NELSON MANDELA UNIVERSITY

THE READINESS FOR THE 4TH INDUSTRIAL REVOLUTION BY SARS TOWARDS 2030

R.C. BOTHA

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THE READINESS FOR THE 4TH INDUSTRIAL REVOLUTION BY SARS TOWARDS 2030

By

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Submitted in partial fulfilment of the requirements for the degree **MASTERS IN BUSINESS ADMINISTRATION** in the Faculty of Business and Economic Sciences at the Nelson Mandela University

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DECLARATION

I, Reneé Chrystal Botha (S194435870), hereby declare that the treatise/ dissertation/ thesis for Masters' in Business Administration to be awarded is my own work and that it has not previously been submitted for assessment or completion of any postgraduate qualification to another University or for another qualification.

R.C. Botha

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ABSTRACT

The South African Revenue Service (SARS) is an autonomous agent that was established to collect taxes on behalf of the state. This mandate is shared across countries where the common thread of revenue collection agencies is that they all need to collect revenue, want participants within the system to act responsibly, the process to be fair and to act within the boundaries of legislation.

It has become increasingly challenging for revenue collection agencies across the world to ensure tax compliance and ensure optimal revenue collection when unemployment rates are high, and the economy continues to struggle. It is a shared objective between revenue collection agencies to optimise revenue collection initiative and to narrow the tax gap.

The technological advances in all sectors have grown at an exponential rate within a very short period. The WEF (2018) emphasised that the fourth industrial revolution (4IR) brings with it an era of unprecedented innovation, technical change and global connectivity. Technology has become the key driver in assisting SARS to achieve its objectives to inform taxpayers of their responsibilities, make it easy for them to comply and ensure compliance to the tax laws.

The primary objective of the research study is to investigate the possible factors that could influence the future state of revenue services, develop a series of alternative scenarios, and provide the preferred future of the South African Revenue Services towards 2030. The Six Pillars of futures studies provide a theory of futures thinking that links method and tools, that is developed through praxis (Inayatullah, 2012). The Causal Layered Analysis (CLA) was the preferred research tool used in this study to deepen the future analysis. Emphasis was placed on scenario planning and the creation of alternative futures for the South African Revenue Services towards 2030. The drivers of change that impacted the economy were identified and how it can be utilised to close the tax gap.

SARS has been a victim of seizure where the destabilising of corporate governance and efficiency was the core objective. It is therefore important to understand the past and present to enable better planning. This paper aims to better understand the disruptors to industry and the opportunity to improve efficiency and effectiveness using

technology associated with the 4IR. SARS has great potential in being globally competitive with other countries, if government, stakeholders and SARS leadership have a shared vision of what the future revenue services will look like, what its capabilities will be and resource availability to ensure this vision is realised.

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LIST OF ACRONYMS AND ABBREVIATIONS

4IR	Fourth Industrial Revolution
AI	Artificial Intelligence
API	Application of Programming Interfaces
ATO	Australian Tax Office
CBN	Capacity Building Network
CGT	Capital Gains Tax
CIT	Company Income Tax
CLA	Causal Layered Analysis (CLA)
CRA	Canada Revenue Agency
CRA	Centre of Risk Analysis
DIST	Digital Information Services and Technology
DTA	Double Taxation Agreement
DTL	Digital Distributed Ledger
FATF	Financial Action Task Force
FTA	Forum on Tax Administration
GDP	Gross Domestic Product
IDC	Industrial Development Corporation
IoT	Internet of Things
IRS	Internal Revenue Service
KSP	Knowledge Sharing Platform
MTBPS	Medium Term Budget Policy Statement
NDP	National Development Plan
OECD	Organisation for Economic Co-operation and Development
P2P	Peer to Peer
PAYE	Pay As You Earn
PIT	Personal Income Tax
PWC	Price Waterhouse Coopers
SARB	South African Reserve Bank

SARS	South African Revenue Service
SOE's	State Owned Enterprises
STEM	Science, Technology, Engineering & Mathematics
TADAT	Tax Administration Diagnostic Tool
UK	United Kingdom
USA	United States of America
UYU	Urban Youth Unemployment
VAT	Value Added Tax
VDP	Voluntary Disclosure Programme
WEF	World Economic Forum

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THE READINESS FOR THE 4TH INDUSTRIAL REVOLUTION BY SARS TOWARDS 2030.

CHAPTER 1: SCOPE OF THE STUDY

1.1 INTRODUCTION

Governments collect revenue in the form of taxes and non-core taxes such as estate duty, donations tax and transfer duty. It includes not only the collection of taxes, but also to ensure that there are investigations into cases of tax evasion and the institution of compliance audits. They mainly collect revenue for two purposes, namely, to finance goods and services to deliver to their citizens and businesses; and, secondly, to fulfil their redistributive role. The Revenue Services mandate would, therefore, include these elements (Nugent, 2018; SARS, 2016).

The South African Revenue Service Act (No 34 of 1997) provides the South African Revenue Service (SARS) with a mandate "to collect all revenues due, ensure optimal compliance with Tax, Customs and Excise legislation and provide a customs and excise service that will facilitate legitimate trade as well as protect our economy and society" (SARS, 2016).

Other countries have similar directives in respect of revenue collection on behalf of the state. The Australian Tax Office (ATO) states that its purpose is "to contribute to the economic and social wellbeing of Australians by fostering willing participants in the tax and superannuation system" (ATO, 2018).

In the United States of America, the Internal Revenue Service (IRS) mission is to "provide America's taxpayers top-quality service by helping them to understand and meet their tax responsibilities and enforce the law with integrity and fairness to all" (IRS, 2018).

The Canada Revenue Agency (CRA) mandate "is to make sure Canadians pay their fair share of taxes and receive their rightful share of benefits. In fulfilling its core responsibilities, the CRA administers the Income Tax Act, the Excise Tax Act and the Excise Act; collects taxes on behalf of provinces and territories; collects certain non−tax debts for the federal government; and administers legislation relating to the Canada Pension Plan and the employment insurance program." (CRA, 2019)

The common thread with the revenue collection agencies across countries is that they all need to collect revenue, want the participants within the system to act responsibly and the process to be fair and to act within the boundaries of legislation/law. It is, however, becoming challenging to ensure tax compliance and optimal revenue collection when the economy continues to struggle and unemployment levels remain high, as stated by the former commissioner, Tom Moyane (SARS, 2017). It is, therefore, imperative to identify potential revenue gaps and to put strategies in place to ensure compliance with the tax and customs acts. The question, then, is how do tax authorities plan to ensure that they address issues around optimum revenue collection and bridge potential gaps? The answer lies in the development of an effective strategy.

The creation of a strategy represents the commitment to pursue a particular set of actions in growing the business, attracting and pleasing customers, competing successfully, conducting operations, and improving the company's financial and market performance (Hough, Thompson, Strickland, & Gamble, 2007). The company's strategy is their action plan and is all about how these goals will be achieved (Hough et el., 2007). Pugh and Bourgeois (2011) state that strategy is an on-going process and a way of thinking about business, assessing its strengths, and diagnosing its weaknesses, of envisioning its possibilities. A strategy is not stagnant but an evolutionary process as this is something we do and have to keep doing in order to support and grow successful organisations (Pugh & Bourgeois, 2011).

Various tax authorities have strategic plans with strategic goals identified to achieve these goals.

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For instance, each year the Australian Tax Office (ATO) provides a corporate plan to outline the future years' priorities with strategic objectives that reflect the goals over the long term. ATO has issued a corporate plan from 2018 up to 2024 (ATO, 2018). The following are the five perspectives and the grouping of ATO strategic objectives.

- Government. Reducing the tax gap and providing assurance across the tax superannuation systems to build community confidence. Focus would be on the design for better tax and superannuation systems to make it both easy to comply and hard not to.
- Client. The client experience and interactions are well designed, tailored, fair and transparent. Collaboration with others to deliver effective and efficient tax and superannuation system
- Workplace. The workforce to be high performing, responsive and professional with the right culture to deliver now and in the future. Providing the right tools and environment so that staff can deliver the best client experience.
- Operational. Use data and insights to deliver value for clients and inform decision-making across everything. Technology and digital services deliver a reliable and contemporary client experience.
- Financial. Strive for operational excellence to achieve efficiency and quality outcomes (ATO, 2018).

Similarly, a strategic plan, FY2018-2022, issued by the American tax authority, also known as Internal Revenue Service (IRS), is an inclusive process that engaged all IRS employees, leaders, advisory groups and key stakeholders, including the Department of Treasury. The purpose is to set forth the key goals to guide the agency over four years (IRS, 2018). The IRS has six strategic goals.

- Empower and enable all taxpayers to meet their tax obligations: The goal is to make it as easy as possible for taxpayers and their representatives to meet their tax obligations. The focus will be on simplifying the process for filing correction and payment. Improving education and outreach on taxpayer's rights and obligations where the aim is the increase in voluntary compliance. Modernising and expanding service channels to meet the taxpayer's expectations.
- Protect the integrity of the tax system by encouraging compliance through administering and enforcing the tax code: The American tax system is based on voluntary compliance and supported by appropriate enforcement. Innovative approaches are used to understand, detect and resolve potential noncompliance to ultimately close the tax gap.
- Collaboration with external partners proactively to improve tax administration: partnerships with other stakeholders where these partnerships expand beyond the traditional tax community, but also includes government entities (international, federal, state, local and tribunal), the private sector and universities. The aim is that joint efforts can help find innovative solutions and tackle common challenges to ultimately improve efficiency and client service.
- Cultivate a well-equipped, diverse, flexible and engaged workforce: A workplace culture that empowers employees to improve the taxpayer experience and uphold the tax code fairly. This will be achieved with a talent management strategy that will allow the IRS to identify human resource needs based on workload demands, business needs and tax legislation.
- Advance data access, usability and analytics to inform decision-making and improve operational outcomes: the aim is to integrate data into the culture to ultimately improve efficiency with regards to client service and successful implementation of tax laws. Analytics to be used to improve internal operations, taxpayer service and enforcement efforts.

- Drive increased agility, efficiency, effectiveness and security in IRS operations: This includes the modernisation and security of IT networks to achieve all strategic goals. Digitization will also assist with enhancing taxpayer-facing systems to ensure better and faster service. Investing in replacing aged infrastructure.

In Canada, the corporate business plan covers the Canada Revenue Agency's (CRA) core responsibilities and describes the major environmental factors influencing the five strategic priorities that frame the objectives the CRA has in place for 2019-20, including perspectives to 2021-22. Within the corporate plan five priorities are identified as focus areas to guide the CRA in delivering on its core responsibilities. The five priorities include strengthening of its service culture, maintaining fairness in the administration of Canada's tax and benefits, strengthening trust, transparency and accountability, and enabling innovation; empowering the people to excel (CRA, 2019). The CRA has identified strategic the following focus areas.

- Service delivery. Designing programs aimed to improve service delivery through all channels that is responsive to the public's needs. Foster greater levels of voluntary tax compliance and maintain the fairness of Canada's tax system. The education and support that the CRA offers to clients must be accessible, relevant, timely, accurate and complete.
- Operational agility. Collaboration and integration with organisations and government to enable faster response to the needs and expectations of Canadians. Better integration will make the CRA more agile and allow for the innovation needed to support its service transformation agenda.
- Profit shifting and offshore aggressive tax planning. The CRA recognises that e-commerce creates complex tax administrations. Reassessment from CRA audits from such complex tax cases are often challenged through the courts. The disputes will require timely resolution and will provide tax certainty for those in similar tax circumstances.
- Data security and privacy. Canadians trust that the CRA collects tax and benefit information for authorized purposes only. They must also be confident that the CRA will handle their data with the utmost security and strong privacy assurance.

- Effective workforce. The CRA has a strategic recruitment plan that enables social and cultural diversity, specialised skills set to support client-centred service and to add expertise in emerging technologies. The CRA recognises the importance of employee wellbeing and has put measures in place to maintain a respectful workplace.

- Emerging technology. Technology is a key enabler in providing insight into taxpayer behaviour to target non-compliance. It is also the tool needed to achieve innovative objectives for client-centred program design and delivery. The CRA recognises that technology continues to have a potentially disruptive influence. Emerging technologies, such as artificial intelligence and blockchain, offer significant potential to address the expectations of Canadians. But they also carry risks that must be effectively managed.

- Data management. Data assets and information must be managed strategically so that it enhances performance and optimises decision-making. Connecting its data systems, using third-party data (within the law), developing new tools and methods, and acquiring and developing technical expertise, will help the CRA enhance its predictive analysis and its use of behavioural economics to improve filing, payment and reporting compliance (CRA, 2019).

The South African Revenue Service (SARS) has issued its strategic plan covering the period 2016/2017 to 2020/2021. In line with its mandate, SARS seeks to achieve five core strategic outcomes listed below.

- Increased Customs and Excise compliance. The engagement approach to be differentiated by the level of compliance. Swift service for those who comply and to crackdown on those who are non-compliant.

- Increased tax compliance. SARS distinguishes between compliant and non-compliant taxpayers, where compliant taxpayers will be assisted through education, simplifying the tax administration and ensuring the channels available are cost effective and accessible. For non-compliant taxpayers the focus is on investing in effective detection and deterrent mechanisms.

- Increased ease and fairness of doing business with SARS. The integration of a customer-centric approach where operations and services are designed around

taxpayer and trader needs and expectations. Feedback loops to be established to monitor service from end-to-end, across all functions and feed the knowledge back into operations. The footprint into branches to be reduced and the migration of the majority of taxpayers and traders to a cheaper and convenient self-service digital channel. Education will be increased for stakeholders to promote tax compliance.

- Increased cost effectiveness and internal efficiencies. SARS will identify, recruit and retain the right people to maintain excellence in operations and to enable implementation of future strategies. A work environment that supports employee growth, innovation and development through providing the relevant skills and training. Prudent financial management to meet National Treasury budget condition and requirements. Zero tolerance to fraud and corruption within and outside SARS.

- Increased public trust and credibility. SARS recognises the importance of this trend and will facilitate close alignment in stakeholder engagements and faster employee advocacy to increase trust in the institution and broader government (SARS, 2016).

1.2 PROBLEM STATEMENT

The commission of inquiry into the tax administration and governance at SARS was established in 2018 by the former Minister of Finance, Mr Gigaba, because the integrity of SARS was questioned both domestically and abroad. The purpose was to establish recommendations addressing issues of governance and integrity that concerned investors, the rating agencies, financial institutions and the public (Nugent, 2018). The focus period of this enquiry was from 1 April 2014 to 31 March 2018. While one of the strategic plans that was issued for the period 2016 to 2022 is "increased public trust and credibility", the commission found that there had been a massive failure in integrity and governance at SARS.

SARS is going through a transitional period with a newly appointed commissioner, Mr Edward Kieswetter, who started office on 1 May 2019. His focus would be to take cognisance of the commission of inquiry into tax administration and governance and to restore trust and governance in this organisation. While robust short-term changes

will be eminent, refocusing its long-term strategic goals will be important to not be left behind with the evolving technological and economic climate.

As stated by the former commissioner, Tom Moyane, it is becoming increasingly difficult to ensure tax compliance and optimal revenue collection when the economy continues to struggle and unemployment levels remain high (SARS, 2017). It is, therefore, imperative that the drivers for change that prevent closing the revenue gaps be determined.

The tax statistics for 2018 provided by SARS (2018) indicated that personal income tax (PIT), corporate income tax (CIT) and value added tax (VAT) on aggregate contribute 80.7% of total revenue collections with PIT for 2017/2018 accounting for more than 38.1% of the total revenue. Job losses and an increased unemployment rate will, therefore, have a direct impact on the total revenue collection.

The unemployment rate as at Jan-Mar 2019 was 27.6% with a 0.9 percentage point increase from Jan-Mar 2018, which was 26.7% (StatsSA, 2019a). The slowdown in the economy, lower wage settlements, containment of bonus pay-outs, job shedding, increased unemployment and lower inflation are all factors that will influence the ability of SARS to collect revenue (SARS & National Treasury, 2019).

	Official unemployment rate					Expanded unemployment rate				
	Jan-Mar 2018	Oct-Dec 2018	Jan-Mar 2019	Qtr-to-qtr change	Year-on-year change	Jan-Mar 2018	Oct-Dec 2018	Jan-Mar 2019	Qtr-to-qtr change	Year-on-year change
	Per cent			Percentage points		Per cent			Percentage points	
South Africa	26,7	27,1	27,6	0,5	0,9	36,7	37,0	38,0	1,0	1,3
Western Cape	19,7	19,3	19,5	0,2	-0,2	22,5	23,1	22,7	-0,4	0,2
Eastern Cape	35,6	36,1	37,4	1,3	1,8	46,0	46,8	48,3	1,5	2,3
Northern Cape	29,5	25,0	26,0	1,0	-3,5	41,0	38,6	41,5	2,9	0,5
Free State	32,8	32,9	34,9	2,0	2,1	38,4	39,3	40,1	0,8	1,7
KwaZulu-Natal	22,3	25,6	25,1	-0,5	2,8	40,6	41,3	42,4	1,1	1,8
North West	25,8	26,6	26,4	-0,2	0,6	41,8	42,9	44,4	1,5	2,6
Gauteng	28,6	29,0	28,9	-0,1	0,3	33,6	33,6	33,6	0,0	0,0
Mpumalanga	32,4	32,0	34,2	2,2	1,8	42,5	41,1	43,0	1,9	0,5
Limpopo	19,9	16,5	18,5	2,0	-1,4	37,6	38,8	43,1	4,3	5,5

Figure 1: Unemployment Rate (Source: StatsSA, 2019a)

According to the World Economic Forum (2018) the Fourth Industrial Revolution (4IR) is moving at a rapid pace where technology is becoming increasingly interconnected and there is a merging of digital, physical and biological realms. Higher levels of efficiency in production and consumption, and expansion into new markets, are all part of the unfolding 4IR (Leopold, Ratcheva, & Zahidi, 2018). Revenue services are not immune to the need to adapt to ensure that optimal revenue collection is achieved.

1.3 RESEARCH OBJECTIVE

1.3.1 Primary research objective

The primary objective of the research study is to investigate the possible factors that could influence the future state of revenue services, develop a series of alternative scenarios, and provide the preferred future of the South African Revenue Services towards 2030.

1.3.2 Secondary research objective

In order to achieve the primary objective, the following secondary objectives have been formulated:

- to provide an in-depth analysis on the drivers of change that are affecting revenue collection;
- to provide an overview of the importance of tax compliance;
- to consider emerging threats and opportunities that will influence revenue collection;
- to provide a comparative analysis of SARS's readiness for 2030 versus other countries; and
- to present recommendations to address the factors that prevent or limit optimal revenue collection.

1.4 RESEARCH QUESTIONS

1.4.1 Primary Research Question

The primary research question of this study is: what is the extent and impact of readiness of revenue collection for SARS towards 2030?

1.4.2 Secondary Research Question

- What research methodologies can be utilised for this study?
- What are the drivers of change that influence revenue collection?
- What is the readiness of SARS for the evolving digital economy?
- What is the impact of cryptocurrency on revenue collection?
- What is the impact of ethical behaviour on revenue collection?
- What recommendations can be offered to government, revenue services and policy makers?

1.5 RESEARCH DESIGN AND METHODOLOGY

Research methodology is a systematic approach to solve a research problem (Kothari, 2004). According to Collis and Hussey (2003) a paradigm is a framework that guides how research should be conducted based on people's beliefs, assumptions of the world and the extent of their knowledge. A paradigm is a way of looking at the world, which consists of certain assumptions that guide and direct thinking and actions

(Mertens, 2015). Two main types of research paradigms identified are the qualitative or interprevistic paradigm and the quantitative or positivist paradigm (Collis & Hussey 2003; Brannen, 2017).

The objective of future studies is to look for means to help individuals and organisations to better understand the process of change. This will enable even better preferred futures to be created (Inayatullah, 2008). Roney (2010) indicated that futures methodologists develop methods with which to conduct futures studies. Futures studies are the preferred research method for this paper. It is the systematic study of possible, probable and preferred futures including worldviews and myths that underlie each future (Inayatullah, 2012).

1.5.1 Six Pillars of Futures Studies

Inayatullah (2008) presented a new research approach for futures studies where he presented six foundational concepts. These six basic concepts of futures thinking are:

- the used future;
- the disowned future;
- alternative futures;
- alignment;
- models of social change; and
- uses of the future (Inayatullah, 2008).

Futures studies have six pillars, alongside these basic concepts. The six pillars of futures studies provide a theory of futures thinking that is linked to methods and tools and developed through praxis (Inayatullah, 2008). The pillars are: mapping; anticipation; timing of the future; deepening the future; creating alternative futures; and transforming the future.

Deepening the future has been identified as one of the critical pillars. It is the fourth pillar of which two methods are significant: the causal layered analysis (CLA) and four-quadrant mapping. The CLA seeks to unpack and deepen the future (Inayatullah, 2008). Four-quadrant mapping is as important as CLA. The four-quadrant mapping

develops the inner dimension of CLA and has four quadrants (Inayatullah, 2008). The first quadrant is the inner-individual; it is the meanings we give to the world that must change. The second quadrant is the outer individual; the behaviour we engage in. The third quadrant is the outer collective; it relates to the official strategies organisations undertake. The last quadrant is the inner-collective; this is the inner map of the organisation (Inayatullah, 2008).

