

University of the Witwatersrand

THE NORTHERN CAPE INFORMATION SOCIETY STRATEGY AND
THE USE OF FORESIGHT METHODOLOGY

By

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Abstract

The 21st century presents complex challenges, requiring innovative and dynamic problem solving techniques and methods. Information and Communications Technologies (ICTs) have advanced considerably over the years, making information more accessible, people more knowledgeable, challenges more complex and the world more difficult to understand. This complexity has made the prediction of future events even trickier. An Arab proverb articulates the issue clearly by suggesting that “He who predicts the future lies even if he is telling the truth”, the interpretation being that no human being can be certain about future events. Yet, the reality is that leaders of public and private institutions have to develop plans and strategies to guide nations and organisations going into an uncertain future.

The purpose of this research is to analyse how a foresight methodology can contribute to better planning of strategies and policies at the local level, in this case the Northern Cape Province of South Africa. This research study documents and analyses the views of ten key interviewees, the researcher’s own observations and an analysis of relevant documentation. A qualitative research approach was adopted for this study, using the Northern Cape Information Society Strategy Development process as a case study.

The findings and conclusions reached in this study confirm that the foresight methodology is suitable for use in strategic planning processes at the provincial government level. Foresight has been effective in producing an information society strategy for the Northern Cape and all respondents interviewed for this study regarded foresight as a useful technique for providing inputs into strategy development. Other South African provinces, districts and local government can use the lessons learned from the Northern Cape study to inform their strategy development processes. The researcher recommends that the foresight process be driven by well trained and skilled facilitators. Learning from the Northern Cape experience also highlights the need for a broader base of participation, one in which the private sector is encouraged to contribute to the discussions.

Declaration on plagiarism

I, Modikoe Thomas Patjane (Student Number; 0315497E) am a student registered for MM/PDM (PADM5166) in the year 2013.

I hereby declare that this report is my own, unaided work. It is submitted in partial fulfilment of the requirements of the degree of Master of Management (in the field of Public Policy) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.

Signature: Modikoe Thomas Patjane

Date: 20 August 2013

Dedication

This research report is dedicated to my beautiful daughters, Anna and Lesedi, you are my motivation. Anna, your unconditional love is highly treasured. Your ever smiling face keeps me going, Lesedi. My little girls, sometimes I turn to think that all I need is your love and the air that I breathe, to be motivated enough to complete this research. The report is also dedicated to my parents, my loving mother and in memory of my father, Mathebe Zebra Patjane (1950 – 2005). Education of your children was always been a priority for you, thank you for your sacrifices and the wisdom you imparted to us. To my siblings, thank you for the support throughout this challenging time. To the mother of my children, thank you for raising our children with love and to the best of your abilities.

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List of Acronyms

AfD	African Development Bank
BUG-C	Business, University, Government and Citizen Model
COFISA	Cooperation Framework on Innovation Systems between Finland and South Africa
CSIR	Council for Scientific and Industrial Research
DACST	Department of Arts, Culture, Science and Technology
DOC	Department of Communications
DRDLR	Department of Rural Development and Land Reform
DST	Department of Science and Technology
EFILWC	European Foundation for the Development of Living and Working Conditions
ICTs	Information and Communications Technologies
IDRC	International Development Research Centre
INSPIRE	Provincial Information Society Strategy Programme in the Republic of South Africa
ITU	International Telecommunication Union
LED	Local Economic Development
LPG	Limpopo Provincial Government
NCPG	Northern Cape Provincial Government
NPC	National Planning Commission
NRTF	National Research and Technology Foresight
PESTEL	Political, Economical, Social, Technological, Environmental and Legal
PNC on ISAD	Presidential National Commission on Information Society and Development
SADC	Southern African Development Community
SAFIPA	South Africa – Finland Knowledge Partnership on ICT
SABC	South African Broadcasting Corporation
SARS	South African Revenue Services
SKA	Square Kilometre Array
STI	Science, Technology and Innovation
TIA	Technology Innovation Agency
WB	World Bank

Chapter 1: Introduction and Rationale

1.1 Introduction

The study aims to identify and document good practice in developing an information society (IS) strategy using foresight methodologies, in the context of sub-national/provincial government in South Africa. This research report will focus on the information society strategy development process in the Northern Cape Province. Although foresight is a useful tool, planners at provincial and local level in government do not use the methodology. They therefore miss the opportunity to plan for alternative futures because they use traditional planning methods that do not take these into account.

Credé and Mansell (1998) argue that societies in the 21st century face new complex challenges compared to the previous industrial era. They report that many countries are attempting to transform their economies into knowledge-based economies to enable them to compete in the global market. Traditional techniques and tools used to respond to the world challenges are no longer sufficient to cope with the rapid changes brought about by calamities such as climate change and the accelerating rate of technological changes. Solutions to these challenges are not clear-cut, but require futuristic and innovative thinking. Hence countries that are late in the uptake of technological innovations and those that continue to use conventional planning systems may find it difficult to deal with these complex challenges in the long run. Unfortunately developing and the least developed countries are the ones mostly falling behind and are not embracing innovative techniques and tools.

Information Society (IS) strategies are among the most recent types of plans being developed in different countries, both at national and regional levels. At regional and local levels, and particularly authorities within government institutions, preference is for conventional linear strategy development techniques and methods. Authorities do understand that IS strategies and policies are critical in order to take advantage of opportunities that ICTs present, but the techniques used to develop these strategies

do not match the innovation required to deal with the complexities in the information era (Rooney, Mandeville & Joseph, 2003).

A contributing factor to this phenomenon is that current leaders are the product of the industrial era, and understandably prefer conventional linear industrial era approaches and methodologies. This is especially so in local public institutions, given the lack of exposure and limited resources for planning exercises. There are many suitable, readily-available and useful planning tools and instruments from the post-industrial era. The foresight methodology is one such easy-to-use tool. Experience shows that strategic planning requires open minded, futuristic and innovative thinking, especially when planning multifaceted strategies such as required in developing IS strategies. Furthermore it requires creative thinkers, suitable analytical techniques, and leaders or managers who prefer to do business in unusual ways. According to analysts, the most appropriate are foresight methodologies (Schwartz 1991, Wack 1985, Van der Heijden 1996, Davis 1998 and Chermack, 2004).

The research report is structured as follows. The first part provides an overview of the conceptual framework that informs the study and a brief description of the importance of foresight technologies. This is followed by an overview of how South Africa has applied foresight methodologies since the 1990s. Chapter 2 deals with the available literature and identifies information gaps. The literature review section is followed by a chapter on the methodology that informed the study, qualitative research and case study design. Chapters 4 and 5 present and discuss the findings of the study before providing recommendations and a conclusion. The last section contains the research references and appendices.

The literature review section describes the instrument or technique called foresight. After the methodology has been described, the researcher discusses the use of foresight in strategic planning. This is followed by an analysis of the use of regional foresight in the Northern Cape Information Society strategy development. The

information from the literature review is then compared with the findings from which recommendations could be extrapolated.

1.1.1 Overview of Foresight Methodologies

The main message of a foresight methodology is that the future can be shaped, acknowledging that there are alternative futures, not just one future. It is all about the ability to be creative, in addition to applying systems thinking, analysis and judgement. Foresight methodologies such as backcasting and scenario planning focus on the possible futures that must be created, not what specific future is likely to arise. In particular foresight methodologies bring out the risks and opportunities that are not considered by more traditional methodologies. For example, it is not clear if the bailouts given to countries and companies in the US and Europe will work in the medium-term (Jackson, 2011). Countries and companies could consider using foresight to anticipate alternative futures and prepare accordingly, rather than hoping that the measures taken will work. In addition, through the use of a PESTEL framework, scenarios are very helpful in asking pertinent questions about the future. PESTEL is a framework used by planners to analyse the external factors that may affect the organisation now and in the future. The acronym stands for six factors: political, economic, social, technological, environmental and legal.

As early as the 1940s Herman Kahn, a futurist and proponent of scenarios, warned world leaders about the possibility of the development and use of nuclear weapons technology by hostile nations (Kleiner, 1996). In the 1960s, Pierre Wack was among the first to use scenarios to alert directors of the Royal Dutch/Shell Group of companies about future events that were likely to affect their business.

These futurists highlighted that the participative approach to foresight is particularly well adapted to use at the local and regional levels, where participants can be involved meaningfully in strategic planning. Sub-national foresight exercises allow solutions which fit the specifics of local circumstances such as demographics and economic

factors, but also ensure synergy and networking among the stakeholders (Semwayo, Nyewe, Lefutso, Marais, Munga, Taute & Hietanen, 2011).

Day, Greenwood and Karuri-Sebina (2009) point out that a well-functioning system of Science, Technology and Innovation (STI) is a major pillar of the knowledge society. Another critical element according to the authors is the culture of foresight in the development of strategies, which intends to transform the economy into a knowledge-based economy. A traditional strategy formulation approach is insufficient in such cases.

1.1.2 The South African Experience with Foresight Methodologies

South Africa started to map the transformation of its socio-economic structures after the dawn of democracy in 1994. Soon after it was formed, the then Department of Arts, Culture, Science and Technology (DACST) embarked on a mission to review and reform the science and technology system. To achieve this objective, the National Research and Technology Foresight (NRTF) project was launched in 1996 (DACST, 1999) and made extensive use of the foresight approach in its long-range planning exercises. Most importantly the NRTF wished to encourage the culture of foresight in society at large and not only in the technology sector. Of interest is that some of the ICT opportunities highlighted in the report are already prevalent in 2013, for example, satellite monitoring of habitats, multilingual translation machines, bio-sensors, virtual-reality applications and surveillance technologies.

