Promoting digital skills development for South African incarcerated criminal offenders

Katlego Mohohlwane

1656393

1656393@students.wits.ac.za

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business

FINAL SUBMISSION DATE: 10 February 2021

ABSTRACT

There is a high rate of recidivism in South Africa which can largely be linked to a lack of access to formal employment and unsuccessful social reintegration following incarceration. This status-quo is, in the context of the 21st century, exacerbated by the obviation of digital skills development by the Department of Correctional Services (DCS) during the 'rehabilitation' of incarcerated persons. This study seeks to investigate the socioeconomic benefits that may be realised through developing digital skills for incarcerated persons thereby promoting the need to include these in the DCS' institutional rehabilitation programmes.

To explore why digital skills should be developed within correctional facilities, a qualitative research methodology was applied for collecting, analysing and interpreting language data to identify common themes among various categories of responses and produce findings. Data was collected from a small group of respondents from the financial, retail, manufacturing, social science, and social entrepreneurship sectors and then analysed using a thematic analysis method with an inductive orientation to provide exploratory insights into the kinds of digital skills required for incarcerated persons to achieve economic entry and successful social reintegration as deemed necessary by the respondents in this research. The digital skills composition is categorised as per the Digital Skills Framework One (DSFOne) (van Greunen et al., 2015), and the conceptual framework is based on an adaptation of the New Skills Now Taxonomy (Accenture, 2017) and the Technology Acceptance Model (TAM) (Legris et al., 2003).

This study finds that considering the excessive barriers to formal employment for ex-offenders, predominantly perpetuated by public perception, lack of stakeholder management on the part of the DCS, and skills development for incarcerated persons, ICT practitioner and advanced digital skills may very well be the skills category that could position previously incarcerated persons favourably for formal economic inclusion. Further, the development of digital literacy skills is materially important for the reintegration of incarcerated persons into the digital society. Lastly, the digital leadership capacity of the DCS needs to be developed to

meet the requirement of effectively building digital strategies that would enable the development of requisite digital skills for incarcerated persons and leverage digital platforms to facilitate social reintegration.

KEY WORDS

Incarcerated persons, criminal offenders, digital skills development, South Africa, prison,

DECLARATION

I, _Katlego Letseke Mohohlwane, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

Name: Katlego Letseke Mohohlwane Signature: 

Signed at Centurion_____

On the ……15th…….. day of …….June…… 2020

DEDICATION

All glory and honour be to the Lord our God, who sustains all of our efforts.

This work is dedicated to my people, the Mohohlwane clan: may this introduce the beginning of a prosperity narrative, through academic achievements, in our family.

Furthermore, I'd like to dedicate this research report as an acknowledgement of the incredible work done by interest groups, such as the Inside-Out community Outside-in South African Corrections interest group, for the development of our prisoners, who are one of the most vulnerable groups in our society.

ACKNOWLEDGEMENTS

To my supervisor, Dr Lucienne Abrahams: Thank you for your commitment to good work, love for knowledge, personal sacrifices, and all the encouragement. A special thank you goes to all the participants of this study, as none of this would have been possible without your contributions.

To my wife, Nompumelelo Mohohlwane, my foremost cheerleader: Thank you for your continued support and encouragement, as well as journeying with me through the highs and lows of this learning process. During the difficult times, when I had to dig really deep the thought of you, and of our hypothetical children motivated me to persist and keep on going.

To my mother, Lorraine Mohohlwane, and secondary cheerleader: Thank you for the prayers and encouragement throughout this challenging journey. You gave me the hope I needed to push through.

To PhD candidates, Nangamso Mtsatse and Madalitso Phiri: Thank you for the AtlasTI hook-up, guidance, and tutorials. To Bongumusa Khoza: Thank you for the Perdue Owl reference and tutorial. The support you have shown me has gone an incredibly long way.

To my anti-weekend, anti-life study group, PhD candidates Carol Nuga-Deliwe, Nompumelelo Mohohlwane, and Dr Olusola Olusa: While I'm not sure that I will miss those Department of Basic Education (DBE) study parades every weekend, I certainly do appreciate your unwavering support and camaraderie…and of course the food!

To Dr Glodean Thani and Dr Stephen Taylor: I drew so much strength and inspiration from you both – you are simply awesome! Thank you.

And finally, I'd like to thank the AAA-grade City Group and my Rooted Fellowship community. It is said that if you throw a brick into a gathering of this community it

will hit at least 50 Masters graduates, 30 scientists and 25 doctors. Well, I’m looking forward to being one of that number!

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

AI	Artificial intelligence
DCS	Department of Correctional Services
DSFOne	Digital Skills Framework One
FET	Further Education and Training
HR	Human resources
ICT	Information and communication technologies
IoT	Internet of Things
IT	Information technology
TAM	Technology acceptance model
UNISA	University of South Africa
OPP	Orleans Parish Prison

GLOSSARY OF TERMS

This section provides a list of definitions of key concepts in this study. In the context of this study, the concepts highlighted shall represent the definitions discussed.

Offenders/incarcerated persons: Persons who are incarcerated in a correctional facility, who are either awaiting trial or convicted of a crime and serving a sentence.

Leaders: Persons in management/decision making positions within an organisation.

Digital literacy: The ability of people to use digital platforms (van Greunen et al., 2015).

Sector skills: The ability of people to use digital technologies for the fulfilment of their formal employment responsibilities (van Greunen et al., 2015).

Digital leadership skills: The ability of leaders to exploit digital technologies to enhance business performance and create new or alternative revenue streams (van Greunen et al., 2015).

ICT practitioner skills: The knowledgeability of people to develop, deploy, and manage information technology systems (van Greunen et al., 2015).

Chapter 1: Problem statement and background

1.1 Introduction

In South Africa, the Department of Correctional Services (DCS) is charged with the responsibility of promoting public safety by breaking the cycle of crime and ensuring effective rehabilitation and social reintegration of criminal offenders (Department of Correctional Services, 2018). Although various interventions are undertaken by the DCS to fulfil this responsibility, recidivism within the South African correctional services system remains high (Khwela, 2014). Herbig and Hesselink (2012) found a causal link between crime, incarceration, and recidivism, and, poverty, unemployment, and ineffective rehabilitation of offenders in South Africa. This link calls into question the relevance and effectiveness of the DCS's rehabilitation programmes, particularly in the context of how incarcerated offenders are included in the 21st century digital revolution.

This study investigates if the perceived digital divide between society, industry, and South African offenders, can be ameliorated by helping offenders develop requisite digital skills for participation in the digital economy and digital society.

1.2 Research problem statement

The research problem is that while we do not have data and analysis of how incarcerated persons are being trained in digital skills, it seems as if digital skills development is not happening at all within the South African correctional system. While not much is known about the digital literacy level of South African incarcerated persons, it appears that the DCS is not developing requisite digital skills for them to increase their capacity for socio-economic participation after release from incarceration.

Specifically, digital skills for economic participation would include skills for industry, while digital skills for reintegration into society would include social media skills. In this study, the focus will be on threshold digital skills required for socio-economic re-entry.

1.3 Research purpose statement

The purpose of this research is to investigate the socioeconomic benefits that may be realised through developing requisite digital skills for criminal offenders within the South African correctional services system thereby promoting the provision and attainment of these 21st century threshold skills to enable socioeconomic participation for these people post-incarceration. To conduct this exploratory study, the researcher will investigate the digital skills required for formal employment in a few industries; the basic digital literacy requirements for social reintegration; and the existing training opportunities for digital skills development in the correctional services system.

1.4 Research questions

The main research question is: Why, as part of their rehabilitation process, should the digital skills of South African offenders be developed?

Research sub-questions:

i) What kinds of digital skills should South African offenders develop to participate in formal employment?
ii) How important to the advancement of their social reintegration is the development of digital literacy for South African offenders?

iii) How can barriers to digital skills development within the South African correctional services system be overcome?

1.5 Context of study

1.5.1 Inside South African prisons

The South African correctional system is oversubscribed and, with approximately 165,000 offenders incarcerated across 240 prisons nationwide (Cilliers, n.d.), houses more people than it has the capacity for. The demographic distribution of the sentenced offender population is 1% Asian/(Indian), 18% Coloured, 79% Black, and 2% White (Jules-Macquet, 2014). The Department of Correctional Services (2018) categorises these offenders into three groups: “Children” as those who are younger than 18 years, accounting for 0,1% of the current prison population; “Juveniles” as those who are between 18 and 20 years old, accounting for 2,8% of the prison population; and “Youth and adults” as those who are older than 20 years, accounting for 97,1% of the prison population. The majority of offenders are from previously disadvantaged and depressed backgrounds and have low literacy rates (Sifunda et al., 2008). 39% of sentenced offenders are serving 0–7 years, followed by 31% of sentenced offenders serving 7–15 years, and 30% serving 15 to life (25 years) sentences in prison (Jules-Macquet, 2014).

In 1998, the South African Human Rights Commission (1998) reported that the provision of education was almost non-existent in South African prisons due to lack of educational facilities, materials, educators, and a general disregard by prisons for offenders’ basic human rights to education. Six years later, the Special Rapporteur on Prisons (2004) found that the status quo had not improved and, notwithstanding the few juvenile prisons offering compulsory computer courses, very few facilities had equipment for vocational training.

Both reports found that where vocational training was offered in prisons, this consisted mainly of basic technical skills such as woodwork and motor mechanics. It can therefore be assumed that digital skills training is not prioritised in the South African correctional services system. This assumption is supported by the work done by Soeker, Carriem, Hendricks, Joynt, and Naidoo (2011) when they found in their investigation on the experiences of South African male ex-offenders and the workplace that not only are there no systems to expose offenders to external job opportunities nor is there any reasonable promise to that effect, skills development programmes are focused on soft-skills and technical skills are reduced to woodwork and plumbing. Soeker et al. (2011) further find that post-incarceration, it then becomes largely incumbent on the ex-offender to develop social reintegration skills and motivate themselves which, in an era where social interactions are largely digitised, will further become a hindrance for successful social reintegration, therefore, highlighting a lack in the systematic transitional support system from incarceration to social reintegration. With Chikadzi (2017) finding that post-incarceration support systems for ex-offenders are generally non-existent in South Africa, these assertions should then lead to the assumption, at least, that while the DCS is not effective in addressing restorative and reintegration challenges for offenders, it is ignoring digital skills development entirely. In the 21st century digital context, this will almost certainly further alienate offenders from social collaboration and circumvent them from economic participation completely.

1.5.2 Inside the Department of Correctional Services

One of the DCS's strategic imperatives is to organise a sustainable rehabilitation system focused on the development of incarcerated persons and their reintegration into society through a formal education framework (Cilliers, n.d.). Khwela (2014). However, the DCS's failure to equip offenders with the basic capabilities required to function in society post-release, often alienates the offenders from the broader community and excludes them from access to

economic opportunities such as employment. This then usually leads to recidivism.

For the 2017/18 financial year, the Department of Correctional Services (2018) reported that over 86,000 incarcerated persons successfully completed rehabilitation programmes targeted at improving their literacy; their ability to teach; and the advancement of their psychological, spiritual, and health care needs. The Department of Correctional Services (2018; p.40-41) states that the various vocational training interventions offered are to advance employability and social reintegration following incarceration. These interventions include “Life Sciences, Mathematics, English First Additional Language, Accounting…cabinet making, upholstery, wood machining, wood polisher/spray painting, welding, fitters and turners, textile work/garment making, shoe manufacturing, baking, dairy, piggeries, broiler, layers, vegetables, orchard, small stock (sheep and goats), beef farms, and abattoirs”.

The DCS also reported that during the 2017/18 period a total of 14,577 incarcerated persons acquired new skills through its various skills development programmes, and that 10,996 of these accessed training through adult and further educational training (Department of Correctional Services, 2018). According to the DCS (2018), 1494 parolees and probationers, who had undergone the same skills development programmes, were employed in the same year. This represents an approximate 0,9% employability rate following incarceration. The DCS also established 14 DCS/UNISA hubs (of which only six are currently operational) to enable incarcerated persons to access further education and training. 453 offenders received formal computer-based training through these hubs and were allowed controlled internet access during the same period (Department of Correctional Services, 2018).

The 21st century digital revolution aspires, among other things, to converge human capabilities and automation where complex problem-solving competencies will be delegated to highly educated humans and repetitive, low cognitive jobs will be delegated to machines (Dombrowski & Wagner, 2014). With

the applications of AI and machine learning, however, it might be astute to expect and plan for disruptive implications, even for the well-educated. Digital skills are also intrinsically connected to meaningful social participation in the digital era. For incarcerated persons specifically, it can be argued that socio-economic participation must be encouraged to reduce recidivism and encourage reintegration. Considering the advent of artificial intelligence (AI), automation, robotics, and machine learning; the impact these technologies will have on economic industries' demand for skills; and the skills development initiatives currently prioritised by the DCS, it may be argued that the DCS's current framework for education intervention is not adequately preparing incarcerated persons for active economic participation in the digital era of the 21st century.

1.5.3 International trends in digital skills development for offenders

The Orleans Parish Prison (OPP), located in New Orleans, Louisiana imprisons more people per capita than any other region in the world. Due to barriers such as lack of access to quality employment opportunities and difficulty reintegrating back into the community, the OPP sees the recidivation of over half of all its released offenders, within five years post-release (Castek et al., 2015). It introduced a digital skills development programme, called the OPP re-entry process, in 2011 which sought to equip all incarcerated persons serving between six months and two years in jail with digital literacy skills, that the institution deemed essential for post-release life. These include working on a resume, learning how to complete online job applications, writing a cover letter, mousing, keyboarding, Internet navigation, creating an email account and using email, as well as self-efficacy, confidence, competence, self-regulation, and autonomous behaviours (Castek et al., 2015). Since the inception of this programme, Crastek et al. (2015) reported that there has been a 47% reduction in recidivism at the OPP. Furthermore, the people who acquired these skills now see themselves participating in a new future previously unimagined, develop courage, self-efficacy and confidence, become empowered, and build new relationships with family through a renewed sense of pride, hopefulness, and belief. This outcome

has seemingly emanated from the development of digital literacy skills for this population.

Another study on Australian incarcerated university students found that as digital skills are becoming enablers for effective socio-economic participation (and given the current disadvantages of unreliable internet and computer access in Australian prisons), emphasis needs to be placed on using technology tools to create social systems which support a higher learning culture and facilitate inclusion in digital humanities (Hopkins & Farley, 2015). It is also reported that the British government has acknowledged the importance of equipping prisoners with the digital skills considered as relevant life skills in the 21st century. It is seeking to reduce recidivism of its incarcerated persons, who are primarily from disadvantaged groups, by empowering them with coding skills, that will allow them to work on real-life projects for external clients while incarcerated and beyond (BBC News, 2019).

With the Covid-19 lockdown suspending all external interactions with prison inmates across most prisons which include, among other things, face-to-face interactions with education practitioners, the majority of offenders are now spending most of their time doing 'nothing' due to limited access to digital technologies (Prisoner Learning Alliance, 2020). In South Africa in particular, the effect of interaction suspensions necessitated by the need to manage the Covid-19 pandemic suggests that not only is the majority of the offender population now idle, they are also no longer able to access critical (albeit in short supply) restorative programmes conducted by social workers that would serve to prepare them for social reintegration and 'self-actualisation'. According to Prisoner Learning Alliance (2020), digital education in prison will provide a sense of purpose in the digital era and help offenders with coping mechanisms post-incarceration and some prisons across the world have started to take advantage of this realisation. Some of these examples include prisons in Antwerp, Belgium, whos prisoners have access to e-learning, multimedia, digital financial services, and phone calls through their PrisonCloud technology, while prisons in Finland

have embraced the notion that prison life should resemble outside life and they aim to make this a reality for their offenders through furnishing them with internet access, online banking, video calls, and online education, where prisons in New Zealand have introduced virtual reality programmes for offenders with dyslexia and other learning difficulties, to name a few (Prisoner Learning Alliance, 2020). These initiatives will ensure that not only will offenders not be left behind and be digitally excluded, but they will also continue to build and maintain relationships with their communities and increase their chances for employment post-incarceration through becoming and remaining socially and economically relevant.

Although it has been found that prison authorities across the world should place significant emphasis on developing skills that would advance the attainment of meaningful and remunerated work for offenders as this would facilitate social reintegration and increase employment prospects, very few developing countries embrace digital skills development for offenders with only Egypt cited in the 2018 United Nation's Introductory Handbook on The Prevention of Recidivism and the Social Reintegration of Offenders report for offering computer skills training (United Nations, 2018). This trend is illustrated by the dearth of research conducted on the effects of developing digital skills for incarcerated persons in developing countries and, perhaps further, by the work done by Zinyemba, Maushe, and Mangwiro (2020) where as part of their recommendations for developing a standard offender based manual for rehabilitation for all prisons in Zimbabwe, various skills development initiatives, predominantly life skills, were mentioned and nothing concerning digital skills.

1.6 Significance of the study

This study is significant in contributing to unlocking the personal and societal benefits of equipping South African incarcerated persons with the requisite digital

skills for them to be able to effect sustainable, positive changes in their lives, their families, and their communities. This study also intends to create value for the DCS in its efforts to meet its effective rehabilitation aspirations by providing a framework for incorporating digital skills development in its educational programmes.

1.7 Delimitations of the study

This study will focus on researching appropriate digital skills South African incarcerated persons should be developing and the factors promoting or inhibiting digital skills development within the South African correctional services system. The focus of the digital skills theme will be on the digital literacy, sector skills, and digital leadership skills categories of the Digital Skills Framework One (DFSOne). DFSOne is a digital skills framework which segments the composition of digital skills into digital literacy, sector skills, digital leadership skills, and information and communication technologies (ICT) practitioner skills (van Greunen, Venter, Craffert, Veldsman, Candi, & Sigurdarson, 2015). Given the assumption of low digital literacy skills within the South African prison population, ICT practitioner skills are only discussed very broadly in this research.

The investigation into and the development of other literacy skills within the prison population, such as further education and training (FET) and high school education, are excluded from this research.