1.5.1.1   Causal Layered Analysis (CLA)

Causal layered analysis (CLA) is offered as a research theory and method, where its use is not to predict the future but to create transformative spaces for the creation of alternative futures (Inayatullah, 2009). CLA is a search for incorporation of methodology, seeking to combine differing research traditions (Inayatullah, 2005). According to Inayatullah (2009), CLA assumes four levels: the litany; social causes; discourse/worldview; and myth/metaphor. The first level is the litany level; the official unquestioned view of reality. The second level is the social causation level; the systemic perspective. The data of the litany is explained and questioned at this second level. The third level is the discourse/worldview. Deeper, unconsciously held ideological, worldview and discursive assumptions are unpacked at this level. How different stakeholders construct the litany and system is explored as well. The fourth level is the myth/metaphor; the unconscious emotive dimensions of the issue (Inayatullah, 2019).

Here are some of the benefits of CLA as stated by Inayatullah (2005).
- CLA expands the range and richness of scenarios (the CLA categories can be used in the incasting phase) ;
- When used in a workshop setting, it leads to the inclusion of different ways of knowing among participants;
- It appeals to and can be used by a wider range of individuals as it incorporates non-textual and poetic/artistic expression in the futures process;
- CLA layers participants' positions (conflicting and harmonious ones) ;
- It moves the debate/discussion beyond the superficial and obvious to the deeper and marginal;

- It allows for a range of transformative actions;
- CLA leads to policy actions that can be informed by alternative layers of analysis; and
- CLA reinstates the vertical in social analysis, that is, from postmodern relativism to global ethics. CLA is a search for incorporation of methodology, seeking to combine differing research traditions (Inayatullah, 2005).

1.5.2 Qualitative Research

The qualitative research approach is a subjective assessment of attitudes, behaviour and opinion (Kothari, 2004). The researcher looks through a wide lens searching for patterns of inter-relationships between previous unspecified concepts (Brannen, 2017). According to Collis and Hussey (2003), qualitative data collection methods are expensive and time-consuming. The data collection methods include interviews, observations and focus groups as these methods may contribute to allowing the researcher to obtain an understanding to responses of the participants (Patten & Newhart, 2018).

1.5.3 Quantitative Research

Quantitative researchers use literature as a basis for planning research and the dominant characteristic is that the data is gathered in such a way that it is easy to quantify, allowing for statistical analysis (Patten & Newhart, 2018). One of the main advantages of the quantitative research approach is the relative ease and speed at which research can be conducted (Collis & Hussey, Business research: A practical guide for undergraduate and postgraduate students. 2nd edition., 2003). Sampling is used as a means to generalise findings from a sample to a population (Patten & Newhart, 2018).

1.6   CONCEPTUAL RESEARCH FRAMEWORK

According to Baxter and Jack (2008), the conceptual framework serves as an anchor for the study.

Figure 2 Conceptual Research Frameworks
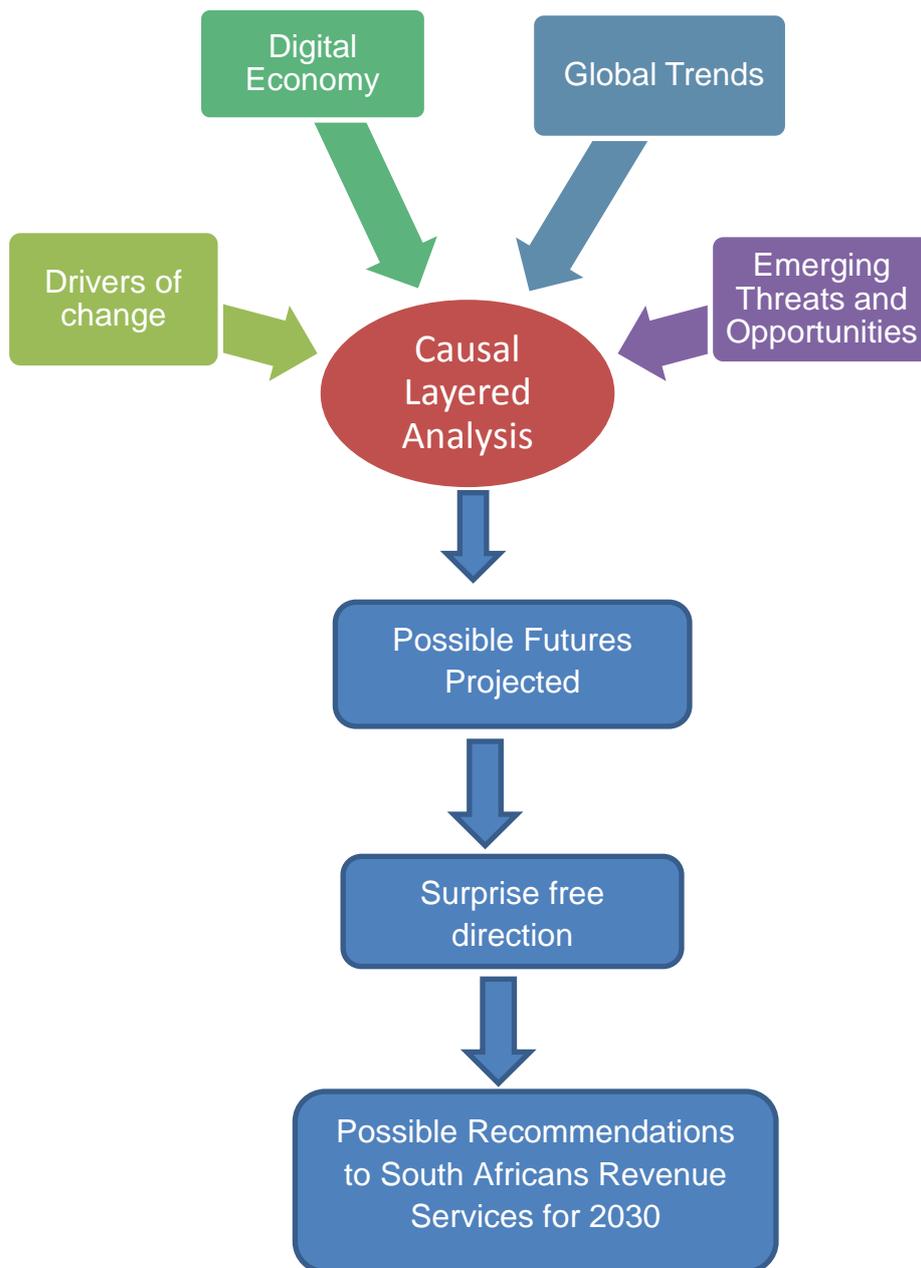
Figure 2 Conceptual Research Frameworks (Source: Researcher's own construction)

1.7 THE IMPORTANCE OF THE STUDY

Looking at other revenue services, it was found that all strategic plans do not exceed a five-year period. Yet, we find that, because the rate of change is exponentially linked to the rapid advancement in technology, and the way businesses are doing business

through e-commerce and the digital economy, revenue services will always find themselves playing catch-up resulting in revenue loss.

1.8 ETHICAL CONSIDERATION

Ethics deals with the values, moral and beliefs that guides decision making. Decisions between right and wrong, good and bad and anyone thinking about what he or she should do, is consciously or unconsciously involved in ethics (Grobler, et al., 2012). Ethics, therefore, is integral to the reliability and integrity of decisions made and work done.

The ethical criteria required for conducting this research paper, as stipulated by the research institution, has been met and full ethical clearance has been approved.

1.9 LIMITATIONS OF THE STUDY

This study is limited to secondary data sources. The nature of the study consists of a desktop study. No sampling of a population size was done to address the research questions. The perspective of a sample group of taxpayers could be used in future research papers to provide a wider insight into the research problem.

1.10 STUDY OUTLINE

The outline of the research paper will be as follow:

Chapter 1: INTRODUCTION

The objective of the chapter is to provide an introduction, background and problem statement for the topic researched. The research objectives will be discussed, with the primary and secondary objectives highlighted. A brief description of the research methodology is provided and the conceptual research framework included.

Chapter 2: LITERATURE REVIEW

This chapter will focus on the literature study to better understand the research problem. The researcher will investigate the drivers of change and possible industry disruptors that impact revenue collection.

Chapter 3: RESEARCH METHODOLOGY

The futures studies research methodology that will be utilised to obtain the research objectives will be discussed. Also scenarios will also be introduced as part of the methodology.

Chapter 4: APPLICATION OF CAUSAL LAYERED ANALYSIS

The six pillars of futures studies that form part of the basic concept of futures thinking, along with causal layered analysis as methodology, will be reviewed.

Chapter 5: THE SUMMARY, CONCLUSION AND RECOMMENDATION

In this chapter the researcher will summarise all previous chapters. A realistic foresight and practical recommendations are provided to ensure that revenue services, more specifically SARS, are ready for challenges presented in 2030.

1.11 CONCLUSION

This chapter provided background of revenue services of different countries by looking at their mandate, strategic objectives and responsibilities. The problem statement flows from this background; however, this chapter also briefly introduces the state of capture of SARS and failure of its core mandate. The readiness for the 4IR is highlighted in the problem statement. The research objective and questions are provided. A brief introduction to the research design and methodology as well as conceptual research framework was outlined.

The next chapter will focus on the available literature with specific focus on the drivers of change and possible industry disrupters that might impact revenue collection.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 1 provided a brief overview of the purpose of revenue services, its mandate, as well as strategic objectives of various revenue services. The research problem was introduced together with the primary and secondary research objectives. A brief introduction to the research methodology and design to be used was provided to ensure an outcome that meets the objectives of the research.

This chapter will focus on global trends and consequences of the 4IR, digital economy, cryptocurrency and disruptors of change shaping business and economies. It will, further, focus on review of literature that will be employed for an understanding of the research problem. The drivers of change that affects future jobs and its link to revenue collection, will be discussed.

2.2 SOUTH AFRICAN REVENUE SERVICE

The South African Revenue Service was established on 1 October 1997, through the South African Revenue Act (Act no 34 of 1997) (SARS & National Treasury, 2019). It is mandated to collect all revenues due; ensure compliance to the Tax, Customs and Excise legislation and provide a service that will facilitate legitimate trade as well as protect the economy and society (SARS, 2016). The tax administrator function within South Africa is as rich and colourful as the country's political history and to fully comprehend the extent of transformation, one needs to look at its history.

2.2.1 Political Background

The South African tax authority was known as The Inland Revenue during the apartheid era before 1994 and before the promulgation of the South African Revenue Act in 1997. The Inland Revenue was a branch of the Department of Finance that was headed by the commissioner for Inland Revenue and Customs and Excise. The commissioner had the same status as a deputy director-general. The Inland Revenue

department consisted of five sub-branches, namely, operations, value added tax, tax policy, law administration and operations control (Davis Tax Committee, 2017). The Inland Revenue was ineffective in tax collection and due to lack of legislation, large amounts of money was diverted to tax havens and tax shelters by individuals (Smulders, 2013). Tax evasion was a form of protest, affecting the revenue collection. This resulted in massive service delivery challenges that required revenue. It was, therefore, a challenge for government to redress the past inequalities and discrimination while facing low tax morale and internal problems within the tax authority. Trevor Manuel, the acclaimed post-apartheid finance minister, stated in his address to the Annual Conference of the International Bar Association in 2002, that the government faced challenges to build a modern, vibrant economy to take its rightful place in the global economy, while simultaneously addressing the massive access to vital social and economic services that originated from the extreme inequality of income and wealth. Policy priorities, therefore, were to focus on restructuring government expenditure towards social services that would contribute to the improvement in the quality of life of all South Africans (Manuel, 2002). A review of the tax and administration policies led to the establishment of the Katz Commission.

The mandate of the Katz Commission was broad in that it was to investigate every aspect of the South African tax regime inherited from the previous government (pre-apartheid) against the backdrop of the political, social and economic goals of the incoming government (Manuel, 2002). Smulders (2013) has cited Lierberman (2003) who states that the alignment between trade unions and the government served to support the revenue authority by using the tax system for righting historical wrongs.

2.2.2 Katz Commission recommendations (1994-1999)

The Katz Commission issued nine interim reports between 1994 and 1999, providing the foundation to introduce build tax reform. Two broad themes were identified to describe the tax reform initiatives, namely, institutional changes to ensure that tax laws were administered effectively, and policy changes to the tax regime (Manuel, 2002).

2.2.2.1 Institutional Changes

The Inland Revenue and Customs and Excise directorates in the Department of Finance (now known as National Treasury) were approved by cabinet on 18 October

1995, to be an autonomous revenue collection agency, which is now known as the South African Revenue Service (Manuel, 2002). This was part of the Katz Commission recommendations on the restructuring of the Inland Revenue and Customs and Excise. The Katz Commission's recommendation was based on a set of broad principles:

a) *"independence of the revenues authorities, including responsibility for their own budgetary allocation and control, administrative policies and objectives, and recruitment, training, remuneration and codes of conduct for personnel;*
b) *oversight by statutory boards responsible for Inland Revenue and Customs and Excise, appointed by and answerable to parliament through the Minister of Finance;*
c) *maintenance of unified Inland Revenue and Customs and Excise departments, with responsibility both to the national and provincial governments for all aspects of tax collection; and*
d) *contracting out, where appropriate, of certain administrative functions, such as computer services, warehousing of documentation and customs merchandise, printing and distribution of tax returns and notices, preparation of tax manuals and documentation and collection of minor taxes"* (Davis Tax Committee, 2017)*.*

However the initial steps to the transformation within SARS were only implemented in October 1997, after it was granted administrative autonomy, and transformational process in June 1998 (Smulders, 2013). SARS could now establish key objectives for collecting all national taxes, duties and levies, by attracting the right talent and retaining them, utilising modern information technology, and adopting efficiency structures and incentive schemes (Manuel, 2002). SARS introduced initiatives to improve staff quality and commitment that included the introduction of new organisational structure and human resource management practices.

SARS had a challenge to make the institution more diverse as more than 65% of the employees in 1998 were white. This included a shortage of middle managers, under-representation of black employees and managers, a lack of quality service to

taxpayers, and corruptions. These were some of the challengers the institution faced post-democracy (Smulders, 2013). Restructuring, therefore, had to address reforming the demographics of the organisation to give black people an opportunity to enter and grow within the organisation, while ensuring that the organisation kept existing skills and experienced staff. During this period SARS did not want to dismiss any employees; however, employees were requested to sacrifice job security for employment security, meaning promises of a position to staff but not necessarily the current position held (Smulders, 2013). The Siyakha People Placement Protocol Programme was approved to assist racial transformation and find managerial talent. The process required that at least 20per cent of SARS employees re-apply for newly created positions against applicants from outside the organisation. Unsuccessful staff was retained with their salaries remaining unchanged. Existing managers that were found to be technically competent, but not managerially competent, became technical experts (Smulders, 2013). The number of employees increased by approximately 2251 during the period 1999 to 2009

2.2.2.2 Policy changes to the tax regime

During the first tax reform period, 1994 to 1999, substantial progress was made in implementing reforms that improved the personal income tax, corporate tax, tax on retirement funds and various indirect taxes (Manuel, 2002). Personal tax provided real tax relief to low and medium-income taxpayers. The structure of the income tax brackets, the marginal rates applied and the rebate system ensures that the present income tax system is progressive (Manuel, 2002).

Company tax changes attempted to create a tax environment that was internationally competitive, encouraged investment and nurtured economic growth (Manuel, 2002). The reform structures included the reduction of the secondary tax rate and the reduction of standard corporate tax, which was part of the government's plan to encourage investment through low standard rate of corporate tax instead of selective tax incentives that erode the tax base, distort investment choices and compromise the tax system (Manuel, 2002).

2.2.3 Post 2000: Accelerated Income Tax Reform

The National Treasury accelerated the rate of tax reform with the purpose of broadening the tax base and also afford rate reduction in line with international trends. Manuel (2002) identified three base-broadening strategies, namely, the introduction of Capital Gains Tax (CGT), taxation of worldwide income, and simplifying tax returns.

2.2.3.1 Capital Gains Tax (CGT)

Capital Gains Tax was introduced in 2001 as an effort to broaden the tax base. Capital profits are viewed the same way as economic profits as both represent wealth creation. International evidence suggests that capital gains often arise in the hands of the wealthy (Manuel, 2002). The introduction of Capital Gains Tax was aligned with international practice as most OECD countries tax capital gains in full or partially. The exemptions applied in South Africa were aligned with international practice which included primary residence exclusions, exemptions on transfer between spouses and exemptions for involuntary disposals (Manuel, 2002).

2.2.3.2 Taxation of worldwide income

South Africans had limited offshore investment opportunities prior to 1994 due to the sanctions and strict tax regime. This meant that South Africa could only tax income arising within geographical boundaries (Manuel, 2002). A residence-based tax system was introduced in 2001 where South Africa began to tax residents on their worldwide income irrespective of where it was earned. However, it is subject to relief through exclusions and provision under the Double Tax Agreements (DTAs) (SARS & National Treasury, 2019).

2.2.3.3 Simplifying tax returns

The third mechanism to broaden the tax base was the removal of tax schemes by individuals by taxing all fringe benefits as they manipulated tax-free fringe benefits to structure remuneration packages. Directors of private companies were brought into the PAYE tax collection section, mainly, as many directors operate like any other employee; however, they try to disguise their salary through loans (Manuel, 2002).

Deductions of salaried employees have been limited to certain general categories. The modernisation programme introduced in 2007 resulted in the number of individual taxpayers increasing (Smulders, 2013).

The modernisation programme included the following enhancements:

- creation of the Large Business Centre that was designed to provide all services to large corporate taxpayers (Nugent, 2018);
- improved PAYE system that requires all in formal employment to be registered for income tax;
- introduction of faster e-filing applications and mobile solutions to replace the paper-based operations of SARS;
- introduction of a temporary voluntary disclosure programme (VDP) in 2010 that allowed taxpayers that are in default to become tax compliant;
- introduction of permanent VDP due to the success of additional revenue yielded;
- introduction of the Tax Administration Act in October 2012 that modernised and synchronised the common administrative elements in the various tax laws;
- continued relationship building between SARS and national and international bodies;
- customs front-end solution modernised which led to the conversion of 26 legacy and paper-based systems into a fully automated and processing system for all commercial trade across South Africa to minimise red tape;
- introduction of a modernised transfer duty system in 2011 resulting in improved efficiency and compliance;
- zero-tolerance approach on corruption, crime and maladministration by instituting disciplinary processes or dismissal of employees, where necessary (Smulders, 2013).

2.3 BRICS: SOUTH AFRICA'S POSITION

During the apartheid era, from 1948 to 1994, the apartheid government introduced unjust laws and practices that led to the isolation of the country by the international community, which applied pressure to end racial discrimination and free South Africa. The end of apartheid in 1994 provided a new political dispensation of democracy into

the international community after economic and political isolation due to apartheid sanctions (Shoba, 2018). South Africa's national interest and aim under the leadership of former President Nelson Mandela and his successor Thabo Mbeki was to regain confidence, trust and establish new fruitful relations with the international community by re-invigorating its foreign policy through the transformation of diplomatic relations. This was to establish relations with other nations to attract increased trade and investment flows (Shoba, 2018). Under the leadership of Jacob Zuma foreign policy marked a paradigm shift with a heightened level of engagement between China and South Africa and, ultimately, the BRICS formation (Shoba, 2018).

BRICS consist of a group of five emerging economies and developing countries, namely, Brazil, Russia, India, China and South Africa. They meet regularly to discuss matters of trade, innovation, energy security, agriculture, international security and global governance reform (Shoba, 2018). South Africa joined BRICS in 2010. It was important to demonstrate its role in the economically emerging African continent. The inclusion of South Africa into the BRICS clubs sparked debate among academics, politicians and commentators, suggesting that South Africa was not the best contender; however, many accepted that South Africa had certain characteristics which other countries did not have. The leaders of South Africa's liberation movements, the African National Congress, the Pan African Congress, the South African Communist Party, among others, have a unique history with Russia, China, India and Brazil (Shoba, 2018). Shoba, cited by Stuenkel (2013), noted that the invitation to BRICS is regarded as South Africa's best achievement in foreign policy in the past ten years.

The forum enables the heads of states to meet regularly to discuss important global issues. It therefore provides a platform that enables ministers, policy makers and think tanks to engage in discussions and debates on critical issues as well as peer learning in their quest for global relevance (Shoba, 2018). It is also noted that South Africa's economy is smaller than that of the BRICS economies and has raised questions of the countries membership. It has been recognised that South Africa can play a leading role in BRICS by helping to facilitate deeper integration of relations between African

states and other BRICS member-countries (NDP, 2011). BRICS is not a formal organisation or any written articles of association BRICS aim to facilitate dialogue and cooperation between member states for the promotion of peace, security and development of a multi-polar, interdependent and complex global world (Shoba, 2018) The forum enables the heads of states to meet regularly to discuss important global issues. It, therefore, provides a platform that enables ministers, policy-makers and think tanks to engage in discussions and debates on critical issues as well as to learn as peers in their quest for global relevance (Shoba, 2018).

BRICS countries represent more than a quarter of the world's geographical area and 41 per cent of the world's population where these economies compete at every level with the largest group at the global level (Maryam, Banday, & Mittal, 2018). The BRICS economies are important importers and exporters where Brazil and Russia are the major producer and exporter of natural resources and importers of manufactured and processed goods, while China and India are importers of natural resources and exporters of the manufactured and processed goods. South Africa on the other hand provides an important route for India-Brazil trade (Maryam et al., 2018).