The subsequent White Paper on Science and Technology (1996) took into account recommendations from the NRTF project (DACST, 1996). At that stage, the then-President Mbeki was already vocal in various fora about the need to build information societies not only in South Africa, but across the African continent. This was in line with the African Renaissance concept that advocated for Africans to face and overcome their challenges while achieving cultural, scientific and economic renewal through social cohesion, democracy, economic rebuilding and growth, and the establishment of Africa as a significant player in geo-political affairs. The concept of building information

societies was high on the post-apartheid intellectual agenda during President Thabo Mbeki's term in office (1999 - 2009).

Through Mbeki's influence, South Africa hosted the 1996 Information Society and Development conference, few years later the Presidential National Commission on Information Society and Development (PNC on ISAD) launched in 2002 in the country. The latter was set up to allow the national government to accelerate the process of transformation into an information society by developing an information society plan for the country. The National Information Society and Development (ISAD) Plan, approved in 2007, intended to contribute to economic growth and poverty alleviation in the country. ICTs were identified in the plan as important drivers for economic growth and the development of society in general. Furthermore, ISAD has made provision for the development of provincial ISAD models to assist provincial governments in their plans to develop regional Information Society strategies. However the institution has done little since its inception and is seen as having been ineffective beyond the fact that Cabinet approved its plan in 2007 (Lewis, 2007)

In 2008 the Department of Science and Technology also released a ten- year plan (2008 – 2010), *Innovation towards a Knowledge Based Economy*. The plan aimed to strengthen the national systems of innovation thereby contributing towards the functioning of the knowledge economy and socio-economic benefits.

Foresight tools were used in combination with other strategic development tools such as SWOT analysis to develop this plan.

Of relevance at the time was the development of another series of scenarios, the Mont Fleur scenarios (Ilbury and Sunter, 2007) which mapped out the transition to a democratic era.

The culture of foresight is slowly taking up in South Africa with more government departments starting to appreciate the methodology since the first use in the 1970s. The Finnish government funded programme, the Cooperation Framework on Innovation Systems between Finland and South Africa (COFISA), has been instrumental

in the introduction of the methodology to the public sector at the regional level in the Provinces of the Eastern Cape, Western Cape and Gauteng (James, 2011). The programme used the methodology at provincial levels of government to assist in the development of strategies and plans.

Another Finnish government funded programme, the South Africa–Finland Knowledge Partnership on ICT (SAFIPA) also advocated for the use of the methodology and organised capacity building initiatives in this regard (James, 2011).

Prompted by the COFISA experience, the Government of the Republic of South Africa and the Government of the Republic of Finland signed a new Development Cooperation Agreement in 2008. The agreement started the process of developing the provincial information society strategies, through an ambitious programme referred to as the Provincial Information Society Strategy Programme in the Republic of South Africa (INSPIRE). INSPIRE is implemented under the authority of the Minister of Communications, through the provincial governments of the Northern Cape and Limpopo, and overseen by the PNC on ISAD. The provinces are developing their information society strategies and piloting ICTs projects in communities.

1.1.3 The Research Case Study

This research report will focus on the information society strategy development process in the Northern Cape Province of South Africa. The province occupies the largest area of the country, but has the smallest population (2.2 %) (see Figure 1.2).



Figure 1.1: Map of Northern Cape Province

Source: Statistics South Africa 2011

The province has been chosen as the best location to host the Square Kilometre Array (SKA) portion awarded to South Africa. Astronomy is a key strategic advantage in the Northern Cape. The Province is already hosting an astronomy project called MeerKAT. Because of its location and the sparse population, the Northern Cape is an ideal position for astronomy initiatives like the SKA. Current telescopes are only able to detect stars or galaxies after they have travelled a long time from space.

The Square Kilometre Array, however, will be powerful enough to see stars and galaxies before they were even created. It is understood that with SKA we may even be able to life in other planets. Part of this huge telescope will be built in South Africa and the other part in Australia, but the majority of the SKA receivers will be installed in the Northern Cape Province. The proposed SKA site is situated in a place called Carnarvon, the same area where the MeerKAT project is situated (SKA, 2013).

On the transition towards a knowledge economy, the SKA, and astronomy in general, provide a good opportunity for the Northern Cape Province to skill its young people in this field. It is however important that the province puts in place strategic plans that will allow it to use such opportunities to move towards a knowledge economy.

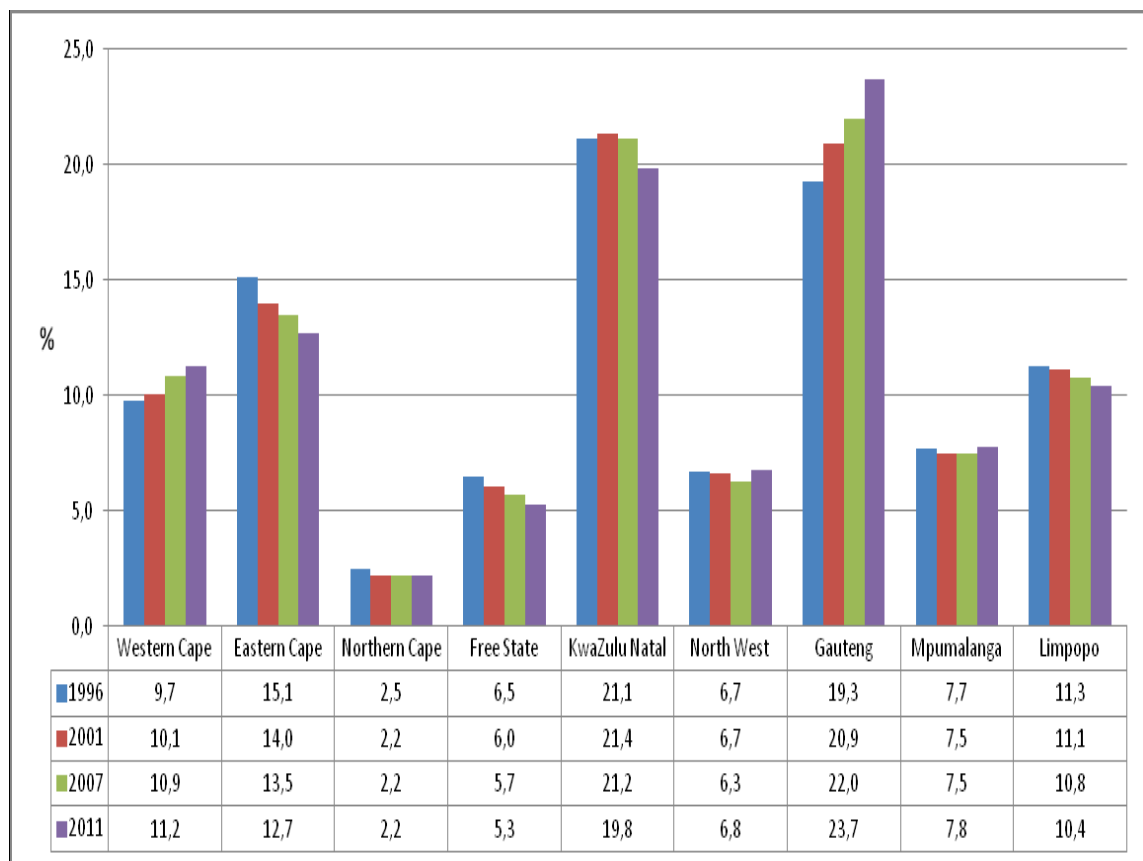


Figure 1.2: Percentage distribution of total population by province:
Census 1996, 2001, 2011 and Community Survey 2007

Source: Statistics South Africa 2011

This study does not in any way suggest that there are hard and fast rules governing the design of IS strategies. However the foresight methodology has proved to be an effective tool to develop plans and strategies in European countries such as Finland (James, 2010). The two provinces (Northern Cape and Limpopo) used different approaches to develop their strategies. This paper attempts to study the experiences of the Northern Cape Provincial Government, with the intention to sharing lessons learned with other provinces, districts and local government in developing South Africa.

1.2 Problem Statement

The foresight methodology is suitable as a planning tool, yet South African planners at regional/provincial level are seldom using it to address future development plans. For the past two decades foresight has been used for various purposes at national level by the Planning, Policy Coordination and Advisory services section in the Office of the President (Credé and Mansell, 1998). Institutions such as the new National Planning Commission use some aspects of the methodology for development planning. The National Planning Commission was established in 2010 and tasked with the crafting of a 20-year development plan for the country. The result was the National Development Plan 2030, which aims to eliminate poverty and reduce inequality by 2030 (NPC, 2012). Although, according to World Bank studies (Credé and Mansell, 1998), South Africa is advanced as compared to other African countries in the use of foresight. Studies suggest that a foresight culture does not exist at provincial government levels (Credé and Mansell, 1998). Planners in the Northern Cape are the exceptions as they opted to use foresight for the Provincial IS Strategy.

Although proponents of foresight claim that it is for everyone and produces plans that better adapt to future situations, it is still rather early for foresight to be understood and embraced across all levels and sectors of South African society. The public sector in South Africa, especially at provincial level, still prefers conventional strategy

development methods over foresight, even when developing strategies that require innovative thinking, such as IS strategies.

As argued throughout this research proposal, foresight is seen as a viable option for developing strategies to facilitate change to a knowledge-based economy and contribute to poverty alleviation. Foresight exercises undertaken by COFISA in the Eastern Cape, Western Cape and Gauteng provinces are some of the first public sector foresight initiatives undertaken at regional level. Although the lack of a culture of foresight in developing countries has been well studied, additional work needs to focus on understanding how policy makers at regional level are able to overcome their anxiety and embrace the culture of foresight. To better understand the adoption of foresight, it is important to learn from those who have used the methodology. Eventually the findings of this research should reveal if the methodology delivers what it promises in a regional set up.

The Province of the Northern Cape has opted to use foresight to plan its Information Society strategy. This research intends to document the lessons learned and challenges experienced by the province.