1.8 Assumptions

The researcher assumes that employment in the economic sectors (with the application of appropriate due diligence) is possible for previously incarcerated persons based on the merit of their qualifications and skill. The researcher further

assumes that the DCS is not developing the digital literacy skills required by incarcerated persons for successful economic and social reintegration (based on 21st century industry digital adoptions, as well as the proliferation of social media platforms and how these are reshaping how people engage with each other). Finally, the researcher assumes that the non-prioritisation of digital skills development within correctional facilities is due to significant barriers imposed on access to digital tools and a lack of digital infrastructure within the DCS system.

Chapter 2: Literature review and conceptual framework

2.1 Introduction

The general participation of South African offenders in skills and literacy development programmes is very low. Fourie (2015) offers a possible reason for this. He notes that most South African offenders are incarcerated for long periods (more than 20 years) which could affect their motivation to develop skills, as doing so could be perceived as meaningless for both the offenders and the DCS officials. The scarcity of educators and physical infrastructure could also be a deterrent for digital skills development aspirations. Low participation of offenders in skills development programmes is not unique to South Africa. Duwe (2017) also found that the majority of American offenders do not participate in skills development programmes, however, he noted that those who do, have a 59% chance of finding employment post-incarceration.

In this section, the researcher will discuss sector-specific digital skills requirements for 21st century industries; a framework for analysing digital skills; digital skills requirements for effective reintegration into the digital economy and digital society; and digital leadership skills required by the DCS to enable digital skills development within correctional facilities. These skills are foundational for offenders to access employment and integrate into society post-incarceration, as well as essential for DCS leaders to create the environments required to execute appropriate digital skills development interventions for offenders.

2.2 Broader frameworks for digital skills development

The 21st century digital revolution is a paradigm shift from an energy era to an information and knowledge era where operational efficiencies are enabled by the

effective application of ICTs which create the digital economy (Skills Queensland, 2013). As it continues to be necessary for organisations to participate in the digital economy to retain economic viability, Skills Queensland (2013) notes that developing digital skills only for IT professionals is a narrow scope. Skills Queensland (2013) argues that digital skills should be developed for everyone across all industries as all employees are essential for overall socio-economic benefits. The South African government policy aligns with this view through its National Development Plan 2030, that aims to create "a seamless information infrastructure by 2030 that will underpin a dynamic and connected vibrant information society and a knowledge economy that is more inclusive, equitable and prosperous" (National Planning Commission, 2012).

In this context as highlighted above, a useful framework to help us understand the composition of digital skills is the DSFOne, that segments digital skills into four categories (van Greunen et al., 2015), namely:

i. Digital literacy. These are useful digital skills for life (social networking, operating digital appliances, etc.), work, and learning.
ii. Sector skills. These are either generic digital skills or profession-specific digital skills.
iii. Digital leadership skills. These skills are concerned with management's ability to exploit digital capabilities to enhance organisational performance.
iv. ICT practitioner skills. These are specialist development and IT engineering skills.

Therefore, in the context of the DSFOne framework, the term "digital skills" refers to any aspect of the four categories individually or holistically, depending on the context in which the term is used.

A useful framework for applying digital skills is provided by the connectivism learning theory. The connectivism learning theory is influenced by the use of technology and socialization to create knowledge networks where knowledge is

actuated by learners connecting and participating in a diverse, autonomous, open, and connected learning community (Goldie, 2016). In connectivism, knowledge is not only shared through physical contact with people but also through accessing cyber information systems, sharing videos and multimedia, etc. to create an environment of distributive knowledge from the connectedness of people, society, experience, organisations, and the technologies that link them (Goldie, 2016). It is important to note that while the connectivism theory may provide a perspective on how an effective learning culture can be developed and exponentially grow, this theory assumes the existence of a digital platform environment where participants have already acquired the relevant digital literacy skills to function in it. This may not be the case in the South African prison environment.

Another useful theory to consider is the technology acceptance model (TAM), which proposes that people's external environments influence the both the perceived usefulness and ease of use of technology which then determines their attitude towards and intention to use technology, and ultimately their adoption or non-adoption of technology (Legris, Ingham, & Collerette, 2003). As TAM does not consider factors such as affordability and social influence it was argued to be a model best suited to predict ICT use within organisations and help with the facilitation of ICT integration, as organisations usually have the resources to procure the relevant infrastructure (Legris et al., 2003). The TAM model, however, can still be a useful predictor of the adoption of ICT by incarcerated persons in order to develop digital skills in prisons, because, in the prison environment incarcerated persons are not expected to purchase ICT equipment thus affordability is not a factor. As the external environment of incarcerated persons is managed and centrally controlled by the DCS, it will be relatively easy to create the technology environment necessary to achieve any desired outcome.

Not much is known about digital literacy rates of the South African incarcerated population or the digital learning environment in prisons, therefore, while the connectivism and TAM theories will be useful in application, this study will also

use the first three categories of the DSFOne framework to explore the digital skills requirements of the prison population post-incarceration, in order to understand how they can be developed within the prison environment.

2.3 Digital skills for Industry 4.0

The transition to 21st century industries, referred to as Industry 4.0 (Herman, Otto & Pentek, 2015; p.4), is characterised by the deployment of cyber-physical systems (robotics, additive manufacturing, automation algorithms), and sensor networks which are all connected to the Internet of Things (IoT) ecosystem to enable autonomous process execution, monitoring, and decentralized decision making thereby creating smart factories. In manufacturing and service industries, the advent of mathematical algorithms used in technologies such as AI, machine learning, and virtual augmentation, also significantly enhance human efficiencies and capacity (Herman, Otto & Pentek, 2015). The skillsets required for the use of these technologies are, however, practitioner skills which do not apply to all employees of an organisation. Nonetheless, employees in an organisation will need to have certain threshold digital skills like the ability to use digital tools, to function in the digital economy. While it is not the intention of this researcher to discriminate unfairly against incarcerated persons, the focus of this study will be specifically on these threshold digital skills.

Accenture (2017) found that for organisations to keep up with the ever changing business environment, employees in the digital economy are required to co-operate with AI, augmentation, and automation technologies; collaborate with human beings through deep interpersonal skills; have the cognitive capacity to learn new skills; and, be flexible and accessible to work anywhere in a global economy. Specifically, DSFOne's sector digital skills are requisite competencies for employees in organisations competing in the digital economy. Accenture (2017) identifies continuous learning as the foundation for attaining new skills,

learning how to apply digital skills, learning co-operative skills, application skills, and specialist skills. In an environment promoting continuous learning, the Accenture *New Skills Now* taxonomy creates the opportunity for thinking about the continuous growth of an individual and ultimately an organisation. In particular, the infinite loop starts with “cultivate a growth mindset”, which is a prerequisite for the next stages of skills development towards the “specialize for work” point in the loop.

Figure 1 below shows the Accenture *New Skills Now* taxonomy for sector skills and the underlying cognitive capabilities required for competency in the digital economy:

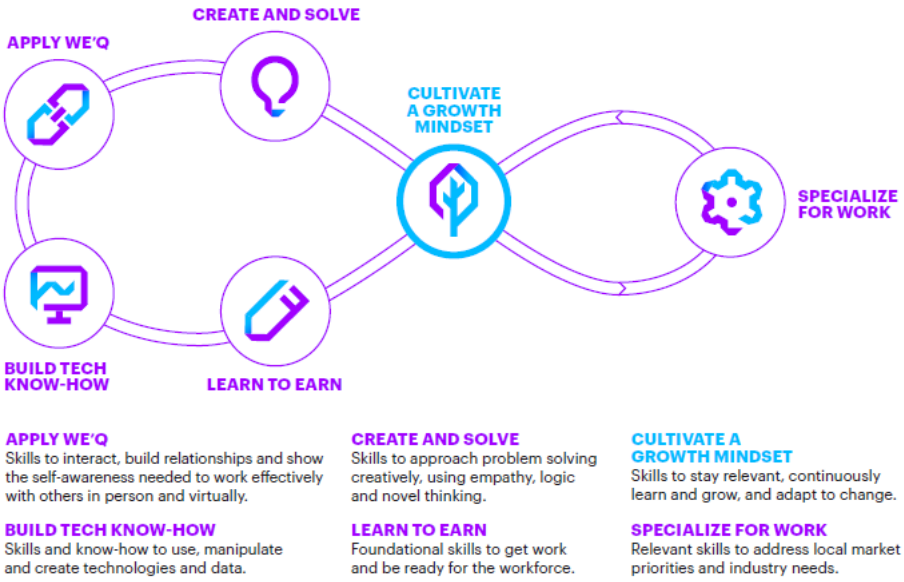

Figure 1: The New Skills Now Taxonomy (Source: Accenture, 2017)

This study will focus on the foundations required for digital skills development in the early digital stage in line with this taxonomy, namely, cultivate a growth mindset, learn to earn, apply we’q (a measure of our collective, collaborative intelligence), and specialise for work. These four features relate to the digital literacy, sector skills and leadership dimensions discussed under the DSFOne categories and in ensuring paragraphs.

Binkley et al. (2012) identified the sector skills documented by Accenture to be necessary for participation in the digital economy and also emphasised how sophisticated thinking, flexible problem solving, and collaboration skills will be key determinants of success in the future world of work and life. Binkley et al's (2012) findings support an earlier Canadian digital skills study which found that the ability to use digital tools for communication, access and process information, learn, and collaborate, are among the most important digital skills to acquire (Chinien & Boutin, 2011). These findings complement the industry perspective sector skills discussed above.

While digital economic opportunities are currently the function of specific business units within South African organisations, most organisations have intentions of redesigning their corporate strategies to become digital-centric and focus on unlocking future opportunities associated with the digital economy (Craffert et al., 2014). To implement successful digital transformations, organisations need to ensure that their employees are digitally capable and continue to develop their skills, by implementing policies designed to establish a culture of continuous learning that will keep the organisation technologically relevant and help retain a sustained competitive advantage (Chetty et al., 2018). South African organisations are acknowledging the significance of growing these skills and prioritising training interventions that facilitate knowledge sharing with peers, e-learning, and coaching and mentoring (JCSE-IITPSA, 2018). The inability of employees to use digital tools for communication, problem-solving, work task fulfilment and everyday life integration is cited by organisations as being among the highest-rated challenges facing enablement and participation in the digital economy (Craffert et al., 2014). Therefore, if incarcerated persons are to enter the working population post-incarceration, they will need these foundational digital skills.

2.4 Digital skills for Society 4.0

Binkley et al. (2012) note that the use of digital technologies, such as video games, evolve social practices and build key competencies and digital literacy skills for everyday societal integration. In their investigation Neumann, Finger, and Neumann (2017) found that the skills required to achieve proficiency in digital literacy are diverse and not clearly defined. According to them, proficiency in digital literacy skills should be measured against the ability to read digital visual images (photo-visual literacy), the ability to create new information through data (reproduction literacy), the ability to efficiently navigate unstructured data (branching literacy), the ability to critically evaluate data (information literacy), the ability to effectively communicate with others through digital platforms (socio-emotional literacy), and, the ability to process high levels of digital data from mediums such as video games. Colbert, Yee, and George (2016) found in their investigation that multiplayer video games also develop leadership skills through collaboration with others and that these skills can then be transferred to the working environment. In a connected society where human interactions are becoming more digital, proficiency in these skills could become societal status differentiators and contribute towards positive social integration and inclusion.

Technology can have positive and negative impacts on society, therefore, digital literacy should not be reduced to a utilitarian view of certain skills and rather, in the context of the digital revolution, be linked to a broader societal view (Gallardo-Echenique, de Oliveira, Marqués-Molias, & Esteve-Mon, 2015). It then follows that the digital literacy definition offered by Ilomäki, Paavola, Lakkala, and Kantosalo (2016), as the ability to understand, interpret, and process media texts from digital technologies should suffice. Digital literacy is one of the driving forces which will be key to shaping the South African future in the next 10 to 20 years (Roux, Viljoen, & Samson, 2019).

However, other studies have found that although there is an increase in the saturation of access and the availability of the internet, digital media, tools, and platforms, most citizens often still lack the ability to use these successfully

(Vītoliņa, 2015). Chetty et al. (2018) found that the leading cause for non-adoption of the internet in South Africa is lack of skills and agree that digital literacy enables knowledge sharing, societal influence and interactions through social media, as well as creating value outputs such as employment. Riel (2012) argues that access to technology, influence, knowledge, and information are determinants of people's interests in mass participation. The use of information technologies consolidates these factors and greatly enhances digital literacy for people who engage them and, therefore, digital literacy should be considered a critical antecedent societal skillset (Riel, 2012).

2.5 Digital skills in leadership

Kane, Palmer, Phillips, Kiron, and Buckley (2016) found transformational leadership, strategic leadership, change-orientation, and an understanding (digital literacy) of technology, to be the primary skills required for successful leadership in digital organisations. Sousa and Rocha (2017) identified innovation and creativity, the capacity to identify and exploit new business opportunities, willingness to take risks, coaching and mentoring, motivation, diversity management, knowledge about different types of technologies, and, the capacity to develop social and relational competencies, as some of the key skills required for managers to effectively lead disruptive digital businesses. Sousa and Rocha (2017) did not find any significant differences in the importance and applicability of these skills for managers across the education, public, health and social work, commercial services, manufacturing, transportation, communication, and the financial services sectors. Therefore, it can be assumed that these skills are transferable to organisations where leadership needs to adopt new technological approaches to resolve legacy problems. For the DCS specifically, this translates into how it solves the problem of societal integration and economic inclusion of offenders by equipping incarcerated persons with digital literacy tools.

Khan (2016), however, found that with interconnectedness, increased transparency, and decision enabling characteristics of digitalisation, most organisational leaders regard integrity as a core attribute for a digital leader as complexities with regard to correct decision making could exert pressure on them. Furthermore, Khan (2016) found that organisational leaders also regarded the need for values like trust, listening, and respect for others as much higher in digital organisations. This finding is not completely disconnected to the views of Kane et al. (2016) and Sousa and Rocha (2017) as it places more emphasis on relational competencies of the leaders of digital organisations while significantly downplaying the value of a leader's digital competencies, as a key requirement to lead 21st century organisations.

Hermann, Otto, and Pentek (2015: p11) describe Industry 4.0 as "a collective term for technologies and concepts of value chain organisation" characterised by five design principles, namely: interoperability, virtualization, decentralization, real-time capability, and service orientation. The successful exploitation and implementation of these designs in organisations will require the calibre of leadership identified by Kane et al. (2016) and Sousa and Rocha (2017). The application of Industry 4.0 technologies will not only enhance operational efficiencies but also create opportunities for new business ventures and models (Hermann et al., 2015). Organisational leaders are, therefore, required to have the capability to lead effective teams in environments where human capacity is augmented by smart technologies and also have the creativity to explore blue ocean strategic opportunities enabled by cyber-physical systems, the IoT, the internet of services, and smart factories. Digital leadership stems from the context of "the leader is the protagonist, the bias point and the focal point; therefore, he is closely linked not only to the structure of the group but also to its dynamic" (Narbona, 2016: p93). Digital leadership has less to do with ICT skills and is more concerned with transformational leadership qualities, which Hoch, Bommer, Dulebohn, and Wu (2016) define as moral, authentic, ethical, and servant leadership. These qualities are paramount to the successful implementation of a transformative digital vision for organisations and individuals.

2.6 Conceptual framework

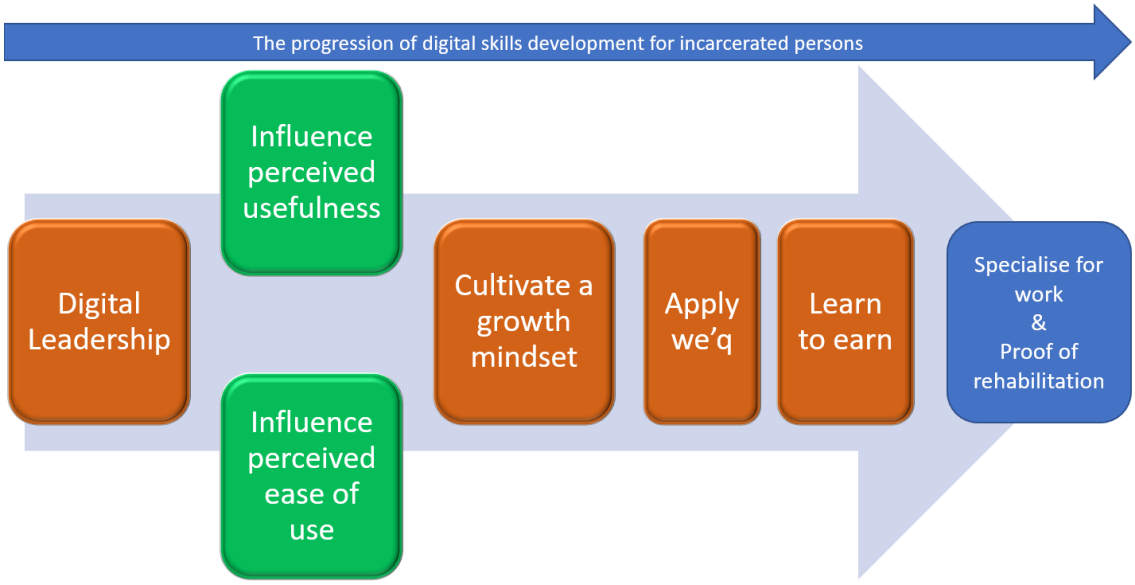

Figure 2: New Skills Now Taxonomy and TAM adaptation of foundations for digital skills development for incarcerated persons

This conceptual framework is based on an adaptation of the New Skills Now Taxonomy (Accenture, 2017) and the TAM model which proposes that people's external environments ultimately influence their adoption or non-adoption of technology (Legris et al., 2003). In this concept, the digital leadership of the DCS is the logical beginning of the process as it is incumbent on them to create an enabling digital environment. The leadership will also be responsible for establishing a "growth-mindset" environment and influencing both the perceived usefulness of digital tools as well as their ease of use. From this, digital literacy can be acquired, and communal learning effected through social network externalities and technology in accordance with the connectivism theory (Goldie, 2016). Once this has been achieved, incarcerated persons will then be able to acquire market-relevant skills and prepare for this workforce during the Learn to Earn and Specialize for Work phases as illustrated in figure 1: The New Skills Now Taxonomy.

