that they cannot be identified. The company and participants will not be identified, as pseudonyms will be used.

**What will happen when the study is over?**

The study results will be shared with those participants who are interested in reading the results of the study.

**Who should I speak to (or contact) if I have any questions about the study?**

The research has been approved by the Faculty of Health Sciences' Human Research Ethics Committee (HREC): Floor E53, Room 46, Old Main Building, Groote Schuur Hospital, Observatory, Cape Town, 7925

Please feel free to contact me if you wish to have more information about the proposed case study or if you have any questions about the rights of the participants.

Thank you for considering my request.

Kind regards,

*K Smit*

**Karen Smit:** PhD student

Faculty of Health Sciences, University of Cape Town

Tel: 021 940 9019 / Email: [karensmit50@gmail.com](mailto:karensmit50@gmail.com)

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Chairperson of the HREC: Professor Marc Blockman

Tel: 021 406 6338 / Email: [Marc.Blockman@uct.ac.za](mailto:Marc.Blockman@uct.ac.za)

## Addendum B – Informed Consent Form for the MNO participants



Division of Disability Studies  
Department of Health and Rehabilitation Sciences  
Faculty of Health Sciences  
University of Cape Town

**TITLE OF PhD STUDY:** Promoting the communication participation of vision impaired persons through digital inclusion: The role of a mobile network operator's processes.

By signing this consent form you agree to participate in an interview to describe the processes that promoted or prevented the digital inclusion of vision impaired persons.

I do not anticipate that there will be any major risks to you being part of this study. I will encourage you to provide input in an open and stress-free manner as I am committed to be open, authentic, honest and deeply interested in the experience of participants.

Should you become distressed during an interview, I will interrupt the interview to determine if you require the interview to be stopped or rescheduled. Should you feel uncomfortable to answer questions at any time, you are free to leave without experiencing any disadvantages.

You understand that you are participating freely. Yes  No

You understand that you can refuse to answer any questions. Yes  No

You understand that you can withdraw from the interview at any time. Yes  No

You understand that the information will remain confidential. Yes  No

Do you agree to have the interview digitally recorded? Yes  No

**Participant's Name:** ..... **Signature**..... **Date:** .....

**Researcher's Name:** ..... **Signature**..... **Date:** .....

**Witness' Name:** ..... **Signature**..... **Date:** .....

## **Addendum C – Introduction and information sheet of the DPO**



Division of Disability Studies  
Department of Health and Rehabilitation Sciences  
Faculty of Health Sciences  
University of Cape Town

**TITLE OF PhD STUDY:** Promoting the communication participation of vision impaired persons via digital inclusion: The role of a mobile network operator's processes.

### **Who is the research team?**

My name is Karen Smit and I will lead the research project. I am doing my doctoral studies at the University of Cape Town in Disability Studies division of the Health Sciences Faculty.

### **Why is this research being done?**

There are 285 million persons with vision impairments globally and this is continuously increasing (WHO, 2010). Due to barriers in the environment, many vision impaired may find it challenging to move around safely, contact their friends and family on the go and access information and services which maintains their dependence on others.

Therefore, persons with vision impairments may have to reorganise their lives and learn new ways of doing things. Almost every aspect of what people do is influenced by digital technology. This is where the use of mobile technology has the potential benefit to promote vision impaired persons' independence and participation in society. One of the ways that vision impaired persons strive to enhance their independence and participation in society is to access and use mobile network operators' (MNOs') information communication technology (ICT).

Hence, the aim of the case study is to identify and describe how an MNO's processes promote or exclude the communication participation of vision impaired persons through digital inclusion. This is relevant because, according to research, literature studying the processes of an MNO to promote the communication of vision impaired persons is an under-researched area.

### **Why are vision impaired persons being invited to take part in the study?**

Vision impaired persons from your organisation were selected to participate in the study as you employ approximately sixty vision impaired staff, which will enable the selection of twelve

participants. Those persons who agree to participate in the study will be requested to sign an informed consent form. During the focus group sessions, several questions will be asked that will enable participants to share their experiences when accessing and using the MNO's services. Two ninety-minute focus group sessions will be held and each focus group will consist of six participants. Participants may propose a date and time that is convenient for them.

Once the study has been approved, the researcher will introduce the details of the study to members via email communication. Prior permission will be requested to record interviews. In order to protect the participants' confidentiality and anonymity, pseudonyms will be used in the written dissertation.

All information which is collected will be stored in a safe place so that information remain private and confidential. To ensure validity of the data, participants who agree will be requested to read the interview transcript to establish whether they agree with the themes that the researcher has identified.

**Are there any benefits for participants or for the organisation for taking part in this research?**

There are no direct benefits for staff who participate in the research. Participating in the study has an indirect benefit in that it will enable the researcher to contribute towards academic knowledge. This knowledge could illuminate the digital inclusion of vision impaired persons which will promote their communication participation.

**What are the risks and discomforts for participants taking part in this research?**

There are very few risks for participants. One potential risk is that vision impaired participants may find it difficult to read the information in documents such as the informed consent form. The researcher will mitigate this risk by asking vision impaired participants to confirm the format in which they would prefer to receive information and documents. The researcher will provide information and documents electronically or in hard copy (large font and Braille). To mitigate travelling difficulties, the two focus group sessions will be held at the organisation's premises.