2.4 FOURTH INDUSTRIAL REVOLUTION (4IR)

According to Schwab (2015), the First Industrial Revolution used water and steam power to mechanize production. Electric power was used to create mass production in the Second Industrial Revolution and in the Third Industrial Revolution, electronics and information technology was used to automate production (Schwab, 2015). The Fourth Industrial Revolution (4IR), which is building on the Third, is characterised by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres (Schwab, 2015).

The 4IR brings with it a combination of challenges which is urgent and extraordinary as we as a human race have expanded our own planetary degradation through human

economic activity. At the same time it also brings with it an era of unprecedented innovation, technical change and global connectivity (WEF, 2018).

Figure 4, below, illustrates the timelines from the first industrial revolution to the fourth industrial revolution.
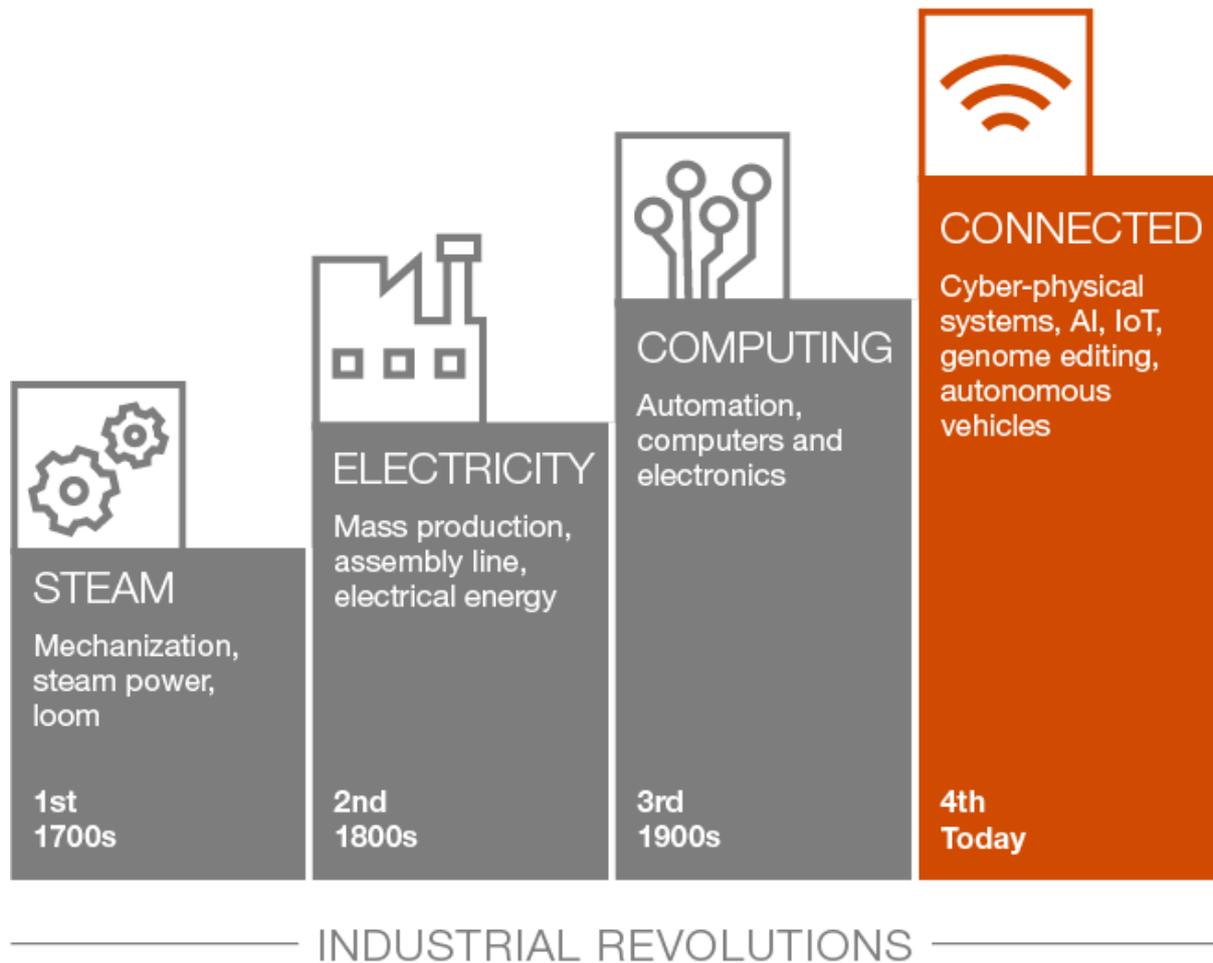
Figure 4: Industrial revolution timeline (Source: PWC)

4IR is also known as the digital revolution as it combines technological and human capabilities through self-learning algorithms, self-driving cars, human-machine interconnection and big-data analytics (Schäfer, 2018). The 4IR has a combination of factors that differentiate it from prior eras, namely, memory units to store information; integrated circuits on microchips; networks that help to enhance telecommunication;

software applications that provide direct links to consumers' needs; and sensor capacity that allows artificial intelligence to analyse most things which were previously only accessible to the human mind (Schäfer, 2018). This industrial revolution is supported by the established digital economy with its fast advances in technologies such as blockchain, artificial intelligence, the Internet of Things, robotics, autonomous vehicles, biotechnology, nanotechnology and nascent quantum computing (WEF, 2018). The 4IR is, therefore, changing the consumption landscape by igniting opportunities for value creation through disruptive technology (WEF, 2019b).

2.5 DISRUPTORS THAT IMPACT CHANGE

2.5.1 Blockchain

Blockchain is a foundational technology for the 4IR, similar to how the internet was for the Third Industrial Revolution (WEF, 2018). Blockchain uses cryptography and mathematics to create a database that is open and decentralized (Rasul, 2018). It is best described as a digital distributed ledger (DTL) used to record and share information throughout a peer-to-peer network where identical copies of the ledger are maintained and collectively validated by network members, with accepted information aggregated into blocks. These blocks are added to a chronological chain of existing, previously validated blocks, using a cryptographic signature (Ducas & Wilner, 2017). The ledger consists of three points of information: the sender, the data and the destination. The transactional information is then logged onto a block. A block acts as a queue system for all transactions, allowing them to be recorded, but not executed. Only one block is allowed to collect data for any given point in time. Once the new block is created, it replaces the current block and transactions on that queueing block are executed and saved. The old blocks are added to the blockchain's global ledger (Lamarsh, 2017). The ledger cannot be reversed or counterfeited as the technology uses cryptography and therefore the security and validity of a blockchain ledger is guaranteed (Rasul, 2018).

Every blockchain is not the same with two main variable features, that is, whether the platform is public or private and the level of permission required to add information to

the blockchain (OECD, 2018). Public blockchains are open as it is accessible to anyone to open and read while private blockchains can only be viewed by a chosen group of people. Permissioned blockchains permit a select group of users to write and commit while permissionless blockchains allow anyone to contribute and add data to the ledger (OECD, 2018). Figure 5, below, illustrates a blockchain in practice.

The blockchain in practice

NODE
A node is simply a computer on the blockchain network that stores the ledger.

LEDGER
A ledger is a list of all the transactions made on the blockchain. Technically, it is made up of a chain of blocks.

DISTRIBUTED
All copies of one document are spread among users and they are constantly and automatically synchronised, hence identical at all times.

BLOCKCHAIN UNDER THE HOOD

A block is comprised of a group of transactions from the same time period, like a page from a record book.

Hash: 1Z8F   Hash: 6BQ1   Hash: 3H4Q
Previous hash: 0000   Previous hash: 1Z8F   Previous hash: 6BQ1

Hash: 1Z8F   Hash: 6BQ1 H62Y   Hash: 3H4Q
Previous hash: 0000   Previous hash: 1Z8F   Previous hash: 6BQ1

Source: Savjee, (2017)

Inside each block:
Hash
Previous block's hash
Transaction data
Timestamp

Along with its own hash, each block stores the hash of the block before it.
A hash is a unique string of letters and numbers created from text using a mathematical formula. Blocks are therefore "chained" together making the ledger (almost) immutable or unable to be changed. To add a block, it may first need to be mined and then approved by a number of notes through a consensus mechanism.

Figure 5: The blockchain in practice (Source: OECD, 2018)

Even though the technology is fairly new, blockchains have the potential to change the way people transact (WEF, 2018). As the technology matures, it has the potential to redefine how business, governance and society operate. Cryptocurrencies and smart contracts use blockchain application, which is an illustration of its potential. Cryptocurrency refers to a math-based, decentralised convertible virtual currency that

is protected by cryptography that is not regulated by any authority (FATF, 2014). Smart contracts use a digital protocol to automatically execute predefined processes of a transaction without requiring the involvement or a third party or intermediary (WEF, 2018).

2.5.2 Cryptocurrency

The Financial Action Task Force (FATF) is an independent inter-governmental body that develops and promotes policies to protect global financial systems against money laundering, financing of terrorists and the financing of proliferation of weapons of mass destruction. In 2014, FATF released a report that incorporated comments from Australia, Canada, Russia, the United Kingdom and the United States. The purpose of this report was to establish a common definition that clarifies the concept of virtual currency and the classification of the various types of virtual currency based on their different business models and methods of operation. It would also identify the participant in typical virtual currency systems (FATF, 2014). Virtual currency has, therefore, been defined as a digital representation of value that can be traded and functions as a medium of exchange, a unit of account, and or a store of value, but is not regarded as a legal tender (FATF, 2014). The South African Reserve Bank (SARB) issued a position paper on virtual currency in 2014 that expressed its view that virtual currency is not regarded as a legal tender. It is the only bank that is allowed to issue legal bank tenders, which are bank notes and coins in the RSA that are legally offered in payment of an obligation and that a creditor is obliged to accept (SARB, 2014).

The most prominent form of cryptocurrency used on the online platform is Bitcoin (Reynolds & Irwin, 2017). Bitcoin is the first decentralized digital currency generated through the internet and transferred directly from peer to peer (P2P), bypassing the banking system and/or financial clearing houses (Broome, 2015). Bitcoin protocol was developed by a person with the pseudonym of Satoshi Nakamoto in early 2009. It was the first open virtual currency that was not regulated by a central authority body (Reynolds & Irwin, 2017). According to Rasul (2018), Nakamoto insisted that it is necessary to have cryptographic proof rather than trust in a third party. "The currency would further not be backed by any asset or precious metal or coin. It is reliant to the

transparency and mathematical certainty of its transactions instead of any asset or the credit by any nation's government" (Rasul, 2018). Bitcoin is defined as a peer-to-peer, digital cryptocurrency, where users can remain anonymous (Lamarsh, 2017).

The role players within the virtual currency are presented in table 2 to provide context on how it functions in the digital economy and in commerce.

Table 2: Role Players

	Roles	Description
1.	Cryptocurrency user	It is a natural person or legal entity who obtains coins to use it (i) to purchase real or virtual goods or services, (ii) P2P payments, or (iii) to hold it for investment purposes
2.	Miner	Participates validate transactions on the blockchain by solving a cryptographic puzzle. A miner supports the network by harnessing computing power to validate transactions and is rewarded with newly mined coins. Miners can also be cryptocurrency users or a party who made a new business by selling mined coins for fiat currency.
3.	Cryptocurrency exchanges	They are parties or entities who offer exchange service for cryptocurrency users at a fee. They allow cryptocurrency users to sell their coins for fiat currency or buy new coins with fiat currency.
4.	Trading platforms	It is the platform that connects the buyer and seller allowing them to transact with each other. It is not run by any entity or company that manage and process all trades, but is rather operates by software.
5.	Wallet providers	Wallet providers are the entities that provide the cryptocurrency users digital wallets or e-wallets which a used to hold, store or transfer coins.

Source:(Houben & Snyers, 2018)

Cryptocurrency is a currency that relies on encryption techniques for its generation and verification (Lamarsh, 2017).

Davis Tax Committee (2016) has recognised the growth of virtual currency use in South Africa and has only recommended that South Africa monitor international developments and consider the potential impact of virtual currency on tax compliance. Mention has been made of three other countries that have taken action in respect of taxation of bitcoin within the boundaries: Canada, the United Kingdom and the United States of America. Canada's position is that "Bitcoin is not a legal tender"; however, "taxpayers must look at the rules of barter transactions and determine whether income or capital treatment arises from the bitcoin transaction. In the UK, bitcoin is treated as a money voucher and attracts VAT".

The USA declared that "Bitcoin is property and not currency for tax purposes. Tax implications of bitcoin transactions include the following: (1) taxpayers receiving bitcoins as payment for goods or services must include in their gross income the fair market value of the bitcoins; (2) taxpayers will have a gain or loss upon the exchange of bitcoins for other property; and (3) taxpayers who "mine" bitcoins must include the fair market value of the bitcoins in their gross incomes" (Davis Tax Committee, 2016). SARS had been silent on how to deal with cryptocurrency transactions, specifically, bitcoin, until its media release dated 6 April 2018. No prior guidance has been provided to taxpayers on how to account or declare their gains or losses or taxable income. Only in the 2018/2019 tax return taxpayers are prompted to declare cryptocurrency disposals to determine a capital gain or loss. However, there is a lack of clear direction with cryptocurrency transactions that would be deemed revenue through, for example, mining.

2.5.3 Internet of Things (IoT)

IoT refers to an environment where applications and services are driven by data collected from devices that sense and interface with the physical world. In the Internet of Things, devices and objects have communication connectivity, either a direct connection to the internet or mediated through local or wide area networks (OECD, 2016). Davis Tax Commission (2016) further indicate that the term IoT refers to a

series of components of equal importance which include machine to machine communication, cloud computing, big data analysis, sensors and actuators that all lead to the development of machine learning and remote control .The IoT allows for greater connectivity between people and things anytime, anywhere with anything and anyone using any path or network and any service (Velumani & Dr. Porkodi, 2014). The IoT is also defined as the technological connection among telecommunication, software and industries connected with hardware (Chatterjee & Kar, 2018).

There are various applications of IoT in all areas of people's everyday life, which covers society, industries and environment (Velumani & Dr. Porkodi, 2014). IoT is reshaping the consumptions landscape bringing with it opportunities for value creation through disruptive technology. As consumers express new patterns of consumption, economies are facing challengers in generating employment (OECD, 2019a). The IoT caters to the diverse needs of different users which are characterised as the individual, community or society, and enterprises. Authors on a book called Internet of Things: "Research and Innovation Agenda" (2013), identified examples of the needs for the IoT applications to include the following:

- to increase their safety or that of their family members by using remote controlled alarm systems;
- to execute certain activities in a more convenient manner, for example, personal inventory reminder;
- to improve overall lifestyle, for example, monitoring health parameters during a workout and getting expert advice on the findings; and
- to decrease the cost of living, for example, building automation that will reduce energy consumption and ultimately the overall cost.

Society has different needs compared to an individual as its concerns are issues that affect the whole community. Examples of society needs include:

- to ensure public safety: this includes the ability to predict natural disasters as far ahead as possible to improve efficiency on evacuation and recovery missions;
- to protect the environment, which includes waste management, efficient usage of energy and natural resources, monitoring of pollutants in the environment and

reduction of carbon emission through legislative agreements to ensure sustainable development.

Enterprises needs are also different. Examples of their needs are as follows:

- increased productivity
- market differentiation
- cost efficiency (Vermesan et al., 2013)

During the state of the nation address 2019, President Cyril Ramaphosa expressed his vision of a smart city, where an entire new city is built with skyscraper, schools, universities hospitals and factories. This vision was highly critiqued in the media as it was seen as a distraction from the real work needed. However, this vision had already been expressed in a strategic framework document on developing the "Africa we want" (Schüneann, 2014). Agenda 2063 identified the need for smart cities in Africa as it was predicted that Africa would move into an urban age by the year 2035, when 50 percent of the population will have moved to urban areas. While South Africa is still grappling with the idea of a smart city, the government of India (GOI) has already proposed the creation of 100 smart cities in the first phase and had allocated a budget for this purpose in 2015 (Chatterjee & Kar, 2018).

According to the OECD (2016) a smart city is a municipality that uses IoT communications technology to control, administer and plan public infrastructures, utilities and services to increase operational efficiency. To make this possible there will be a need for smart parking, smart urban lighting, integrated transport system, smart city maintenance, etc.(OECD, 2016).

The rate of change and development is happening at an exponential pace. The interconnectivity of devices that make it possible for smart cities, smart water, smart agriculture, and logistics supply chain to develop and operate, creates massive data that has to be stored and analysed.

2.5.4 Big data

The phrase "big data" refers to the amount of data that is harvested in the day-to-day life of businesses. However, it is not the amount of data that is of importance, but rather what organisations do with the data that matters (SAS, n.d.). As people we leave our digital footprint with almost everything we do, from our social media uploads, searches on the internet, voice recording to a call centre and even our purchases. Our phones, vehicles and machinery are fitted with sensors and trackers that record every move. Online platforms such as Google, Facebook and Amazon collect massive amounts of data on individuals and use it to determine what people want as well as targeted advertising services (Marr, 2017). According to Ittmann (2015), big data is about converting data into an advantage for a business by seeking to gain intelligence from the data. Bernard Marr (2017) defines big data as the huge data sets we are building, as well as the practice of interpreting, analysing and acting upon insights gained from this information. Data provides analytical insights to gain competitive advantage and improved efficiencies in businesses. This is a desired resource not only limited to the big 4IRms with information technology and data scientists and analysts, but also smaller 4IRms. Many companies have leaped at the opportunity to offer services that enable other businesses to launch data initiatives and harness the power of data without incurring the capital expenditure of investing in technology and hiring of analytical staff (Marr, 2017).

Four dimensions are identified to recognise big data.

- Volume: the increased size of data and data bases. It can range from terabytes to petabytes of data.
- Variety: the different formats of data, namely, sound, text, structured, unstructured, video, etc.
- Velocity: the speed at which data are available as well as the throughput of the data. Latency is the analysing of streaming data; i.e. how fast data can be analysed.
- Veracity: managing the reliability of data. The data quality, correctness and accuracy determines the credibility and suitability of the data (Ittmann, 2015).

Benard Marr has identified areas in which big data is currently being used to gain advantage in practice.

- Understanding and optimising business processes. Big data is currently used to improve processes such as supply chain to optimise routes; retailers optimise stock based on social media predictions.
- Personal quantification and performance optimisation: Big data is analysed on an individual level where data is collected from our activity level, sleep pattern, etc. providing individuals rich insights.
- Improving healthcare and public health. Big Data analytics enable the decoding of DNA strings in minutes and will allow the prediction of decease patterns.
- Improving sports performance. Smart technology is becoming embedded in most sports from sensors in yoga mats, sport equipment, tracking nutrition and sleep with the objective of optimising performance and reducing injuries.
- Improving science and research. Science and research are currently transformed by the new possibilities of big data.
- Optimising machine and device performance. Big data analytics help machines and devices become smarter and more autonomous.
- Improving security and law enforcement. Police forces use big data tools to catch criminals and predict criminal activity and credit card companies use big data to identify fraudulent transactions.
- Financial trading. High frequency trading is an area where big data is used often in the financial sector. Big data algorithms are used to make trading decisions.

SARS executive, Mark Kingon, spoke at the opening of the two-day SA Institute of Chartered Accountants tax symposium on 9 October 2019. He mentioned that big data is changing how the revenue service operates since there is a need for substantial modernisation and upgrading of systems due to the rapid advancement of technology. Kingon emphasised that ignoring the effect of digitalisation could negatively affect revenue and the fiscus. He also recognised the growing capacity of the internet as a global highway for taxable services and products. There needs to be clarity as to what constitutes taxable services and products (Dludla, 2019).

SARS introduced a smart phone application as one of the online channels taxpayers can use to file their returns. This is an indicator of commitment to embrace the digital demands that taxpayers have. It is also an indicator of SARS's commitment to its objective of making it easier for taxpayers to do business with SARS (SARS, 2016). Through collaboration with third parties, such as government institutions, financial institutions, employers and health insurers, compliance to declare this information has been made easier to taxpayers by the pre-population of this data. The Australian Tax Authorities also have collaboration with cryptocurrency designated service providers which provide purchase and sale transaction data.

2.5.5 Artificial Intelligence

Intelligence, from the human context, is about a person's ability to learn, assess new situations, understand and handle abstract concepts and use knowledge to manipulate a person's environment (Paschen, Kietzmann, & Kietzmann, 2019). Intelligence, therefore, in broader terms, would refer to the ability to perceive and process data, transform the data into information, and use knowledge to make goal-directed decisions. Factors such as problem-solving, reasoning, learning, memory, scanning of an individual's environment and acting to achieve goals all contribute to the process required to effectively adapt intelligence (Paschen et al., 2019).

Researchers have agreed that there is no unanimous definition of artificial intelligence (AI). Simon (2019) refer to AI as an umbrella term for the science of making machines smart that is inspired by biological systems. AI involves multiple technologies that include machine learning, deep learning, computer vision, natural language processing and machine reasoning (Simon, 2019). The 1956 Dartmouth Summer Research Project on AI is considered to be the birthplace of the field of AI as it was named by John McCarthy. He defined AI as a machine that behaves "in ways that would be called intelligent if a human were so behaving" (WEF, 2019a). This definition does not include the technical functionality of AI. The WEF (2019a) cites definitions from various sources which included that AI technology includes software, algorithms,

a set of processes, a robot, etc. that is able to function appropriately with foresight of its environment. The UK Government Office for Science defines AI as the analysis of data to model aspects of the world that is used to predict and anticipate possible future events. This is achieved through the creation of statistical models that use a series of algorithms, or step-by-step instructions that computers can follow to perform a particular task (WEF, 2019a).