2.7 Chapter summary

Attaining digital literacy skills and the cognitive ability for people to continually learn and develop new skills and apply sophisticated thinking to problem-solving are the digital skills most necessary for formal economic inclusion and participation. Digital leadership skills are important in enabling organisations to achieve differentiation (through leveraging technology to enhance business performance) and are generally necessary for organisational digital adoption. For integration into the 21st century society, digital literacy skills are considered to be one of the skills that would ensure acceptance and participation.

Practically, a useful framework to adopt, in order to advance digital skills development, would be the TAM theory to enable the connectivism theory which will in turn, facilitate the process of cultivating a growth mindset, developing foundational skills for economic entry, building digital collaboration and etiquette, and learning specialised economic sector skills.

Chapter 3: Research methodology

3.1 Research design: a qualitative case study

This exploratory study intends to investigate the digital skills required by economic sectors for entry by previously incarcerated persons; the economic sector respondents sentiments about employing previously incarcerated persons; the digital skillset necessary for successful social reintegration; and the digital leadership requirements for the DCS to establish an environment that enables digital skills development for the prison population. As this study is focused on understanding influencing factors from the respondents' perspectives through collecting, analysing and interpreting language data that is non-numeric, a qualitative research approach was deemed to be best suited to achieve the objective of this study and identify common themes among various categories of responses to produce findings that are grounded in an interpretivist position (Astalin, 2013). To achieve this, face-to-face interviews were conducted with participants to produce answers to the main research question. Eisenhardt (1989) describes case-study research design as "a research strategy which focuses on understanding the dynamics present within single settings". Astalin (2013) further notes that case studies analyse persons, policies, or institutions holistically. At a holistic level, this study seeks to provide an understanding of the importance of developing digital skills for incarcerated persons, the institutional barriers that exist to prohibit this, and possible solutions to remediate this reality.

3.2 Data collection methods and research instruments

The data from the South African economic sectors, that was used to provide insights into the digital skills requirements for previously incarcerated persons

and people that have not been imprisoned before, was collected via individual semi-structured interviews with two Human Resources (HR) managers from the retail sector, two HR managers and a Chief Information Officer from the financial sector, and one company owner from the manufacturing sector. The HR managers interviewed were those individuals responsible for supporting and enabling their respective organisation's digital transformation strategies from a skilling perspective.

The data used to provide insights into digital literacy requirements for the effective social reintegration of offenders was collected from individual semi-structured interviews conducted with four social science experts and one social entrepreneur.

The intention was to collect the data required to provide insight into the DCS's readiness, propensity, or inability to equip offenders with digital skills by interviewing leaders from the DCS, however, due to research submission time constraints and the protracted approval process of the DCS to perform research, the researcher did not have the opportunity to conduct these interviews. Therefore, insights into the DCS's institutional readiness to support digital skills development was solicited from the thought leader participants, given their extensive experience of working with the DCS and incarcerated people.

The table below represents the profiles of participants in this study:

Table 1: Profiles of respondents

Categories	Respondent	Abbreviation	Brief profile
1 Financial Sector	Financial Sector Expert 1	FSE1	A senior manager in digital innovations for one of South Africa's biggest four banks responsible for digitizing customer experience across the bank's product offerings.
	Financial Sector Expert 2	FSE2	A senior manager in talent acquisition for one of South Africa's biggest four banks responsible for enabling the organisation's digital aspirations through skills acquisition.

	Financial Sector Expert 3	FSE3	A senior manager in talent planning for one of South Africa's biggest four banks responsible for enabling the organisation's digital aspirations through skill development and management.
2 Retail Sector	Retail Sector Expert 1	RSE1	A senior manager in human resources for one of South Africa's leading retail stores responsible for organisational capacity planning, management, and enablement through human resources.
	Retail Sector Expert 2	RSE2	A senior manager in learning and development for one of South Africa's leading retail stores responsible for enabling the organisation's strategic aspirations through skill development and capacity building.
3 Manufacturing Sector	Manufacturing Expert 1	ME1	Owner and Chief of a small-sized enterprise in the manufacturing sector which deals with remote mover systems, auto levelling and stabilizing systems, lighting systems, and security systems.
4 Thought Leaders in Humanitarian Studies	Thought Leader 1	TL1	A professor at an international college of criminal justice and founder and director of multiple social reintegration programmes and networks for incarcerated persons.
	Thought Leader 2	TL2	A full-time scholar, researcher and academic. A psychology lecturer at a local university and advocate for marginalised South African communities, particularly in the area of rehabilitation for female incarcerated persons. Is part of various local incarcerated persons social reintegration interest groups..
	Thought Leader 3	TL3	A psychology professor at a local university specializing in, among others, community psychology. Academic interests include research in corrections and the community reintegration dynamic. Respondent is a member of various social reintegration interest groups.
	Thought Leader 4	TL4	A psychology professor at a local university specialising in, among others, violence and reconciliation. Academic interests include research in causes of violent crime, juvenile offenders, and community reintegration. Is a member of various local prison interest groups.

5 Social Entrepreneur	Social Entrepreneur	SE1	A social entrepreneur who is a member of various local and international social reintegration interest groups, networks, and organisations.

The semi-structured interview format was chosen as its open-ended nature allows extensive probing, creates the opportunity to explore insights provided more deeply and obtain reactions to new ideas (Adams, 2015). Although the semi-structured method is time-consuming and laborious, and cannot be conducted on a large enough sample to achieve statistical significance, it is best suited to explore "uncharted territory with unknown but potential momentous issues and your interviewers need maximum latitude to spot useful leads and pursue them" (Adams, 2015; p.494). The semi-structured interview guides for the different research group samples can be referred to in Appendices A, B, and C.

3.3 Data preparation, analysis, and interpretation

A thematic analysis method was used to interpret the prominent themes arising in data collected from respondents and to systematically identify common patterns that inform insights into the data set (Braun & Clarke, 2012). To evaluate and identify shared meaning from a data set, an inductive approach is necessary as it dictates a bottom-up approach where data analysis is driven by the data itself to provide exploratory insights derived from the experiential views of the respondents (Braun & Clarke, 2012). For this study, a thematic analysis method with an inductive orientation was, therefore, applied as it was the best option to achieve the researcher's objectives of gaining insight into which digital skills are perceived by leaders and social experts to be important for South African economic sectors, society, and how the DCS can equip incarcerated persons with these skills to ensure their socio-economic prosperity post-incarceration.

The interviews were recorded using the mobile Android application “Voice Recorder”. The recordings were transcribed using the Sonix web automated transcription tool. As the automated transcription tool is not completely efficient in transcribing South African accents the transcripts were, where applicable, cleaned by the researcher while keeping the original meaning of the data. The transcripts were then imported to the AtlasTi software for coding, theme generation, and analysis. A list of one hundred and eighty-five codes was initially generated from the data to create eight organising categories. The figures below show the composition of the codes for each category:

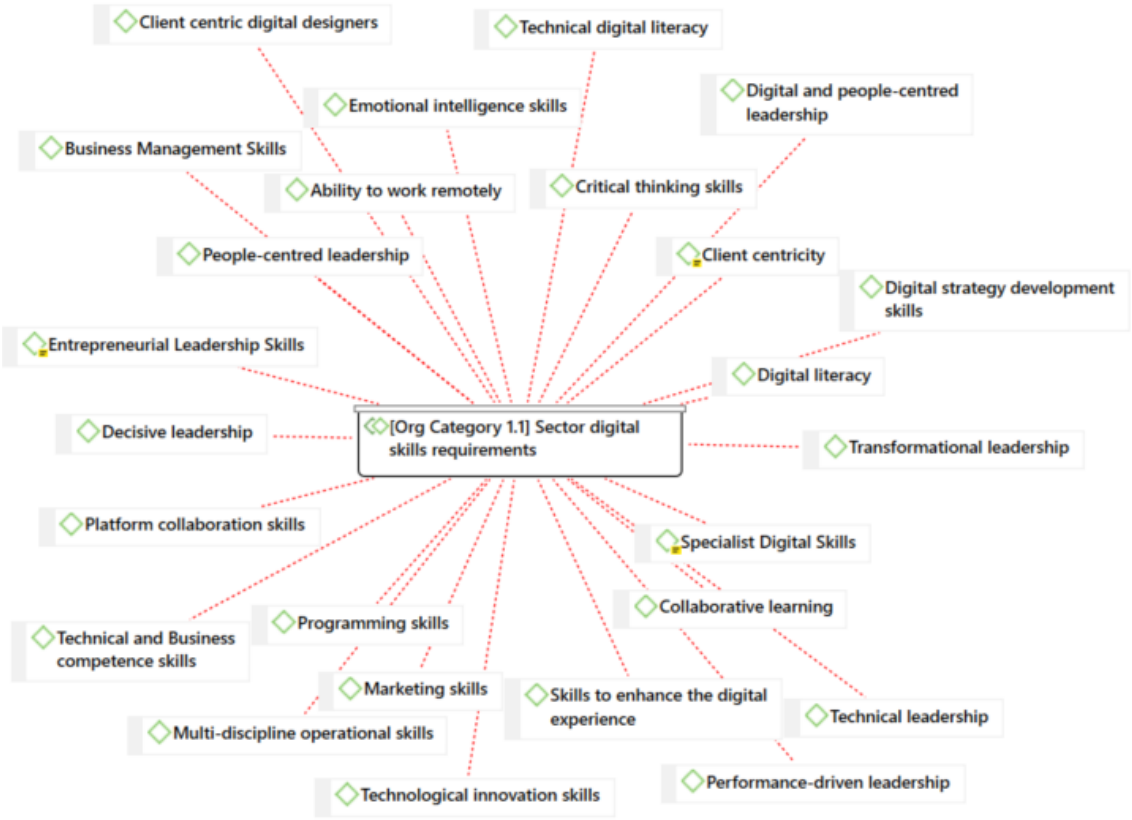

Figure 3: Organising category 1.1

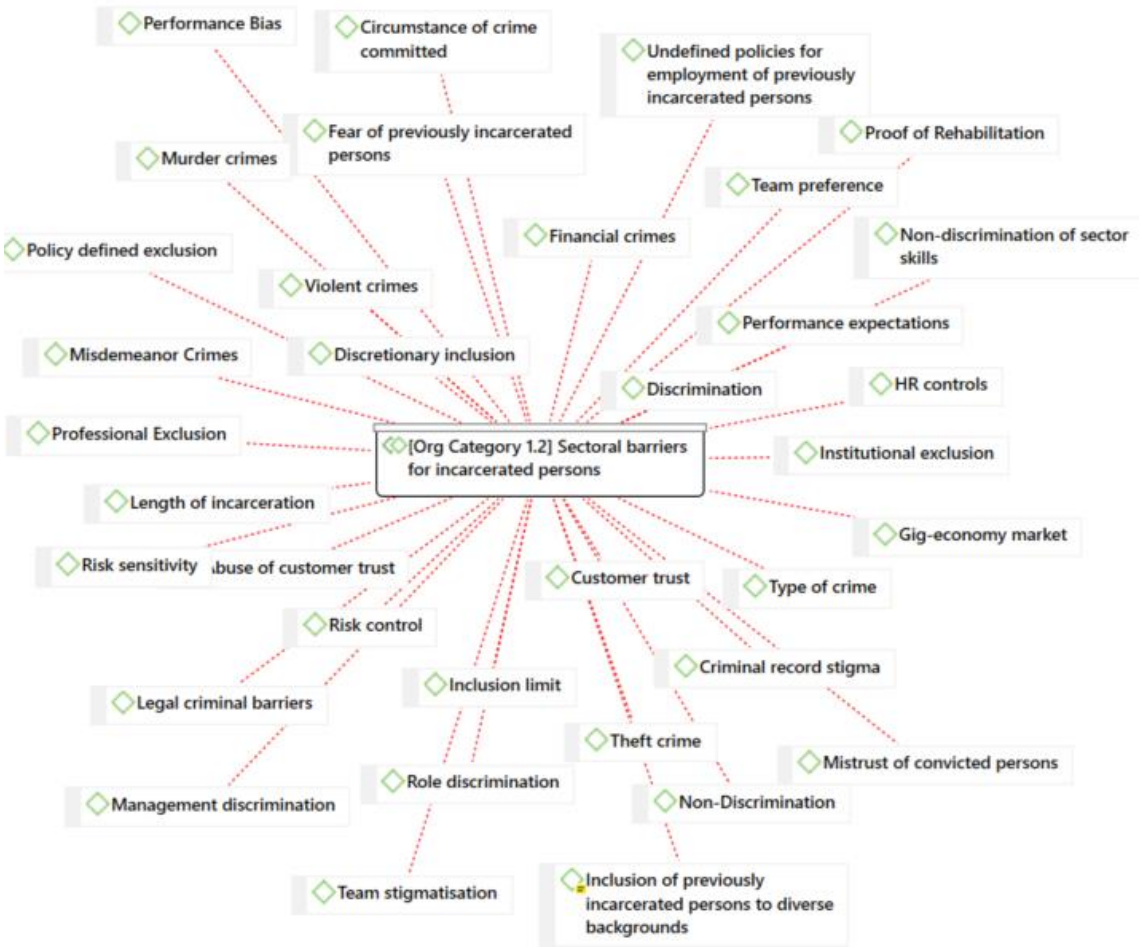

Figure 4: Organising category 1.2

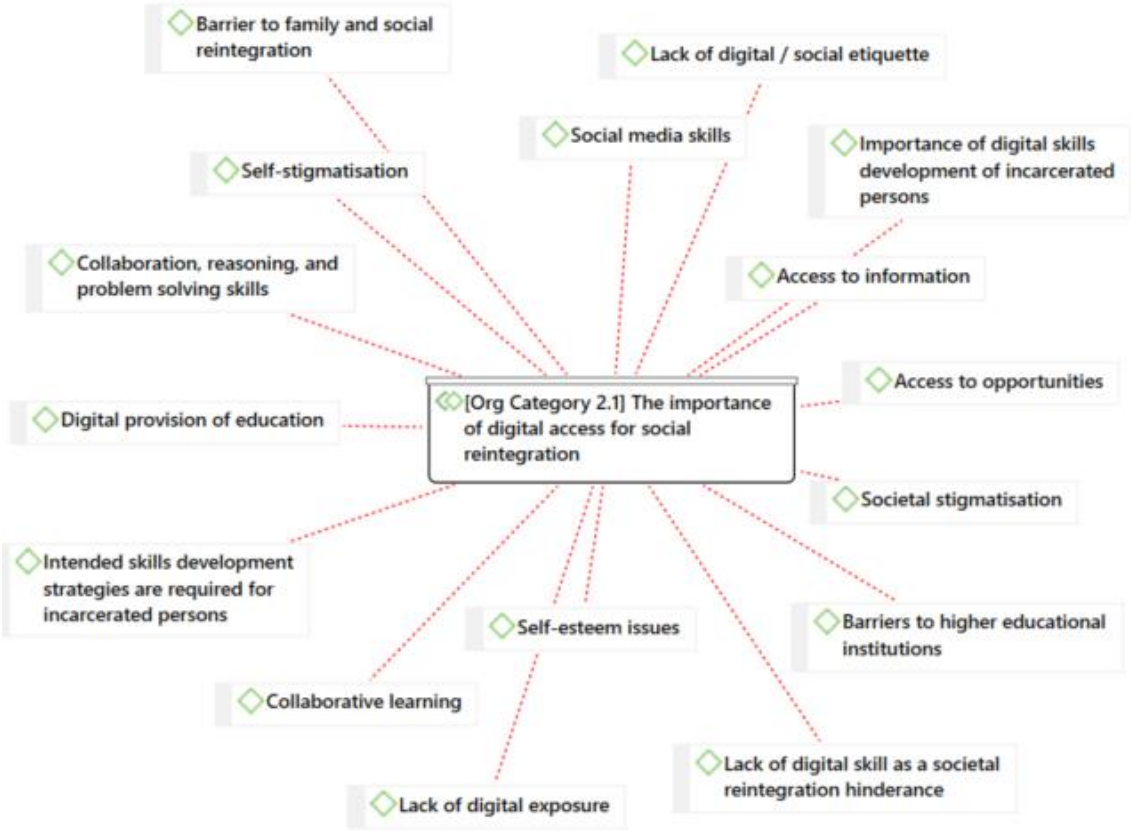

Figure 5: Organising category 2.1

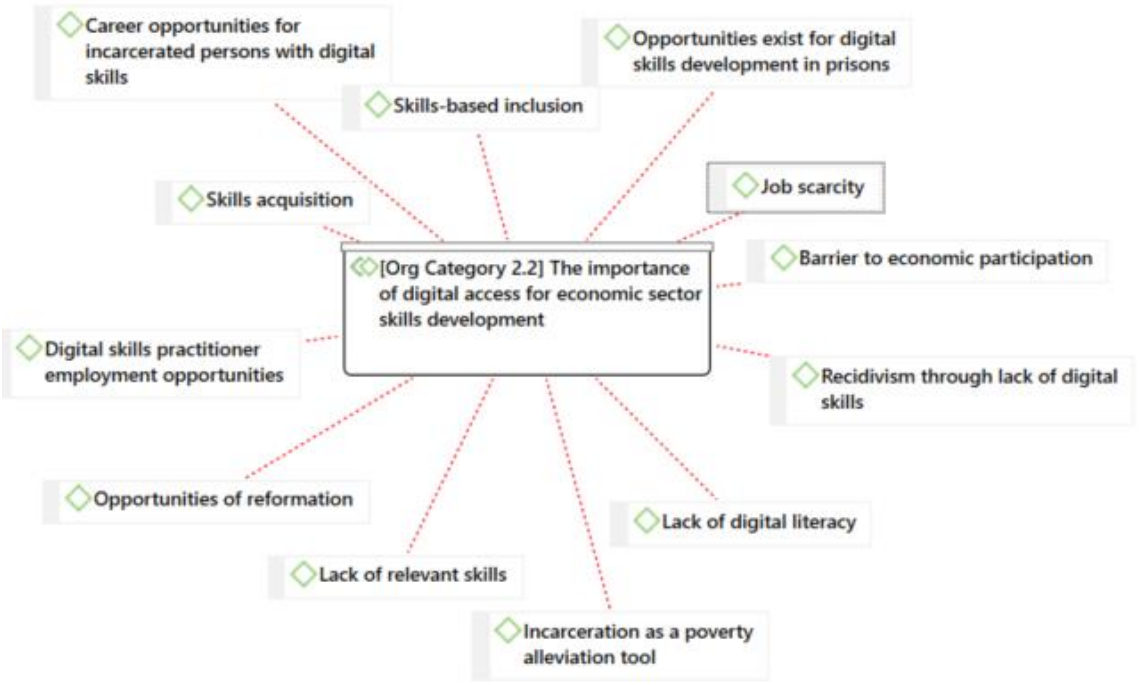

Figure 6: Organising category 2.2

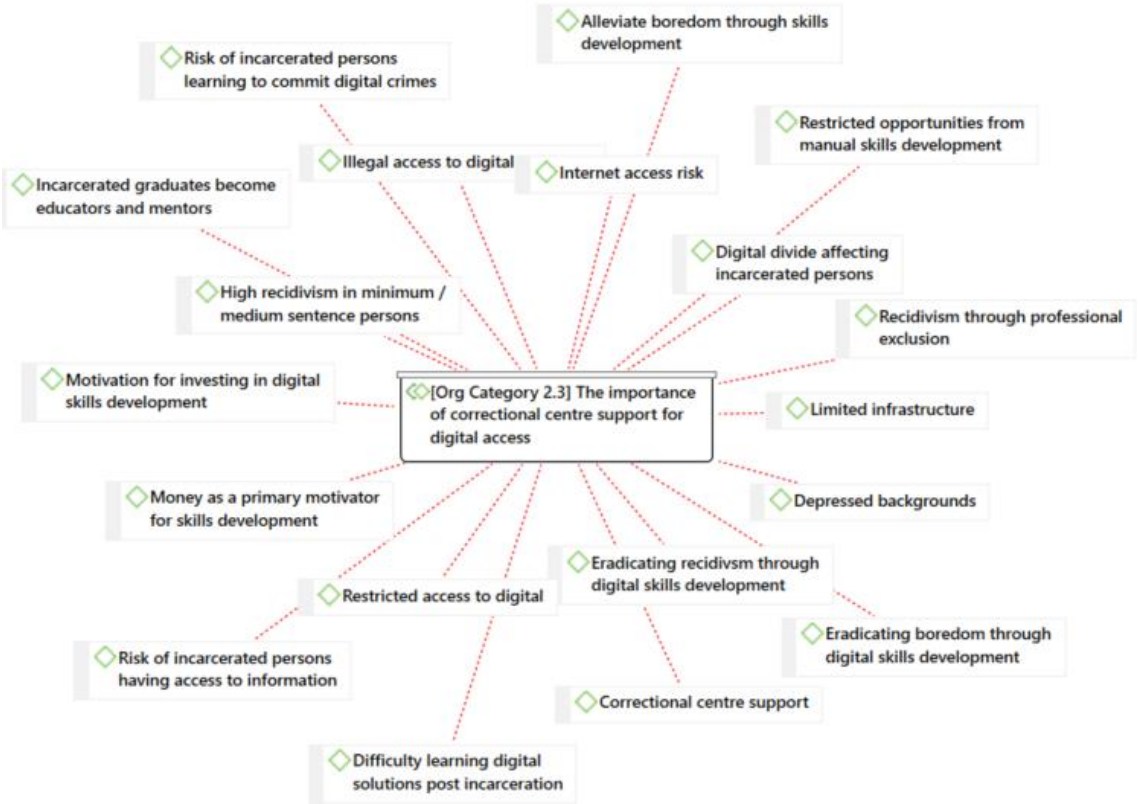

Figure 7: Organising category 2.3

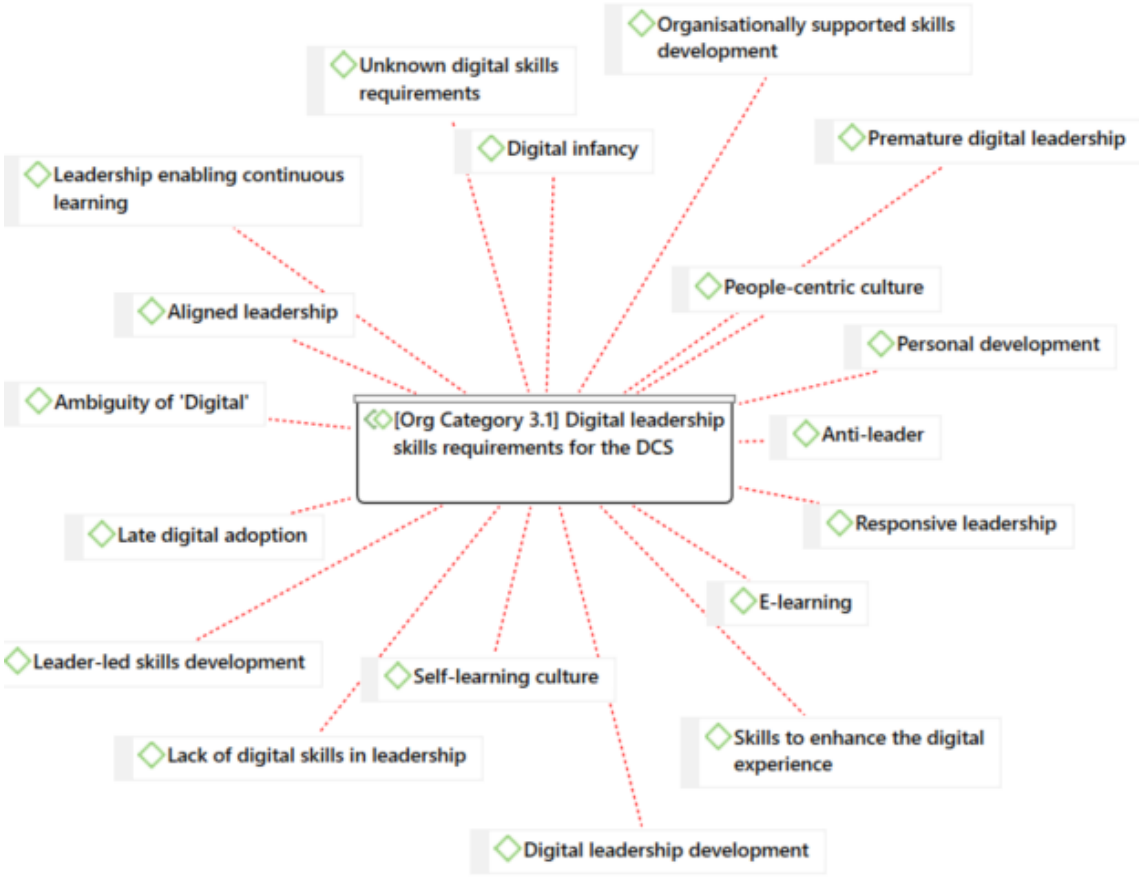

Figure 8: Organising category 3.1

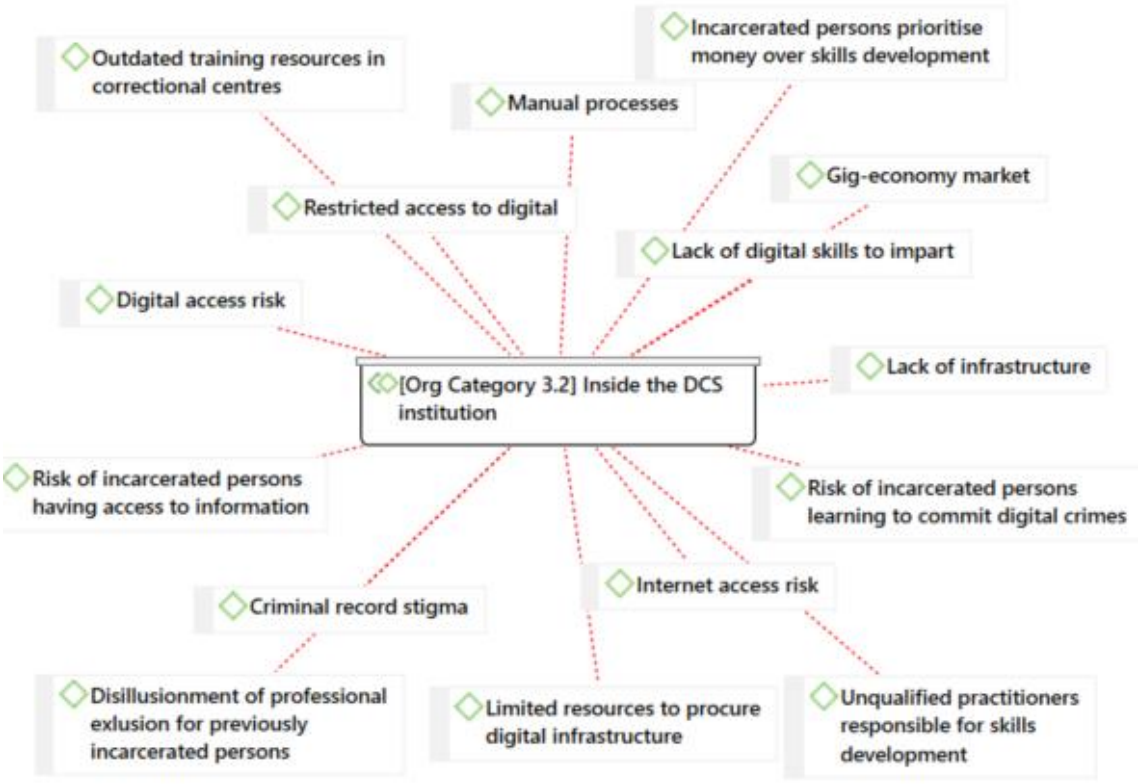

Figure 9: Organising category 3.2

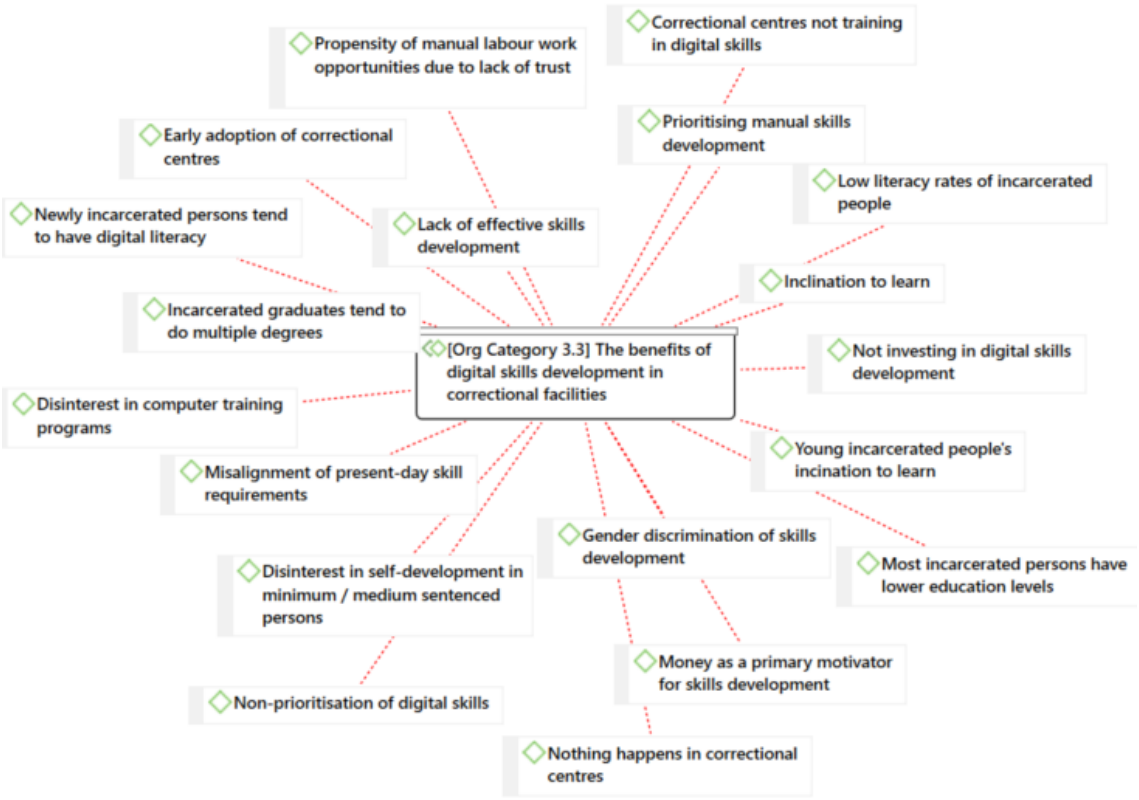

Figure 10: Organising category 3.3

In order to interpret the meaning of data in each of the codes within the respective organising categories created from the statements of the respondents, an inductive approach was applied to interrogate their underlying meaning and group each code into its respective organising categories. Three emerging themes were developed and associated to develop a response to a specific research question, as indicated in the table below:

Table 2: Emerging themes and associated research questions

Organising categories	Themes	Research question answered
Sector digital skills requirements	Sector digital skills requirements and economic entry barriers for South African incarcerated persons	What kinds of digital skills should South African offenders develop to participate in formal employment?
Sectoral barriers for incarcerated persons		

Digital access for social reintegration digital skills	The importance of digital access for South African incarcerated persons	How important is the development of digital literacy for South African offenders to advance their social reintegration?
Digital access for economic sector skills development		
The importance of correctional centre support for digital access		
Digital leadership skills requirements for the DCS	The importance of digital leadership capacity in the DCS	How can barriers to digital skills development in the South African correctional services system be overcome?
Inside the DCS institution		
Benefits for encouraging digital skills development in the correctional facilities		

3.4 Limitations of the study

The research submission time constraints and the protracted approval process (which has taken over seven months) of the DCS to allow research to be conducted with representatives of their institution meant that interviews with the leadership of the DCS could not be conducted as part of this study. This could in part have been due to the South African national lockdown in response to the Covid-19 pandemic. Insights into the institutional matters concerning the DCS were solicited from this study's thought leader participants as they have considerable experience researching and working with the DCS and incarcerated persons.

3.5 Ethical considerations

The researcher has complied with the integrity standards set out in the Singapore Statement to which the University of Witwatersrand subscribes.

The researcher has ensured that the following was adhered to:

i) No participants have been vulnerable persons.

ii) The research has not exposed participants to any risk or harm that they would not normally have been exposed to.

iii) The researcher has taken reasonable measures to ensure that no unintended consequences emanate from this research.

iv) Ethics clearance certificate ‘WBS/BA1656393/815’ has been obtained for this research. Details are in Appendix C

Chapter 4: Findings – Sentiments regarding digital skills development for South African incarcerated persons

4.1 Introduction

The data collected to answer the research question is presented in this chapter. The data will provide insights into the kinds of digital skills South African incarcerated persons should develop to participate in the digital economy, the importance of developing digital literacy skills for social reintegration, and the digital leadership skills requirements for the DCS to remove barriers (that currently exist within the South African correctional services system) to the digital skills development of incarcerated persons. The presentation of data will follow the afore-mentioned sequential order.

Three themes emerged from a total of eight organizing categories derived from participants' responses. Each theme was purposefully arranged to answer a specific research question. The table below shows the arrangement of the categories and the themes according to which they were grouped:

Table 3: Themes emerging from the data

Organizing categories	Themes
Sector digital skills requirements	Sector digital skills requirements and economic entry barriers for South African incarcerated persons
Sectoral barriers for incarcerated persons	
The importance of digital access for social reintegration	The importance of digital access for South African incarcerated persons
The importance of digital access for economic sector skills development	
The importance of correctional centre support for digital access	

Digital leadership skills requirements for the DCS	The importance of digital leadership skills in the DCS
Inside the DCS institution	
The benefits of digital skills development in correctional facilities	

4.2 Sector digital skills requirements and economic entry barriers for South African incarcerated persons

This section reveals digital literacy skills as well as the capacity to continually learn and develop new skills to be the most important sector skills required for employment in South African economic sectors. The section also highlights the importance of digital leadership skills to organisations in order to be able to establish the environments and cultures that support and sustain the development of these threshold skills. Furthermore, it contrasts the benefits of organisations that have these digital leadership skills against the consequences for those who lack them. Although this view is developed based on data collected from the few economic sector respondents who participated in this study, when one considers that South African organisations are prioritising investments in establishing digital continuous learning environments for their employees (JCSE-IITPSA: 2018), it may be generalised across various economic sectors. This section will also highlight the various economic sector respondents' attitudes towards the inclusion of previously incarcerated persons in their organisations. This view may also be applied generally, given historic organisational patterns of employment that pertain to the inclusion of previously incarcerated persons.

4.2.1 Sector digital skills requirements

The digitisation of internal processes to improve administrative efficiencies, product development, and service delivery within organisations has resulted in digital skills being one of the threshold skills required for entry into formal

economic sectors. While organisations require varying digital skills contextually aligned to the roles being fulfilled, potential employees are generally required to be able to co-exist with and make use of the digital tools deployed by their organisations to increase their effectiveness.

Digital literacy skills requirements for previously incarcerated persons

Digital literacy skills may well be the most important sector skill for any incarcerated person to develop in order to be able to achieve economic re-entry. This view is expressed by all respondents, and is, therefore, presented as the first data category. Familiarity with digital tools in order to collaborate with colleagues, digital etiquette when using these tools, and the ability to use the computers on which these tools are hosted was found to be the most desirable digital threshold skill for previously incarcerated persons to be considered for employment. While these skills are an obvious requisite for employment for all potential candidates, they were specifically emphasised to be a requirement for previously incarcerated persons seeking employment by the various economic sector respondents. This was based on their assumption of the low digital literacy rates within the South African prison population. The thought leaders in humanitarian studies based this view on their experiential awareness of the low digital literacy rates within the South African prison population. According to the economic sector respondents, the specific threshold digital skills required for economic entry, generally involve the ability to use and navigate Microsoft Office products and to be able to work remotely…

> "…digital literacy, which is really just understanding how to navigate yourself in a digital world, can you use, you know, tools like Skype, or Office 365, you know, can you have virtual meetings, how do you work offsite, you know, remotely, those type of things…" (FSE3)

The economic sector respondents only require this set of digital skills as a pre-requisite from previously incarcerated persons because they are ultimately not willing to place them in any technically complex, significant or otherwise, decision making position within their organisations. Therefore, they will only be considered

to fulfil roles where the ability to use their technology at a very basic level will be sufficient for them to understand how to operate in their environment. Even at this entry level, the previously incarcerated would still only be considered under extraordinary circumstances.