1.3 Significance of the Study

The concepts of information society, knowledge-based economy, knowledge economies and knowledge societies are the current subject of many research studies. Countries are adopting these notions in the hope that they will assist in solving challenges of access to education, poverty and service delivery. Some countries are developing strategies both at the national and regional levels. Furthermore, researchers have found the use of foresight for strategy development to be an attractive research subject. However, no study has been undertaken to assess the experiences of using regional foresighting in IS strategy development in the Northern Cape.

African countries continue to face challenges in developing robust and relevant policies that aim to transform their economies into knowledge-based economies and become information societies (Credé & Mansell, 1998). This study is an addition to the body of knowledge and presents a good practice model for other regions to emulate.

1.4 Research Limitations and Ethics

Senior officials at provincial level are usually difficult to access because of their tight schedules. However the closeness of the researcher to the work of the Northern Cape IS Strategy Development project assisted in getting the officials to make time for the research. The researcher is involved in the process as an employee of the Embassy of Finland, an institution that is partly funding the strategy development process in the Northern Cape and Limpopo Provinces. Initially, the researcher had some concerns about respondent bias as they may have felt obliged to communicate what they believed the researcher wished to hear. However, during the interviews they were open and unconcerned about how their answers would affect future funding from the Finnish Ministry for Foreign Affairs (MFA). It may have helped that the researcher clarified that the participants' involvement in the programme would not depend on the answers they gave.

Although the Afrikaans language is widely spoken in the Northern Cape, communicating with the key interviewees was conducted without language limitations. All the key interviewees were conversant in English, and all the interviews were conducted in English.

The Northern Cape IS Strategy Development processes did not have sufficient private sector participation, and those that were involved were not available to participate in the research study. The researcher also requested interviews with representatives from academia, but the requests for the interview were declined due to busy schedules.

With regard to ethical issues, Maxwell (2008) suggests that ethical issues should be addressed in every aspect of the design. Therefore the following issues were clarified and communicated to the respondents: confidentiality would be guaranteed; and the interview material would only be seen by the researcher and his supervisor. The purpose of the study was communicated and a consent form provided for signing by the key interviewees. Furthermore the respondents were informed that they could withdraw from the interview at any time if they feel uncomfortable with the process. The researcher also informed participants that the information would be used for academic purposes only.

Chapter 2: Literature Review

In the 1980s, during the apartheid era, the British multinational mining company Anglo American commissioned the development of scenarios to determine the routes South Africa might take towards the future. The results were the famous High Road/Low Road scenarios (Galer, 2004). Scenario planning is one of the foresight techniques that are commonly used in South Africa. In the last days of apartheid (1991), the Mont Fleur scenarios were developed to determine what South Africa would look like in 2002 (Murphy, Beery, & Eidinow, 1997). Although the use of the foresight methodology is not new in South Africa, the challenge remains the very slow pace of adoption and penetration into strategic planning at the local development level.

A detailed and relevant analysis of foresight and information society is outlined on the “Handbook of Knowledge Society Foresight”, prepared by PREST and FFRC for the European Foundation for the Improvement of Living and Working Conditions (Keenan, Loveridge, Miles & Kaivo-Oja, 2003). The handbook makes a distinction between knowledge society and information society by clarifying that information society is one component of knowledge society. These concepts will be discussed in the subsections below. With regard to foresight, the handbook suggests that foresight can be seen as a policy response to the emergence of information and knowledge societies. The strength of foresight is that the methodology enables different bodies of knowledge and disciplines to come together. Most importantly, foresight can be a tool for meaningful participation in planning, especially at regional level. It encourages continuous cooperation, dialogue and collaboration between diverse stakeholders. The methodology amplifies the link between information policies and other regional policies such as provincial growth and development policies (James, 2010). There is however, a shortage of literature on regional foresight, especially in developing countries where adoption of the methodology is still low (Keenan *et al*, 2003)). This literature review will provide existing and relevant theoretical documentation to support or challenge the argument that foresight is a usable development planning

tool not used by South African planners at provincial level. The section will further unpack the concepts and identify the knowledge gaps.

2.1 Foresight – A Brief History

In the 1960s Ted Newland, an employee at Shell Corporation, assessed the situation in the petroleum sector and concluded that the stability being witnessed in the sector would not last (Kleiner, 1996). He was among the few who suspected this potential instability. Others included a futurist named Herman Kahn. Newland befriended Kahn who was at that time the founder-director of a freewheeling think tank called the Hudson Institute in the United States of America. The Hudson Institute had been working on a new concept of looking into the future, something the institute named scenarios. According to the institute, scenarios are future stories that are supposed to help understand and prepare for possible futures. Later another futurist, Pierre Wack, regarded these stories as tools that aim to help people break past their mental blocks and consider “unthinkable” futures (Wack, 1985). Newland was fascinated by Kahn, referring to him as “an enormously stimulating man” (Kleiner, 1996). Wack first joined the Paris branch of Shell Corporation, but was later recruited to the Group Planning Division in London (UK). There he compiled a list of people he considered “remarkable people”, who thought of the world in a smart way, and who came from all over the world. Clem Sunter later referred to the “remarkable people” as persons who have the mind of a fox, meaning that they could think out of the box and adapt to circumstances that required flexibility (Sunter and Ilbury, 2001). Another important name in the history of foresight is Peter Schwartz, the man who succeeded Pierre Wack at Shell before establishing a company called Global Business Network. His arguments and ideas are discussed in this research. In South Africa, Ted Newland and Pierre Wack shared their knowledge of foresight with Anglo American during the development of the High Road/Low Road scenarios in the 1980s (Sunter and Ilbury, 2001).

2.1.1. Understanding Foresight and Other Planning Tools

What is a foresight methodology? A search on Wikipedia indicates that the term "foresight" is used to describe activities such as critical thinking concerning long-term developments, debate and effort to create wider participatory democracy, shaping the future, especially by influencing public policy ("Foresight", n. d). Foresight is one of the methodologies at the disposal of planners to develop plans for addressing issues at many levels. What makes the methodology different is that the foresight methodology enables planners to consider alternative pathways of the future (Galer, 2004). They have an opportunity to collectively come up with critical actions to be taken to prepare for different situations of the future. Van der Heijden (1996) regards scenario planning, one of the foresight techniques, as a holistic approach to strategic planning.

The difference between foresight and other forecasting techniques is that foresight is about shaping the future rather than trying to predict it, as other forecasting techniques are attempting to do. Traditional forecasting planning may have been successful in the 1960s and 1970s when the environment was stable, but in the current unstable environment their effectiveness is questionable. The main problem is that forecasts take it for granted that tomorrow will be more or less like today (Wack, 1985). However Davis (1998) argues that forecasters focus on trends from the past, forgetting the often-quoted statement that "a trend is a trend is a trend until it bends". The fact that something happened in the past in a particular set up and format does not necessarily mean that the event will repeat itself. Experienced futurists like Wack (1985) have concluded that over the years, scenario planning forces decision-makers to think about the future more than other forecasting techniques.

The foresight process itself is made up of between three and six phases depending on the context and the case (see Figure 2.1 for depiction of foresight phases adapted from Horton (1999)). The phases involve the following processes:

- Conducting trend/environmental scanning;
- Interpretation of the results of the environmental scanning process;

- Assessing the implications and alternatives using scenarios; and
- Backcasting.

Horton finds it best to explain foresight by what it is not. Foresight is not a prediction of the future and is not a solution that is supposed to fix everything. Foresight is more about systems thinking, bringing different parts together and making decisions based on information from all. The focus is on the significance of the parts together, rather than the parts on their own. Systems thinking looks at a bigger picture. For example systems thinking considers if the solutions suggested would not have undesirable consequences in the long term.

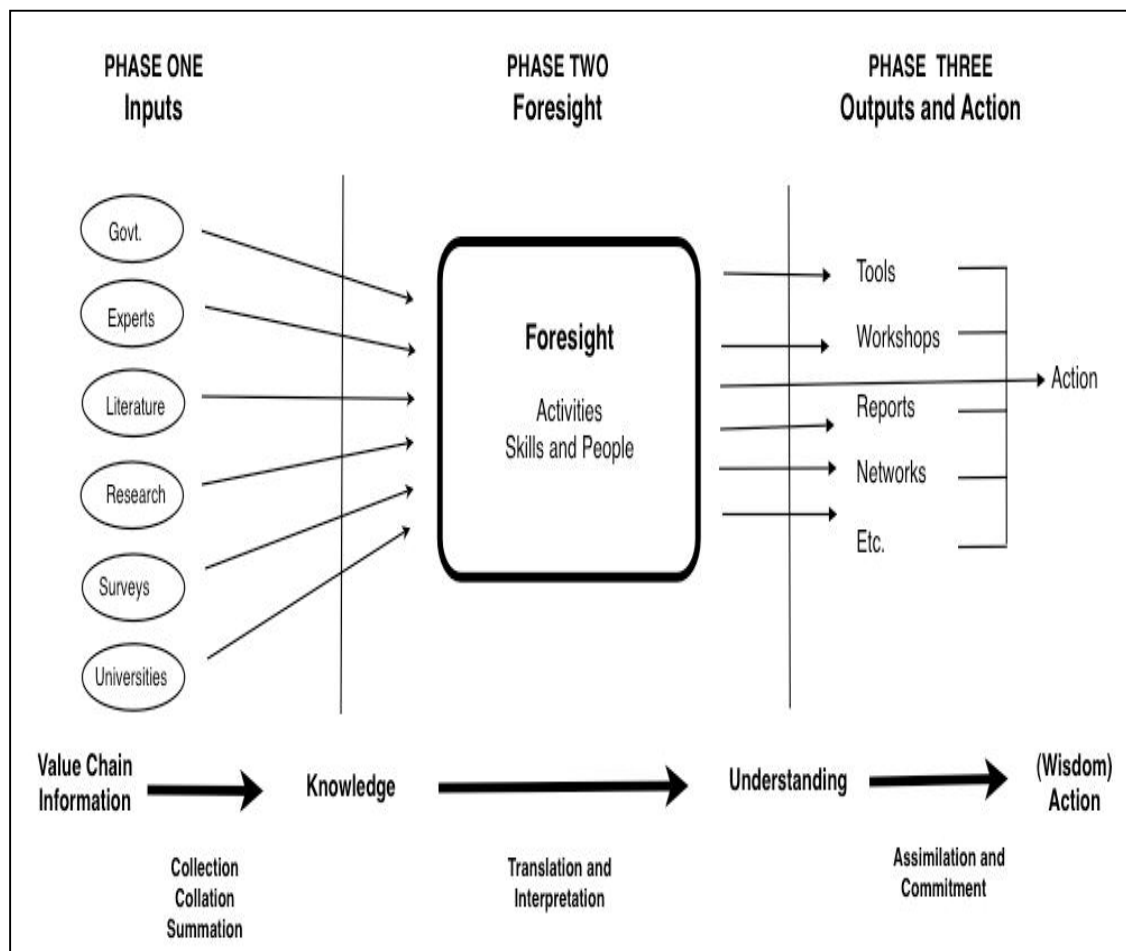


Figure 2.1: A successful foresight process

Source: Adapted from Horton (1999)