Should participants become distressed during an interview or focus group session, the interviewer will interrupt the interview to determine if the participant requires the interview to be stopped, paused or rescheduled. Participants are also free to withdraw from the study at

any time without giving any reasons and without any consequences that would be to their disadvantage.

**Who will see the information which is collected about participants during the study?**

The information participants share will be kept confidential so that they cannot be identified. The organisation and participants will not be identified, as pseudonyms will be used.

**What will happen when the study is over?**

The study results will be shared with those participants who are interested in receiving them.

**Who should I contact if I have any questions about the study?**

The research has been approved by the Faculty of Health Sciences' Human Research Ethics Committee (HREC): Floor E53, Room 46, Old Main Building, Groote Schuur Hospital, Observatory, Cape Town, 7925

Please feel free to contact me if you wish to have more information about the study or if you have any questions about the rights of the participants.

Thank you for considering my request.

Kind regards,

*K Smit*

Karen Smit, PhD student  
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## Addendum D - Informed Consent Form for the DPO participants



Division of Disability Studies  
Department of Health and Rehabilitation Sciences  
Faculty of Health Sciences  
University of Cape Town

**TITLE OF PhD STUDY:** Promoting the communication participation of vision impaired persons through digital inclusion: The role of a mobile network operator's processes.

By signing this consent form you agree to participate in an interview to describe your experiences when interacting with the MNO via various channels.

We do not anticipate that there will be any major risks to you being part of this study. However, you could find it challenging to access information in accessible formats. I am requesting that you indicate the format in which you would prefer to receive information; for example, electronically, in large font, or in Braille.

Should you become distressed during an interview, I will interrupt the interview to determine if you require the interview to be stopped or rescheduled. Should you feel uncomfortable to answer questions at any time, you are free to leave without experiencing any disadvantages.

You understand that you are participating freely. Yes  No

You understand that you can refuse to answer any questions. Yes  No

You understand that you can withdraw from the interview at any time. Yes  No

You understand that the information will remain confidential. Yes  No

Do you agree to have the interview digitally recorded? Yes  No

**Participant's Name:** ..... **Signature**..... **Date:** .....

**Researcher's Name:** ..... **Signature**..... **Date:** .....

**Witness' Name:** ..... **Signature**..... **Date:** .....

## **Addendum E – Interview guide of the MNO**

Q1. Please provide your name, job title, job level (top, senior or middle management), gender and business unit name.

Q2. Why is it important for the company to ensure that visually impaired persons are able to access and use mobile technology and services?

Q3. How can leadership ensure that the company's purpose strategy empowers the lives of visually impaired persons?

Q4. How do you ensure that technology and services meet the needs of visually impaired persons?

Q5. What processes has the company implemented to remove barriers to accessing ICT (such as affordability) so that more visually impaired persons can access its technology, products and services?

Q6. What are the benefits for visually impaired persons when they have access to mobile technology and the internet?

Q7. How can the various business units ensure that the needs of visually impaired persons are kept in mind up front when designing or improving processes, products and services?

Q8. Do you think that having an accessibility office adds value to drive the digital inclusion of visually impaired persons across business units? Please provide reasons for your answer.

Q9. How can business units ensure ensure that the implementation of accessible products and services for the visually impaired receives greater priority faster?

Q10. What are the biggest challenges that your business area has experienced when having to design or implement accessible processes, practices, services and offers that meet the needs of visually impaired persons?

## Addendum F - Confidentiality agreement for note-taker



Division of Disability Studies  
Department of Health and Rehabilitation Sciences  
Faculty of Health Sciences  
University of Cape Town

**STUDY TITLE:** Promoting the communication participation of vision impaired persons via digital inclusion: The role of a mobile network operator's processes.

Name of note-taker: \_\_\_\_\_

Before you begin taking notes for the two focus group interviews, I must obtain your consent not to reveal any of the contents of the sessions, nor to reveal the identities of the participants interviewed at the premises of the DPO.

If you agree to these conditions, please sign below.

\_\_\_\_\_  
**Signature: note-take**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Signature: researcher**

\_\_\_\_\_  
**Date**

## **Addendum G – Interview guide for the DPO**

Q1. Please provide your name, role, gender and age.

Q2. Which payment system do you prefer – contract or prepaid – and why?

Q3. What is the biggest challenge you experience when purchasing a contract?

Q4. Is it beneficial for you to be a consumer the MNO? Please explain your answer.

Q5. Which devices do you prefer to use, and why?

Q6. What price are you able to pay for an accessible device?

Q7. Through which channel do you prefer to buy your device and data – at the MNO store, online, telephonically, using the MNO application, or at chain stores? Please explain your answer.

Q8. What are the benefits for you being able to access and use accessible mobile technology and the internet?

Q9. What are your needs and requirements when purchasing the MNO's technology and services?

Q10. What are the biggest challenges you experience when accessing the MNO's technology and services?

Q11. The MNO has a dedicated accessibility office that aims to promote the inclusion of persons with visual impairments. How do you think this office can contribute towards ensuring that vision impaired persons have barrier-free access to technology and services?

Q12. Are you aware of the MNO's accessible technology and services and special discount offers? If not, please explain which channels the MNO should use to raise awareness about accessible and affordable technology, products and services.