ICT practitioner skills requirements for economic sectors

ICT practitioner skills, on the other hand, are expressed as most desired by the economic sector respondents for people without a criminal record, i.e people who have never been convicted of a crime. For the financial sector respondents, it is more important to employ people that will help develop and deploy digital client journeys that are focused on enhancing customer experience,; enable data-driven value propositions through the application of data science technologies and predictive analytical modelling; and digitise the employee experience within their organisation by deploying digital collaborative and decision-enabling systems. Equally important to employing people with ICT practitioner skills is the employment of support staff that have digital literacy skills that are advanced enough to enable them to make use of these applications.

> "So, we require people that are skilled in AWS cloud, Azure cloud, cloud architects, system administrators, data engineers and data scientists, machine learning engineers, full spec developers, feature analysts, and UX designers." (FSE1)

While the retail sector respondents acknowledge that they are still in the infancy stages of their digital maturity, they too have emphasised the need to employ people who can leverage technologies (such as robotics) to increase store management efficiencies and enhance their clients' in-store experiences through the deployment of sensor systems that manage demand and track customer satisfaction.

> "… like I've mentioned right now, your AI, robotics, robotics in the stores in terms of optimization – that's what we're using now. So that's what we're trying to embed right now in terms of the digital skills" (RSE1).

Attracting ICT practitioner skills, however, is proving quite difficult for the retail sector. The retail sector respondents have indicated that due to the urgent drive for the adoption of these technologies within their organisations and the scarcity of these skills, they would be willing to make an exception by employing a previously incarcerated person who has ICT practitioner skills.

Meanwhile, the manufacturing-sector respondent regarded digital literacy as a key skill for entry into their organisation, regardless of whether or not a person had been previously incarcerated. The manufacturing respondent regarded the ability to use Microsoft Office applications as the most important skill requirement for their business.

Continuous learning as a digital skill required for economic entry

An individual's capacity to use digital tools to learn new skills, to collaboratively and creatively solve problems, and continuously develop themselves is also expressed as an important requirement for formal economic entry. All sector respondents based the importance of this capacity on the need for their people to help their organisations achieve digital competitiveness and differentiation through to the attainment of digital leadership. The economic sector respondents generally attribute the achievement of this aspiration to the employees' ability to exploit the democratisation of knowledge as a consequence of the proliferation of digital learning platforms that explore creative ways of navigating complexity and keeping abreast of changing environments.

> "..skills are changing so quickly and at such a fast pace and so extensively that they're saying the shelf life of skills is currently sitting at around five years – which means everything you know or half of what you know is redundant within five years. So, you need to continuously make sure that you fill that other half with what's happening and what's current. The onus is on employees." (FSE3).

Digital leadership skills requirements for organisations

Digital leadership skills are perceived to be a key enabler and catalyst for digital transformation and digital adoption within organisations. Respondents from the

financial sector attribute their organisational digital leadership positions to their leadership capabilities which include being decisive, change-oriented, having the ability to increase business performance through technological applications, being transformative, and appreciative of the value of a learning organisation. These kinds of leaders have the knowledge and ability to establish environments that allow for the continued learning and development of employees. They have a clear digital strategy and create organisational cultures of execution to accelerate digital disruption in the external markets in which they operate.

In contrast, the retail sector respondents attribute the digital infancy of their sector to the lack of digital leadership within their organisations. The characteristics of the leadership in their organisations are described as averse to change, which contributes to organisational entropy with regard to technological aspirations, and demonstrates very little interest in digital adoption.

> "However, I must say that we are very backward as an organisation in terms of employing digital platforms…we're incredibly backwards. What we haven't really done is defined what our capability strategy is in line with the holistic strategy..." (RSE1).

The manufacturing sector respondent also didn't place much emphasis on the importance of digital leadership within their organisation. Consequently, the respondent's organisation has no digital strategy, aspirations, or a clear understanding of how to exploit alternative revenue streams by creating digital capabilities. There seems to be a relationship between the digital maturity of an organisation and the digital leadership skills that an organisation has.

4.2.2 Sectoral barriers for incarcerated persons

A criminal history imposes some significant barriers for potential entrants into economic sectors. While digital skills are generally threshold requirements for economic entry for people who do not have a criminal record, the barriers of a criminal record almost discourage the pursuit of digital skills development for

incarcerated persons – to a point where it could even be considered a redundant exercise.

Discrimination based on the lack of proof of rehabilitation

Organizations generally enforce strict controls against discrimination of any form. Organizations generally provide that employers "…cannot discriminate on people based on their backgrounds or their past, or anything like that" (RSE1). The attitudes of the economic sector respondents and their emphasis on inclusion and non-discrimination went beyond obligatory adherence to internal and regulatory policies. Some respondents even highlighted the significant benefits, in terms of accelerating innovation, to be realised through creating diverse teams. Further, all economic respondents indicated that there would be no performance expectation bias of previously incarcerated persons once these were employed into their organisations, with the general sentiment being "…If they can perform the job like anyone else, let's treat them as such and integrate them into the organisation like we would any other employee." (RSE1)

In practical application, however, all economic sector respondents discriminated against the inclusion of previously incarcerated persons in their organisations. The overwhelming reason for this discrimination was that there is a lack of proof of rehabilitation for previously incarcerated persons. While a formal proof of rehabilitation does not exist (and the economic sector respondents could not advise what exactly would constitute one), they were clear that they would not consider employment without one. The manufacturing sector respondent was somewhat lenient on this requirement, however, the finance and retail sector respondents insisted on it.

> "You've been rehabilitated. No problem. Prove it to us... if that person passes, whatever that middle layer is, where we have to check for that competence, then I wouldn't mind, but I wouldn't want to do it without that." (FSE1)

> "…not unless they've proven to have been rehabilitated." (RSE2)

A crime of theft is considered non-rehabilitative

All types of convictions are generally frowned upon by all economic sector respondents. Although in very rare instances, exceptions are made for certain types of crimes (such as drinking and driving), people convicted of theft crimes are strictly prohibited. This was made expressly clear by one of the retail sector respondents, who said: "…I think I would hire a person who killed a person (rather) than a person who had previously stolen." (RSE2)

All of these barriers are prejudicial and none of them are prescribed by organisational policies. Most organisational policies simply provide vague guidelines on how to engage employing a person with a criminal record, while not making explicit prohibitions against employing such a person. These guidelines usually require an unspecified "further investigation" to be undertaken by the hiring manager, as part of applying due diligence before an offer of employment. Ultimately this bestows the final decision and risk acceptance at the sole prejudicial discretion of the hiring manager. Managers are often unwilling to take this on: "…because then your head is on the block. If that guy just commits the financial crime, I mean, it's like I'm an idiot!" (FSE1)

Continued discrimination of previously incarcerated persons once hired

Should all selected barriers somehow be overcome, previously incarcerated persons who are employed could still expect to face more discrimination, in terms of performance expectation bias and restricted participation and inclusion in teams, within the working environment. The main reasons given for this by the economic respondents are the fear of exposure to their employees and the expectation that such a person would not have the requisite digital skills (at the desired level and competence to meaningfully contribute in a team) anyway. The inclusion of these people for formal employment and the perceived undertaking of the inherent risk of doing so, is widely regarded by the economic sector respondents as unnecessary. Further, inclusion into finance roles for a person convicted of any type of crime is a precarious proposition that would not be entertained. Should inclusion into formal employment occur, the economic sector

respondents indicated that this would only happen within low-level roles predominantly requiring threshold digital literacy skills. This was affirmed by the experience of the social entrepreneur respondent:

> "One of the things that we found is that it's also easier for the guys to be employed in jobs that have got nothing to do with security, like policing, security police, or jobs that have got nothing to do with finances, but jobs like call-centre. You'll find a guy in a job like call-centre, and jobs like construction – they like to hire those guys." (SE1)

The inclusion of these people in a formal workplace environment would seemingly rather be an attempt for organisations to meet some kind of corporate social investment quota than a merit placement. Respondents from the finance sector even recommended that such work-seekers rather develop ICT practitioner skills and sell them on the online gig economy market because "…that could stand these people in good stead as they don't have to be an employee, but they could still offer their services on an open platform." (FSE3). This further articulates the extent to which the presence of previously incarcerated persons is undesired in a formal working environment.

4.3 Digital skills development through digital access for socio-economic re-entry

The lack of access and restrictive regulations on access to digital media tools, as well as the lack of digital literacy skills development as a consequence of these, are found to be the leading barriers to social reintegration and economic participation for incarcerated persons. The thought leaders in humanitarian studies experientially highlighted the juxtaposition of the DCS's mission of rehabilitation and the institutional policies that exist to inhibit this aspiration – particularly within the context of the digital era. Although access to digital tools has also been established as a potential risk, this section will present the findings

on the importance of digital access for social reintegration in the digital society, economic participation in the digital economy, and the enablement of personal advancement to complement and enhance the DCS's rehabilitation activities.

4.3.1 The importance of digital access for social reintegration

Digital access can be thought of as a bridge that enables digital skills development and facilitates continued connectivity between people in prison and external communities. This continued connection, created by staying abreast of relevant social skills, has the potential to bridge the gap of belonging to a community and lessen stigmatisation.

Digital access for successful social reintegration

It is increasingly crucial for the DCS to develop digital literacy skills for incarcerated persons, primarily through the deployment and access of digital tools that foster communication and sustain relationships with the outside world. The prevailing sentiment across the thought leaders express an expectation of a low digital literacy skill level across the prison population in general.

When people are incarcerated, they are essentially removed from their families and communities, restricted from interacting with them for some time, and then sent back to the same communities with a hope that somehow successful reintegration will happen. Considering firstly that one of the biggest barriers to social reintegration is stigmatisation by families, communities, and self-stigmatisation, and secondly how the demonetisation and proliferation of digital tools in the society (like social media technologies) have reconfigured the way people interact with one another, and given their low digital literacy levels the quality of freed prisoners' social interactions with communities post-incarceration can expected to be low and strained. Lack of digital literacy skills disorientates previously incarcerated persons and further marginalises them from interacting with their communities. When exposed to social media technologies, they also often lack the digital etiquette to conduct themselves in socially acceptable

manners, which further isolates them and frustrates their efforts of developing meaningful relationships with communities.

> "…they tend to post things carelessly because they cannot understand the importance of that digital space, you know, so it's always a challenge for them." (SE1)

Social media access to advance social reintegration efforts

The inability to use digital tools for basic communication and the restriction of digital communication with the outside world frustrates relationship-building efforts between incarcerated persons, their families and communities. Access to social media technologies and encouraging communication with the outside world will serve to ease identity and stigmatisation and improve the digital divide between the prison population and outside communities.

The use of social media may also help with the rehabilitation process, by creating opportunities to meet like-minded people or interest groups, who are also dealing with challenges relating to the incarceration and with whom experiences and coping mechanisms can be shared. Providing incarcerated persons with this digital interaction can also reduce their perception of societal distance and probably make it much easier for them to reintegrate post-incarceration. The self-esteem they could potentially develop through skills development and by remaining a part of the outside community is an essential contributor to building self-awareness and shedding self-stigmatisation.

> "Social media can be an amazing platform for somebody like that (who might feel that they might be stigmatised because of who they were in their past) to be able to meet other people and find commonalities and be able to sort of 'power through' that social interaction." (TL2)

The current lack of digital literacy development for incarcerated persons, which "…includes basic things like cell phones and of course, other things like proper email etiquette, and, you know, basic email skills…are causing many crisis issues when it comes to re-entry and reintegration overall." (TL1). When these people

are released from prison, they are almost completely disconnected from their society and environment. This is mainly due to lack of access to digital- and social media platforms and the lack of the digital literacy skills required to navigate those platforms. Failure to establish reformative programmes to ensure these requisite digital literacy skills are developed in prisons, may ultimately be sustaining criminality.

4.3.2 The importance of digital access for economic sector skills development

Digital access also creates an awareness of, and an opportunity to learn about, formal economic sectors – how they operate, and how to engage with them. Digital access could therefore favourably position a potential entrant into the formal economic sector post-incarceration.

Digital access to develop requisite economic sector skills

Digital literacy development by providing access to digital platforms for incarcerated persons enables and fosters an environment of “connections and learning and development” (SE2). One of the most desired skills for employment, as articulated by the economic sector respondents, is the capacity of an individual to continually learn, develop and create a network of knowledge and information sharing by collaborating through digital media. This skill can only be developed and enhanced by gaining access to digital platforms. The lack of digital literacy skills within the prison population is one of the factors linked to their subsequent post-incarceration exclusion from formal economic sector participation. The thought leader respondents assert that the unfamiliarity of basic technology is the greatest barrier for previously incarcerated persons to access the 21st century digital economy – even more than having a criminal record.

> “Today to re-enter society and to re-enter the career world, one needs certain skills and be comfortable working and operating with computers and understanding how computers work and how the Internet works.” (TL3)

Inadequate preparation of formal economic entry post-incarceration

There is a misalignment of the skills required by the formal economic sector respondents (necessitated by digitisation within their organisations) and the skills development the DCS is offering incarcerated persons. The prioritisation of manual or technical skills development by the DCS, although also important, limits the prospect of successful economic entry post-incarceration. Significant financial investments are made to set up privately-owned welding workshops, chicken farms, motor mechanic workshops, etc,, when realistically most people being released from prison would not have access to such resources. Were they to have access to such resources, they will still be required to work on emails, at the minimum, to build and maintain relationships with suppliers in their business value chain. Similarly, should they opt to seek employment in these sectors, they will still need to be able to search for the jobs and in some cases apply for them electronically. Digital literacy skills, therefore, is one of the basic minimum skills required for realising prospects for economic entry into 21st century organisations. Regrettably, it is one that the DCS is seemingly not prioritising. The ultimate implication of this reality will see incarcerated persons reoffending, as a means to overcome poverty and unemployment.

> "In amongst the many other challenges that they face…going back to the poverty-stricken environment and needing to now feed and clothe yourself, whereas you've been institutionalised, so you've been fed and clothed by the government. So, there's a fear of that you'll find a lot of people will simply go out and commit other crimes, go back into the institution again because its simpler to not have to come out and face unemployment and poverty, having to look after yourself again and family members." (TL2).

Digital skills as an enabler to explore alternative economic participation

Digital skills development also creates ample opportunities for entrepreneurship for the incarcerated and those leaving incarceration. Entry into the formal economic sectors, for previously incarcerated persons, is seemingly a near-impossible proposition in South Africa. A further barrier to access includes the

current unemployment rate and the likelihood that many digitally skilled people, without a criminal record, will be competing for jobs that require digital literacy skills. The population that develops digital skills in prison can, therefore, explore alternative ways to sell their skills, by for example helping to develop the same skills for other incarcerated people within the prison system, and thereby create a viable revenue stream for themselves.

> "I think also teaching people in prison digital skills is a viable trade. So, we're talking about opportunities for people to come out of prison and not go back to prison and therefore have a job." (TL1).

4.3.3 The importance of correctional centre support for digital access

Digital access would not only help facilitate the development of relevant digital skills for incarcerated persons but also help the DCS to achieve its strategic rehabilitation objectives.

Institutional barriers to digital access

The DCS impedes access to digital platforms: in prison, access to computers, laptops, and Wi-Fi is only granted to registered university students. The application process to use these facilities is protracted and cumbersome, with applicants often being required to submit several applications for access to a laptop or a computer, and then for this to be connected to the Internet.

Digital access for incarcerated persons is very limited and highly regulated. While digital access is legally permitted for university students, they often still have to resort to the courts to force the DCS to uphold their right to education through digital platforms. The DCS's restrictive attitude towards digital access further contributes to the lack of the development of digital skills within the prison population. These restrictions are imposed upon students interested in acquiring formal higher education qualifications whereas, in contrast, a lot more leniency and encouragement is afforded those interested in learning manual or technical skills. This dynamic provides insights into the culture that exists within the DCS

with regard to digital skills development. It is assumed that the underlying cause of this position could either be due to envious officials or, more probably, the lack of digital skills in DCS officials themselves.

> "But then you hear stories, not just only in the newspaper, but students…that I know of, who've had to go to court to fight to just get a laptop to be able to use it in the UNISA hub to do their studies." (TL2)

Exacerbation of the digital divide as a consequence of lack of digital access

The greatest concern shared by all thought leader respondents about the prison system's attitude towards digital access for incarcerated persons, is the exacerbation of the digital divide it creates between incarcerated persons and society. In a prison environment, the only option to study further and obtain a formal FET qualification is through distance learning – which requires students to have the requisite digital literacy skills to navigate online educational platforms. One can assume that university students already have the requisite digital literacy skills, however, the majority of the prison population does not. It then follows that the majority of the prison population are further disadvantaged and denied opportunities to learn the requisite digital literacy skills that would enable them to access FTE institutions. The net effect of this exclusion is recidivism, as these people are systemically or deliberately prevented from developing relevant 21st century skills for socio-economic reintegration. They are then released from prison without the ability to interact with the digital communities and no prospect to find a job, and ultimately find themselves "…frustrated and in no time, re-offend." (TL4)

Risk of digital access within correctional facilities

Access to digital platforms and the Internet for incarcerated persons may be considered a risk by the DCS. The risks could include equipping incarcerated persons with the knowledge and skills to commit new digital crimes or, through digital access, perpetuate the external commission of crimes. Nonetheless, the potential benefits to be realised from digital access for incarcerated persons far outweigh these risks. Mitigation strategies to manage these risks can be

implemented by applying various information security controls on the digital platforms made available. This would, however, require strong digital leadership skills within the DCS.

> “Offenders are incarcerated for a reason and it would be difficult for the DCS to control access to information if everybody had access to the Internet and a cell phone, for example. But I think that they are going to have to realize that they need to move with the times and they're going to at least have to start to look at developing digital skills.” (TL2)

4.4 The importance of digital leadership skills in the DCS

The DCS not prioritising any kind of digital skills development for incarcerated persons in the correctional system is a consequence of the lack of digital leadership and literacy skills amongst the DCS officials, as well as inadequate digital infrastructure within the correctional facilities. In spite of the DCS officials not having the opportunity to express their point of view on the matter in this study, this position was upheld by the thought leaders in humanitarian studies based on their experience of working with incarcerated persons and within correctional centres. The non-prioritisation of digital skills development is arguably causing the DCS to miss the opportunity to establish a progressive internal culture of continual learning and development for inmates, and potentially also for the officials.