AI literature distinguishes between weak or narrow AI and strong or general AI (Bullock, 2019). Narrow AI can learn to complete small sets of tasks or one challenging goal. Narrow AI is continuously improved and is able to perform tasks humans were once most effective, efficient and equitable at completing. Strong or general AI can learn across a vast range of challenging, complex tasks across almost any genre (Bullock, 2019). Simon (2019) highlights that AI is not a product such as packaged software, mobile applications or operating systems. It combines hardware and software; however, there is no specific AI software, only AI solutions that build upon a variety of software (Simon, 2019). The fastest growing AI category appears to be machine learning which is the computer learning from data sets to perform functions, instead of executing the specific tasks it is programmed to do. Machine learning was the main contributor to the AI surge which includes search and product recommendation engines, speech recognition, fraud detection and image understanding (Simon, 2019). Machine learning is described by Weber and Schutte (2019) as a discipline within AI research that deals with learning improvement based on data. It is the ability of machines to continuously solve tasks better using particularly good training data or large amounts of data from algorithms (Weber & Schütte, 2019). AI use cuts across all industries from technology, psychology, politics, science, law, economics and ethics. The WEF (2019) has highlighted some benefits of AI which include the reduction in economic inefficiencies and labour costs, and increased demand for high-skilled jobs. It can also help companies understand their customer better and develop customised products tailored for their specific needs (WEF, 2019a).

Bullock (2019) highlighted a few examples of AI capabilities within various sectors. This includes personalised products that could change how taxes are collected

through automation of data collection from employer and state databases. These products could assist in determining who is legally entitled to sets of social services. Targeted marketing could be used to ensure citizens receive all relevant public service announcements. Fraud detection could be improved drastically, while supply chain and logistics could be streamlined across government business practices, resulting in improved governance efficiency (Bullock, 2019).

2.6 POLITICAL CLIMATE/ENVIRONMENT

South Africa is known for its rich and colourful political history of liberation (World Bank, 2019). The birth of a new democratic state in 1994 brought with it a promise of new beginnings, but also challenges. The recent xenophobic attacks on foreigners in South Africa were not the first of its kind. Madichie (2015) highlights that after the end of the apartheid regime, African migrants expected South Africans to be more welcoming. Fear, jealousy, discrimination and xenophobia were expressed by locals towards immigrants. During May 2008, 62 people, the majority of them immigrants, were killed by mobs in Johannesburg, Durban and elsewhere (Madichie, 2015). Researchers Ngcamu and Mantzaris (2019) found in their study that the instigators of xenophobic violence are opportunistic young men with a background of poverty and unemployment. They use xenophobic attacks as opportunities to loot businesses and properties belonging to these foreign nationals (Ngcamu & Mantzaris, 2019). For the peaceful cohabitation between South Africans and foreign entrepreneurs, South Africans need to understand that African foreign entrepreneurs are job creators rather than job takers. They should also be aware of the skills these foreigners bring into the country (Madichie, 2015).

The September 2019 xenophobic attacks followed a lower than anticipated economic growth in 2018. The economic growth remained tepid with a technical recession in the first half of 2018 (World Bank, 2019). Various external factors contributed to the poor growth rate and included prolonged droughts, trade war tension between China and the United Stated, and tightened global financial conditions which contributed to the reduced foreign financial inflow and exports (World Bank, 2019).

The economic review by the Industrial Development Corporation (IDC) of June 2019 highlighted that the South African economy's contraction for the first quarter of the year was the worst since the 2009 recession. South Africa's GDP growth at the first quarter of 2019 was -3.2% quarter-on-quarter and 0% year-on-year (IDC, 2019). The unemployment rate has increased to 27.6% and lower output levels recorded by most sectors. This includes agriculture, mining, manufacturing, electricity, transport and communications, trade and accommodation, and the construction industry. Load shedding by Eskom had an adverse effect in the first quarter and the continued financial and operational challengers continue to threaten the economy at large. The disruptive power supply affects not only the activity level in resources, and industrial and service sectors, but also influences potential investments (IDC, 2019).

Figure 6: **SA economy's contraction in Q1 2019 was the worst since the 2009 recession**

Source: IDC, compiled using Stats SA data

The medium-term budget policy statement (MTBPS) was presented to cabinet by the Minister of Finance, Tito Mboweni, on 30 October 2019. The MTBPS's purpose is to provide government with fiscal goals, economic projections and the risks facing the

country. The policy statement did not provide detailed spending or tax proposals as this would be provided in the annual budget.

2.7 CONCLUSION

This chapter reviewed the impact of the 4IR and disruptive technologies that are influencing industries today and are impacting on how revenue services need to adapt towards the future of 2030.

The next chapter will focus on the research design and methodology chosen to achieve the research objectives of this study. Available literature with specific focus on the drivers of change and possible industry disrupters that might impact revenue collection will also be included.

CHAPTER 3: RESEARCH METHODOLOGY AND DESIGN

3.1 INTRODUCTION

The previous chapter focused on the available literature with specific focus on the drivers of change and possible industry disrupters that might impact revenue collection.

This chapter will focus on the research methodology to be applied to reach the objective of this study. The researcher will be using futures studies. According to Inayatullah (2012), futures studies is the systematic study of possible, probable and preferable futures including the worldviews and myths that underlie each future. The mission of future studies is to explore potential consequences of current actions and help to formulate desirable visions of the future (Kurki, 2019). Futures methodology such as causal layered analysis, environmental scanning, backcasting, visioning, and trend impact analysis are designed to help people think about how they think of the future (Saul, 2001). It is further stated that the purpose of futures methodology is to steadily evaluate both possible and desirable future visions, where future visions can help long term policies, strategies and plans (J C Glenn, 1994). According to Kurki (2019), futures methodology can be understood as looking through different lenses with which one aspires to look into the future. The most common reason for futures methods is to help identify what we do not know, but need to know to make more intelligent decisions (J C Glenn, 1994).

According to Glen (1994), the increased complexity and faster rate of change have shortened the lead-times for decisions and have made the previous expectations less reliable. The understanding of time is changing where the perception of time in the Agriculture Age was to determine when a specific cycle would start, while in the Industrial Age, it was more progressive and linear where forecasting was to predict the efficiency of technology (J C Glenn, 1994).

3.2 FUTURES STUDIES

3.2.1 BACKGROUND

Until the late Middle Ages, speculation was mainly used to predict the future. A prediction is a statement that you believe will be true (J C Glenn, 1994). Predictions were used initially to predict the weather to determine periods of rain, storm or sunshine. It was not limited to natural phenomena but also areas of politics, military, technology and economics were popular (Kreibich, Oertel, & Wolk, 2012). Inayatullah (2007) describes the history of futures studies by surveying humans' past by looking at three types of attempts to understand the future: astrology, prophecy, and forecasting.

Astrology. In this view it is believed that the lives of people have the same patterns and movements of the stars. The ontological position was that heaven and earth should match; as it is above, so too, below (Inayatullah, 2007). The purpose of astrology was to help individuals by providing early warning signs to avoid dangerous situations. The goal was to predict the future so that it could be personally controlled. However, the astrological system was not of an individual nature (Inayatullah, 2007).

Prophecy assumes that certain individuals can see the future, as they have a deeper level of access to the mind. Prophecy is visionary in nature, while astrology is based on the relationships between stars or on other criteria. Prophecy does not predict a specific event, but is rather used to create new systems, new worlds, and is located in one individual or a group of individuals (Inayatullah, 2007).

Forecasting has become the technique of planners, economists and social scientists. It is a perspective that drives the desires to make the world more stable and to control the future (Inayatullah, 2007). Kotze (2010) further highlights that forecasting is based on historical trends that stem from the assumption that whatever holds true for the past, will continue into the future. In general, forecasts are viewed as being uncertain where a set of forecasts is often used to frame uncertainty while prediction implies

belief in one forecast and rejection of others (Schüneann, 2014). Forecasting, therefore, means thinking about possible futures in a structured manner (Schüneann, 2014). A forecast should not only be based on historical trends, but could also be made through projecting what could be where there is no historical trends (Kotze, 2010). It is assumed that the more information, more specifically, timely information, will enable decision-makers to make wiser decisions (Inayatullah, 2007). The rate of change within the technological environment has driven the need to have more information

In the 1960s a new awareness of consequence and risk of technology and industry began, resulting in emancipatory civic movements such as the social and student movements, the peace movement, the environmental movement and the woman's movement (Kreibich et al., 2012). Kreibich et al. (2012) further states that the Scandinavian countries were the first to place important questions about the future within the framework of scientific, political and economic development. Equally evident in Germany, the most relevant issues regarding future are defined by the consequence of technology and social development (Kreibich et al., 2012). Some examples are the global economic, ecological and social disparities, weapons of mass destruction (nuclear, biological or chemical), the power imbalance between developed and industrial nations, and globalisation in general that is linked to development (Kreibich et al., 2012).

Foresight is defined as the process of developing a range of views of possible ways in which the future could develop, understanding it well enough to decide on the best decisions taken today that will lead to the best possible tomorrow (Horton, 1999). To better understand the futures theoretical framework, Inayatullah (2012) has outlined four approaches that are critical to understand foresight. The first is predictive, based on empirical social sciences. The second is interpretive, based on understanding competing images of the future and not on forecasting the future. The third is critical, derived from poststructural thought and focused on asking who benefits by the realization of certain futures and which methodologies privilege certain types of futures studies. The fourth approach is participatory action learning/research. This approach

is more democratic and focuses on stakeholders developing their own future, based on their assumptions of the future and what is critical to them (Inayatullah, 2012).

3.2.2 Foundational Futures Concepts

Future studies seek to help individuals and organisations better understand the process of change so that wiser preferred futures can be created. Inayatullah (2008) suggests that there are six basic concepts of futures thinking, namely: the used future; the disowned future; alternative futures; alignment; models of social change; and uses of the future. The table below illustrates the six basic concepts of futures thinking (Inayatullah, 2008).

Table 1: Six Foundational Futures Concepts

Foundational Futures Concept	Description
The used future	This refers to a scenario where one has copied or adapted someone else's method in achieving a specific task after observing them. Inayatullah (2008) addresses this concept by asking the question: "Have you purchased a used future? Is your image of the future, your desired future or is it unconsciously borrowed from someone else?" Inayatullah (2008) has cited an example of Asian cities that have unconsciously followed a pattern of western urbanisation with no concern for nature or liveability. In this process they have forgotten their own traditions where village life and community were central and living with nature was important. New futures now have to be created or continue with the future being discarded elsewhere. The consequence of this used future is that it is leading to a global fresh water depletion, climate change and human dignity (Inayatullah, 2008).

The disowned future	What we excel at becomes our downfall, meaning that focus is only on strategies and plans while one's own identity is lost in the process. Plans go wrong not because of a lack of effective strategy or planning, but rather because the course of direction ignored others and organisational selves. Inayatullah (2018) cites an example of a principle to remember what it was like to be a child and to use the child self to create curriculum. The aim is to integrate the disowned selves. This means moving futures closer: from a goal oriented neo-Darwinian approach to a softer more paradoxical Taoist approach (Inayatullah, 2008).
The alternative future	By believing in only one future and ignoring the possibility that there might be alternate possibilities, result in one would make the same mistakes over and over. By looking at alternatives allows us to see something new. If a specific future does not occur, as humans we learn to adapt to changing conditions. Alternative futures thinking reminds us that while we cannot predict a particular future always accurately, by focusing on a range of alternatives, we can better prepare for uncertainty, indeed, to some extent embrace uncertainty.
Alignment	This concept relates to how an organisation or person would have a goal they wish to achieve; however, the organisational indicators have no relationship to the vision. There needs to be an alignment of all aspects, from the day-to-day realities, problem approaches and measurements to the vision of the organisation. There is also an inner alignment. This relates to the culture of the organisation; how it sees itself and how does the organisation imagine its future. This alignment should

	also reflect the internal culture map linked with the outward vision and future (Inayatullah, 2008).
Model of social change	It relates to how an individual or organisation relates to social change. The concept relates to whether the individual or organisation believe they have control over the future or not. Inayatullah (2008) provides reflective questions such as: "Do you believe the future is positive and you can do something about it? Or is the future bleak and there is nothing you can do about it? Or is the future already given, created by prophecy?"
Uses of the future	Futures thinking can help create more effective strategy. It allows organisations to become more innovative and can create capacity. It is not so much about creating the right strategy using the right tools, but about enhancing our confidence to create futures we desire.

Inayatullah (2008) further states that to create the future that is desired, there is a need to respond to these futures questions, summarised as follow: will; fear; hidden assumptions; alternative futures; preferred future; and the next step.

The six basic futures questions:

1. What do people think the future will hold or the predictions people hold about the future? What do people see regarding progress and wealth, technological revolution or environmental catastrophe? Why?
2. Which future are people afraid of? Could it be random acts of violence? Could they transform this future to a desired future? Why or why not?
3. What are the hidden assumptions of a predicted future? Are there some taken-for-granted assumptions (about gender, or nature or technology or culture, or . . .)?
4. What are some alternatives to a predicted or feared future? If some of the assumptions change, what alternatives emerge?
5. What is the preferred future? Which future does the individual or organisation wish to realise as reality?

6. And finally, what are the practical steps to be taken to achieve the preferred future? In ancient Buddhist texts it is stated that much of the solution to the challenge of life is simply in being pointed in the right direction (Inayatullah, 2008).

3.3   SIX PILLARS OF FUTURES STUDIES

The six pillars provide a theory of futures thinking that links method and tools, and is developed through praxis (Inayatullah, 2012). The pillars are: mapping; anticipation timing; deepening; creating alternatives; and transforming. It can be used as theory or in a futures study workshop setting (Inayatullah, 2008). These six pillars are explained below.

3.3.1   Mapping

In the first pillar, past, present and future are mapped. Mapping time allows us to become clearer on where we come from and where we are going (Inayatullah, 2008). Three tools essential in mapping are the shared history, the futures triangle and the futures landscape (Inayatullah, 2008). Shared history method consists of having participants in a futures workshop provide the main trends and events that have led up to the present. Inayatullah (2008) further states that shared history would ask what is continuous in our history and what is discontinued, as this tool creates a framework from which to move to the future.

The futures triangle maps today's views of the future through three dimensions, which is also illustrated in Figure 1:

- The image of the **future that pulls us forward**. Inayatullah (2008) identifies five archetypal images of the future. These are:1) evolution and progress – more technology, man a centre of the world and a belief in rationality; 2) collapse – the belief that man has reached his limits: world inequity, fundamentalism, tribalism, nuclear holocaust, climate disaster: all point to worsening of the future; 3) Gaia – the world, culture and social technologies need to come together to repair the self-inflicted damage to ourselves, others and nature; 4) globalism – free market systems can eliminate the barriers between nations and cultures. Technology and the free flow of capital can bring riches to all; 5) back to the future – return to simpler

times when hierarchy was clearer, technology was less disruptive and the rules of hierarchy were clear (Inayatullah, 2012);

- The **pushes of the present**, these are the quantitative drivers and trends that are changing the future. These include the ageing population, mobile internet penetration, climate change and the number of females in higher education;

- The **weights of our history**, where these are the barriers to the change we wish to see. The globalised world is weighted down by nationalists with the reality that even though capital is freer, labour is still tied to place. The Gaian image is weighted down by the dominance of hierarchy (Inayatullah, 2008).

The futures triangle helps us to develop **plausible future** by analysing the interaction of these three forces (Inayatullah, 2008).
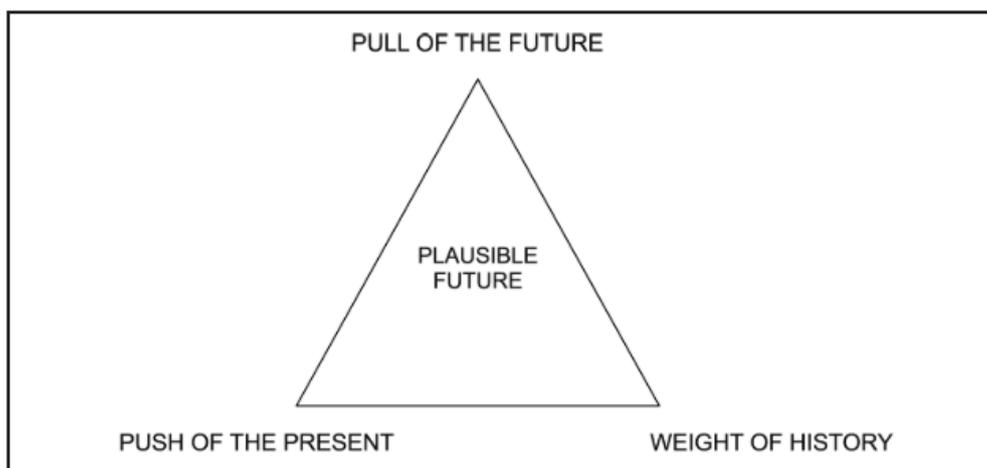
Figure 3: Futures triangle (Source: "Six pillars : futures thinking for transforming"; Inayatullah, 2008).

3.3.2 Anticipation

The second pillar of futures thinking is anticipation where the main method is emerging issues analysis (Inayatullah, 2012). Emerging issues seek to identify issues before it becomes unmanageable and expensive and also seeks to identify new opportunities and possibilities. Inayatullah (2012) identifies emerging issues including disrupters such as these, below.

- Will robots soon have legal rights?
- Will meditation be part of every school curriculum?
- Will we develop pharmacies in our bodies?
- Will the smart toilet help us with early diagnostics?
- Will the slow cities movement redefine the 24/7 world?
- Will smart bots (eco, health) create more fuel- and health-efficient persons, houses, communities and businesses?

Inayatulla (2012) further states that solving emerging issues can minimise harm and help individuals and organisations respond better to emerging challenges.

3.3.3 Timing the Future

The third pillar is timing the future. Timing the future focuses on the sensible use of macro-, meso- and micro-patterns of change to better influence social reality (Inayatullah, 2012). Macro-patterns, as suggested by macrohistorians, are critical to understanding the shape of time.

- The future is linear, stage-like, with progress ahead. By good work we will realise the good future.
- The future is cyclical; there are ups and downs.
- The future is spiral: parts are linear and progress-based, and parts are cyclical.
- New futures are often driven by a creative minority.
- There is a turning point in human history where the action of few can make a dramatic difference. In these periods the old behaviours are no longer add value (Inayatullah, 2012).

Meso-patterns, more specifically meso-institutional change have three positions on institutional change. The first position comes from those within the institution where there is a deeper awareness of self that leads to consciousness change. The second position emanates from institutional change; changing the laws that govern society, rules and regulations. The third change comes from new technology. They change

how things are done by way of taxation, legislation and incentives to lead societal change (Inayatullah, 2012).

Lastly there is microtiming which has two aspects. The first is that the futures thinking differs depending on the stage of the individual's life. For example, the maturity level of a teenager differs from that of an adult. The second aspect is microhistory that frames life stages. An example of a life stage would be birth-student-work-retirement, mentoring and spiritual life.

3.3.4 Deepening the future

Pillar four is deepening of the future. Two methods are significant, namely, the causal layered analysis (CLA) and the four-quadrant mapping. As indicated in chapter 1, the application of CLA will be dealt with in detail in chapter 4 as this method was chosen as the primary research methodology. The four-quadrants mapping consists of the following:

- the **inner-individual**: the individual gives to the world that must change;
- the **outer-individual**: the behaviour that the individual engages in;
- the **outer-collective**: the official strategy of organisations;
- the **inner-collective**: the inner map of the organisation (Inayatullah, 2008).

Most policies focus on the outer-collective and very little on the inner collective. The four-quadrant and CLA methods, therefore, go hand in hand as the four quadrant method is an inner CLA.

3.3.5 Creating Alternatives

The fifth pillar is creating alternatives. According to Inayatulla (2012), scenario planning is the most important method. Scenarios open up the present, outline the range of uncertainty, offer alternatives and predict possible futures (Inayatullah, 2008). There are a number of scenario methods, as follows: single variable; double variable; archetypes; organisational and   integrated (Inayatullah, 2008).

3.3.6 Transforming the future

The last pillar is transformation. Transformation narrows towards the future that represents desires and wants, which emanates from scenarios created from questions. This forces individuals to think more in detail about the world they want to live in (Inayatullah, 2008). This preferred future can also be determined through creative visualisation, but with the main goal to have a win-win solution when there are conflicting visions.

People can create a world they want to live in by mapping the past, present and future, by anticipating future problems and their consequences, by being in tune with the patterns of change, by deepening their analysis to include worldviews, and by choosing the preferred way to achieve the desired future they wish to live in (Inayatullah, 2008).

3.4 CAUSAL LAYERED ANALYSIS (CLA)

The six pillars of futures studies provide theory of futures study thinking that is linked to methods and tools used in practice. Deeping the future is one of the critical pillars to consider. The two methods are causal layered analysis (CLA) and four quadrant mapping.