Foresight methodology consists of many useful techniques, ranging from the famous Scenarios, Delphi Techniques, Environmental Scanning, Emerging Issues Analysis, Futures Wheels, Futures Table, SWOT Analysis and Technology Roadmapping. These techniques can be used in combination. Some are used to produce information that feeds into other techniques, for example, environmental scanning results are very useful when developing scenarios. Foresight is a powerful and relevant methodology to design innovative strategies for an IS strategy. Delphi is designed to extract information from a group of people, especially experts dealing with complex problems (Lang, 1995).

However, the methodology and techniques do not go without criticism. For instance, it is argued that the success of the Delphi method depends on the chosen group of experts and the skills of the coordinating team. While this criticism is acknowledged it is important to note that, compared to other strategy development methods, foresight has proven to be successful in a number of different countries such as Australia, Japan, Finland, UK and Singapore and in companies such as Shell.

Another criticism is that there is insufficient evidence supporting the foresight methodology, since most derives from one company, Shell. Scenario planning has been developed mainly in practice, but does not have strong theoretical roots, except for Schoemaker's work on analysing scenarios as a tool for strategic planning (Chermack, 2004). However the same criticisms can be levelled against other long-range planning techniques. The advantage of the Shell experience is that it has been well recorded since it was started.

Other critics question the extent to which companies, such as Shell, take the scenarios into account when making decisions. Did these scenario planning exercises give Shell any competitive advantage? Shell conducted an assessment to determine whether scenarios were being used in decision making and found this to be true. Davis (1998) from Shell International confirmed this in a Conference in 1998 in New York. He informed the Conference that Mckinsey estimated that 103 companies collectively wasted 300 billion USD by mis-estimating future developments and investing in high-cost oil (Davis, 1998). The savings Shell made as a result of scenario planning were beneficial because the money could be invested in other useful projects.

A further criticism is labelled against the two-by-two technique or four quadrant scenario planning tool (Figure 2.2). The 4 – Quadrant Scenario Planning tool is a two axes crossing matrix that allows us to develop four quadrants of uncertainty. The quadrants are supposed to be very different, but plausible. When developing the matrix, we take into account the driving. The four-quadrant diagram ultimately helps narrate four distinct scenarios. Here the argument is that if other key uncertainties are

chosen, one may derive different scenarios. In essence, these types of criticisms are not fundamental criticisms of the methodology, but rather related to limitations and misuse of the approach. They therefore help to carefully identify critical aspects when designing foresight activities (Day *et al*, 2009).

The foresight methodology is being used increasingly in South Africa given the transition period the country is in and increasing demands for radical changes in the economic system where the future is more uncertain (Day *et al*, 2009). In recent months the country experienced unfortunate events in the mining and agricultural sectors, indicating clearly that predicting the future is a futile exercise. A recent article in *The Economist* (2012) depicts a sad picture of South Africa. According to the article South Africa is losing the gains and international competitiveness it gained since 1994.

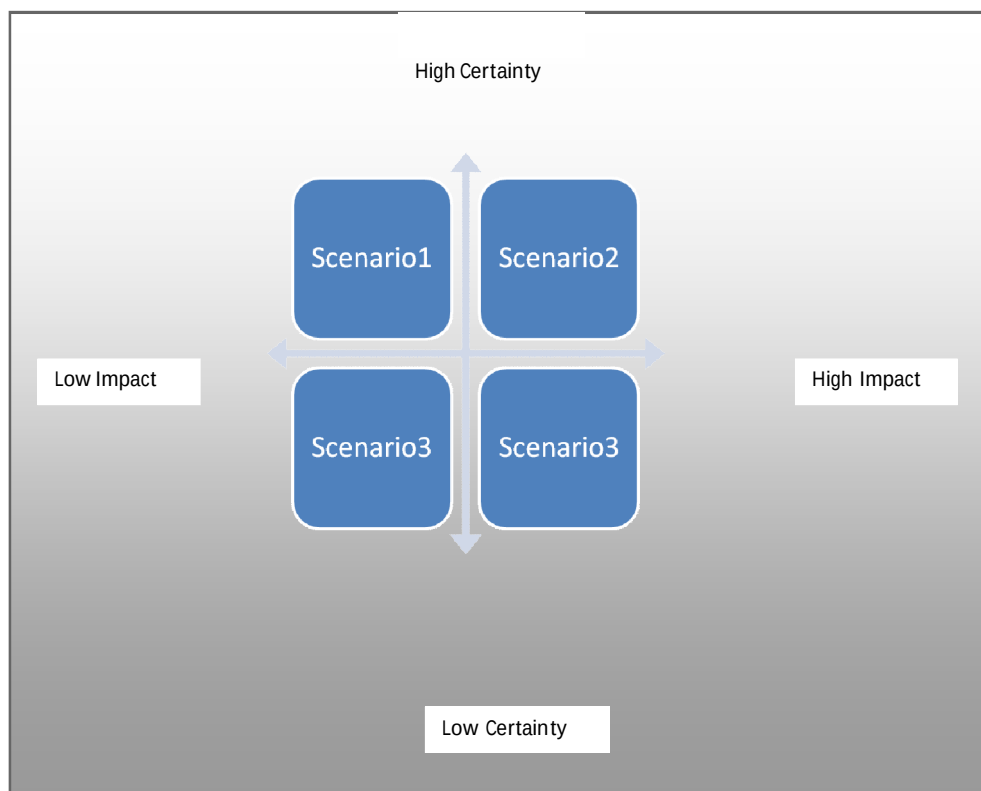


Figure 2.2: The 4 – Quadrant Scenario Planning Tool

Source: Author's formulation

The government's National Planning Commission has developed a vision document for the country called the *National Development Plan 2030, Our Future – Make it Work* (NPC, 2012). However many South Africans do not really understand the document and its intended vision. Foresight could be used as a communication tool, in which case the NPC has an opportunity to share the new vision with different stakeholders. Lessons can be learned from Shell on how it successfully used foresight to communicate its new view of the world to outsiders and clients throughout its scenario experience (Schwartz, 1991).

In conclusion, the issue should not be which are the “right” scenarios, but rather whether the scenarios will provide perspectives on alternative futures. Scenario planning is a tool for collective learning, and trying to focus on only one scenario may be tempting, but will result in the same outcome as trying to predict the future. Scenarios should be flexible and adjustable tools aimed at learning. In the final analysis, the benchmark should focus on how the foresight methodology performs as compared to other planning methodologies.

2.1.2. Foresight Techniques and Tools

Scenario Planning

Scenario techniques could stimulate authorities to think about what might happen in the future and how they should prepare to respond to future events. In other words, after understanding what the future may look like, authorities could work together to influence it. Schwartz (1991) suggests that scenarios are stories about the future that helps us prepare in the present situation to live in that future (Schwartz, 1991). Schwartz does however also advise that people should not spend all their time considering all future possibilities. The solution is to focus on those possibilities that are significant (Schwartz, 1991).

As defined by Chermack (2004), scenarios change thinking, improve decision making, enhance human learning and improve organisational performance. Scenarios are

linked to systems thinking, with special emphasis on the quality of the thinking (Davis, 1998). According to Davis, scenarios help us to be less surprised and develop strategies that are better adapted to the emerging environment. Ideally scenarios should result in more robust strategies, a clearer sense of direction and more effective strategy.

Accordingly, it will be important for senior officials to commit to scenario planning processes to ensure ownership of the results, as this will improve the chances of implementation. Wack (1985) stated that scenarios should be “more than water on a stone” to be truly effective; they should change a manager’s view of reality. The phenomenon was later referred to as passing the Wack test.

Delphi techniques

Delphi is a technique used to extract knowledge from a group to solve a complex issue, usually a group of experts in a particular topic or field (Jackson, 2011). The process aims to reach consensus without members having to necessarily meet in person. The disadvantage with Delphi is that team leaders/organisers can bias the results.

Environmental scanning

Environmental scanning is a systematic way of exploring the external environment (Jackson, 2011). The external environment is constantly changing. However the changes bring out opportunities, challenges and threats. Once the issues have been identified as a result of the environmental scanning processes, the futurist then evaluates the impact these issues will have on the organisation. Then the organisation should engage in strategy development taking into account the identified issues.

Futures Wheels

A Futures Wheel is a graphical representation of a future issue or future development (Jackson, 2011). Firstly, the planner identifies a future issue or development, and then a series of wheels each representing different aspects of the issue are constructed. Different levels indicate the direct and indirect events that result from that development.