This section outlines the digital leadership skills deemed necessary for the DCS in association with what has proven to work for the economic sector respondents; the learning inclination of the prison population; and the opportunities which are believed to arise through instituting digital skills development within correctional facilities.

4.4.1 Digital leadership skills requirements for the DCS

A fundamental starting point for the DCS is understanding the digital leadership that is required to create a digital environment that enables the acquisition of digital skills by fostering continuous learning and development.

Digital leadership skills to enable a digital environment

Establishing an enabling environment for the continuous learning and development of employees is a key contributor in organisations achieving and maintaining a competitive advantage in the digital economy. This view is held by all economic sector respondents who all also agree that to manage and execute this is a leadership function. Some of the initiatives to create these environments being undertaken within their organisations include informal up-skilling programmes, access to e-learning platforms, access to digital collaboration tools, and access to formal and vocational education programmes. The leadership in these organisations invest in creating these enabling technology environments and then encourage their employees to use them. The articulation of their importance and ease of use thereby influence adoption of the technology, while at the same time cultivating a culture of continual learning. While it is eventually incumbent on the employees to make use of these technologies and learning opportunities, the provision of these environments and influencing the desired digital culture is the responsibility of the leadership of the organisation.

> "We need to have a culture that reinforces very positive and sort of differentiated experiences for our employees. It takes an element of leadership, but also elements of the technology in the organisation." (FSE2)

Digital leadership skills requirements

Digital leadership skills required to deliver such a continuous learning environment include the need to be technologically adept and business oriented. The ideal digital leader does not require ICT practitioner skills but does need to exhibit some technical aptitude and the ability to transform digital competencies into revenue streams. The leader must be visionary, decisive, transformative,

change and risk oriented. This view was expressed by all the financial sector respondents who indicated that this is the calibre of digital leadership within their organisations. Consequently, the institutions of the finance sector respondents have clear digital strategies and are at the forefront of digital adoption. Contrastingly, the leadership of the retail sector respondents can be characterised as being technologically backward, reliant on manual processes, and change averse. The digital infancy of the retail respondent organisations is perceived to be a result of the state of their digital leadership skills.

> “So, we had leaders that were here for 20 years, you know, and who didn't see the need to drive change in the digital space.” (RSE4).

To increase digital leadership capacity within their organisations, the retail sector respondents have reported significant investments into digital skills development for their leadership, with the objective of digital alignment throughout all business units with regard to digitising their operations and businesses. These organisations aim to achieve this through implementing digital tools to facilitate information processing, communication and collaboration throughout their organisations (as this has been determined by the respondents to be part of the fundamental digital leadership skills that need to be developed). The manufacturing sector respondent did not indicate any perceived need for digital leadership skills within his organisation. The manufacturing sector respondent’s organisation also does not have a digital strategy nor is it leveraging the use of technology to drive business performance. Similarly, based on what is known about the state of innovative rehabilitation interventions enabled by technological advancements within the DCS, it may be assumed with a degree of certainty that the level of digital leadership skills within the DCS is also very low.

4.4.2 Institutional readiness of the DCS to adopt digital skills

Assessing the inclination of incarcerated persons to adopt digital skills and the available infrastructure that exists to do so, provides more insight into institutional readiness to effectively embark on the development of digital skills.

The inclination of incarcerated people to learn digital skills

Among the general prison population, the prospect of being involved with new interventions and learning new skills is usually met with enthusiasm. For this reason, all thought leader respondents agree that the prospect of learning digital skills will be one that is welcomed among the population as there is "…a huge thirst for any sort of skills development that they can attain." (TL2). This enthusiasm is generally influenced by the reality that not much else happens in prisons. Because of this, there is also usually very low drop-off rates for incarcerated persons who join various prison reformative programmes.

> "In my programme, I've got 24 guys and the rate of guys dropping out is very small. We either have one or two guys who drop out in a year." (SE1).

The de-prioritisation of digital skills development by the DCS

The DCS seems to be channelling incarcerated persons' enthusiasm for skills development towards the acquisition of manual labour skills. The DCS seems to neither be prioritising nor providing digital skills development for the prison population. The possible reasons for the DCS to having adopted this position could include:

i) The DCS is aware of the attitude of the formal sector towards previously incarcerated persons and the barriers they impose on these individuals. Therefore, it regards it as a waste of resources to promote digital skills development.
ii) The DCS believes that previously incarcerated persons will only be able to access economic participation through manual labour.

> "…it's a struggle. One of my students has completed her masters on female ex-offenders and found that many of her participants ended up often leaving correctional centres, doing the manual type of work in terms of struggling to find something in the professional world." (TL2).

iii) The DCS considers that since money is a motivating factor within correctional facilities, they will rather prioritise manual skills development

as people are able to gain financial benefits while incarcerated and help the DCS to “keep the peace” (SE1).

> “…but when they are going to school, they're not going to have an opportunity to make a little bit of money. So, they would rather choose to go to farming or the abattoir or wherever instead of going to school… they want to get money and they want to get tobacco.” (SE1).

iv) The DCS staff themselves do not have the digital skills to impart on incarcerated persons and to effectively manage their digital exposure.

> “…because even the same warders that need to be providing these lessons, they don't have such skills.” (TL4)

Considering what is known about the digital leadership capacity within the DCS, the most likely of these scenarios is the lack of digital skills within the DCS. The omission of digital skills development perpetuates the challenges of social reintegration and reinforces barriers from economic participation in the digital economy.

<u>Lack of digital infrastructure to develop digital skills</u>

Lack of adequate infrastructure in correctional facilities is also found to be one of the greatest challenges in correctional facilities. There is hardly any digital infrastructure in the institutions and where there is, the infrastructure is usually outdated and cumbersome to use, which can discourage inmates (particularly those studying towards grade 12) from taking up computer literature as a course. Failure to provide adequate digital infrastructure is consistent with the lack of digital leadership within the DCS, as the institution cannot prioritise what it does not consider necessary.

> “I have yet to go to a correctional facility where I have seen a computer lab for anyone to be able to use and to develop themselves.” (TL2).

> “And it's often in most cases the computer labs, I mean, it's like walking back into the 80s, you know. The computers standing there are not high-tech stuff, or maybe if there are any, I haven't seen them yet.” (TL3).

4.4.3 The benefits of digital skills development in correctional facilities

Developing digital skills for incarcerated persons presents opportunities for both the individuals, in terms of equipping them with viable trade skills and providing opportunities for new revenue streams, as well as for the DCS as a potentially effective rehabilitation strategy, that would reduce recidivism.

Creating a continuous learning culture through digital skills development

Prison is mostly boring and developing any skill tends to prevent incarcerated persons from “falling into old habits, meeting up with the old people again and looking to get back into the old behaviours.” (TL2). In prison, money is the primary motivator for anyone to do anything, hence if the value that stands to be gained from learning digital skills to participate in the digital economy can be articulated to incarcerated people, it is probable that most would readily adopt it. This will help the DCS establish a new learning culture which may enhance collaboration between officials and incarcerated persons.

To influence more people to participate in the learning journey, incarcerated persons serving very long sentences can be approached to become the prison social influencers. They generally tend to enrol for university degrees and once they graduate, go on to complete multiple degrees and become mentors to fellow inmates. This could turn the prison culture around and start creating a positive perception (by communities) of the effectiveness of the rehabilitation activities the DCS is trying to create in prison.

Reducing recidivism through digital skills development

There is particularly high recidivism among people who serve short sentences. The reason why recidivism is high among this segment of the prison population could be linked to the fact that no new skills are developed – either to advance social reintegration or economic participation during their incarceration. Mentorship programmes and digital skills development could specifically target

this segment of the population, in a bid to follow the OPP example that drastically reduced recidivism.

> “So, whenever there's something new that will help them, the guys, you didn't even need to encourage them, they come themselves... You know, that means that this is something that they see they can live on, on the outside. The minute the guys don't see any value for something on the outside, they lose interest.” (SE1)

4.5 Summary of findings

The finance, retail, and manufacturing sector respondents agree that digital literacy skills and the capacity of an individual to continually learn new things and to develop themselves may well be the most desirable skillset for previously incarcerated persons to have, to enable them entry into formal economic sectors. There are, however, a significant number of barriers to workplace entry, mostly influenced by decision-makers prejudices towards the ineffective rehabilitation of people in correctional facilities. This has important implications on the type of digital skills the DCS should focus on developing for the prison population in order to enable their participation in the formal economies post-incarceration.

Overall, digital literacy skills are also considered as the most important skills for incarcerated persons to develop to advance their social re-entry. These skills are necessary for participation and engagement with the 21st century society. Access to digital tools and the subsequent development of digital literacy skills within prisons will positively impact on building and sustaining relationships with the external society, that is currently experiencing the digital revolution.

Digital leadership skills are necessary for institutions to implement innovative learning and development solutions enabled by the deployment of digital platforms, and to drive transformative change for both individuals and

organisations. A lack of digital leadership skills is a key inhibiter to organisational digital adoption.

The DCS is not at all prioritising the development of digital skills for incarcerated persons. A few institutional and infrastructural barriers exist within the DCS which undermine the prospect of digital skills development. In cases where digital access should be provided for university students, it appears that barriers exist that hamper this process. The leadership of the DCS also appears to have taken a stance not to support the development of digital skills, which may be linked to their own digital skills capacity.

Chapter 5: Data analysis – Reflections for digital skills development for South African incarcerated persons

5.1 Introduction

In this chapter, an inductive reasoning approach is applied to analyse the data. Inductive data analysis refers to the process of applying a bottom-up approach to data analysis where interpretation is led by the content of the data and deductive data analysis refers to the process of data interpretation that is influenced by a series of theoretical concepts or frameworks (Braun & Clarke, 2012). This study seeks to explore a new understanding of digital skills requirements for incarcerated persons based on the respondents' experiential points of view. Therefore, an inductive approach is more appropriate for analysis as the data will be used to build key insights. Each significant finding will be analysed and discussed in the context of their respective themes.

5.2 Critical analysis of digital skills requirements for re-entry into formal economic sectors

Digital literacy skills

This study reveals digital literacy skills to be the most important digital skill for incarcerated persons to acquire for re-entry into formal economic sectors. Specifically, these include basic skills such as the ability to use a computer, send emails, and navigate digital collaboration platforms like Microsoft Office, Skype and Microsoft Teams. For people who do not have a criminal record, however, the financial sector and retail sector respondents prefer them to have ICT practitioner, and more advanced digital skills such as programming, data science, information security, and, specialised skills such as customer experience

development and finance. The primary reason for the distinction in skills requirements between these two categories of people is articulated in the prevailing shared sentiment of the respondents that they would generally not bestow the trust and independence, required for key positions to drive the digital innovation, adoption, strategy, and most importantly the management of budgets for their organisations, on a previously incarcerated person. Inclusion of such people across all sectors, if it were to happen, would be on the basis that they are micromanaged, meticulously monitored, and their representation in organisations strictly limited. Binkley et al. (2012) characterised organisations that would be successful in the digital economy as those who exhibit sophisticated thinking skills, flexible problem-solving skills, and collaboration skills. All economic sector respondents agree with this principle but only require these competencies from people without a criminal record. Previously incarcerated persons are held to an altogether different standard. This further indicates that should employment occur, there is the potential that further institutional discrimination would be imposed on these people, directly or indirectly, as the organisations would not necessarily seek to fully explore their potential and limit their creativity and freedom. It would appear that currently there is no intention by the economic sectors to include previously incarcerated persons in the workplace in any meaningful way, irrespective of whether they have or could acquire advanced digital skills.

Creating an environment for continuous skills development

An individual's cognitive capacity to learn new skills and continually develop themselves is also an important economic sector skill to have. The economic sector organisations support and enable this through the creation of continuous learning environments using technological platforms to enable e-learning and team collaborations. These organisational initiatives support the assertion by Accenture (2017) that for organisations to keep up with the changing business environment, employees would need to engage and coexist with digital technologies, and organisations would need to establish continuous learning environments. All respondents in this study also subscribe to the view of Chinien

and Boutin (2011) and Craffert et al. (2014) that the ability to use digital tools for information processing, collaboration, and communication are important sector skills that also contribute to creating a continuous learning environment. There was no bias of this skill requirement and it was found to be equally desirable whether or not a potential candidate has been to prison. For incarcerated persons specifically, ideal economic sector skills may well be classified as a combination of the ability to navigate digital technologies (van Greunen et al., 2015) and cultivating a growth mindset (Accenture, 2017). This requirement is predominantly informed by the economic sector respondents' perception that most if not all incarcerated persons have very little to no digital skills.

Excessive economic entry barriers

Although digital literacy skills and the capacity to continually learn and develop oneself are overall the most important sector digital skill requirements for previously incarcerated persons, in reality, it almost does not matter what kind of digital skills such a person has, as the chances of formal employment are very low. While the manufacturing sector respondent has shown somewhat of an inclination to give these people an opportunity for formal employment, the finance and retail sector respondents have all expressed no desire to do so. This discrimination is not driven by organisational policies but rather emanates from the mistrust the sector respondents have in the capacity and ability of the DCS to rehabilitate their incarcerated people. This highlights a disjuncture between the DCS's mandated responsibility to organise a sustainable rehabilitation system that focuses on the reintegration of incarcerated persons into society (Cilliers, n.d.), and the involvement of society in this process. This misalignment sustains society's preconceived ideas about what is *not* happening in the DCS, which then filters into the economic sectors and poorly influences decision-makers' attitudes about the character and abilities of people released from prison. Compounding the findings by Khwela (2014), who asserts that the DCS's failure to equip offenders with basic capabilities is a barrier to employment, this "lack of proof of rehabilitation" dynamic also serves as a significant barrier to employment in the digital era. While organisations do not explicitly prohibit the employment of

previously incarcerated persons, they do not provide clear guidelines as to how to engage with the subject and rather relinquish the risk and responsibility to the hiring manager. This, therefore, relinquishes the decision making to the sole discretion of the hiring manager and their preconceived ideas and fears concerning the involvement of incarcerated persons in their organisations and teams. To this end, managers are not willing to take such a risk.

5.3 Socio-economic impact analysis of lack of digital access for digital skills development

Social media access for social re-integration

Lack of access to social media platforms is a hindrance to the development of digital literacy skills and digital etiquette and will inhibit successful social reintegration post-incarceration. In today's digital society, the advent of social media technologies has generally reconstructed how people engage with each other and with information, therefore, a lack of access to these technologies not only frustrates the social reintegration efforts of the DCS by restricting incarcerated persons from sustaining connections with their communities and families, but the consequent lack of skills development to navigate these platforms stigmatises them from those groups after their release from prison. Neumann et al. (2017) indicated that digital literacy should be measured by an individual's competency levels in socio-emotional literacy, photo-visual literacy, reproduction literacy, branching literacy, and information literacy. Since incarcerated persons are removed from communities for doing something wrong and the DCS intends to appropriately reintegrate them back into the community who, in the 21st century context, would be digitally advanced, socio-emotional literacy must be the main digital literacy concept to develop proficiencies in. While the DCS must prioritise Neumann et al's (2017) digital literacy indicators, it would be prudent to first develop socio-emotional literacy as from this the proficiency in all the other concepts will be developed. Being cognisant of the caution by

Vītoliņa, (2015) that, notwithstanding the saturation of digital access, communities often can still not use digital tools, the provision of digital access alone is not enough and must be supplemented with the DCS influencing the use and ease of use of these digital platforms following the TAM model outlined by Legris et al. (2003). In this way, a connection to the outside world will be sustained, while ameliorating the digital divide in the prison population by enabling the distributive knowledge of connected people as per the connectivism theory (Goldie, 2016).

Digital access for economic sector skills development

The intransigent access regulations the DCS imposes on digital tools usage prohibits the development of digital literacy skills and the development of people's capacity to cultivate a growth mindset. The DCS's policies regarding digital usage within correctional facilities make it impossible for it to establish a continuous learning environment through the application of digital components that would enable distributive knowledge bases of connected people and this prevents the prison population from developing digital literacy and the cognitive capacity to learn new skills.

Self-actualisation barriers as a consequence of the lack of digital access

The lack of digital literacy skills development, as a consequence of the general lack of access to digital tools, imposes restrictive barriers on the self-actualisation aspirations of incarcerated persons. The DCS's attitude towards skills development for their prison population in general and digital skills development, in particular, will exclude offenders from participating in the dynamic information and knowledge economy that the South African National Development Plan wishes to establish through the creation of a seamless information infrastructure by 2030 (National Planning Commission, 2012). Only university students are permitted to access laptops and Wi-Fi in the correctional facilities and even then, this access is highly restricted and regulated. Access to this privilege is based on the assumption that the applicant already has the requisite digital skills to navigate these tools. Based on what we can establish about the low digital literacy

skills level in the general prison population, the majority of these people are withheld from aspirations of formal education while incarcerated, as they probably will not be able to satisfy some of the foundational requirement, including the ability to use a laptop to register for a course.

Digital access risk

Access to digital tools for incarcerated persons may be a risk. Adams and Pike, (n.d.) found that these risks could potentially relate to the creation of a new technological environment in which alternative forms of crimes such as paedophilia, hacking, etc., could occur. These risks could also include providing incarcerated persons with the ability to intimidate society or manage external criminal activities from within the prison system. Restricted access to digital tools may also be a punitive instrument adopted by the DCS to appease communities, as the people affected by the perpetration of crime may construe it to be an undue privilege to afford criminals digital access. This idea, however, further makes clear the disjuncture between what the DCS currently is, what it ought to be, and what society's perception of it is. The DCS is not intended to be a punitive authoritarian system which represents everything despised by societies and is segregated from communities. It is intended to be a place of corrections and rehabilitation in which incarcerated people are given new hope and a second chance of becoming the ideal South African citizen (Department of Correctional Services, 2005). For the DCS to achieve this aspiration, the connection between incarcerated persons and society cannot be severed. Consistent with the argument by Gallardo-Echenique et al. (2015) that while technology can effect both negative and positive impacts on society, the development of digital skills must be considered for the broader society in the context of the digital revolution, it must also be considered that incarcerated people form part of the broader society and cannot afford to be excluded from the digital revolution. The consequence of assuming such an exclusivist position is that regardless of how long one's prison sentence is, in the South African context they will eventually be

released lacking the relevant skills to help them prosper economically and socially and, therefore, once again ultimately become society's problem. The DCS's leadership must be charged with exploring creative ways of mitigating the inherent risks of digital access, and ensuring that digital access is provided for the prison population.