CLA is concerned more about creating alternative futures by opening up the present and past and less about predicting a particular future (Inayatullah, 2005). CLA seeks to combine different methodologies and combine differing research traditions (Inayatullah, 2019). CLA is further described as a layered analytical method that can be used to analyse thinkers, texts, issues, problems, discourses, worldview, etc. (Anthony, 2009). The CLA method has four levels of analysis: the litany, social causes, discourse/worldview and myth/metaphor (Inayatullah, 2009).

3.4.1 The Litany

It is the day to day construction of events and data (Inayatullah, 2016). The litany is a study of future trends and issues in terms of disconnected features (Adendorff & Putzier, 2018). It is also the level that is the most visible and obvious which requires little analytic capability where the assumptions are rarely questioned (Inayatullah, 2019).

3.4.2 Social Causes

Social causes include economic, political, cultural and historical factors (Inayatullah, 2009). Quantitative data is interpreted and the type of analysis is mostly articulated by policy institutes (Inayatullah, 1998). This level excels in technical explanations as well as academic analysis where the role of government and other role players are explored (Inayatullah, 2019). The systematic layer of this study will try to identify trends and disruptors that impact revenue collection for South Africa.

3.4.3 Discourse or worldview

This is the third level that is the big picture, the paradigm which informs what we think is real or not real, the cognitive lenses we use to understand and shape the world (Inayatullah, 2008). It is a deeper level of understanding and expression of the problem. It is within this level that different dialogues with strong technical grounding are essential in unlocking the meanings and different ways of knowing (Inayatullah, 1998).

3.4.4 Metaphor or Myth

The fourth layer of the analysis it the metaphor or myth. It is the deep stories, the collective archetypes, the unconscious dimension of the problem or paradox (Inayatullah, 1998). The metaphor and myths not only reveal deeper civilizational bases for particular futures, but they move the understanding of the future beyond rationale. CLA includes the metaphorical dimension and links it with other levels of analysis (Inayatullah, 2005).

3.5   SCENARIO METHOD

Glen (2009) defines a scenario as a story with plausible cause and effect links that connects the present with a future condition, while at the same time illustrating important decisions, events and consequences throughout the storyline. Another definition of scenario is that it describes possible future situations which include the path development leading to that situation (Kreibich et al., 2012). The intention of scenarios is not to provide a full description of the future, but to elevate certain elements of a possible future and to draw attention to key factors that will drive future development (Kreibich et al., 2012). The purpose of scenarios is to systematically explore, create and test alternative future possibilities that include all the variable elements that the user might possibly face (Jerome C Glenn & Gordon, 2009). Scenarios are a method used in creating alternatives which is the fifth pillar of futures studies. Inayatullah (2008) highlights that there are multiple scenario methods: single variable; double variable; archetypes; organisational; and integrated.

The first method is the multi-single variable. It is derived from the futures triangle. A range of scenarios or stories are created based on the images or drivers (Inayatullah, 2008). The second is the double variable method. This method identifies two major uncertainties and develop scenarios based on these (Inayatullah, 2008). The third refers to scenario archetypes. It was developed by James Dator. These are continued growth; collapse; steady state; and transformation. Inayatullah (2008) describes the archetypes as follows.

- Continued growth – the current product is enhanced in the form of more roads, more technology, and a greater population. Within this method technology is the solution to everything.
- Collapse – within this future continued growth fails. The paradoxes are countless: between the economy and nature; between men and woman; between speculative and the real economy; between religious, secular and postmodern approaches; and between technology and culture.
- Steady state – this future seeks to find balance between nature and the economy where growth is halted. Human values have a higher priority where it is a softer

and fairer society. Within this state there is movement back to nature and the past and technology is seen as a problem.

- Transformation – this future seeks to change the basic assumptions of the other three. Transformation originates from either drastic technological change or spiritual change (Inayatullah, 2008).

These four scenarios within the archetype enable an individual to visualise how an organisation would look in each of these scenarios.

The fourth method of scenario writing is organisationally focused. It consists of four variables: best case scenario (where the organisation wants to move towards); worst case (where everything goes bad); outlier (a surprise future based on disruptive emerging issues) and business as usual (no change) (Inayatullah, 2008). The fifth scenario methodology has four dimensions namely: the preferred; the world people want; the disowned; the world that people reject or are unable to deal with; and the integrated where owned and disowned are united and connected in a complex way. The last is the outlier, which is the future outside of these categories (Inayatullah, 2008).

Kreibich et al, (2012) indicate different ways to construct scenarios, namely, normative, explorative, descriptive and quantitative, amongst others. The process of developing a structure for development of scenarios is framed as follows by Kreibich et al, (2012).

- Framing: consists of scoping the project – developing and defining the key terms and problem definition;
- Scanning: the collecting of data and information – systems, qualitative and quantitative research, interviews, historic developments and current research results;
- Forecasting: focused on trends, uncertainties and drivers of change;
- Foresight: involves challenging the baseline scenario and develops alternative futures;

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- Visioning: unfolding the preferred futures and performing back casting for ways of realising it by starting now;
- Planning and action: developing strategy, options and agenda setting and acting (Kreibich et al., 2012).

Scenarios can help formulate long-term policies, strategies and plans, to help bring the likely future circumstances in closer alignment (Jerome C Glenn & Gordon, 2009). The benefit of scenarios is that there is not just one future, but several realizable and desirable futures that can be placed side by side (multiple futures). Another benefit is that scenarios are a means of identifying weaknesses, technological discontinuities or disruptive events and include them into long term planning (Kreibich et al., 2012). Some of the weaknesses identified are that scenario techniques are time-consuming. It is not an easy task in practice to put a strong emphasis on the selection of suitable participants when applying a qualitative approach. It also requires a deep understanding and knowledge of the field under investigation (Kreibich et al., 2012).

3.6   VISIONING

The term vision has a variety of meanings which include the popularity of   viewing   it as an ability to see what the majority do not (Jerome C Glenn & Gordon, 2009). Vision is also referred to as a mental image of some future danger seen during a dream or a ceremony to invoke such experience. It can also be a view of a desirable future or be the result of people working together to create a new condition for themselves. It can be static, such as visioning to land on the moon, or more dynamic, like exploring the unknown (Jerome C Glenn & Gordon, 2009). Vision and visioning are foundational to the field of futures studies. It works by pulling people together. It gives a sense of what is possible to both individual and groups (Inayatullah, 2012). It inspires the good in all to transcend by sacrificing the short term for the long term for the greater good. Lastly it can help align individual goal with organisational goals (Inayatullah, 2012).

3.7 QUALITATIVE AND QUANTITATIVE RESEARCH METHODOLOGY

According to Collis and Hussey (2014), research is a systematic and methodical process of inquiry and investigation with the view to increasing knowledge. The start of a research design is to determine the research paradigm. A research paradigm is the framework that guides how research should be conducted as it is based on people's philosophies and assumptions (Collis & Hussey, Business Research: A Practical Guide for Undergraduate and Postgraduate Students, fourth edition, 2014). The qualitative research method involves a researcher describing different characteristics of people and events without comparing events in terms of measurements or amounts. On the other hand, quantitative methods focus on the detail of measurements and amounts of characteristics displayed by people and events the researcher is studying (Thomas, 2003). Quantitative researchers use literature as a basis for planning research and the dominant characteristic is that the data is gathered in such a way that it is easy to quantify, allowing for statistical analysis (Patten & Newhart, 2018). One of the main advantages of the quantitative research approach is the relative ease and speed at which research can be conducted (Collis & Hussey, Business research: A practical guide for undergraduate and postgraduate students. 2nd edition., 2003).

3.8 CONCLUSION

The primary focus of this chapter was to explore the research methodologies looking at the fundamental principles of futures studies. The six pillars of futures studies were explored. Causal layered analysis was selected as the preferred research method that is all about creating alternative futures (Inayatullah, 2005). Scenario as method and visioning as an extension of futures studies, were explored. Furthermore, the qualitative and quantitative research methods were highlighted.

The next chapter will provide a review and in-depth discussion on the application of CLA as a methodology, and the six pillars of futures studies that form part of the basic concept of futures thinking. Scenarios will be provided on the possible futures of the revenue services by 2030

CHAPTER 4: APPLICATION OF CAUSAL LAYERED ANALYSIS

4.1 INTRODUCTION

The previous chapters provided an insight into the research problem, research methodology and review of literature relevant to the research questions presented in chapter one. The impact of the 4IR and how it has created disruptive technology that impact the way the world works and could possibly work, was reviewed. The rate of change within the 4IR has great potential for all sectors within the economy that challenge the way we could look at the world.

The six pillars of futures studies represent the theory of futures thinking. Within these pillars, deepening the future provides a tool, CLA, which is the preferred research methodology relevant for the study.

4.2 PILLAR FOUR: DEEPENING THE FUTURE

Chapter two provided an introduction of the six pillars as a theory that links method and tools where each pillar was briefly discussed. Causal layered analysis is the fundamental and foundation methodology for deepening the future (Inayatullah, 2012). CLA assumes that the manner in which a problem is framed changes the policy solution and the role players responsible for creating transformation (Inayatullah, 1998). Inayatullah (1998) further argues that futures studies should be seen as layered, both deep and shallow, with its rich texture that cannot be reduced to empirical trends analysis. The goal is not to have complex layered analysis but rather to create the possibility of real transformation of our empirical and ideational worlds and ensure deep participation in this transformation (Inayatullah, 2009).

Inayatullah (2009) has provided context to CLA, summarising it as how constructing the problem through context creates the solution. CLA views context at multiple levels. The levels are the litany, the systemic, the worldview/discourse, and the myth/metaphor. The challenge is to move up and down multiple layers, rethinking the

implied future at each level. Moving move down the levels, solutions become longer term and more difficult to achieve. CLA, therefore, allows authentic alternative scenarios and preferred futures to emerge (Inayatullah, 2009). Figure 7 below illustrates CLA.
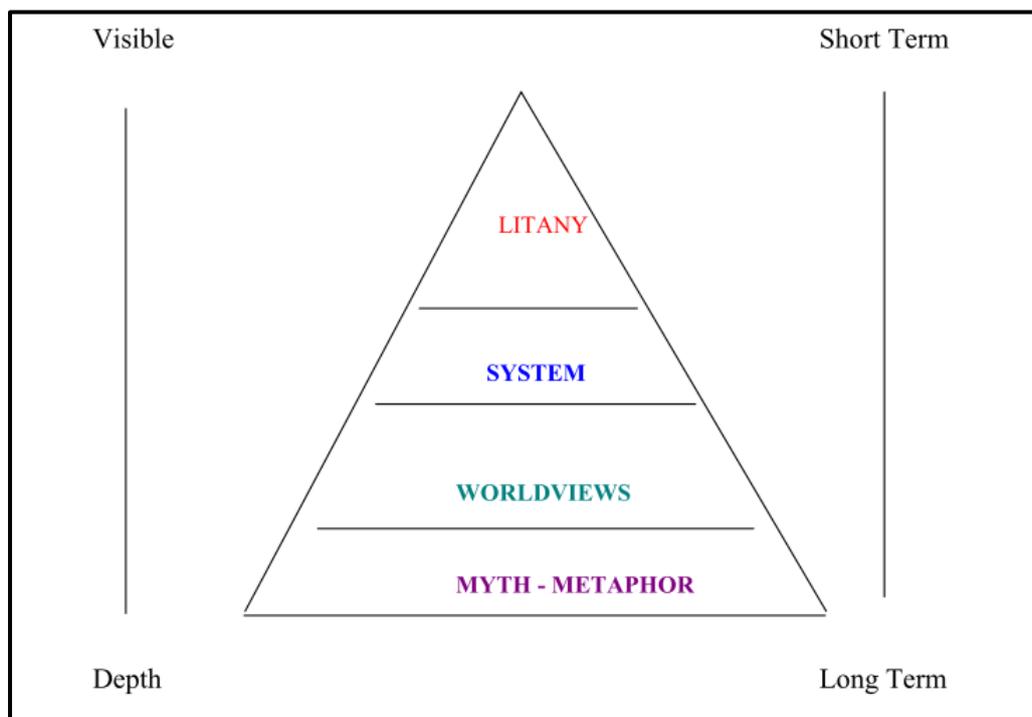
Figure 7: Causal Layered Analysis:(Source: (Inayatullah, 2009))

4.3 APPLICATION OF CAUSAL LAYERED ANALYSIS

Causal layered analysis consists of four levels as illustrated in figure 7. The litany level or the day-to-day future is characterised by quantitative trends and problems, often exploited in media news for political purposes (Inayatullah, 2019; Kotze, 2010). At the litany level the solution seems unsolvable or it is up to government or those in power to solve it. This is a conventional level of futures research that can easily create a politics of fear (Inayatullah, 2019). The solutions to problems at this level are usually short term and assumptions are rarely questioned (Inayatullah, 2009, 2019).

The second level is deeper and is concerned with systemic causes which include social, economic, technological, and political causes of the issue, and historical

factors. Interpretation is based on quantitative data. The role of the state and other role players is often explored at this level and the data are often questioned. This layer is characterised by technical techniques and models built on a strong academic foundation (Inayatullah, 2019; Kotze, 2010).

The third level is the worldview that is concerned with the perspective of reality from the positions of various stakeholders (Inayatullah, 2016). Kotze (2010) highlights that this level is more about factors like culture, political views, and religious influence over our views about the world and less about technical analysis. The task is to find deeper social, linguistic, and cultural processes that are independent from systems and role-players (Inayatullah, 2019). It is critical at this level to recognise deeper assumptions behind the issue and to develop a new vision of the problem. The foundations for how the litany has been presented and the variables used to understand the litany, are questioned at this level (Inayatullah, 2009).

The fourth level of analysis is the metaphor or myth. This is the deep stories, the collective archetypes, and the unconscious and emotional dimension of the problem or paradox. The language used is less specific and more focused on evoking visual images by touching the heart instead of reading the mind (Inayatullah, 2009, 2019). Deconstructing conventional metaphors and then presenting alternative metaphors present a powerful way to critique the present and create possible alternative futures. Metaphors and myths reveal the deeper civilizational bases for particular futures and move to the creation of the future beyond rational or design efforts (Inayatullah, 2009).

4.3.1 Understanding the readiness of South African Revenue Services towards 2030 for the 4IR- Infrastructure readiness

Table 3, below, provides a framework that will be utilised in the application of CLA.

Table 3: CLA Understanding the readiness of the South African Revenue Services (SARS) towards 2030 for the 4IR- Infrastructure readiness

CLA LEVEL	QUESTIONS RAISED
Litany	What is the state of readiness of SARS for the 4IR?
Systemic/Social causes	What are the drivers of change affecting SARS to fulfil its mandate?
Worldview	What are the global revenue services doing with regards to 4IR? Whose voice is not being heard?
Metaphor and Myth	Is technology the solution to all the problems?

4.3.1.1 The litany

The South African Revenue Services (SARS) is South Africa's tax collecting authority. This autonomous institution was established in terms of the South African Revenue Service Act 34 of 1997. The first commissioner of SARS was Pravin Gordhan who served from 1999 to 2009. He was succeeded by Oupa Magashula who served until July 2013 when he resigned. Thereafter, Ivan Pillay acted as commissioner until the appointment of Tom Moyane from 27 September 2014 until 1 November 2018. Mark Kingon was appointed as acting-commissioner on 20 March 2018 (Nugent, 2018). Edward Kieswetter was appointed on 1 May 2019 and is currently serving as the SARS commissioner. What is glaring is that, within a period of six years, the organisation had four commissioners.

SARS was once seen by its employees as an employer of choice as they worked for an institution with a higher purpose. Its purpose is to serve and contribute to the wellbeing of the country. It is an institution that should be morally and ethically sound. For purposes of understanding the current state of SARS, it is important to look at the events that led to the reputational deterioration of a once foundationally sound organisation.

Under the leadership of Pravin Gordhan, SARS went through a restructuring process that was founded on three legs: education, service and enforcement, and the organisation was structured to meet that objective (Nugent, 2018). The transition from

a paper-based operation to a modernised information technology platform ensured the acceleration of processing tax collection and optimum allocation of human resources. The modernisation of customs ensured that turnaround times on processing imports were improved and substantial compliance improvements on illicit cigarettes, clothing and textile products and narcotics were achieved (Nugent, 2018).

The first crack into the image of SARS was with the resignation of Oupa Magashula for not following due process by offering a young woman work at SARS. An inquiry into the allegations revealed no evidence that Mr Magashula committed a crime; however, his conduct had placed the reputation and credibility of SARS at risk. Magashula admitted that his actions constituted failure to promote and maintain the high standard of professionalism and ethical behaviour that is expected of the SARS commissioners (eNCA, 2013). The second blow to the institutional integrity was the Sunday Times article published on 12 October 2014 about an alleged rogue unit established in SARS. This led to an investigation report issued by the Public Prosecutor, Busi Mkhwebane, which is currently under review by Gordhan's legal team.

The commission of inquiry into the tax administration and governance by SARS was led by Judge Nugent. This commission of inquiry was established by the former Minister of Finance, Malusi Gigaba, as the integrity of SARS was questioned both domestically and internationally. The purpose was for recommendations to emerge addressing issues of governance and integrity that were of concern to investors, rating agencies, international institutions, and the public (Nugent, 2018). Findings of this inquiry report revealed that there was massive failure of integrity and governance. The trajectory of sophisticated information technology, which was a decade in the making, was summarily stopped with the arrival of Moyane (Nugent, 2018). This information technology has vital built-in checks; however only adjustments and adaptations to the system were done from time to time while the system itself degenerated as technology advanced. The Chief Officer: Digital Information Services and Technology (DIST), Mmamathe Makhekhe-Mokhuane, provided evidence to the commission of inquiry into tax administration and governance by SARS, stating that

the information technology division only operates to "keep the lights on" with no new or focussed innovations.

The 2019 tax season introduced enhancements to the e-filing platform and also allowed taxpayers to submit their returns via the SARS MobiApp for smart phones and tablets (SARS, 2019). SARS has enhanced the tax compliance status functionality, where printed certificates are no longer required as this protects the confidentiality of taxpayers and provides for third party real time view of the overall tax compliance. These enhancements to the functionality of e-filing were implemented after the departure of Moyane and more enhancements are to be made to make it easy for taxpayers to do business with SARS.

4.3.1.2 Systemic/Social level

The litany level provided the day to day future; the commonly accepted headlines of the way things are or should the systemic level focus on the social, economic, technological, political causes of the issue. The systemic level is more policy driven. At the systemic layer the study will try to identify drivers and trends that contribute to the issues identified by the litany analysis as it appears to the world and South Africa. Disruptive technology is at the core of the key drivers of change where it officers radical efficient solutions for existing inefficiencies in an ecosystem (van Rijswijk, Hermsen, & Arendsen, 2019).

- **Digital Economy**

The OECD (2019b) emphasises that tax authorities must continue to evolve in order to meet the demand of client expectations, while at all times protecting the integrity of revenue systems. This has been expressed by Nugent (2018) who states that SARS needs to be linked to the digital economy if it is to fulfil its mandate. SARS is an information technology driven business that cannot be permitted to fall behind (Nugent, 2018). There is a need for revenue services to contribute to the broader ecosystem as the clients operate across the boundaries of different government

services, public and private sectors, and across government jurisdictions (OECD, 2019b).

Digital economy is the activity that is the product of billions of everyday online connections between people, businesses, devices, data and processes. It, therefore, is the hyperconnectivity which means growing interconnectedness of people, organisations and machines that results from the internet, mobile technology and the Internet of Things (IoT) (Deloitte). Tax authorities could begin to craft a new reality where services are seamlessly integrated and the integrity of the broader system is assured within an integrated system (OECD, 2019b). Disruptive technology could be defined as the technology that provides such radical solutions to existing inefficiencies in a particular ecosystem that it displaces existing technologies (van Rijswijk et al., 2019). The progress of the digital economy is closely linked to the progress of some key software technologies such as blockchain, data analytics and artificial intelligence (AI). The specialised machine-orientated hardware includes IoT, automation robotics, and cloud computing (United Nations, 2019). Detailed descriptions of some of these technologies were presented in chapter 3.

- **Blockchain and distributed ledger technology (DLT)**

Blockchain has the ability to transform the functioning of a wide range of industries. It improves the efficiency of transactions and can increase the transparency and traceability of goods, data and financial assets, and facilitate market access (OECD, 2018). Blockchain technologies are a form of DLT that allows multiple parties to engage in secure and trusted transactions without intermediary. DLT is, therefore, a means of sharing and recording data stores, also known as ledgers, where each have the exact data records and are maintained and controlled jointly by a distributed network of servers, also known as nodes (Houben & Snyers, 2018) It is best known as the technology behind cryptocurrencies (United Nations, 2019). Information stored on a blockchain is of an absolute nature and can be utilised by businesses by solving problems in creating uniformity of records between multiple entities, maintaining auditable information trails, efficiently settling and tracking exchanges of value, and authentication of user identity (George et al., 2019).