Technology Roadmapping

Technology roadmapping is a collaborative planning and coordination tool. In order to reach a certain goal in terms of technology development, the roadmap helps to identify alternative technology “roads”. The idea of technology roadmapping is to develop a framework that will help coordinate technology development in an industry or country. Government and the private sector can then use the roadmaps to assist them in making better investment decisions (Jackson, 2011).

Backcasting

Firstly a desired future is outlined. Backcasting is the process that follows to ensure that the desired future will be attained. The backcasting process ensures that the actions that need to be taken today are identified and preparations put in place to ensure execution of the tasks (Jackson, 2011). Backcasting does not consider the future to be linear and therefore decisions that are made now are supposed to shape the future, with some influence from external factors. The process encourages creativity and avoids extrapolation from present conditions.

2.1.3. Foresight Experience in South Africa

The foresight methodology is not foreign to South Africa, but over the years the use of the methodology has been concentrated at national level. The adoption of regional foresight in South African public institutions, although still less than expected, is by and large advanced compared to other African countries. This can be attributed to the previously-mentioned COFISA programme and other related programmes that followed. For example, Finland entered into a cooperation agreement with South Africa through three programmes: COFISA, SAFIPA and INSPIRE. Finland’s Futures Research Centre was involved in all three interventions.

See Table 2.1 for a detailed list of South African organisations involved in foresight and Table 2.2 for foresight exercises in South Africa since the 1960s.

Table 2.1: South African Organisations Involved in Foresight

Sphere / Type	Organisations involved in Foresight activities
Public	Office of the Presidency, National sector departments Council for Science and Industrial Research (CSIR) COFISA – Department of Science and Technology
Multinational	African Union (AU) / New Partnership for Africa's Development (NEPAD) Southern African Development Community (SADC)
NGO, Agencies and Quasi-governmental	Institute for Global Dialogue (IGD) South African Institute for International Affairs (SAIIA) Institute for Security Studies (ISS) World Economic Forum (WEF) African Futures Institute African Leadership Institute Various UN agencies: eg UNDP, UNAIDS, UNIDO Development Partners such as GTZ, DFID, Rockefeller Foundation
Private/Corporate	Multinationals in sectors such as energy, mining, finance, insurance (eg Shell, Barclays Bank, Anglo American) A range of Foresight researchers, professionals and practitioners
Sectoral	Governance, safety & security, water, health, technology, environment, cross-border parks
Thematic	State of (eg "the environment" of "the future") studies, climate change, migration, shared resource
Voluntary associations / Individuals	Millennium Project, with a South African Node World Futures Society (WFS), now with South African chapter World Futures Studies Federation (WFSF), which has several South African members over the years

Source: Day et al, 2009

Table 2.2: Foresight Projects in South Africa

Period	Foresight exercise (and champion)
1970s	Institute for Futures Research
1980s	High Road/Low Road scenarios (Anglo American) Scenario exercises by Eskom, the Council for Scientific and Industrial Research (CSIR), Shell South Africa
1990s	Mont Fleur scenarios (ANC/COSATU Alliance) South Africa: Prospects for a Successful Transition (Nedcor-Old Mutual Corporation) Knowledge Intensive Service Business in 2007 (CSIR) NRTF (National Research and Technology Foresight), involving 12 sectors, by Department of Arts, Culture, Science & Technology from 1996-99 The Future of the Unions: The September Scenarios (Congress of South African Trade Unions) PSG/Siphumelele Three Scenarios
2000s	Southern Africa 2015 (South African Institute of International Affairs) Electricity Market Scenarios Study (National Electricity Regulator) Southern Africa 2020: Five Different Scenarios (Institute for Global Dialogue) Memories of the Future: South African Scenarios to 2014 (South African Presidency) CSIR Strategy 2014 scenarios SADC 2015 Scenarios: CSIR Infrastructure thrust in support of NEPAD (CSIR) Energy Scenarios for Africa (CSIR and Shell) Africa 2025: What Possible Futures for Sub-Saharan Africa? (UNDP and African Futures Institute) South African Benchmark 2020 (Department of Trade & Industry and European Foresight Monitoring Network) Transport Foresight Study (CSIR) AIDS in Africa: Three Scenarios for 2025 (UNAIDS and Shell) South Africa 2020 (UNDP/African Leadership Institute) Technology Roadmapping (DST, CSIR, industry) COFISA Foresight Initiatives – provincial innovation, community-level, biotechnology, ICT, etc SA Scenarios 2025: The future we chose? (South African Presidency) The Dinokeng Scenarios

Source: Day et al, 2009

The National Research Technology Foresight project (1999) produced a number of reports, including ICT foresight, energy foresight, foresight agriculture, tourism foresight, youth foresight and manufacturing foresight. The project may have not realised its objective of creating a national culture of foresight, but the process of foresight was in itself beneficial.

The COFISA regional foresight exercise was conducted in three provinces: Eastern Cape, Gauteng and Western Cape Provinces between 2007 and 2009 (James, 2010). Furthermore, through SAFIPA, capacity building programmes were conducted at the CSIR Meraka Institute, facilitated by foresight experts from the Finland Futures Research Centre within the Turku School of Economics. The training was aimed at encouraging the culture of foresight, especially at local level (SAFIPA, 2011).

South Africa as a developing state should be taking advantage of foresight tools to ensure that all stakeholders are mobilised towards a brighter future. Some of the government agencies and departments have had some experience of using foresight for their planning, but the impact is still to be determined. However some ignorance of the recommendations from foresight processes is reported to be the reason South Africa experienced energy challenges in the past few years. Officials at ESKOM did not manage to convince the government that South Africa needed to increase its energy capacity in order to cope with the increasing demand. The result was blackouts or what ESKOM referred to as load shedding.

2.1.4. Foresight in Europe, experience of Finland

Finland, on the other hand, has used the foresight methodology extensively to transform the Finnish economy into a world class knowledge economy. Given the fast changes in the world today, the Finnish society continues to use the methodology to prepare for the future.

Throughout the stages of information society development, the Finns have generated income from technology products (including sales of NOKIA mobile phones), as well as content and services related to this technology. The country used foresight as part of

its system of innovation. For the country to grow economically out of the third stage of information society development, it should combine innovation and foresight to archive what Kettunen and Meristö (2010) coined as “finnovations”.

2.1.5. Foresight and Public Participation

The regional foresight methodology is well-suited to enhance public participation in sparsely populated provinces such as the Northern Cape Province. The foresight methodology is designed to enable diverse stakeholders to participate in strategy development processes meaningfully. In this way stakeholders find local solutions together, ensuring that local circumstances and economic situations are taken into account (James, 2010).

Public participation is also enhanced through the use of ICTs, especially the more recent availability of social media and the remarkable mobile phone penetration in Africa. According to the study conducted by the World Bank and the African Development Bank (eTransform Africa, 2012), mobile phones possess a huge potential to be used for development due to the fact that many people on the African continent own a mobile phone.

2.2 Information Society and Knowledge Economy

The term knowledge economy is sometimes interchanged or confused with that of a knowledge-based economy. A knowledge-based economy refers to an economy in which knowledge is used as a factor of production. In most cases, it would be ICTs which are used in the production of goods and the provision of services. The knowledge economy, on the other hand, refers to a section of the economy that creates wealth through knowledge or intellect (Rooney *et al*, 2003). The concept of a knowledge society is even wider than the two concepts described above.

In July 2012, the Southern African Development Community (SADC) approved a document called the Regional Infrastructure Development Master Plan. This includes

an Information and Communications Technology Master Plan. According to the document, ICTs are the lifeblood of what SADC Member States are striving to achieve - a knowledge economy. Just as access to electricity changed the world in the last century, ICTs are critical in the 21st century (SADC, 2012).

2.2.1. Information Society (IS)

When developing an IS strategy, Davenport (1997) cautions that sometimes technocrats are so fascinated with technology that it gets to the point where the ultimate purpose of the technology is lost. The technology is there to assist in the sharing of information so that people can be better informed. Information needs of the people have to be understood, as well as what information already exists and how it is currently being shared. Information society initiatives and programmes should be user-centric and avoid top-down approaches to technology for development. When technology development projects are designed, the technology is usually developed first. Only then can the developers work with the community to test how it can be used to improve lives. Alternatively, the process could be started with a foresight workshop in which the participants can dream about the future. Only at that point can the type of technology be determined, or what (non-technological) products are required to make their dreams a reality (Semwayo *et al*, 2011).

Developing countries can benefit from existing knowledge and technologies available in developed countries, but some lessons can also be learned from developing countries. Several examples can be quoted. For example, the South African e-filing system used by the South African Revenue Services (SARS) has been commended as a world class system. Tax authorities in the UK are interacting with SARS to learn more about some aspects of the system (eTransform Africa, 2012). In Gauteng, , ICTs and specifically mobile phones have been used in apartment buildings to create security systems using turnstile gates and mobile-enabled access. By dialling a particular number, residents are able to open the gate and gain access to the building. The software recognises the mobile phone numbers of residents. Biometrics is taking

security to an even higher level with fingerprint recognition and other related technologies. Banks in South Africa are considering using the technology for transactions. One innovative bank, CAPITEC, has already partly adopted the technology.

Here are some of the latest innovations as outlined by Jackson (2011): processes to reduce water consumption (fear that the next world war may be fought over fresh water resources); technologies to scavenge energy; reducing energy consumption in data centres; collaborating with customers to find new solutions; and using waste as a feedstock for biofuels. Jackson also suggests that opportunities in the near future lie in the following fields: robotics, remote sensing, artificial intelligence, anti-aging, sustainable practices and energy transformation.

On the other hand, access to the internet is still a major challenge in the many areas in the country, but more so in the less developed provinces such as the Northern Cape Province. Government is rolling out an ambitious programme to develop broadband infrastructure across all the provinces, an acknowledgement that ICTs are potential tools for raising standards of living and quality of life, and ultimately contribute to poverty alleviation (DOC, 2012).