5.4 Critical analysis of the DCS's digital environment

Based on the discussion under 5.2 above, it would appear that the strong sentiments held by the economic sector respondents which create barriers to entry to employment imply that the DCS has a great responsibility to build the relevant digital skills for incarcerated persons and foster confidence in their stakeholders about their ability to rehabilitate incarcerated persons. The thought leader respondents experientially affirmed the low digital literacy levels among the prison population in South Africa and also indicated their low literacy levels in general. This finding suggests that in over two decades since the time the South African Human Rights Commission (1998) found low skill levels in the general prison population, very little has been done to advance skills development within the correctional system and that the subsequent findings by the Special Rapporteur on Prisons (2004) and Fourie (2015) concerning little progress in the advancement of skills development within the DCS are still valid today.

Lack of digital leadership skills within the DCS

There seems to be a lack of digital leadership skills within the DCS. Strong digital leadership skills, as illustrated by the financial sector respondents and represented in their digitally matured organisations, are characterised as innovative, creative, risk-tolerant, understands technology and business and applies this knowledge to increase business performance through technological capabilities. This is consistent with the determination made by Sousa and Rocha (2017) regarding the key elements of the digital leadership skills necessary to

lead disruptive organisations. While these characteristics of leadership are common across the financial sector respondents' organisations, the leadership characterised by the retail and manufacturing sector respondents are in stark contrast. Their leadership characteristics are not technologically adept and are risk and change-averse. Consequently, their organisations are self-acknowledged to be digitally immature. This finding suggests that digital leadership must go beyond the relational qualities as found by Khan (2016) and must emphasise transformational leadership and digital literacy qualities as emphasised by Kane et al. (2016) and Bommer et al. (2016). Juxtaposing the relationship that exists between the digitally mature financial organisations (and the common characteristic of digital leadership skills articulated by the respondents representing them), and the digitally immature retail and manufacturing organisations and the common characteristic of a lack of digital leadership skills articulated by their respondents, it can be assumed with some degree of certainty that the DCS also lacks digital leadership skills, given their general disinterest and non-investment in technological solutions within correctional facilities.

Lack of digital infrastructure within the DCS

The state of the digital infrastructure at the DCS is a barrier to digital access and digital skills development. Although it is incumbent on people to access and make use of the continuous learning environment, the economic sector respondents stressed the importance of organisations assuming the responsibility of establishing such an environment and influencing the use thereof by its people to advance their cognitive capacity to learn new skills. The creation of a continuous learning environment is not automatic and has to be created by the organisation, and this requires digital leadership and digital foresight. To fulfil the TAM theory requirement of influencing people to adopt the use of digital tools based on their perceived ease of use and usefulness as highlighted by Legris et al. (2003), the digital infrastructure must first exist. Based on this theory, the current state of the infrastructure at the DCS already has a negative effect on the perceived ease of

use for incarcerated persons, with many of them not opting to enrol for computer courses or work in libraries where there might be some computers.

Lack of digital literacy skills among the DCS officials

The lack of digital literacy skills of the DCS officials is a barrier for digital skills development within the DCS. Most incarcerated persons are found to respond to opportunities to develop new skills with enthusiasm, mainly because in prison there is very little else to do. The DCS is currently channelling this enthusiasm towards the development of technical skills such as woodwork and welding. Although learning technical skills remains important, particularly considering that the manufacturing sector may be the only sector likely to employ previously incarcerated persons, even in the manufacturing sector employees are required to at the very least be able to send an email. Considering the current digital age, the lack of digital leadership in the DCS, and the lack of digital access within the DCS, the DCS may very well not be prioritising digital skills development for incarcerated persons, not because they are pursuing better skills development but possibly because they do not have the digital skills themselves to create the necessary environments and/or facilitate the development of digital skills for the prison population.

Opportunities for digital skills development within the DCS

Developing digital skills in the correctional system may potentially establish a progressive culture of commerce and mentorship within correctional facilities. In the prison population, it is seemingly those serving long sentences who are more likely to be involved in skills development and mentorship programmes. The population serving shorter sentences are thought to not believe that there is value in skills development while incarcerated, because of the length of their sentences. This dynamic, combined with the understanding that money is generally a primary motivator for incarcerated persons to get involved with anything, creates an opportunity for the DCS to inspire the long-sentence serving population to acquire digital skills that they impart on the short-sentence population, by using the prospect of the prosperity to be attained from having learnt such skills as an

influence for adoption. This could also create a new culture of learning and keep inmates from mischievous activities. Establishing such a culture could revive the self-esteem of the incarcerated by enabling meaningful participation in the digital society and improving the external perception of digital literacy levels in prison, while also helping the DCS achieve a drastic reduction in the recidivism of short-term sentenced people, through the provision of relevant skills that could unlock work opportunities, as was the case in OPP. (Castek et al., 2015).

5.5 Summary of analysis

Digital literacy skills and the capacity to continuously learn and develop oneself are the digital skills that economic sector respondents most desire for incarcerated persons to acquire for employment. While there is no discrimination concerning the desirability of cultivating a growth mindset skill between the different categories of candidates, digital literacy skills are expressly required from the economic sector respondents and they place no value in the potential of a previously incarcerated person advancing within their organisations. The economic sector would also probably institute additional internal barriers against such a person, thereby inhibiting any chances of progression. Considering the excessive barriers that exist for the inclusion of these people into organisations, it can be deduced that digital literacy skills and cultivating a growth mindset skill, though desired, is not enough for previously incarcerated persons to re-enter formal economic sectors and participate in meaningful positions.

Social media access for incarcerated persons will help expedite the development of digital literacy skills, maintain external relationships to advance social re-entry, and help build a knowledge network that fosters an environment conducive to continuous learning. The skills that stand to be realised by enabling access to digital platforms are those that can be transferable for formal economic participation. While access to digital platforms might pose a risk, it is this access that has the best advantage of assisting the DCS to achieve its rehabilitation

mandate. Hence it should be incumbent on the DCS to find creative mitigation strategies to eliminate digital access risk.

The general lack of digital leadership skills within the DCS is the source of the de-prioritisation of digital skills development for the prison population. Many barriers against digital advancements within the DCS are as a result of this, particularly considering that there may well be a general lack of digital literacy skills among the DCS officials as well. The effects of this reality are far-reaching as people seeking to better themselves through access to FET institutions are indirectly disadvantaged, while the DCS may also be missing opportunities to transform the DCS culture for the better.

Chapter 6: Conclusion - Promoting digital skills development for South African incarcerated persons

6.1 Introduction

Chapter five analysed the digital skills regarded most important for the employment of previously incarcerated persons and the barriers affecting their inclusion into the formal economic sectors; the socio-economic impact of failing to develop digital skills for incarcerated persons; and the state of the digital readiness of the DCS to enable the development of digital skills. This section will present propositions concerning the kinds of digital skills incarcerated persons should be developing in preparation of formal economic re-entry; the importance of their digital literacy skills development for social re-entry; and how the DCS can remove some of the institutional barriers that currently hinder the prospect of digital skills development within correctional facilities.

A conceptual framework, for the DCS to adopt in the pursuit of creating an environment conducive to digital literacy skills development and continuous learning for incarcerated persons, is also presented in this chapter and discussed as part of the implementation recommendations.

Finally, suggestions for future research, informed by the literature and the perspectives and insights provided by the respondents while conducting this exploratory research, will also be shared at the end of the chapter.

6.2 Propositions for digital skills and digital leadership skills development

6.2.1 Digital skills requirements for South African incarcerated persons for formal economic re-entry

ICT practitioner and advanced digital skills may very well be the skills category that could position previously incarcerated persons favourably for formal economic inclusion. Building ICT practitioner skills will provide job-market differentiation for these people and also make it possible for them to explore economic entry through markets such as the gig economy, where they will not have to be formally employed by a company to sell their skills. This would circumvent the inclusion barriers that may exist within organisations.

The economic sector respondents have shown no interest or desire to include these people in their organisations and teams. It was found that on the rare occasion that inclusion might occur, these people will still be subjected to stigmatisation and a performance bias within the organisation – this will lead to a toxic working environment for them. Although some sector respondents have indicated a willingness to buy skills in the pursuit of attracting the required digital skills to advance their digital aspirations, they would only do so to attain the scarce ICT practitioner skills. The current South African job market climate is turbulent with unemployment rates at 38.5 per cent (Kaziboni, 2019). This job market probably consists of many people who have digital literacy skills and no criminal record, prior to competing with previously incarcerated persons for the same digital literacy skill-level jobs. The expectation that sectors would take on the “risk” of choosing to employ a previously incarcerated person above the “ideal” citizen is a doubtful proposition. It is for this reason, that these propositions and recommendations are made only for offenders and DCS officials.

Digital literacy skills will be most useful for those people leaving incarceration who hope to explore the opportunities of becoming mentors or digital literacy skills

trainers within the correctional system and other social institutions. Digital literacy skills, however, will not be enough for these people to enter formal employment in the South African economic sectors.

6.2.2 Digital literacy skills development for social reintegration

The development of digital literacy skills is materially important for the reintegration of incarcerated persons into the digital society. Social reintegration aspirations of these people cannot be disconnected from their ability to interact with the external society and maintain relationships while incarcerated. The advent of social media technologies has reconfigured the way people interact with each other, share knowledge, and consume information. Given the apparent low digital literacy level of the general prison population, the inability of incarcerated persons to engage with and through digital platforms will limit social interactions and frustrate any post-incarceration social reintegration efforts.

The current state of the disconnect between the prison population and the digital environment has more than social reintegration consequences. It also affects the ability to self-actualise through accessing FET formal qualifications and imposes additional barriers to economic participation. The lack of digital skills within the prison population will further entrench stigmatisation of self, communities, and the industry sectors. The net effect of this may ultimately be that previously incarcerated persons choose to consciously re-offend – either as a strategy to alleviate poverty or as a method of removal from their alienated society through reincarceration.

The DCS's regulations concerning access to digital platforms and their attitude towards digital skills development within prisons urgently need to be altered to ameliorate the resonant digital divide between the prison population and the digital communities they need to be reinstated into. These regulations also need to be adjusted because it appears that they are inhibiting the DCS from achieving its strategic imperatives.

6.2.3 Removing barriers for digital skills development in the South African correctional services environment

The digital leadership capacity of the DCS needs to be developed. The failure of the leadership within the DCS to realise the importance of digital skills development for incarcerated persons for socio-economic reintegration in the current digital age and for the DCS to apply knowledgeability to exploit technological solutions to create the necessary environments to enable digital skills development in the prison system is disruptive to the attainment of digital skills for the prison population. Digital leadership skills development for the DCS's leadership should also encourage digital literacy skills development for its officials so that the whole organisation can develop a digital culture that will remove psychological and skills barriers that exist against digitisation.

The evident lack of digital leadership skills also encumbers the process of prioritising the procurement and establishment of the relevant digital infrastructure required to enable this environment. Some of the important implications of this current reality are that the, firstly, the DCS will fail to implement effective measures to address successful social reintegration into the digital society for incarcerated persons. Secondly, it will also fail to develop the necessary digital skills to give previously incarcerated persons their best chance at economic participation, thus undermining its own purpose of creating the "ideal South African citizen".

6.3 Recommendations

A conceptual framework for developing digital skills for incarcerated persons:

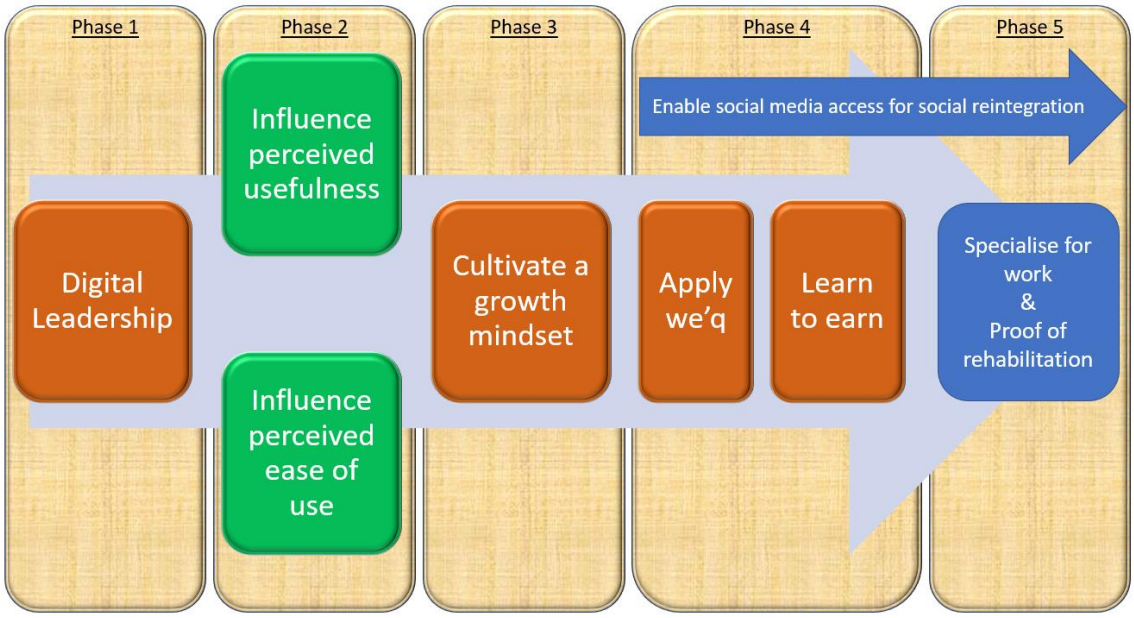

Figure 11: Adaptation of the New Skills Now Taxonomy and TAM model to promote digital skills development for incarcerated persons

As illustrated in this conceptual framework, the foundational phase for enabling digital skills development within the DCS involves capacitating the DCS leadership with the digital leadership skills necessary to establish a digital skills development environment for incarcerated persons. Once the necessary strategies are defined and the physical-digital environment designed and implemented, it will remain the responsibility of the leadership to influence digital adoption in the prison population through articulating the usefulness of digital skills, employing gamification strategies to influence the use of digital tools where applicable, and realign digital access policies to encourage increased usage and sustained communication with external communities. Once digital adoption is achieved within the prison population, the connectivism learning theory will begin to take effect, where knowledge networks will be created through learners actuating knowledge sharing by participating in a diverse and autonomous learning community (Goldie, 2016), thereby cultivating a growth mindset

environment. As learning increases,the skills to interact, build new relationships and self-awareness to increase their digital etiquette will be enhanced and the prison population will learn foundational skills that will prepare them for entry into the formal economy, through the “learn to earn” process (Accenture, 2017). As continuous learning and development happens within the prison system, stimulated by a cultivated growth mindset environment, incarcerated persons should then be able to start developing ICT practitioner, or otherwise specialist skills, to meet specific economic industry requirements. In parallell, the DCS should strengthen external stakeholder relationships to collectively determine “proof of rehabilitation” requirements to ensure that these are fulfilled in preparation for release and to begin building trusted pipelines between incarceration and economic entry.

The details of the activities which must be undertaken in each phase are highlighted below:

Phase One

The DCS must increase their digital leadership capacity either by bringing in external people who have digital leadership skills or by up-skilling their current staff. The leadership development of the DCS should be focused on building transformational leadership qualities within their leadership structures, that are change-oriented and have a good understanding of technology (Kane et al., 2016), that can develop social and relational competencies, are innovative, and can identify and exploit opportunities through leveraging technology (Sousa & Rocha, 2017). Once the digital leadership capacity of the DCS has been increased, a digital strategy for learning and development within prisons needs to be defined and a physical-digital environment deployed as part of this phase. As part of defining the strategy to mitigate access risk and protect both the prison population and the external communities, special consideration needs to be made at this stage for information security and monitoring the use of the digital tools. As the protagonists of the digital revolution within the prison system, the DCS’s leadership should also ensure that their officials develop relevant digital

skills, as they will ultimately assume the operational responsibility of facilitating responsible digital access and skills development for incarcerated persons. It is also incumbent on the leadership to ensure that the officials are aligned on the digital strategy and have bought into the idea.

Phase Two

Once the digital environment is deployed and a technology environment is created, the DCS leadership and officials should then embark on a communication strategy so that the adoption of the digital technologies can be advanced to satisfy the technology acceptance model (Legris et al., 2003). The communication strategy will encourage the use of this environment by informing the prison population about the existence of the digital environment, its usefulness for self-actualisation and the prosperity prospects that it creates post-incarceration, the ease of using this environment, and the support of the DCS institution.

The terms and conditions must be clearly articulated to the prison population to avoid abuse of digital infrastructure. A gamification strategy, where certain privileges can be awarded for early adoption and responsible use or removed in cases of abuse, can be a powerful tool to ensure adherence. The frameworks within which technology should be used (for social networking, skills development, and network video gaming which in turn can also develop leadership skills that can be transferable to economic sectors), should also be clearly articulated. (Colbert et al., 2016).

Phase 3

Early digital adopters should be targeted to lead adoption within the prison population. These should be the people who already have digital skills or university degrees and are now mentors. This group of people should then be used to influence adoption for the late adopters thereby increasing digital adoption within the population. Once there is general adoption, digital literacy skills will begin to develop and, theoretically, the knowledge networks would be

created, thus establishing an environment conducive for continuous learning within the prison population. DCS leadership should ensure constant policy alignment and support in order to enable continuous and sustained responsible digital access and usage.

Phase 4

The growth mindset environment created through digital access and responsible usage through policy enforcement, monitoring, and gamification, will allow the prison population to connect and develop digital literacy skills and etiquette, that will sustain quality interactions with external communities, thereby facilitating the ease of transition into social re-entry upon release, as well as develop requisite digital literacy skills for economic re-entry. While incarcerated, the quality of the digital interactions of the population would also create an opportunity to promote harmony within the prison environment. People whose digital skillset is more advanced should be incentivised to help other people who are struggling, thereby incentivising those with lower skillsets to catch up, so that they too can be incentivised to train other people, thereby perpetuating a skills development culture.