- **Cryptocurrency**

Cryptocurrency was introduced and discussed in chapter 3 of this paper where the general understanding of cryptocurrency was discussed. Cryptocurrency is not regarded as a legal tender as expressed in the position paper issued by the Reserve Bank; however, it is regarded as a digital asset and, like any other asset, it has value. There is a lack of regulatory and a legal framework, absence of consumer protection laws, the inability to enforce the principal of finality and irrevocability in the payment system, and avoidance of exchange control regulations (IFWG, 2019). The end user is, therefore, the bearer of all the risk with no recourse to the South African Reserve Bank (SARB). Even though the digital transaction is not regulated, it still happens at the discretion of consumers and willing merchant that will accept payment in the form of crypto assets for goods and services (IFWG, 2019). SARS"s view on cryptocurrency transactions is self-declaration by the taxpayer where the latter has to determine whether the transaction is of a capital nature which accrued capital gains tax, or whether it constitutes gross income (SARS, 2019b).

The IFWG (2019) has identified specific risks that the use of crypto assets has posed in practice, which include the purchasing and selling of crypto asset, and payments using crypto assets. When purchasing crypto assets, the identity of the purchaser is not mandatory due to the lack of regulation. This presents the risk of clients conducting money laundering or financing terrorist activities. It could also circumvent exchange controls and mask illicit financial flows. There is a further risk with the tracking of flows of funds as it is separate from current monitoring activities of financial systems and regulators. The purchaser has no dispute recourse due to the non-regulatory format of trading. Many consumers have fallen prey to fraud and hacking (IFWG, 2019)

Risks identified through the payment channel of crypto assets reveal the shift away from traditional deposits at banks to decentralised stores. Crypto asset wallets and related stores of tokenised value is different from commercial or central banks, yet perform the same function as deposits reserved for payment purposes (IFWG, 2019). The alternative payment system will imply the creation of parallel closed loop payment

systems that may reduce the efficiency of existing national payment systems. There is no consumer protection for payment in crypto assets and there is uncertainty whether payments can be reversed in cases of errors, fraud or overpayment. There is an increased risk in payments being used to fund criminal activities, e.g. the payment of ransom is requested in crypto assets to avoid detection (IFWG, 2019).

4.3.1.3 Discourse or Worldview

The worldview level is concerned with structure and the worldview that legitimate and supports it. Discerning deeper assumptions behind the issue is critical as are efforts to revision the problem (Inayatullah, 1998). The Forum on Tax Administration (FTA) was established in 2002 and aims to influence the environment within tax systems. The FTA is a forum on tax administration for commissioners from 53 OECD and non-OECD countries which include members of the G20. The main objective of this forum is to improve taxpayer services and tax compliance by helping tax administrations increase efficiency, effectiveness and fairness of tax administration, and reduce the cost of compliance (OECD). The forum's aim has been to target commissioners who face similar issues and where the FTA can best facilitate to help develop new approaches for better tax administration (FTA, 2019). A number of time-limited projects are undertaken by smaller groups of tax administrations for the wider consideration of FTA commissioners with the themes of tax certainty, tax cooperation and digital transformation (FTA, 2019).

The FTA annual report for 2018-2019 has been issued and this paper will highlight some of the projects undertaken by certain Commissioners:

- **Sharing and gig economy**

The project was sponsored by the UK and Italy and looks at approaches to help ensure effective taxation of those receiving income from the sale of goods or services in sharing and gig economy. There are different ways that tax administrations can best communicate with platform sellers, sharing and gig economy platforms to enable more effective tax compliance (FTA, 2019). Recommendations and consideration for possible future work include joint work between tax administrations and platforms on

providing information and support to platform sellers, improving the evidence base to enhance understanding of tax at risk in relation to platforms and options for minimising those risks, and assisting in legislation development for standard reporting by sharing and gig economy platforms (FTA, 2019)

- **Successful tax debt management**

The project was sponsored by Belgium and Canada. The project aim is to provide awareness of the elements of a successful tax debt management strategy. Rising tax debt is a common thread between tax administrations. More innovative, cost effective and coordinated ways to both prevent debt from rising and the efficient collection of debt (FTA, 2019). The project has provided three focus principles which include measurement to prevent tax debt from rising; overview of a new tax debt management maturity model, and a collection of successful tax debt management practices provided by FTA participating countries of the project (FTA, 2019)

- **Application of programming interfaces (API)**

This project was sponsored by Australia. It provides an overview of the techniques, practices and standards used to deliver effective digital services for taxpayers. Digital technologies allow tax administrations to be more data and service driven, by proactively engaging taxpayers, making greater use of third party data, and increasing use of advanced analytics to better target inventions. A key enabler to these changes is the use of API's. This is the functionality that connects systems, people and IoT. The report provides practical assistance to tax admonitions and other parts of government who seek to implement of further develop their API strategy.

This forum presents countries the platform to share concerns and tax challenges and share best practices.

4.3.1.4 Myth/Metaphor

The myth or metaphor level is the fourth layer of the analysis. Inayatullah (2019) describes the myth level as a level that provides a gut/emotional level experience to the worldview under inquiry. It is to deconstruct the worldview into images that can transcend into other structures of interpretation (Kotze, 2010). In the worldview level it

has been established that tax authorities globally share similar challenges. These challenges include the technological, policy and regulatory issues which spread across all countries. Within the South African context, the tax administrator, SARS, is on the recovery path after seizing the organisation. The stopping of innovation and lack of strategic direction for information technology have placed the organisation in a position to catch up to what is happening in the global tax administration space. Collaboration on a global scale assists tax administrators, government and the private sector to navigate the fast revolutionary changes that are at their doorstep.

The myth that technology is the solution to all problems was further challenged when the institution was de-stabilised from within at the cost of good governance, lack of information technology development, low staff morale and a five-year consecutive shortfall in revenue collection. Without support, guidance and good governance by leadership within institutions, the one-dimensional solution to the readiness for the 4IR, is not plausible.

The FTA report of 2016, "Tax administration And Capacity Building- A Collective Challenge", highlighted a number of challenges for tax administrations and led to the establishment of the FTA Capacity Building Network (CBN). The aim of the CBN is to help FTA members frame their capacity-building contributions in a more coordinated, cost-effective and strategic way (FTA, 2019). The CBN priorities include the building of capacity and networks to help inform commissioner's investment decisions, assisting with the efforts to coordinate and collaborate between FTA members, and supporting the development of a knowledge sharing platform (KSP) in an effort to broaden the sharing and dissemination of knowledge among FTA   members   and others (FTA, 2019). The commission of inquiry into tax administration and governance by SARS has recommended that SARS takes steps to restore the cordial relationships that previously existed with other state institutions. This included the National Prosecution Authority, the National Treasury, the Financial Intelligence Centre, and the Auditor General. It was also recommended that SARS takes steps to restore the cordial relationship with the OECD (Nugent, 2018).

The FTA raised concerns at the FTA 11th plenary in Oslo in September 2017 which included concerns that 70% of the tax administration operations budget is spent on mostly staff salaries. Specific issues relating to the capabilities and competencies that will be required of staff in the future and the changing nature of work as a result of digital solutions were also raised (FTA, 2019). Research conducted by the World Wide Worx revealed that South African enterprises are yet to adopt the technologies that make up the 4IR. This is technologies relating to artificial intelligence (AI), robotics, virtual and augmented reality, IoT and blockchain. (Goldstuck, 2019). Participants in the study revealed that their lack of enthusiasm to embrace emerging technologies affected their eagerness to learn skills for implementing AI. Within a year the companies that indicated they would be implementing AI in the future have declined by 42%. The reality of obstacles such as skills and cost has reduced the level of interest to adopt some of the emerging technologies in the private sector (Goldstuck, 2019).

4.3.2 Understanding the change of the labour market and economy

Table 4: Understanding the change of the labour market and economy:

CLA level	Questions raised
Litany	What is the unemployment status in South Africa? What are the key factors impacting on South African jobs by 2030?
Systemic/Social causes	What will the impact of 4IR disruptive technology be on employment and revenue collection?
Worldviews	Who are the stakeholders shaping the storyline? Whose voice is not being heard?
Metaphor and Myth	Are humans being replaced by AI and automation? Is singularity near?

4.3.2.1 The litany

The litany level of this research presents an understanding of the labour market and its impact on the objectives of SARS by looking at the unemployment status of South Africa. The medium-term budget policy statement of 2019 presented by the Minister of Finance, Tito Mbowene, has highlighted that the global growth forecast for 2019 is the lowest since the 2008 financial crisis. The international trade tensions and local political uncertainty has been contributors to this status. The unemployment rate of South Africa increased by 0.1% to 29.1% compared to the second quarter of 2019 (StatsSA, 2019b). The high level and rate of unemployment is as a result of a deficit, where the demand for jobs exceed the its supply.

The official definition of unemployment defines the unemployed person as someone in the economically active population, between the age of 15-64 years of age, who did not work seven days prior to the interview, who wants to work, who is available to start work within seven days of the interview and who has taken active steps to look for work or start a form of self-employment in the four weeks prior to the interview (NEDLAC, 2019). South Africa's biggest contributor to its economic problem remains to be the very high and increasing unemployment rate. NEDLAC (2019) has identified four types of unemployment: frictional, seasonal, cyclical and structural. A brief description of these types of unemployment is as follows.

- Frictional unemployment is when people leave their job and are not able to find another job straight away;
- Seasonal unemployment is when certain or occupations only require workers at certain times of the year;
- Cyclical unemployment is related to the general strength and vitality of the economy. A recession will result in lower demand for goods and services which result in lower production factors impacting directly on demand for labour.
- Structural unemployment when there is a significant gap between demand and supply of appropriately qualified workers to fill these posts (NEDLAC, 2019)
- At the current rate of increase of unemployment, the NDP target for unemployment at 6% by 2030 seem to be an almost impossible task to achieve. Seasonal

unemployment is when certain jobs or occupations only require workers at certain times of the year.

- Cyclical unemployment is related to the general strength and vitality of the economy. A recession will result in a lower demand for goods and services which results in lower production factors impacting directly on demand for labour.

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At the current rate of increase of unemployment, the NDP target for unemployment at 6% by 2030 seems to be an almost impossible task to achieve.

The factors impacting unemployment in South Africa appear to be relevant for the past, present and future. The large supply of low and unskilled labour far exceeds the demand which was caused historically by the low levels of investment in African education (GCIS, 2014). When looking at South Africa's unemployment context, the detrimental effect apartheid had with the deliberate exclusion of black people from the education system and from high skilled occupations, contributed to the high rate of unemployment rate today (GCIS, 2014). Ansara's analysis that the labour policy with the introduction of the minimum wage has contributed to unemployment as the jobs that should be created because of it are not there. He further states that the employer with a limited budget for wages, is forced to hire fewer workers; retrenchment are indicative of this (Naile, 2019). This view, however, does not consider the socio-economic environment that drove the need to implement the minimum wage policy. The severe level of inequality, with South Africa being rated as one of the top three most unequal countries in the world, should not be underestimated since poverty does not only include the unemployed, but also the harsh reality of people employed and earning less than the required cost to feed a person per day.

4.3.2.2 Systemic/Social level

There is a growing concern worldwide that the increased use and integration of technology will lead to job losses as human work is replaced by automation and AI (United Nations, 2019). The United Nations digital economy report of 2019 further

states that digitisation is more likely to affect specific tasks than full occupations as feared by most.

Predictions are that two billion jobs that exist today will no longer exist by 2030; 60% of jobs that will exist 10 years from now have not yet been invented; by 2030 two billion jobs would have disappeared freeing up talent for upcoming new industries; basic computer programming will be considered a core skill required in more than 20% of jobs - these are some of the futurist Prof Adendorff's predictions for 2030 (Pillay, 2018). The introduction of technologies will inevitably lead to the vanishing of some jobs as some activities disappear, but it can also lead to job creation as new activities emerge. Within the short term, job losses will occur; however, the benefits in the long-term job creation linked to increased productivity, may outweigh the short term losses during the transition from digitisation (United Nations, 2019). Companies are seeking to harness the high levels of efficiency of production as the 4IR unfolds. This, however, will call upon all industries and regions across the board to formulate comprehensive workforce strategies that meet the challenges of this new era of fast change and innovation (Leopold et al., 2018).

South Africa has experienced the effects of digital innovation and automation services in the workplace. Standard Bank announced its closure of 91 branches this year due to shift in clients using digital banking products and services (Mzekandaba, 2019). This decision was not accepted well by the trade unions and raised as a concern given the high unemployment rate as any job losses based on operational requirements will have an effect on the growth of the economy. The retrenched employees would be able to make use of training and upskilling opportunities provided by the bank in order to still contribute to the economy, even if it is outside the finance sector. It would however have been ideal if such opportunities were presented before the dreaded retrenchment notice. The reality is that South Africa like many other countries has an ICT skills shortage where trade unions and other stakeholders are posing questions on what is being done to develop the skilled workforce that enable them to respond to the demand of future work processes (Mzekandaba, 2019). The Congress of South African Unions (Cosatu) has suggested that a skills audit be conducted to identify the

skills gap that exists and to determine where and how to train workers. They are of the view that they cannot avoid technological evolution and therefore have to embrace it (Mzekandaba, 2019). South Africa has experienced the effects of digital innovation and automation services in the workplace. Standard Bank announced its closure of 91 branches this year due to a shift in clients using digital banking products and services (Mzekandaba, 2019). This decision was not accepted well by the trade unions and raised as a concern given the high unemployment rate as any job losses based on operational requirements will have an effect on the growth of the economy. According to trade unions, the retrenched employees would be able to make use of training and upskilling opportunities provided by the bank in order to still contribute to the economy, even if it is outside the finance sector. It would, however, have been ideal if such opportunities were presented before the dreaded retrenchment notice. The reality is that South Africa, like many other countries, has an ICT skills shortage. Trade unions and other stakeholders are posing questions on what is being done to develop the skilled workforce that enable them to respond to the demand of future work processes (Mzekandaba, 2019). The Congress of South African Trade Unions (Cosatu) has suggested that a skills audit be conducted to identify the skills gap that exists and to determine where and how to train workers. They are of the view that they cannot avoid technological evolution and, therefore, have to embrace it (Mzekandaba, 2019).

Mariana Mazzucato, an influential economist, demonstrated that the real driver of innovation is not lone geniuses, but state investment (Medeiros, 2019). The origin of her research into the early history of the world's most innovative companies started as the UK government decided to pursue a fiscal policy which affected the most vulnerable people in society. The policy included cutbacks on public services, which led to an increase in homelessness and crime. Her research revealed that industry disruptor companies such as Google, Tesla, Solar City and SpaceX, all have a common thread of funding by the Small Business Innovation Research Programme, which is a public venture capital fund. The deeper she delved, she found that state financing for other well-known start-ups was not only in early research, but also applied research, early stage finance, and strategic procurement (Medeiros, 2019). It could be argued that the enabling of innovation of enterprises through state financing would be easier since it came from a developed country. However, South Africa has a legacy of

state corruption, mismanagement of funds, lack of accountability and constant bailouts of state-owned enterprises (SOE's). This has resulted in loss of state funds which could have been investment in possible research and development of financing innovative enterprises.

4.3.2.3 Worldview

The worldview level seeks to go even deeper and attempts to discover the trends and problems identified in the previous layer. Many stakeholders are involved when trying to understand unemployment and the labour market. Unemployment is a global problem in which the depth, rate, effect and severity differ from country to country. Developing countries have a higher unemployment rate than developed countries and despite the variations of unemployment, it still remains a universal challenge (Mago, 2019). In the litany level it was highlighted that South Africa's current unemployment rate is 29.1%. Youth unemployment has been flagged as a ticking bomb as the rate of youth unemployment is overtaking adult unemployment rates (Mago, 2019). Youth unemployment in South Africa for the age group 15-24 years was 32.3% in the third quarter of 2019, compared to youth in the age group of 15-34 years unemployment in the third quarter at 40.4%. This unemployment category includes those who are not in employment, education or training (NEET)(StatsSA, 2019b). This is a staggeringly high rate compared to other countries in the world. The NEET rate serves as a broader measure of potential youth labour market entrants as it includes young person's outside the labour force not in education or training (ILO, 2018). The concern about these statistics is that it reflects a status of potential workers that are now exposed to skills degradation and erosion and these individuals are most at risk of not making the transition into work successfully without targeted support (ILO, 2018). Urban youth unemployment (UYU) refers to youth who reside in the urban areas, who were born there or migrated from rural areas through rural-urban migration as they were pushed to move to urban areas due to prospects of work opportunities in the cities. Unfortunately, they fail to secure work and this is one of the drivers of poverty among youth (Mago, 2019). The UYU causes social problems such as crime, violence, socio-political unrest, gangsterism and substance abuse. Murder, rape, robberies and other related crimes are widespread in South Africa with youth mostly implicated in these cases (Mago, 2019).

The global landscape of youth is changing as there were 1.8 billion youth worldwide between the ages of 15 and 29 as at 2018 and it is noted that Africa's youth population rate is rapidly expanding and it is expected to represent more than half of the youth population increase by 2050 (Deloitte, 2018). A prediction that by 2030, more than half of the nearly two billion youth worldwide will not have the skills or qualifications necessary to participate in the emerging global workforce, was issued by the Education Commission. This means that more than 50% of tomorrow's human capital are potentially unprepared to enter the workforce (Deloitte, 2018).

In order to delve even deeper into understanding the state of unemployment, the causes of youth unemployment are explored.

4.3.2.3.1 Education

To escape the chronic poverty, governments need to provide quality and market-related education. The National Development Plan (NDP) has emphasised the need for quality education and states, as part of the enabling milestones, the quality of education has to be improved by ensuring that all children have at least two years pre-school education and all grade three learners can read and write. The NDP further envisaged that by 2030, the education system will be globally competitive with regards to literacy and numeracy standards. It has been acknowledged in this plan that South Africa has made progress within its education system; however, challengers still remain (NDP, 2012). South Africa spends more than 20 per cent of its national budget on education; despite this, the quality of graduates in that education system is poor. Chief operating officer for the Centre of Risk Analysis (CRA), David Ansara, who analysed the key drivers of unemployment, advised that a graduate has a better chance of getting a job than those coming from the basic education system without mathematics, science and technology that are needed in the new modern economy (Naile, 2019).

4.3.2.3.2 Skills shortage

The youth lack the necessary skills to be competitive in the labour market. First-time job seekers find themselves at a disadvantage when competing for employment opportunities with the rising group of experienced job seekers who have also became recently unemployed (ILO, 2019).

The youth skill mismatch is a global phenomenon. India has the world's largest youth population and more than half of the country's population is of working age. The World Economic Forum Future of Jobs Report 2018 cited that more than half of India's workforce will need to be re-skilled by 2022 to meet the demands of the Fourth Industrial Revolution and that skill development is critical for India to sustain inclusive growth and development (WEF, 2019b)

4.3.2.3.3 Youth unwillingness to work

Mango (2019) has highlighted that some youths in South Africa are unwilling to obtain formal employment in the private sector because it is not rewarding. They prefer a life of crime by making quick money (Mago, 2019).

4.3.2.3.4 Labour: Supply versus demand mismatch

South Africa has a young population where more people enter the working age compared to the number of jobs that become available in the labour market (GCIS, 2014). As long as the growth in supply of labour exceeds the rate of job creation, the unemployment rate will remain high and it also increases the risk of political unrest and social tension (NEDLAC, 2019).

4.3.2.3.5 Lack of interest for entrepreneurship

It has been found that the entrepreneurial activity level of the youth in South Africa is very low. This is a fact even though there are various government initiatives to enhance entrepreneurship of the youth (GCIS, 2014).

4.3.2.3.6 Stakeholder: Government

The NDP provides a broad strategic guideline on key choices and actions which is led by the president and cabinet to execute this plan. However, the success depends on joint responsibility of all South Africans (NDP, 2012). One of the objectives is for the unemployment rate to fall to six percent by 2030. Actions to achieve this objective by government include the following:

- the removal of barriers on growth, investment and job creation;
- expansion of the public works programme to cover two million fulltime equivalent jobs by 2020;
- offer tax incentive to employers to reduce the initial cost of hiring young labour market entrants;
- facilitate agreement between employers and unions on entry level wages; and lastly,
- business and labour to develop their own proposals to reduce unemployment.

Government, therefore, has an instrumental role to play as it can facilitates policy change and influence foreign investors to participate, and is in a position to remove barriers up to international level that can positively influence the job creation stalemate the country is experiencing.

4.3.2.3.7 Stakeholder: Trade Union

South Africa has a rich history of racial segregation and marginalisation of the African workforce. Trade unions have played a role in speaking up for the rights of the marginalised in the workplace. South Africa has more than one hundred registered trade unions with three major federations of trade unions. The trade unions' role is to ensure the rights of the employees are protected and employers act within the ambit of labour law. They have the power to influence their members and ensure that the transitional period within the 4IR is met with the least resistance.

There is great dependence on stakeholders to initiate reform in education, labour market policies, private sector contribution to the development of skill and existing social contracts. This has the potential to ignite economic prosperity and social progress.

4.3.2.4   Myth

It is a misconception that unemployment in South Africa only became an issue after democracy in 1994 (GCIS, 2014). The unemployment rate in 1994 was 20.5% and has now grown to 29.1% in 2019. One of the greatest myths surrounding 4IR is that automation will take away jobs. The evolution of economies has revealed that a few years ago numerous jobs did not exist before; however, there have also been the introduction of many new jobs that did not exist before. (GCIS, 2014). Some of the new jobs that exists today that did not exist a few years ago including occupations such as Uber drivers, web designers, 3D printing technicians, social media managers and many others (Booth, 2019).