The world is facing challenges of unequal and unjust distribution of power, knowledge, wealth and quality of life in an age of globalisation. Therefore an IS strategy should not only focus on information technology, but also the broader social context.

In post-industrial economies, information and knowledge are critical. It is therefore crucial to avoid using industrial-era analytical theories and methodologies to develop complex IS strategies. Governments like to make statements about the way their nations are creative and how they encourage innovation. It is therefore disappointing when the same governments are not using creative or innovative methods in their planning processes.

There currently is no national ICT policy framework. Policies related to the ICT sector are largely coordinated by the rather ineffective Department of Communications. Other national government departments such as the Department of Science and Technology and the Department of Trade and Industry also have an interest in the ICT sector, leading to parallel activities and a potential waste of resources due to duplicated efforts (Lewis, 2007).

2.2.2. Knowledge Economy

South Africa continues to be an unequal society. The World Bank report (World Bank, 2010) indicates that the SA GINI-coefficient sits at 63.14. GINI-coefficient measures the level of inequality, 100% indicates perfect inequality. As part of the bigger development plan, many countries are working towards turning their economies into knowledge economies, South Africa included. In a knowledge economy, knowledge is regarded as a commodity. The Northern Cape IS strategy is taking a step in this direction but presently the plan is still at the IS level. The present economy of the Northern Cape relies heavily on natural resources, such as diamonds, iron ore and manganese. Moving towards a knowledge economy will enable the province to benefit from improved technologies, higher value products, as well as a better plan for sustainable development (James, 2010).

The South African government is currently placing emphasis on the local economic development concept, specifically the issue of rural development. Apart from the newly established Department of Rural Development and Land Reform, provincial and local government have Local Economic Development (LED) units responsible for development planning.

The Northern Cape IS strategy is expected to contribute towards transformation of the natural resource based economy to a knowledge economy. This will not happen overnight, but the strategy is a step in the right direction.

2.3 Strategic Planning

Strategic thinking is a concept that can be traced back to the times of King Pharaoh of Egypt and the Nguni kings of Southern Africa (James, 2010). Around 500 B.C the Chinese military had already recognised the benefits of using strategies after an introduction to the concept by Sun Tzu. He once said “Those who win one hundred triumphs in one hundred conflicts do not have supreme skill. Those who have supreme skill use strategy to bend others without coming to conflict” (Wing, 1988).

Strategic planning is a concept that is already entrenched in management studies and practices. Business schools and management related studies offer strategic planning as a course. The concept of strategic thinking was adopted in the 1930s in businesses with varying levels of success and failures.

Many of the current leaders in public and private institutions were raised during the industrial era. They therefore tend to understand and prefer industrial era approaches to implementation and problem-solving, overcoming challenges and developing strategies.

All organisations require resources to operate - human resources, materials and capital, for example. These resources are provided by the ever-changing environment in which the organisation operates. In order to adapt, strategic managers in these organisations try to predict future environments. So strategists conduct what is called strategic analysis. Different techniques can be used to undertake this exercise, including South African developed strategic issues analysis, organisational analysis and scenario planning (Human, 1998).

Scenario planning has been discussed above. What now needs to be discussed briefly are the types of people who think strategically. Mintzeberg (1995) argues that strategic thinkers do not follow conventional ways of doing things. They think differently and are willing to challenge the norm. These are the thinkers Pierre Wack referred to as “remarkable people”. However, our current leaders in South African

public institutions seem to prefer business-as-usual as a way of doing things, avoiding having to deal with change.

2.4 Foresight and Strategic Planning

In the 1960s Shell and General Motors started to incorporate futures activities in their strategic planning. By then the Hudson Institute was already experimenting with scenarios, led by Herman Kahn. Noticing that their traditional forecasting methods were not yielding the required results, Shell became interested in scenarios. The company hired Pierre Wack to assist them to fully incorporate scenarios into their strategic planning and thinking. Since then, more companies, academic institutions, the public sector and even nongovernmental organisations are using the methodology. Foresight is now also being used in innovation and marketing space (James, 2010).

2.5 Foresight for IS Strategy Development in the Northern Cape

Fast tracking to 2013, the Northern Cape Provincial Government has developed its IS strategy using foresight methodology. The strategy was developed after realising that the Provincial Growth and Development Strategy did not include ICTs. Currently the strategy document is with the Provincial Executive Council for approval (NCPG, 2012). The Northern Cape government learned from the IS project in Finland, *Learning Upper North Karelia*. The project aimed to prevent social exclusion, support social innovation, and improve services and living conditions (NCPG, 2012). *Learning Upper North Karelia* valued citizen participation and recognised that citizens are the most critical agents for information society development.

After experiences with COFISA, the foresight methodology was adopted to develop the Northern Cape IS strategy. The team developing the strategy felt that foresight would be the most suitable methodology for development of inclusive IS strategies and innovation development (NCPG, 2012). One of the reasons foresight was used was to encourage the acceptance of foresight and develop a pervasive culture of foresight

across society (NCPG, 2012). The Northern Cape government adopted the “what can be” scenario to develop their IS strategy (NCPG, 2012).

Given that the Province learned about foresight through its exposure to COFISA, and given that the COFISA foresight exercise was among the first regional foresight exercises in South African public institutions, it was felt that there would be benefit in assessing how the process was adopted and adapted for use in this province. This is the basis for the research carried out for this study. Ontolligent Software Services, the company that facilitated the foresight workshops for Northern Cape government was also involved with COFISA.

The following three foresight techniques were specifically used in the development of the IS strategy - Futures Wheel, Futures Table and Story Development. After three foresight workshops were held, three prototype scenarios and a common vision for the Northern Cape Information Society were crafted. The final vision statement that was adopted provides comprehensive coverage of the critical areas that emerged from the strategy development process. The Province intends to be a vibrant information based knowledge economy, with small and medium businesses playing a crucial part in growing the economy. The Province also aims to implement good governance practices and sustain them in both government and business, as well as other institutions. To improve the capacity of its citizens, the province proposes among other things to build a university. Exporting renewable energy is seen as a critical source of future economic growth.

Generally the goal is to be

*“[A] Smart Province where knowledge work is the
predominant work ethic that is transforming society
where high social capital is the norm.”*

NCPG, 2012

At the time of writing, the strategy had not yet been approved by the Provincial Executive Council, but was submitted to the Council for approval.

The next section details the methodology used to undertake the study. The interviews were conducted via semi-structured interviews, through face to face meetings and telephone interviews. The qualitative research method proved to be suitable for this study.

Chapter 3: Research Methodology

3.1 Introduction

This report is a qualitative research study using case study methodology to investigate the questions being raised. In order to dig deeper into issues under study, the research opted for the case study methodology. Semi-structured Interviews were conducted with stakeholders in the Northern Cape and other parts of the country. Participants were selected using purposive sampling because they are the main source of information regarding the issues central to this study. Secondary data was collected by reading reports and INSPIRE programme documents, including foresight workshop reports. But also the researcher had an opportunity to observe the workings of the programme by attending the stakeholder consultation workshop.

The thematic content analysis method was used to identify, categorize and elaborate themes. After the interviews had been transcribed, representative statements or quotes were selected to formulate categories after which an interpretation was developed.

3.2 Purpose of Research

The purpose of this research is to analyse how the processes of foresight methodology contribute to plans, strategies and policies that better adapt to future situations at provincial level. The research analyses the views expressed by stakeholders involved in the development of information society strategies in the province of the Northern Cape. It provides useful and practical information on lessons learned and challenges experienced. The insights that emerged from the study could be used by other provinces and developing countries which intend to develop IS strategies through the use of foresight methodologies. The study also recommends a way forward regarding

the suitability and usage of foresight for local and provincial economic and development planning.

3.3 Research Questions

The study answers the following questions:

Primary question:

- What has been the effectiveness of the regional foresight process in producing the IS strategy in the Northern Cape?

In addition to the primary question, the study answers the following related sub-questions:

- a. What benefits and challenges were experienced with the foresight methodology?
- b. How did the approach support or not support participation in strategy development processes?
- c. Is there evidence for the creation of a foresight culture, with longer-term perspectives being taken seriously by a wider spectrum of actors?

The three sub-questions are designed in such a way that information collected from the responses will supplement the answers to the primary question.

Foresight processes are preferred over other processes because of their supposed encouragement for meaningful participation. To determine if the processes were effective, it is important to assess the extent to which the processes enable the participation of different stakeholders. When there are signs of an emerging culture of foresight, it shows to a certain extent the effectiveness and usefulness of the process.

3.4 Research Methodology

A qualitative research methodology has been used to investigate this case. The approach was selected because of its interpretive and descriptive nature. It is a suitable approach to obtain a deeper understanding of the issues. Neuman (2011) describes qualitative research as an approach designed to enhance data in order to see key aspects of cases more clearly. Essentially, qualitative research gives the researcher an opportunity to understand a particular issue and its uniqueness in a particular context. For the research to work, the research design needs to be coherent. It is important to pay attention to the connections between the different parts of the research.

The main advantage of qualitative research is that the methodology acknowledges that there is no single reality. In other words, discussions undertaken are knowledge on their own. The methodology is relevant for this study because the researcher wanted to understand the experiences and thoughts of the interviewees. Unlike in quantitative methods, the researcher did not intend to quantify the findings but to find meanings in the words of the interviewees.

The research study used a case study design and collected data using three methods:

- direct observation;
- semi-structured interviews; and
- document analysis.

The nature of the study is a case study research method, focusing on the Northern Cape Province of South Africa. The case study methodology was chosen because case studies usually dig deeper into issues and they are appropriate for a qualitative research design (Merriam, 1998). To capture the views of different participants by using a combination of techniques for data collection, the case study methodology was also found to be the most suitable (Tellis, 1997). This method is advantageous because it uses different sources of data, which helps to bring forward different views. The case study method makes conclusions about a particular group, in this case the

Northern Cape Province, after a holistic and in-depth investigation in a specific context.