Simultaneously at this stage access to social media platforms should be enabled and the prison population should be encouraged to begin connecting with the outside world and to start rebuilding sustainable relationships, further advancing a seamless reintegration into the digital society upon their release.

Phase five

As learning and development become a continuous process in the prison system, incarcerated persons would naturally begin to develop advanced digital skills specific for economic entry. It is at this stage that the DCS should also define, with key inputs from economic and social stakeholders, what constitutes proof of rehabilitation. Once this requirement is defined, the DCS should also endeavour, through strengthened stakeholder relationships, to award deserving incarcerated persons with this proof of rehabiltation, change stakeholder perception of the

DCS's capacity to rehabilitate people, and forge pipeline entries into the economic sector for their deserving participants.

6.4 Suggestions for further research

Developing a proof of rehabilitation framework: Given how important this requirement is for entry into industry sectors, it is important to establish what would constitute proof of rehabilitation for a previously incarcerated person post-incarceration and how to develop this requirement and facilitate its admissibility within both the economic sectors and the community stakeholders.

Accelerating ICT practitioner skills development for incarcerated persons: As it is clear that currently it is those within the prison population that have ICT practitioner skills who may be able to access the economic sector, it could be beneficial to research specific digital pedagogies designed specifically for the South African prison population in order to accelerate the development of ICT practitioner skills, while taking their literacy levels into consideration.

Developing work integration pipelines together with the economic sector stakeholders that enable the prison population to seamlessly integrate economically post-incarceration: The DCS needs to build confidence in their stakeholders about their ability to rehabilitate incarcerated people. One of the ways that this can be done is by providing the economic sectors with a method to test the quality of people being released from prison, through employment. A study needs to be undertaken to define the criteria under which such initiatives can be explored, monitored, and controlled.

The ambiguity of the meaning of the concept of “digital”: Although not directly related to the purpose of this study, it was found that all respondents in this study could explain what “digital” meant to them and that all explanations offered differed between all participants, even those from within same organisations. It

would be prudent to study the effects of a coherent understanding of “digital” within an organisation, and the implications this could have on the organisation’s adoption of digital, its acceleration of digital, and tangible benefits such as profitability and culture.

LIST OF REFERENCES

Accenture. (2017). *New Skills Now inclusion in the digital economy*. Retrieved from https://www.accenture.com/_acnmedia/PDF-63/Accenture-New-Skills-Now-Inclusion-in-the-digital.pdf

Adams, A., & Pike, A. (2008). Security issues within prison and health ODL programmes. In *PCF5 Conference, London.* Retrieved from: http://www. wikieducator. org/images/a/ab/PID_461. pdf

Adams, W. C. (2015). Conducting Semi-Structured Interviews. In K. E. Newcomer, H. P. Hatry, & J. S. Wholey (Eds.), *Handbook of Practical Program Evaluation*, 492–505. https://doi.org/10.1002/9781119171386.ch19

Astalin, P. K. (2013). Qualitative research designs: A conceptual framework. *International Journal of Social Science and Interdisciplinary Research*. 118-124. Retrieved from https://pdfs.semanticscholar.org/baa7/c8f5577b0b1798b5e9f559f5cbae32bf1a36.pdf

BBC News. (2019, March 15). Prisoners in England to be taught code. Retrieved August 14, 2019, from BBC News website: https://www.bbc.com/news/technology-47570134

Binkley, M., Erstad, O., Herman, J., Raizen, S., Ripley, M., Miller-Ricci, M., & Rumble, M. (2012). Defining twenty-first century skills. In *Assessment and Teaching of 21st Century Skills*, 17-66. Springer, Dordrecht.

Braun, V., Clarke, V., & Terry, G. (2012). Thematic Analysis. In Cooper et al (Ed.), *APA Handbook of Research Methods in Psychology: Vol. 2. Research Designs*, 57 – 71. Retrieved from https://link.springer.com/content/pdf/10.1007/978-981-10-5251-4_103.pdf

Castek, J., Jacobs, G., Pendell, K. D., Pizzolato, D., Reder, S., & Withers, E. (2015). *Program Design: Learning Digital Skills in a Corrections Setting. 9.*

Retrieved from https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?referer=https://www.google.co.za/&httpsredir=1&article=1011&context=dla_research_briefs

Chetty, K., Qigui, L., Gcora, N., Josie, J., Wenwei, L., & Fang, C. (2018). Bridging the digital divide: measuring digital literacy. *Economics: The Open-Access, Open-Assessment E-Journal*, 1-20. doi: 10.5018/economics-ejournal.ja.2018-23

Chikadzi, V. (2017). Challenges facing ex-offenders when reintegrating into maintream society in Gauteng, South Africa. *Social Work/Maatskaplike Werk Vol 53 No 2; Issue 8,* 288-300. doi:http://dx.doi.org/10.15270/52-2-569

Chinien, C., & Boutin, F. (2011). *Defining essential digital skills in the canadian workplace*. Human Resources and Skills Development Canada. Retrieved from http://en.copian.ca/library/research/digi_es_can_workplace/digi_es_can_workplace.pdf

Cilliers, C. (2008). The South African prison policy. *University of South Africa, Pretoria*. Retrieved from https://www.arasa.info/files/8514/2649/8310/27_Stavern_Report_South_Africa.pdf

Colbert, A., Yee, N., & George, G. (2016). The digital workforce and the workplace of the future. *Academy of Management Journal,* 731–739. doi: 10.5465/amj.2016.4003

Craffert, L., Ungerer, M., Visser, K., Morrison, J., & Claassen, W. (2014). Strategies, practices and skills for competitiveness in the digital economy: a perspective on large companies in South Africa. Retrieved from http://repository.uwc.ac.za/xmlui/bitstream/handle/10566/1187/CraffertDigitalEconomy2014.pdf?sequence=3

Department of Correctional Services. (2016). White paper on corrections in South Africa. Retrieved from http://www.dcs.gov.za/wp-content/uploads/2016/08/WHITE-PAPER-8.pdf

Department of Correctional Services. (2018). Mandate. Retrieved from. http://www.dcs.gov.za/?page_id=172

Dombrowski, U., & Wagner, T. (2014). Mental strain as field of action in the 4th industrial revolution. *Procedia Cirp*, *17*, 100-105. doi: 10.1016/j.procir.2014.01.077

Duwe, G. (2017). *The use and impact of correctional programming for inmates on pre-and post-release outcomes*. US Department of Justice, Office of Justice Programs, National Institute of Justice.

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, 532 - 550. doi: 10.2307/258557

Fourie, E. (2015). Thinking about incarceration in South Africa: The Inside-out Outside-in interest group. *Psychology in Society*, 77-89. doi: 10.17159/2309-8708/2015/n48a4

Gallardo-Echenique, E. E., Minelli, J., Marqués-Molias, L., & Esteve-Mon, F. (2015). Digital competence in the knowledge society. *MERLOT Journal of Online Learning and Teaching*, *11*(1),17

Goldie, J. G. S. (2016). Connectivism: A knowledge learning theory for the digital age? *Medical Teacher, 38*(10), 1064–1069. https://doi.org/10.3109/0142159X.2016.1173661

Herbig, F. J. W., & Hesselink, A. M. (2012). Seeing the person, not just the number: Needs-based rehabilitation of offenders in South African prisons. *South African Crime Quarterly*, *41*, 29-37. Institute for Security Studies.

Hermann, M., Pentek, T., & Otto, B. (2015, January). Design Principles for Industrie 4.0 Scenarios. In *2016 49th Hawaii international conference on system sciences (HICSS)*, 3928-3937. IEEE. Retrieved from http://www.iim.mb.tu-dortmund.de/cms/de/forschung/Arbeitsberichte/Design-Principles-for-Industrie-4_0-Scenarios.pdf

Hoch, J. E., Bommer, W. H., Dulebohn, J. H., & Wu, D. (2018). Do ethical, authentic, and servant leadership explain variance above and beyond transformational leadership? A meta-analysis. *Journal of Management*, *44*(2), 501-529. doi: 10.1177/0149206316665461

Hopkins, S., & Farley, H. (2015). *e-Learning Incarcerated: Prison Education and Digital Inclusion.* 13. Retrieved from https://www.researchgate.net/publication/283646200_E-Learning_incarcerated_Prison_education_and_digital_inclusion

Ilomäki, L., Paavola, S., Lakkala, M., & Kantosalo, A. (2016). Digital competence–an emergent boundary concept for policy and educational research. *Education and Information Technologies*, *21*(3), 655-679. doi: 10.1007/s10639-014-9346-4

Joburg Centre for Software Engineering and IITPSA (Institute of Information Technology Professionals South Africa). (2018). JCSE-IITPSA *ICT Skills Survey*. Institute of Information Technology Professionals South Africa. Retrieved from https://www.iitpsa.org.za/wp-content/uploads/2018/10/2018-JCSE-IITPSA-ICT-Skills-Survey-V1.pdf

Jules-Macquet, R. (2014). *The State of South African Prisons.* National Institute for Crime Prevention and the Reintegration of Offenders (NICRO) Public Education Series. Edition One, *22*. Retrieved from http://press.nicro.org.za/images/PDF/Public-Education-Paper-The-State-of-South-African-Prisons-2014.pdf

Kaziboni, L. (2019). Preparing jobs for technological advancements. Retrieved from http://www.dnaeconomics.com/pages/trade_policy/?zDispID=NewsArtPREPARING_JOBS_FOR_TECHNOLOGICAL_ADVANCEMENTS

Kiron, D., Kane, G. C., Palmer, D., Phillips, A. N., & Buckley, N. (2016). Aligning the organisation for its digital future. *MIT Sloan Management Review*, *58*(1).

Khan, S. (2016). Leadership in the digital age: A study on the effects of digitalisation on top management leadership (master's thesis). Stockholm Business School. Stockholm University, 54. Retrieved from https://su.diva-portal.org/smash/get/diva2:971518/FULLTEXT02.pdf

Khwela, M. N. (2014). A need to re-integrate prisoners to the community: A case of Polokwane Medium B Prison, South Africa. *Athens Journal of Social Sciences*, *1*(2), 145-155. doi: 10.30958/ajss.1-2-5

Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management, 40*(3), 191–204. https://doi.org/10.1016/S0378-7206(01)00143-4

Narbona, J. (2016). Digital leadership, twitter and Pope Francis. *Church, Communication and Culture*, 90-109. doi:10.1080/23753234.2016.1181307

Neumann, M. M., Finger, G., & Neumann, D. L. (2017). A conceptual framework for emergent digital literacy. *Early Childhood Education Journal*, *45*(4), 471-479. doi: 10.1007/s10643-016-0792-z

Prisoner Learning Alliance (2020). *The digital divide Lessons from prisons abroad*. Retrieved from https://prisonerlearningalliance.org.uk/wp-content/uploads/2020/07/The-Digital-Divide-Lessons-from-prisons-abroad.pdf

Riel, J. (2012). The digitally literate citizen: How digital literacy empowers mass participation in the United States. *Available at SSRN 2781190*. doi: 10.2139/ssrn.2781190

Roux, A., Viljoen, D., & Samson, D. (2019). *Futures of work in South Africa*. Executive Summary. Nedlac. Retrieved from http://nedlac.org.za/wp-content/uploads/2017/10/Futures-of-Work-in-South-Africa-Executive-Summary-March-2019.pdf

Sifunda, S., Reddy, P. S., Braithwaite, R., Stephens, T., Bhengu, S., Ruiter, R. A., & van den Borne, B. (2008). The effectiveness of a peer-led HIV/AIDS and STI health education intervention for prison inmates in South Africa. *Health Education & Behavior*, *35*(4), 494-508. doi: 10.1177/1090198106294894

Skills Queensland. (2013). The digital economy and impact of the national high speed broadband network: a literature review: implications for skills development in Queensland, Skills Queensland, Brisbane. Retrieved from http://hdl.voced.edu.au/10707/254990

Soeker, M.S., Carriem, F., Hendricks, M., Joynt, T., Naidoo, N. (2011). Breaking into the world of employment: The vocational experience of South African male ex-offenders. DOI 10.3233/WOR-2012-1411

South African Human Rights Commission. (1998). *The national prisons project of the South African human rights commission*. Retrieved from https://www.sahrc.org.za/home/21/files/Reports/The%20Nationals%20Prisons%20Project%20of%20SAHRC.1998.pdf

Sousa, M. J., & Rocha, Á. (2017). Skills for disruptive digital business. *Journal of Business Research*, *94*, 257-263. doi: 10.1016/j.jbusres.2017.12.051

Special Rapporteur on Prisons. (2004). *Report of the Special Rapporteur on prisons and conditions of detention in Africa mission to the Republic of South Africa*. Retrieved from: https://genderjustice.org.za/publication/report-of-the-special-rapporteur-on-prisons-and-conditions-of-detention-in-africa/

United Nations (2018). *Introductory Handbook on The Prevention of Recidivism and the Social Reintegration of Offenders*. Retrieved from

https://www.unodc.org/documents/justice-and-prison-reform/18-02303_ebook.pdf

van Greunen, D., Venter, I., Craffert, L., Veldsman, A., Candi, M., & Sigurdarson, H. T. (2015). *Diagnosis of the digital landscape in South Africa's Skills, infrastructure and available technologies*. Common Good First Report co-funded by the Erasmus +programme of the European Union. Retrieved from https://www.commongoodfirst.com/wp-content/uploads/2018/02/WP2_full.pdf

Vītoliņa, I. (2015). E-inclusion process and societal digital skill development. *Discourse and Communication for Sustainable Education*, *6*(1), 86-94. doi: 10.1515/dcse-2015-0006

Zinyemba, L., Maushe, F., Mangwiro, V. (2020). *Treatment and rehabilitation offenders: Options for social workers in Zimbabwe.* Retrieved from https://www.ajol.info/index.php/ajsw/article/view/198919

APPENDIX A – Participation information sheet

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

1 Jan Smuts Avenue
Johannesburg
2000

PARTICIPANT INFORMATION SHEET

Dear Sir / Madam,

My name is Katlego Mohohlwane, a Masters student in Management in the field of Digital Business at the University of the Witwatersrand in Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating promoting digital skills development for South African criminal offenders. The aim of this research project is to explore how digital skills can be developed in the South African correctional services system to enable socio-economic participation for offenders after release from incarceration.

As part of this project, I would like to invite you to take part in an interview. This activity will take around sixty minutes. With your permission, I would also like to record the interview using a voice recording application on a cellphone.

You will not receive any direct benefits from participating in this research, and there are no disadvantages or penalties for not participating. You may withdraw at any time or not answer any question if you do not want to. The interview will be completely confidential and anonymous as I will not publish your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will use a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions at any time during this research process, feel free to contact me or my supervisor on the details listed below. This study will be written up as a research report which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email Shaun.Schoeman@wits.ac.za

Yours sincerely,
Katlego Letseke Mohohlwane

Katlego Mohohlwane, katlego.moh@gmail.com, 073 610 0682
Dr Lucienne Abrahams, luciennesa@gmail.com, 082 569 7675

APPENDIX B – Informed consent form

Interview: Informed Consent Form

Promoting digital skills development for South African incarcerated criminal offenders
Katlego Letseke Mohohlwane

I …….. agree to participate in this research project. The research has been explained to me and I understand what my participation will involve.

I agree that my participation will remain anonymous	YES	NO	(please circle)
I agree that the researcher may use anonymous quotes in his research report	YES	NO	
I agree that the interview may be audio recorded	YES	NO	
I agree that the information I provide may be used anonymously by other researchers following this study	YES	NO	

…… (signature)
…… (name of participant)
…… (date)

APPENDIX C – Ethical clearance certificate

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/BA1656393/815
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below)

This certificate is only valid if accompanied by formal permission from the relevant stakeholder(s).

Project title	Promoting digital skills development for South African incarcerated criminal offenders
Investigator / Researcher	Mr Katlego Mohohlwane
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved unconditionally
Issue Date of Certificate	2019/10/22
Expiry date	Date of submission of the project report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

24/10/2019
Date:

APPENDIX D – Interview questions (industry HR practitioners)

1. What are the digital skills requirements to achieve your digital transformation?
2. How is your company organised to support the development and/or continuous development of these requisite skills for its employees?
3. How can the digital leadership of your company be characterised?
4. What digital threshold competencies are required in your company leadership and how are these measured/determined?
5. What is the company leadership's attitude toward digital skills development and how do they foster it?
6. What is your company's organisational culture and how is it aligned with promoting your digital transformation agenda?
7. Would you consider employing a previously incarcerated person? Why?
8. Which threshold digital competencies would you would require from a potential previously incarcerated person?
9. How would you place a previously incarcerated employee within your organisation to help advance your digital transformation agenda?
10. What, in your opinion, is the biggest barrier of economic participation for previously incarcerated individuals and why?

APPENDIX E – Interview questions (thought leaders)

1. How do most citizens experience the digital revolution?
2. How do previously incarcerated persons experience the digital revolution?
3. How important are digital skills to the process of reintegrating previously incarcerated persons in the digital society?
4. How are new social phenomena like ‘social / media influencers’ shaping society’s outlook on life.
5. Which digital skills are important for previously incarcerated persons to increase their likelihoods of socio-economic participation and why?
6. What, in your opinion, will be the implications of excluding previously incarcerated persons from the digital society?
7. How can previously incarcerated individuals be encouraged to develop digital literacy?
8. How can incarcerated offenders be prepared for economic participation in the digital economy?
9. What, in your opinion, is the biggest barrier of social reintegration for previously incarcerated persons and why?

APPENDIX F – Interview questions (DCS leadership)

1. Which digital learning interventions are prioritised by the DCS?
2. Why has DCS leadership prioritised these digital learning interventions?
3. How are these digital learning interventions delivered to offenders?
4. How is the DCS motivating offenders to participate in these digital learning interventions?
5. How do you measure the effectiveness of these digital learning interventions?
6. How is the DCS preparing offenders for socio-economic participation in the digital economy post-incarceration?
7. How is the DCS leadership creating and encouraging a culture of continuous learning among offenders?
8. How can the digital competencies of the leadership team in the DCS be characterised?
9. How important is digital transformation to the DCS leadership in the digital economy?
10. What, in your opinion, is the biggest barrier of socio-economic participation for previously incarcerated persons and why?