Another myth with regards to 4IR is that there are industries that will not be disrupted. History is full of examples of industries caught unaware by technological disruptors. Unicorns, which are start-up private companies with a valuation exceeding one billion dollars, seem no longer to be uncommon with more than 300 unicorns disrupting industries such as healthcare to financial services, manufacturing, food and travel (Booth, 2019).

The sharing and gig economy as a threat to employers, is viewed as another myth. The gig economy platforms are defined as two-sided platforms that connect the one side of the market, the workers, to the customers, on the other side, on a per-service "gig" basis (Schwellnus, Geva, Pak, & Veiel, 2019). The OECD (2017) has highlighted that the term "sharing and gig economy" is used interchangeably because the first part tends to be concerned with the physical assets and the second with labour, where labour and assets are used frequently in combination. Sharing economy has its origin in the idea that value can be extracted from sharing an asset that would have been

unused. Examples include a spare bedroom, parking space or a car. The online platform has enabled the rapid expanding of the sharing market by providing built-in trust mechanisms through insurance, ratings, complaints procedures, funds held in escrow, etc. (OECD, 2017).

Lastly the myth that technological singularity is near, will be explored. Singularity is defined as that point in time when advanced technology, specifically artificial intelligence (AI), will lead to machines being smarter than humans (Reedy, 2017). The term singularity was originally derived from mathematics and describes a point that we are unable to decipher its exact properties (Tzezana, 2017). Ray Kurzweil, Google's director of engineering, is a well-known futurist with an accuracy rate of 86 percent of his 147 predictions made since 1990. Kurzweil has predicted that by 2029, AI will pass a valid Turing test which will lead to the achievement of human level of intelligence and by 2045, singularity, which is when we will multiply our effective intelligence a billion fold by merging with the intelligence we have created (Reedy, 2017). The concept of singularity became popular in the last two decades because of two thinkers namely Vernor Vinge and Ray Kurzweil. Vinge wrote in 1993 that "within thirty years we will have the technological means to create superhuman intelligence. Shortly after, the human era will be ending" (Tzezana, 2017). Ray Kurzweil who wrote a book called "The singularity is near" where Kurzweil basically agrees with Vinge. However, he believes that Vinge has been too optimistic with his view on technological progress. Kurzweil believes that by the year 2045 mankind will experience the greatest technological singularity (Tzezana, 2017). The singularity is an opportunity for humankind to improve, as the same technology that will make AI more intelligent will give humans a boost as well. Kurzweil's view is that humans will get more neocortex, which will make them funnier, better at music, and where we exemplify everything we value (Reedy, 2017). Even though the concept of   a computer in your brain to enhance who you are seems impossible, Kurzweil reminds sceptics that Parkinson's patients today have computers in their brain which is an indicator that cybernetics is just getting its foot in the door (Reedy, 2017).

4.4 CREATING ALTERNATIVES

Creating alternatives are part of the fifth pillar. Inayatullah (2008) has identified two methods in this pillar which consist of the "nuts and bolts" and scenarios. The first method consists of undertaking a structural functional analysis of the organisation and then finding alternative ways of doing what it does. The objective is to create an organisational function chart and then search for new structures to engage in those structures (Inayatullah, 2008).

The second method of creating alternatives is through scenarios. Glen and Gordan (2009) describe scenarios as a story with plausible cause and effect links that connects a future condition with the present, while highlighting key decisions, events and consequences throughout the storyline. Scenarios are tool par excellence of future studies as they open up the present, outline the range of uncertainty, offer alternatives, and predict (Inayatullah, 2008). A scenario is not a single prediction or forecast, but rather a compilation of various statements about the future that is vivid enough for one to see and comprehend the problems, challenges and opportunities that such an environment would present (Glenn & Gordon, 2009). Adendorff (2015) has emphasised that a good set of scenarios needs to leave the reader questioning whether the preferred future would occur and, therefore, encourage the reader to ponder longer on the subject (Adendorff, 2015).

The purpose of scenarios is to systematically explore, create and test alternative futures that provide for all possible future operating possibilities the user might face. It can help in creating long term policies, strategies and plans that will bring desired and likely future circumstances in closer alignment (Glenn & Gordon, 2009). Exploratory scenarios describe events and trends that could evolve based on alternative assumptions about the future. Normative scenarios describe how the preferred future can emerge from the future (Glenn & Gordon, 2009).

Glenn and Gordan (2009) have identified that the goal of scenarios is to understand the mix of strategic decisions that are of maximum benefit where there is uncertainties and challenges present with the external environment. Therefore, scenario construction consists of evaluating the driving forces that give rise to potential futures that could be good and bad. Glenn and Gordarn (2009) have further summarised that scenarios have been developed and utilised to:

- understand the significance of uncertainties
- illustrate what is possible and what not
- identify what strategies will work with the range of possible scenarios
- learn how to prepare for future risks and uncover new opportunities
- make the future more real for decision makers to force a new way of thinking and decisions (Glenn & Gordon, 2009).

Inayatullah (2008) has identified multiple scenario methods, namely, single variable; double variable; archetypes; organisational and integrated (Inayatullah, 2008). The single variable method is derived from the futures triangle. Drivers, images or emerging issues provide the backdrop to create a range of scenarios or stories/pictures of the future. The second is the double variable method where two major uncertainties are identified and scenarios are based on these. The third method, developed by James Dator, articulates scenario archetypes. They are as follows.

- Continued growth – where technology is considered the solution to every problem. The current conditions are enhanced resulting in more products, more roads, more technology and a greater population.
- Collapse – the future results as continued growth fails. The contradictions are too great: between the economy and nature; between men and woman; between speculative and real economy; between the speculative and the real economy; between religious, secular and postmodern approaches; and between technology and culture.
- Steady state – this future seeks to stall growth to allow balance to be found in the economy and nature. It is a balanced, softer and easier society. Steady state is

both back to nature and the past where human values are rated higher and technology is often seen as the problem.

- Transformation – this future seeks to change the basic assumptions of the other three. Transformation is caused by either massive technological change or through spiritual change (Inayatullah, 2008).

The fourth model of scenario writing, which has been developed by Peter Schwartz of the Global Business Network is organisationally focused. This scenario structure consist of four variables: best case (where the organisation desires to move towards); worst case (where everything goes wrong); outlier (a surprise future based on a disruptive emerging issue), and business as usual (no change) (Inayatullah, 2008).

The fifth scenario methodology has four dimensions: the preferred - the world we want; the disowned, - the world that we reject or are unable to deal with; the integrated - combination of the owned and disowned in a complex fashion; and the outlier – the future outside of these categories (Inayatullah, 2008).

Peter Schwartz's scenario building model has been adopted by the researcher for this research.

4.4.1 Best Case Scenario

In this scenario, by 2030 all recommendations provided to SARS by the commission of inquiry into tax administration and governance, have been implemented, and the institution has regained its former reverence and respect nationally and internationally. The 4IR technology has successfully been incorporated into operations of the revenue services by 2030. This would be mostly possible due to collaboration of both the private and public sectors that invest into research and development into, among others, blockchain technology, AI, big data, cloud computing, etc. By 2030, great progress has been made by the revenue services with regards to blockchain where it is applied to transactional taxes such as VAT, withholding taxes and duties, indirect

taxes such as donations tax and any transaction that involve multiple parties. The technology would also assist with transfer pricing. The integration of blockchain technology will be seamless and would have gradually been built into everyday transactions. There will be a shift in the organisations mandate to include the tracking and storing of data to enable a single view of taxpayers on demand. The use of big data will be incorporated into its business model as data integration is an integral part of assessing, processing and auditing of tax matters. Information technology infrastructure enhancements would still be on-going as SARS enhances its digital service offerings. By 2030, most services will be available on mobile devices and users will have access to customer support via SMS, video and web chats, voice and email.

The single view concept of a taxpayer will be a reality by 2030 providing due diligence of compliance of both direct and indirect taxes. It would not only be available to SARS but also throughout government. Registration of taxpayers has become automated and a tax number created with registration of birth for every taxpayer. Legal entities will also be subjected to an automatic registration which has a digital footprint to provide a single view of the entity. Data storing and cross referencing will be continuous even if an individual does not earn taxable earnings, as it contributes to the single view profile of the individual.

The workforce of SARS is changing as the millennial generation is more introspective and more connected to the world and the community. They enter the workplace with a better understanding of the key business technological tools than senior employees. They have narrowed the skills gap to understand various technological implications and data analysis, and possess a blend of business, mathematics and science expertise. Repetitive processing functions have been gradually phased out or automated.

Branch offices have reduced in size, as most service offerings are provided through online channels. The view that a client would only visit a branch due to service failures, where SARS did something wrong, that needs to be investigated. The number of

clients visiting the branch is continuously decreasing as SARS is providing automated assessments based on third party data. Clients' first point of contact within a branch office will be through self-help kiosks and later AI virtual assistants. Complex tax matters will be resolved on an appointment basis if all other avenues have been exhausted.

The relationship managers within the current Large Business Centre will expand as the private sector expands and international operational levels become the new normal.

By the year 2030 the audit processes both investigative and compliance audits moved from manual process to automate through e-audits. These audits will rely heavily on the use of data through AI machine learning. Increased cross referenced data products, increased inter-governmental cooperation and information sharing will be the backbone of e-audits.

Revenue Service debt collection framework will change. Debt will be collected at source, in other words at the point the transaction occurs, to eliminate the creation of debt. The data sharing and interconnectivity of third party data, the integration of banks and financial institutions and increased cashless mechanism, will contribute to the elimination of debt. Payments via fiat and cryptocurrency will be accepted.

4.4.2 Worst Case Scenario

In this scenario 4IR technologies were not a priority to government and they did not invest in any adaptation to the technological infrastructure required. This lack of foresight impacted the revenue service's ability to collect optimal taxes that is due and found that the low collection rate was linked to the low tax morality of taxpayers. SARS is unable to trace certain income sources and money is leaving the country without a trace. The technology infrastructure is not maintained, while the private sector has evolved with the global trends.

The internal processes within SARS have deteriorated where the turn-around time to finalise assessments, audits and objectives has increased to unacceptable international standards. The low revenue collection rate increased that resulted in the debt ratio being at unacceptable level. Due to the limited funds provided from National Treasury, SARS was unable to attract new talent and is sitting with an aging workforce where no succession plans or skills transfer plans are in place. Senior managers and executives have left the organisation as it was no longer the employer of choice. The unemployment rate has increased and foreign investors are no longer interested in South Africa to manufacture and export. South Africa is no longer seen as the gateway to Africa, as other African economies grow from strength to strength with investment into revolutionary technology and continues investment into IT skills.

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4.4.3 Outlier

The reality of singularity happened much sooner than anticipated. In the year 2030 artificial intelligence has surpassed human intelligence. Machines has not taken over the world, however humans have started implanting devices, similar to AI technology to enhance human intellectual ability as well as memory capacity. Only the financially elite however is in a position to afford this technology. This further widens the gap between rich and poor as the poor is mainly dependent on government subsidies and assistance. Humans live longer and are able to contribute economically for a longer period than originally anticipated due to the bio-technological advances within the medical field. The mortality rate of humans globally has increased and governments are deliberating on increasing the retirement age. Job losses occur in the field of repetitive and administrative functions. New careers are on the rise where people follow what they enjoy and they are not committed to only one career path.

Revenue collections are on an upward trajectory. All transactions are digitally traceable where humans find that there is nowhere to hide. All activities are traceable and if tax liability is triggered, it has to be paid at source. Unpaid debt is reduced due the change in payment structure. Risk detection, tax evasion and fraud are limited with the assistance of AI. Legislative changes are lagging behind as the rate of technological changes and innovation happened at such a rapid pace.

4.4.4 Business as Usual

Government and the private sector collaborate in various forums to discuss the benefits and strategize on the implementation of 4IR technology. Resistance from opposition parties delay the implementation of an effective action plan. Trade unions acknowledge the benefits of 4IR technology and in principle support the implementation, however, whenever job losses are on the horizon due to the effects of 4IR, mass industrial action is lobbied to prevent such lay-offs. In principle the long term facilitative role of trade unions was to ensure that employers commit to the training and reskilling of their employees to ensure that they can still be economically active after having to leave such employer trained. The reskilling would not necessarily be within the same industry, but rather assist in acquiring new skills to be self-employed or contribute to the gig economy. Businesses cannot afford the prolonged industrial actions and therefore delay the full implementation of technology that might lead to job losses. This decision affects the global competitiveness as competitors are running operations more efficiently and less labour intensive. Foreign investment has reduced as the market is no longer investor friendly. Revenue collection is directly impacted as economic growth is slower than anticipated.

SARS has received funds from National Treasury towards initial implementation of information technology enhancements that has been successfully implemented in other countries, however funds was not provided for the maintenance and enhancements, post implementation. SARS find themselves lagging behind other revenue services in terms of 4IR infrastructure. The workforce of SARS has significantly reduced mainly due to the organisations inability to fill vacancies due to lack of funds. This has placed greater stress on the remaining workforce, resulting in low staff morale. There is a lack of up skilling and reskilling within SARS and clients find that the lack of general knowledge with regards to issues such as cryptocurrency, the gig economy and general shift in global marketplace frustrates the taxpayers. There is a direct correlation between ease of doing business with SARS or payment of taxes and the tax morality of taxpayers. SARS realise to change this perception; it requires investment into not only structural enhancements, but also clear change

management strategy with a focus on enhancing the general knowledge relating to 4IR technology and their role within this era.

4.5   CONCLUSION

In this chapter the application of CLA was applied in an attempt to address the main research objective. CLA's function is not to predict the future but to create alternative spaces for the creation of alternative futures (Inayatullah, 1998). The past and present of SARS have been reviewed with the objective of determining its readiness for 2030, specifically in the context of 4IR. Revenue collection, which is one of SARS core functions, is dependent on so many factors, among these, the economy, legislative reach, and policies. Tax administrators globally, like many other businesses, are dependent on technology to operate efficiently. Tax administrators, through the FTA, have collectively agreed that through collaboration and sharing, faster solutions to their shared problems can be achieved.

Unemployment was put through the CLA to gain a deeper understanding. This problem has multifaceted solutions that require multiple stakeholders. Plans exist within the NDP and Agenda 2063 concerning the country's and Africa's targets by 2030 with regard to unemployment and lifting the poverty level of its citizens. Ultimately, the phrase "no work, no pay" could also translate to "no work, no taxes", which means that fewer economically active citizens, the more state dependent citizens. Chapter 5 will delve into recommendations various stakeholders should consider to assist SARS to respond to the challengers 2030 might present.

CHAPTER 5: THE SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapter dealt with the application of the CLA. Various elements that impact revenue collection were analysed in order to provide appropriate recommendations.

The National Development Plan 2030 provides the policy framework for government that guides and gives direction to all its related entities. SARS is regarded as part of the critical organs of state that has a mandate to collect the revenue required by government to fund the various programmes identified to improve the lives of South Africans (SARS, 2017). The newly appointed commissioner of SARS, Edward Kieswetter, has issued the 2019/20 Annual Performance Plan (APP), which outlines the strategic outcome-oriented goals and objectives SARS strives to achieve over this period. The commissioner recognised the decline in employee engagement, loss of public confidence and tax morality, and decline in revenue collection in his opening statement of the APP 2019/20. SARS, therefore, has the mammoth task of rebuilding and enhancing its capabilities to meet the future demands of 2030. The Commission of Enquiry into Tax Administration and Governance by SARS (Nugent report), pointed to deliberate derailing of key governance elements, the systematic gouging out of critical capabilities and break down of key relationships. The current state has, therefore, demanded a drastic turn-around with a focus both internally and externally to restore confidence within the organisation (SARS, 2019a).

The turnaround strategy will focus on two major issues, namely, clarity of the higher purpose, i.e. clarity on the strategic intent, and clarity on the compliance programme. The higher purpose clarifies the pure intent of the organisation's existence, which enables government to build a capable democratic state in the interest and wellbeing of all South Africans. The strategic intent aims to create a culture of voluntary compliance through effectiveness and efficiency. The compliance programme is informed by honest taxpayers and their willingness to fulfil their tax obligations (SARS,

2019a). The immediate priorities which SARS will focus on include areas identified in the Nugent Report as well as internal areas identified that need improvement. Some of these areas are:

- restoring the internal integrity, governance and employee trust;
- restore public trust in SARS;
- arrest and recover losses and quickly stabilise SARS;
- lead specific actions to recover compliance and prevent revenue decline; and
- create dedicated capacity to respond to the work from Nugent and other (SARS, 2019a)

5.2   SWOT ANALYSIS

The SWOT analysis consists of the strength, weakness, opportunity and threat that provide the foundation for understanding the organisation's internal and external environment and work towards improving the current situation (Pandya, 2017). A SWOT analysis provides a good indicator on the overall health of an organisation. In this chapter the researcher wants to explore the strengths, weaknesses, opportunities and threats that will have an impact on the future and readiness of SARS by 2030. Highlights were provided in previous chapters; however, this chapter will bring it together under the SWOT analysis.

5.2.1   Strength

Strength refers to the internal attributes that SARS as an institution legislated by law has, to collect revenue on behalf of the state. It is also the attributes that enhance its competitiveness in relation to other tax administrators globally.

5.2.1.1   Institutional Reputation

SARS was established in 1997 with the first commissioner being Mr Pravin Gordhan. From date of inception to 2014, before the appointment of Mr Moyane, SARS was on a trajectory that earned it accolades locally and globally (Nugent, 2018). The International Monetary Fund in 2014 reviewed SARS and benchmarked it against its

Tax Administration Diagnostic Tool (TADAT). It observed that in most categories SARS was world class. There was conformance to good international practice in 15 of the 27 indicators and only one was below good international practice in one of the remaining 12 indicators (Nugent, 2018). The World Bank report "Doing Business 2019" ranked South Africa 82nd overall out of 190 economies. South Africa ranked 46th in the paying taxes indicator and 143rd in trading across borders (SARS, 2019a). SARS was an institution where employees felt pride and a sense of higher purpose. This was the sentiment of employees who were interviewed at the commission of inquiry into tax administration and governance by SARS. The institution is still built on the same foundation; its people, who are still part of the organisation, long to see the day where the organisation gains back its former glory and respect. It is within these human capital assets where the strength of the organisation lies, and it is they who will rise from the ashes with the correct ethical, morally sound and grounded leadership to steer the ship.

5.2.1.2 Information and communication technology enablement

SARS has initiated a program referred to as a modernisation process which replaced the paper-based operations with a digital format. This was during the reign of Mr Gordhan. It enhanced the efficiency and productivity, resulting in enhanced collection of taxes. This enables SARS to accumulate data for analysis and understanding of taxpayer behaviour, and the tax gap. The introduction of eFiling has elevated the platform to make it easy for taxpayers to do business with SARS. Multiple functionality and products were launched in a staggered approach which ranged from personal income tax, vat, and pay-as-you-earn for individuals, companies and trusts. It expanded to tax practitioners who preferred the online channel to do business with SARS. Non-core taxes such as transfer duty migrated into the eFiling online channel which improved efficiency in operations. The 2019 tax season introduced the smartphone application to enable thousands of taxpayers to make use of their cell phones as a medium to submit their tax returns. Following the example of financial institutions, self-help kiosks were introduced at branches. Wi-Fi access is made available at branches to enable taxpayers who want to make use of the Mobi App options to file their returns.

SARS further extended its reach to the outlying areas that are geographically far from a SARS branch, by taking service to the taxpayer. Mobile tax units have been deployed to visit these areas to educate and provide a service to taxpayers with the objective of making it easy for taxpayers to do business with SARS.

5.2.1.3   Large Business Centre

Edward Kieswetter has launched the re-establishment of the Large Business Centre in Woodmead, Johannesburg, which is in line with the recommendations of Judge Nugent from the commission of inquiry into tax administration and governance by SARS. The strategic objective that drives the Large Business Centre is a focus on voluntary compliance, effective and efficient revenue collection, and enhancing service and relationship building with large businesses (Dlamini, 2019). It was also highlighted that corporate income tax is the third highest revenue contributor, contributing 16.6% of the total revenue for the 2018/19 financial year (Dlamini, 2019). Before the disbanding of the Large Business Centre, the centre provided large businesses with end-to-end service. Various industries had relationship managers with specialised knowledge who formed a relationship and interacted with large business concerns in that sector. All disciplines dedicated to that sector enabled all the affairs of the taxpayer, irrespective of tax type, to be serviced from one port of call (Nugent, 2018).

5.2.2   Weakness

A weakness refers to attributes that put the organisation at a disadvantage and prevent it from performing at its optimal level. Weakness also refers to any limitations SARS faces in executing its planned strategy and mandate. It also represents areas that need improvement for SARS to be part of the global tax administrator playing field.

5.2.2.1   Nugent Commission

The commission of enquiry into tax administration and governance by SARS provided a comprehensive list of recommendations. The researcher has identified the commission of inquiry as a weakness as it has already identified the elements that

prevented good governance and optimal revenue collection. Various recommendations regarding the amendments to the SARS Act were provided, which included the procedure on the appointment and removal of the commissioner and deputy commissioner of SARS, the appointment of an advisory executive committee, and the appointment of an inspector-general of SARS for purposes of investigating matters of governance and to enforce an annual business plan to be issued. Legislative incorporation of the recommendations ensures SARS will not be vulnerable again to the degradation of good governance.