In qualitative research, interviews are usually part of the tools used to collect data. The advantage with interviews is that the participants are able to provide details of their experiences and thoughts about a particular issue. The researcher used one-on-one semi-structured interviews. Although the researcher used guided questions for the interview, there was also flexibility for the participants to express themselves. The semi-structured interview method allows for comparison of the data collected and gives the researcher a chance to do follow up questions. Participants of the foresight workshop, a representative of the funding organisation and the foresight workshop facilitators were interviewed. Among this group were government officials, a civil society representative and small business representatives. Six of the ten interviewees were known to the researcher. The researcher informed the participants in advance about the purpose of the research, how long the interviews would take and what was expected from them. Furthermore the researcher requested the participants to sign a consent form before the interview was initiated. The consent form contained a section requesting the participant to agree to the recording of the meeting. The participants were also informed that they could withdraw from the interview at any time if they felt uncomfortable at any stage.

The research focuses on the period 2007 to 2012. This is the period during which both the Northern Cape and Limpopo governments initiated and participated in INSPIRE, with assistance from the Government of Finland and the Department of Communications.

3.5. Selection of interviewees

Purposive sampling was chosen as an appropriate method given the purpose of the study. Participants were selected because they possessed specific knowledge about the issue being investigated. The selection criteria were decided at the researcher's

discretion. However, the researcher also relied on the coordinators of the Northern Cape IS Development strategy process to suggest names of people they thought were relevant to the study.

Primary data was collected using semi- structured interviews with key interviewees in the Northern Cape. These included government officials who were involved with INSPIRE, and private sector and civil society stakeholders who also participated in the strategy development process. Where physical meetings proved difficult, interviews were conducted via telephone. The land line telephone with clear loud speaker was used to undertake the interviews. In the spirit of using technology, the cell phone was used to record the interviews. The telephone interviews were conducted the same as face to face interviews. The interviewees were informed of the reason for the research and their rights to withdraw from the interview if they feel uncomfortable. Before the interview participants were provided with the guiding questions, consent form and an information sheet explaining the purpose of the study. Participants were selected using purposive sampling as this kind of sampling method is meant to select participants who would provide the greatest insights (Devers & Frankel, 2000). Annex A lists ten key interviewees who were selected for the study, all of whom were chosen because they could provide the main sources of information regarding the issues central to this study.

The researcher also participated in the stakeholder consultation workshop organised as part of the strategy development process. The workshop was facilitated by Ontolligent Software Services using foresight techniques.

Secondary data was sourced through reading reports and other relevant documents i.e. books, articles, bibliographies, workshops and conferences documentation).

3.6. Data Analysis

Data was analysed using Tesch's method of qualitative data analysis (Tesch, 1992). The process included the following steps:

- The researcher listened to the interviewee recordings and read the transcripts. The researcher then picked up one transcript that was interesting and read it again. Later the other other transcripts were read again to ensure that nothing was missed.
- The researcher highlighted the experiences and comments that stood out in all the transcripts.
- From the highlights, the researcher developed a list of topics. Topics which related to each other were clustered together in themes and categories.
- Codes were then developed from the categories; and
- The researcher re-checked the data to see if recoding was necessary before the data analysis process was finalised.

Maxwell (2008) argues data collection and data analysis should take place simultaneously. The researcher followed Maxwell's advice and analysed the data during the data collection period. Using Tesch's method, the researcher analysed the identifying themes, categorising and elaborating on the themes.

After the interviews had been transcribed, the coding process commenced. Representative statements or quotes were selected and rearranged into categories for comparison. The researcher explored the possibility of using available and reputable computer programmes to analyse the data. The researcher chose to use an online programme called CAT. However, the researcher did not rely only on the programmes so as to avoid losing his own concepts and interpretations.

The findings section provides a detailed analysis and interpretations of the results of the study. Here the research report provides meaning to the data collected. It is here that unanticipated findings are outlined. The argument put forward by the study was analysed to determine if the findings support or dispute the argument. Thus it was important to be frank and unbiased when interpreting the results of the study.

As the study used a qualitative research method, it followed a nonlinear research path (Neuman, 2011). The findings are presented in a user-friendly format, ensuring that

the findings can be easily understood. The researcher used graphs, charts, tables and other forms and formats of presentations to communicate the results.

3.7. Demonstrating Trustworthiness

Trustworthiness is concerned with the reliability of the qualitative data, as well as the validity of the data. The researcher was guided by Guba and Lincoln methods to establish the trustworthiness of the data (Guba & Lincoln, 1985). The following aspects are relevant to qualitative research.

Credibility

To ensure credibility of the data, the researcher took the following steps:

- The guiding questions for the interview were asked of all the participants;
- All the interviews were recorded and transcripts were made;
- Follow up was undertaken with some of the participants to ensure that the transcripts reflected their experiences;
- Three methods of data collection were used: semi-structured interviews, direct observation and document analysis. The case study method in itself is a triangulated research strategy, which is important to increase confidence in the interpretation.

Dependability

The material used in the study, including recordings from the interviews, transcripts, documents and other relevant materials will be made available to the supervisor.

Transferability

Part of the data analysis process included contrasting the findings with available literature. This was done to compare what other scholars have concluded about the findings through a process referred to as literature control. Information about the key interviewees is available for anyone who might be interested in using the result of the study to make similar conclusions in a different context. It should be noted that the

aim of the study was not to generalise research findings, which would be a limitation for someone who would like to use the result of the study in different context.

Confirmability

All material used or generated during the study will be made available for the editor (another researcher) to verify the relations between the findings and the data collected.

Chapter 4: Research Findings and Analysis

4.1 Presentation of Research Findings

This section outlines the findings of the research extracted from the information provided by the key interviewees, documents and observations made by the researcher. The results are categorised according to the themes that emerged from the research.

The method used to analyse the data is inspired by the Tesch method of analysing qualitative data (Tesch, 1992). The researcher had previously developed a structure for the research, which informed the research guiding questions. The structure was developed based on the information gathered from literature reviews and personal experience. Themes emerged at this stage, which were used by the researcher as headings. The Tesch method was used to code raw data from the interviews and for further thematic analysis. As part of the coding process, the researcher read the field notes, used data from the literature review, interviews and other sources. During this process the researcher noted similar responses from a cluster of respondents, as well as critical terms, key events or themes occurring across cases. The themes identified by the researcher also emerged during the analysis. The researcher reviewed the codes, checking if additional codes would be necessary.

4.2 Case Study: Northern Cape Information Society Strategy Development

Despite having the sparsest share of the South African population, the Northern Cape is a place full of opportunities, including potential for economic growth that can alleviate poverty. Because of the small population size, investors have shown little interest in the markets in the Province and therefore do not invest in the necessary infrastructure. With little investment from the private sector, the Northern Cape continues to contribute less to the national domestic product (GDP) as depicted in Table 4.1.

The economic sector in the Northern Cape Province is dominated by the mining sector and the agricultural sectors. The mining sector continues to be one of the main employers and contributors to the GDP of the Province.

Table 4.1: Comparison of Northern Cape GDP versus national GDP and GDP of other provinces

Province	2002 (Rand Million)	2002 (Percentage Contribution)	2011 (Rand Million)	2011 (Percentage Contribution)
Western Cape	165, 265	14.1	413, 235	14.2
Eastern Cape	91, 123	7.8	219, 170	7.5
Northern Cape	25, 794	2.2	65, 259	2.2
Free State	65, 847	5.6	153, 284	5.3
KwaZulu-Natal	191, 434	16.3	458, 841	15.7
North West	77, 110	6.6	189, 047	6.5
Gauteng	392, 706	33.5	1, 005, 795	34.5
Mpumalanga	83, 162	7.1	205, 600	7.0
Limpopo	78, 644	6.7	207, 308	7.1
TOTAL (South Africa)	R1, 171, 085		R2, 917, 539	

Source: Statistics South Africa 2011

The Growth and Development Plan of the Province has so far failed to significantly improve the GDP in the province. Service delivery challenges continue to compromise the quality of lives of the poor and vulnerable in the Province. To accelerate service delivery, the Province is trying all potential solutions, including the use of ICTs and technologies in general. Hence the Province has embarked on an ambitious project to develop an IS strategy.

4.2.1 Northern Cape Information Society

Findings

Given the dispersed population in the province, making physical contact is expensive and time consuming. ICTs are therefore critical to connect people and to enable information sharing.

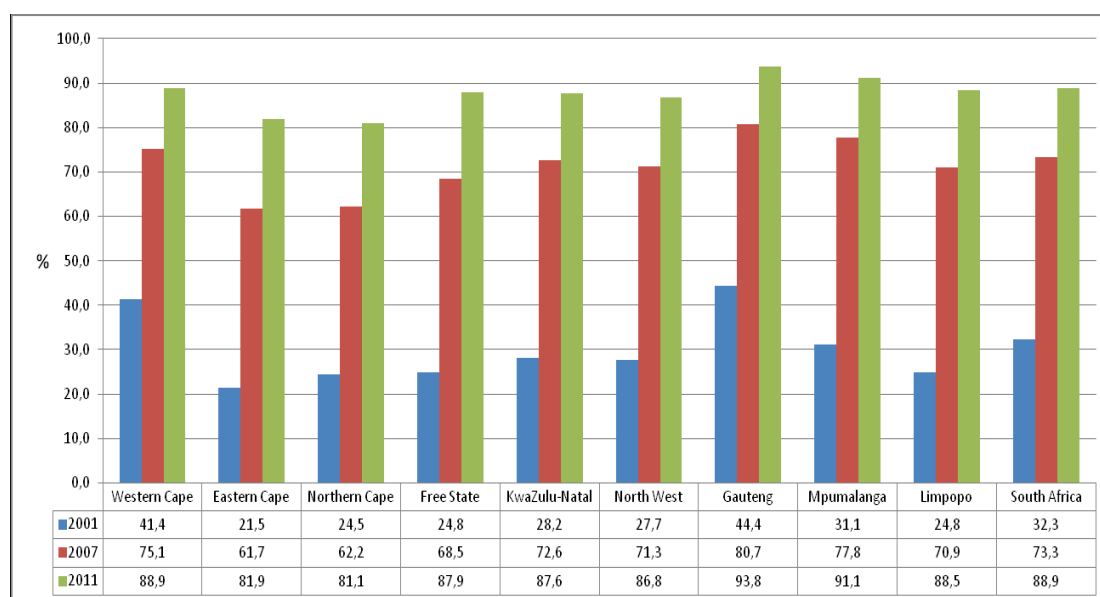


Figure 4.1: Percentage of households that have a cell phone in working order by province: Census 2001, 2011 and Community Survey 2007

Source: Statistics South Africa

As with other parts of the country and the African continent, the most accessible ICT device in the province is the mobile phone. According to Stats SA 81.1 % of households in the Northern Cape have a mobile phone in working order (see Figure 4.1). Broadband is still a challenge, and the province relies on the national broadband programme being rolled out by SENTECH and the Department of Communications (DOC). Although there has been some improvement in access to the internet since 2007, the percentage of households having access is still very low and below the national percentage (see Figure 4.2).