5.2.2.2   Growing debt book

The growing tax debt book is a concern to all tax administrators. Tax administrators need, firstly, to find innovative ways to collect debt once due and, secondly, prevent tax debt where possible (FTA, 2019). It is important that the debt that is due and payable be collected within the fiscal year, to account to the current year revenue received. SARS has a high rate of incidents of objections and disputed taxpayer debt. This could be indicative of the quality of audits or assessments, a lack of understanding from the taxpayer or purely a reflection of the tough economic conditions taxpayers are faced with. It is, therefore, imperative that these objections are dealt with timeously.

5.2.3   Opportunity

Opportunities refer to the favourable conditions in the environment that could yield rewards for the organisation. The 4IR presents various opportunities to improve all tax administrators' efficiency, effectiveness and minimise human error. It would require investment into the required innovative technology.

5.2.3.1   Expanding SARS digital footprint

SARS has identified three pillars to execute its mandate, namely, service, education and enforcement. Part of the strategic plan is to increase the ease of doing business with SARS. Part of reaching this objective is to reduce the need for taxpayers to visit the SARS branch office and migrate the majority of taxpayers onto the self-service

digital format. This will allow taxpayers to meet their tax obligation irrespective of their geographic location. SARS does, however, through collaboration with other government departments and private institutions, provide service to remote areas through co-location or shared infrastructure on a temporary basis (SARS, 2016). Education and communication strategies are essential in promoting tax compliance. Migration of various tax products and functions is not available through the online channel; however, there is room for a lot of improvement. The trajectory of information technology enhancements was stopped during the reign of Tom Moyani, which left a gap in where the organisation would have been if enhancements had continued as planned versus the current state of lagging behind other tax authorities. There is, therefore, great potential in the enhancement and upgrade of the digital platform as it is the foundation of the organisation's operations.

5.2.3.2 Blockchain

The potential use of blockchains was discussed in chapter 3. It is globally recognised by tax authorities that it has great potential. However, the technology is still evolving and complex in nature. Nonetheless, this should not deter tax administrators to be 'plugged' in to the digital evolution.

5.2.3.3 Reskilling

The 4IR is evolving at such a rapid pace that both private and public sectors should have pro-active plans in place to reskill their staff. Certain functions within organisations will become redundant, which will require reshuffling of resources, provided they are adequately skilled. In an already struggling economy where no further job losses can be afforded, employers, in collaboration with trade unions, should have a strategic plan in place to accommodate the change in the digital direction. Redundant jobs as well as the newly created jobs should be part of the peripherals to ensure SARS's readiness towards 2030.

5.2.4 Threat

The biggest threat SARS has faced was the capture of the institution where the integrity and mandate of the organisation was under threat. From the period of 2014 to 2018, the institution was systematically destabilised so that once effective operating divisions were dissolved. This included divisions such as the Large Business Centre.

5.2.4.1 Illicit trade and smuggling

Illicit trade and smuggling have a negative socio-economic impact which threatens the growth of the economy. It undermines legitimate economic growth, legitimate business activities, job security and creation (SARS, 2019a). The lack of risk profiling, enhanced technology, and skills shortage have led to the inefficiency in exposing an illicit and shadowy economy. The dismantling of key structures within the compliance framework has also contributed to a lack of consequences or cases referred to criminal investigations for prosecution.

5.2.4.2 Loss in public trust and credibility

There has been a loss of trust with the public due to the negative media reports. The tax administrator should be a trusted institution. Even though a new SARS commissioner has been appointed and we have a new president, trust takes time to be rebuilt as it is not something that is changed overnight. Corruption tends to decrease tax morality and increase non-compliance, which, ultimately, has an effect on revenue collection (du Chenne, 2018). Tax morality refers to the willingness of the individual to pay their taxes and comply with tax laws. There is a correlation between taxpayers' willingness to pay voluntarily tax and the manner in which their taxes are spent by government. As President Ramaphosa has stated, tax morality is reliant on the implicit contract between taxpayers and government.(Van Eeden & Meintjes, 2018)

5.2.4.3 Economic Growth

In January 2019, the IMF projected global economic growth downwards to 3.5% in 2019 and 3.6% in 2020 (SARS, 2019a). The trade war between China and the United

States has partly resulted in the downward revision. Advanced economies' growth has been on the decline. The projected growth for 2019 is 2.0% and 1.7% in 2020. South Africa, including other emerging economies, has been on a downward growth trajectory. The IMF projects the emerging economies to grow at 4.5% in 2019 and marginally improve to 4.9% in 2020. The South African economy is projected to grow at 1.4% in 2019, which is down from 1.7% in October 2018, and only 1.7 % in 2020 (SARS, 2019a). The lack of growth in the South African economy will have a direct impact on SARS achieving its revenue target.

5.2.4.4   Cyber threats

Cyber-attacks have increased and are a real threat to any business. SARS's vulnerability to cyber-attacks could result in taxpayer and trader confidentiality breaches leading to further reputational damage. Cyber security needs to be continuously strengthened and monitored to enable detection and ability to respond to cyber threats. The city of Johannesburg reported a breach in their network which resulted in unauthorised access to their information system. This was the same time that several banks reported internet problems believed to be related to cyber-attacks (Paton, 2019).

5.3   OVERVIEW OF THE STUDY

Chapter one provided an introduction to the study, specifically, looking at the mandate of tax authorities and their strategic plans. The background and problem statement of the topic researched as well as the research objectives were discussed. The 4IR is impacting all industries, both in the public and private sectors. The 4IR is already here and not still coming as assumed by most. President Cyril Ramaphosa has established a commission on the 4IR. The core function of this commission is to recommend plans, policies and strategies to assist in positioning South Africa as a key and competitive role-player in the global digital space. The 4IR brings with it the potential of enhanced efficiencies through information technology. The exponential rate of change does, however, also bring a wave of uncertainty and fear. For it is human nature to fear the unknown.

It was highlighted within the problem statement that SARS has been a victim of seizure where the destabilising of corporate governance and efficiency was the core objective. It is importance to understand the past and present to enable better planning for the future. Revenue targets were not achieved for the last five years, the rate of unemployment still continues to rise, and with a struggling economy the well of innovative ideas to narrow the tax gap is drying up. It is, therefore, important to look at the drivers of change in the economy and identify the means to close the tax gap.

5.3.1 RESEARCH OBJECTIVES

5.3.1.1 Primary Research Objective

The primary objective of this study was to investigate the extent and impact of readiness of revenue collection for SARS towards 2030.

5.3.1.2 Secondary Research Objective

The following secondary objectives were formulated in order to give effect to the primary objective of this study:

- To provide an in-depth analysis on the drivers of change that is affecting revenue collection
- To provide an overview of the revenue services in South Africa
- To consider emerging threats and opportunities that will influence revenue collection
- To provide a comparative analysis of SARS readiness for 2030
- To present recommendations to address the factors that prevents or limits optimal revenue collection.

Table 5 below illustrates the chapters in which the secondary objectives were achieved.

TABLE 5: Secondary objectives of the study and relevant chapters

Secondary objectives	Chapters objective were discussed
To provide an in-depth analysis on the drivers of change that is affecting revenue collection	Chapter 3
To provide an overview of the revenue services in South Africa	Chapter 3
To consider emerging threats and opportunities that will influence revenue collection	Chapter 3 & 4
To provide a comparative analysis of SARS readiness for 2030	Chapter 3 & 4
To present recommendations to address the factors that prevents or limits optimal revenue collection.	Chapter 5

The study identified research questions to support the research objectives of the research. The research questions are illustrated in table 6 below, which was drafted to ensure the research objectives are achieved.

TABLE 6: Secondary research questions

RQ 1	What research methodologies can be utilised for this study?
RQ 2	What are the drivers of change that influence revenue collection?
RQ 3	What is the readiness of SARS for the evolving digital economy?
RQ 4	What is the impact of cryptocurrency on revenue collection?
RQ 5	What is the impact of ethical behaviour on revenue collection?
RQ 6	What recommendations can be offered to government, revenue services and policy-makers?

Chapter 3 focused on the research methodology adopted in the study. Future studies were identified as the preferred research methodology. A brief introduction and background to futures studies and foundational futures concepts was provided. The research method is centred on the six pillar futures research theory. The Six Pillars of futures studies provide a theory of futures thinking that links method and tools, that is

developed through praxis (Inayatullah, 2012). The Causal Layered Analysis (CLA) was the preferred research tool used in this study to deepen the future analysis. Emphasis was placed on scenario planning and the creation of alternative futures for the South African Revenue Services towards 2030.

In the future of SARS towards 2030, the drivers of change mainly consist of 4IR technologies that will transform industries through innovation and collaboration between relevant stakeholders. In summary, the extent and readiness of revenue collection by SARS is determined by the following factors:

- The shared vision and direction of both government and private sector;
- Recognition of 4IR benefits and alignment to adapt to such changes;
- Technical innovation lead to greater productivity, cost reduction and efficiencies
- Greater connectivity allows for sharing of best practices between tax administrators as technology evolves;
- Greater emphasis on change management to prepare the workforce on changes to come and ensure adequate reskilling and training interventions are implemented.

Factors that influence the possible futures of SARS by 2030 have been explored, together with a SWOT analysis and possible futures were presented in this research paper. The primary research objective has been therefore been achieved.

5.4 STRATEGIC CONSIDERATIONS AND RECOMMENDATIONS

The desired future of revenue services by the year 2030 involves a number of key strategic interventions and recommendations. These recommendations would require buy-in from policy-makers, governments and the greater business community.

5.4.1 Education system

In chapter 4 a CLA was applied to understand the labour market and economy by looking at the employed and, specifically, youth unemployment in South Africa. The unemployed are the economically inactive participants of our society. The unemployment rate is at 29%, the highest it has been since 2003. South Africa is spending more than 20% of its budget on education, yet, the school leaving pupil have no skill to compete in the real world. Change, therefore, has to come from within the system. A change to the mind-set is required. The youth of tomorrow will not only compete with their neighbour or classmate for a job, but the playing field has opened up beyond the borders of our own country. So, what exactly needs to change in the education system?

Education requires the teacher, the environment, resources and willing learner to come together. There has been an urban explosion and is not likely to change as migration to cities due to the high rate of unemployment has caused mass movement into urban areas with not sufficient infrastructure additions. Classrooms are, therefore, overpopulated with a high ratio of learner to teacher. This has exposed both teachers and learners to abuse and violence, that is, learner toward teacher and learner towards learner. Learners are exposed early in their childhood to gang violence, and are members of gangs, victims of cyber bullying and other forms of abuse. Over and above these horrendous facts, learners are expected to excel on empty stomachs as unemployment in their own homes has forced them to attend school hungry. How then does government ensure that teaching and learning takes place in a safe place where a child doesn't have to be concerned with a stray bullet flying through the class, but can focus on what the world has to offer beyond the classroom?

Leadership drives culture and so, too, in our education system leadership within the school system has to drive discipline and excellence. Training colleges for teachers should be re-established to address the shortfall and capacity of teachers. Teachers cannot be expected to change the mind-set of learners when they themselves are stuck on how things were. Infrastructure safety should not be a reactive plan, but a pro-active safety policy that ensures that all schools meet safety and security

measures so that dangerous weapons and unauthorised persons are restricted from entering the premises. Feeding schemes at all public schools should become mandatory. The school curriculum should include awareness and preventive content on cyber bullying and social media security as users of these platforms become younger and younger.

The proposals above mostly deal with socio-economic factors that have an impact on the educational experience of a learner. Digital education concepts should form part of the curriculum and implemented from the foundation phase. Our country has a shortage of skills within the science and mathematics fields and our learners are performing poorly in Science, Technology, Engineering and Mathematics (STEM). Government incentives in the form of subsidies or bursaries should be offered to students who want to pursue STEM subjects and qualifications. It is further recommended that the pass rate of 30% be reconsidered and be aligned with tertiary institution pass rate requirement of 50%.

5.4.2 Promotion of Entrepreneurs

The rate of unemployment is a clear indicator that the supply of employment is far less than the demand for employment. The harsh reality is that the targeted unemployment rate by 2030, as indicated by the National Development Plan, will not be reached given the current state of affairs. It is not only up to government to create jobs; all sectors need to turn it around. A culture of entrepreneurship has to be fostered within the education system to overcome the fear of the unknown, such as the fear of becoming a business owner. The promotion of a culture self-reliance and self-belief is needed. Financial assistance and mentorship programs that should form part of the financing, should be offered. To an extent, financial aid and mentoring is taking place with our young entrepreneurs; however, greater communication and education on the options available should be explored.

5.4.3   Call for Innovation

As an African country, we are faced with the effects of global warming, changing weather patterns, and droughts with serious water shortages. Yet, the innovative minds of our youth could be sitting with ground-breaking solutions to our problems. As government, private investors and policymakers, there is an urgent need to promote a platform to create innovation. Assistance is also required to introduce innovation prototypes into the market. There is great opportunity within our own country to focus on sectors such as the energy, water, sanitation, and waste management industries. Tax incentives from a policy perspective are called for to assist start-ups.

5.4.4   SARS: Post-mortem

The commission of inquiry into the tax administration and governance by SARS has provided extensive recommendations to legislature for additions to the SARS Act, relating to governance, which included the appointment of key positions such as the commissioner and deputy commissioner, the appointment of an advisory executive committee, as well as an inspector-general of SARS to oversee matters of governance. The re-establishment of the Large Business Centre and Compliance Unit has been recommended to stabilise the once functioning highly efficient units that yielded revenue results. It was recommended that the existing contracts of SARS should be reviewed and those that add no value be terminated.

SARS has a leadership gap with regards to the information and technology division. It was recommended by the commission of inquiry that the newly appointed commissioner should appoint a qualified person who will develop and implement a strategy to renew the development of information technology. Technology is the basis of operations of all tax administrators. SARS's strategic objective of making it easy to do business with SARS is dependent on three pillars, namely, service, education and compliance. To increase efficiency, investment in technology has to be the organisation's priority. The potential of big data and blockchains have to be explored by SARS to enable it to be in a competitive position with other tax administrators. Big data management could provide key information to assist risk profiling and identifying revenue gaps. SARS might already have access to the information but without the

correct programming and skills to interpret the data, it could suffer revenue losses. Collaboration with other government departments has enabled SARS already to make use of biometric identification of taxpayers. Registration of taxpayers could be simultaneously done when an identification number is issued. Alternatively, the identification number could become the tax number as a tax number is allocated for life. Only in the event of liquidation or sequestration, is a new tax number allocated. This could prevent so many duplicate tax numbers issued to taxpayers, which creates an administrative burden. Having a single view of a taxpayer through an identity number and have matching data of all transactions of this taxpayer, will allow less reliance on taxpayer self-declarations to declare or come forward with regards to compromise requests on debt.

5.4.5 Communication

The 4IR highlights the inequalities within South Africa. Accessibility to digital services is essential to optimising the benefits of the 4IR. The tax ecosystem consists of many stakeholders which include the private sector, government and the public. Partnerships are in place with SARS and various stakeholders with the aim to improve voluntary tax compliance. Enhanced communication policy is required to keep the general public informed of enhanced digital service offerings in place and changes to existing practices and requirements. Information technology is changing at a rapid rate, however if not all participants to this digital platform is informed, it will cause delays and frustration to all parties involved.

The movement into the digital world of service would require all to have access to this service. One of SARS strategic objectives is to make it easy for taxpayers to do business with them. The cost of communicating with SARS is currently a barrier to some taxpayers due the high cost of mobile data and broadband services. Free Wi-Fi and self-help kiosks are available at branch offices, however not all have access due to their geographic location. Further enhancements to the existing strategic objectives are required to address these shortcomings by 2030.

5.5 RESEARCH RELEVANCE AND CONTRIBUTION

The South African Revenue Services is a critical part of state needed to ensure that revenue is collected. These funds are needed to run the state and provide grants to its citizens. SARS was intentionally destabilised over a period of four years resulting in the degradation of good governance, revenue targets not being met and information technology enhancements being limited. It is, therefore, imperative to reflect on all the 4IR revolution drivers of change that could impact the future of the revenue services.

The role of the research was to provide theoretical, methodological and practical value.

- **Theoretical value.** The researcher opted for a review of various literature sources on the methodologies and pillars of futures studies. The state of the future of SARS towards 2030 would be analysed in the form of a SWOT analysis as well. The aim was to contribute to the existing pool of knowledge using the futures approaches.
- **Methodological value.** The research reflected on the future of revenue services by 2030 through the application of the CLA. This provided an opportunity to consider the possible future of revenue services.
- **Practical value.** Strategic recommendations were looked at towards the future of SARS with a view to responding to various trends the 4IR brings and recovering from the state of seizure it endured for four years. This will require collaboration with various departments from the public and private sectors. Policy adjustments have been recommended through the commission of inquiry into SARS. However, further policy changes and incentives might be needed to see a change in improved governance from SARS and effective methods to close the tax gap.

5.6 LIMITATIONS

CLA is described as a layered analytical method that can be used to analyse thinkers, texts, issues, problems, discourses, worldview, etc. (Anthony, 2009). During the literature review study, the drivers of change with regard to the 4IR was explored, it was noted that there is limitation to the extent of the revenue services application. The

changes of technology are still evolving where the breakthrough in technology could assist revenue services or widen the tax gap.

5.7 CHAPTER SUMMARY

Chapter 5 dealt with the extent of readiness of SARS for the future towards 2030. A SWOT analysis was done to determine the extent of readiness. This led to the recommendations that have been proposed in this chapter. The research objectives were reviewed again and reflected to which extent it was delivered.

In closing, SARS has great potential in being globally competitive with other countries, provided that government, stakeholders and SARS leadership have a shared vision of what the future revenue services will look like, what its capabilities will be and resource availability to ensure this vision is realised.

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Tel: +27 (0)41 504 2906

Ref: [H20-BES-BUS-182] / Approval]

9 December 2020

Prof C Arnolds
Department: Graduate School

Dear Prof Arnolds,

TITLE OF STUDY: THE READINESS FOR THE 4TH INDUSTRIAL REVOLUTION BY SARS TOWARDS 2030 (MASTERS)

PRP: Prof C Arnolds
PI: R Botha

Your above-entitled application served at the *Faculty Ethics Committee of the Faculty of Business and Economic Science,* (*16 October 2020)* for approval. The study is classified as a negligible/low risk study. The ethics clearance reference number is **H20-BES-BUS-182** and approval is subject to the following conditions:

1. The immediate completion and return of the attached acknowledgement to Lindie@mandela.ac.za, the date of receipt of such returned acknowledgement determining the final date of approval for the study where after data collection may commence.
2. Approval for data collection is for 1 calendar year from date of receipt of above mentioned acknowledgement.
3. The submission of an annual progress report by the PRP on the data collection activities of the study (form RECH-004 to be made available shortly on Research Ethics Committee (Human) portal) by 15 December this year for studies approved/extended in the period October of the previous year up to and including September of this year, or 15 December next year for studies approved/extended after September this year.
4. In the event of a requirement to extend the period of data collection (i.e. for a period in excess of 1 calendar year from date of approval), completion of an extension request is required (form RECH-005 to be made available shortly on Research Ethics Committee (Human) portal)
5. In the event of any changes made to the study (excluding extension of the study), completion of an amendments form is required (form RECH-006 to be made available shortly on Research Ethics Committee (Human) portal).
6. Immediate submission (and possible discontinuation of the study in the case of serious events) of the relevant report to RECH (form RECH-007 to be made available shortly on Research Ethics Committee (Human) portal) in the event of any unanticipated problems, serious incidents or adverse events observed during the course of the study.
7. Immediate submission of a Study Termination Report to RECH (form RECH-008 to be made available shortly on Research Ethics Committee (Human) portal) upon unexpected closure/termination of study.
8. Immediate submission of a Study Exception Report of RECH (form RECH-009 to be

made available shortly on Research Ethics Committee (Human) portal) in the event of any study deviations, violations and/or exceptions.

9. Acknowledgement that the study could be subjected to passive and/or active monitoring without prior notice at the discretion of Research Ethics Committee (Human).

Please quote the ethics clearance reference number in all correspondence and enquiries related to the study. For speedy processing of email queries (to be directed to Lindie@mandela.ac.za), it is recommended that the ethics clearance reference number together with an indication of the query appear in the subject line of the email.

We wish you well with the study.

Yours sincerely

Prof S Mago

Cc: Department of Research Capacity Development
         Faculty Research Co-ordinator: Lindie van Rensburg

ANNEXURE B – CONFIRMATION OF LANGUAGE EDITING

MINERVA copywriting, proofreading & editing

Physical Address: 17 Townsend Avenue, Westering, Port Elizabeth, 6025, Republic of South Africa
Telephone Number: (+27) 0733577902 (mobile phone) / (+27) 041 360 1989 (landline)
E-mail Address: snayer.samuel@gmail.com

TO WHOM IT MAY CONCERN

08 December 2020

This serves to confirm that *MINERVA* copywriting, proofreading & editing did the language editing for **RENEE BOTHA** on her MBA thesis titled: **THE READINESS FOR THE 4TH INDUSTRIAL REVOLUTION BY SARS TOWARDS 2030.**

Yours faithfully

Samuel Snayer [Director]

ANNEXURE C – TURNITIN

Turnitin Originality Report

THE READINESS FOR THE 4TH INDUSTRIAL REVOLUTION BY SARS TOWARDS 2030.   by Renee Chrystal Botha

From MBA Treatise Submission Part 1 (Moodle TT) (MBR5TR: Business Research Project (Moodle TT))

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