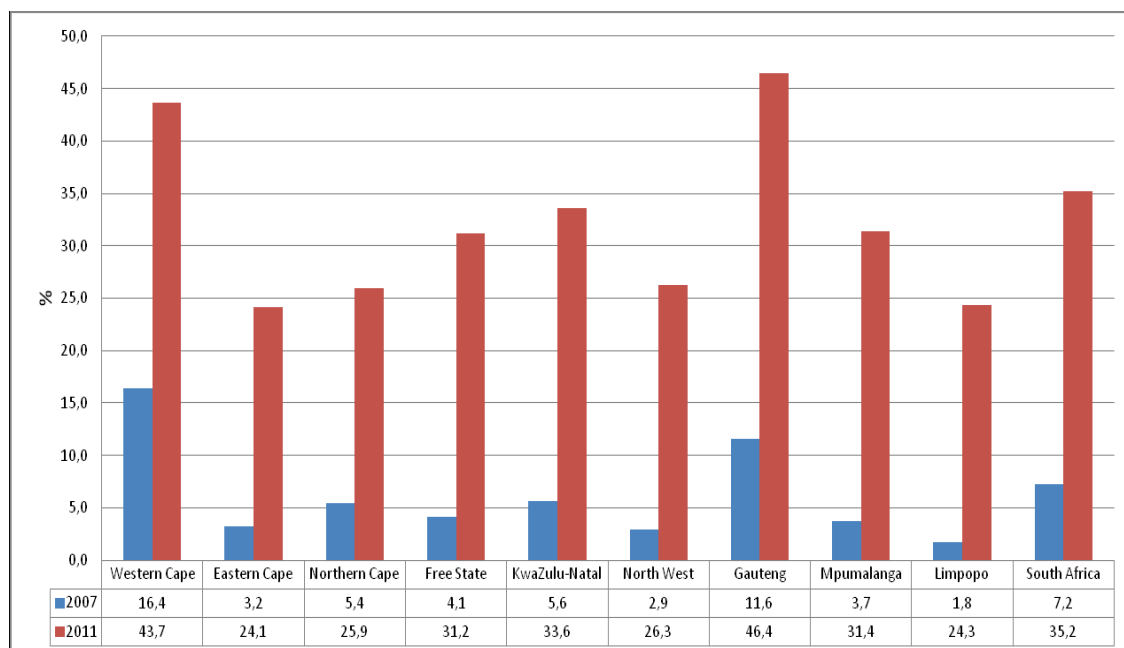


Figure 4.2: Percentage of households with access to the internet:
Community Survey 2007 and Census 2011

Source: Statistics South Africa 2011

The DOC also plans to switch the country from the use of analogue TV to Digital Terrestrial Television in all provinces before the International Telecommunication Union (ITU) set due date of 2015. Once implemented, these developments will change the ICT landscape significantly. South Africa is lagging behind other African countries such as Tanzania, which has already switched to digital TV.

One of the challenges raised by the respondents is that the country does not have a national information society policy. There is an ISAD, but as mentioned in the previous sections, the framework is not functional and not understood at local level.

Analysis

The ICT landscape has undergone changes in the country since the transition from the racially-based oppressive apartheid regime that ruled the country from 1948 (Lewis, 2007). Notably the broadcasting sector has seen the transformation of the South African Broadcasting Corporation (SABC) from government agent into a public

broadcaster. However, it continues to be a worry that the SABC is experiencing ongoing governance problems, which may affect its impartiality and effectiveness.

As mentioned above, the Department of Communications is planning to migrate the whole country from analogue to digital television. The switch to digital will serve the community better with possibilities to access government services via the TV set.

With internet still beyond reach for many households in the Northern Cape and South Africa at large, migration to digital television will bring some relief. It can only be hoped that the government rollout of broadband will be faster. In order for the Northern Cape to build an information society, access to the internet is a critical factor in the process. The current costs of the internet are still high, even higher than in some other African countries.

Mobile telephony possesses great potential to connect people. Mobile phones are today used in many ways, including to access health information. With the majority of people owning a working cell phone in the Northern Cape, delivering services to the people should be accelerated by using mobile phones. The telecommunications sector in general should encourage innovative ideas to ensure that the mobile phone sector serves the needs of the communities. The current mobile operators are investing in some Research & Development (R&D), but the investment is not enough given the country needs. The fixed-line operators, TELKOM and Neotel, should also know how they can better serve the South Africa population with their fixed-line technologies.

The Square Kilometre Array (SKA) is an opportunity for young scientists in the Northern Cape to use their skills for the betterment of society. Already the SKA project is offering the young scientists in the Northern Cape bursaries to study science. If the University of the Northern Cape concept materialise, then the University will play a key role in the SKA project.

4.2.2 Foresight as an Enabling Tool for Participation in Strategy Development Processes

Findings

As far back as 2004, the Provincial government of the Northern Cape realised that the Provincial Growth and Development Strategy did not outline how the province intended to take advantage of technology to inspire growth and development. The Northern Cape Government formed a partnership with the Government of Finland to address this weakness. The programme INSPIRE was born, spearheaded by the Provinces of the Northern Cape and Limpopo, under the guidance of the Department of Communications. The Northern Cape was chosen for this study because the province used the foresight methodology to develop their IS strategy.

The Northern Cape Provincial Government is expected, like all other provinces, to produce a Provincial Growth and Development Strategy (PGDS). The purpose of this document is to guide and coordinate the allocation of resources in the province. Besides the provincial government resources, the national and local government also contribute resources toward the provincial growth and development. The few investment resources from the private sector resulted in a need for systematic coordination to ensure sustainable development outcomes. Even though the preparation of a PGDS is not a legislative requirement, the Provincial Government concedes that it plays a vital role in ensuring effectiveness and coordinated delivery on the overall development objectives of the country's developmental state. The Northern Cape Government has been using traditional strategy development techniques to prepare the PGDS, namely gap analysis and SWOT analysis. That was the case until the INSPIRE programme was initiated in the province. As a result, government officials interviewed for this research are already indicating that they will suggest the use of foresight in planning exercises.

At the beginning of all the foresight workshops in the Northern Cape, facilitators started by explaining the foresight methodology to the participants. The majority of

workshop participants did not have any prior knowledge of or background on foresight. The introductory explanation helped because, even though workshop participants did not understand the substance of the foresight methodology, they were able to gain an understanding of what the process was trying to achieve. Foresight is a learning process and people are by nature curious. This made it easier for the facilitators to introduce the methodology. The facilitators themselves acknowledged that it would be difficult if there was no buy in from the participants at the start of the process.

The workshops were “full of energy and fire”, as described by the respondents. Some respondents attributed this to the fact that many people like to dream. The foresight methodology allowed them to dream and engage freely during the workshop. However, all respondents acknowledged that the workshop facilitator needed to be good to maintain the necessary levels of engagement.

Tools used in the workshop were derived from different fields, and not only foresight. For example, the Futures Wheel is in essence a brainstorming exercise adapted for use in foresight.

The majority of respondents liked the group discussions during the workshops. The sizes of working groups ranged between six and eight. Facilitators of the workshops encouraged dialogue among the participants, encouraging people to think collectively about the future. Facilitation methods, templates from foresight methodologies and other disciplines were used to get the participants to do the work. The general finding is that foresight enables participation in strategy development processes.

A significant criticism of the Northern Cape IS Strategy Development process was that there was not enough grassroots participation. One of the respondents did however argue that the process does not always have to be grassroots. The private sector was also not represented as expected. Some respondents suggested that less effort was made to draw the private sector into the process.

Analysis

Generally, the foresight workshops were exciting and managed to bring out the issues that the people of the Northern Cape Province wanted in the future. The processes of strategy development lacked satisfactory participation from certain parts of society. The private sector, both big and small business, had only few delegates participating. For the foresight exercise to be constructive, broader participation is critical.

4.2.3 Understanding of Foresight Philosophy and Its Preference in the Northern Cape

Findings

The COFISA programme appears to have been successful in raising awareness about the foresight methodology. Half of the respondents (5 of those interviewed for this research) had their first exposure to the foresight methodology during the COFISA process (see Figure 4.3 below). In addition, the team that facilitated the foresight workshops in the Northern Cape was trained through COFISA to enable them to lead foresight processes. The Finnish government funded INSPIRE programme was responsible for introducing the foresight methodology to 40% of the respondents. Furthermore, the majority of the respondents (8 of those interviewed for this research) had travelled to Finland as part of COFISA's exchange visit programme. Experiential learning included exposure to the use of foresight in Finland as well as the opportunity to meet with experts from a range of fields.

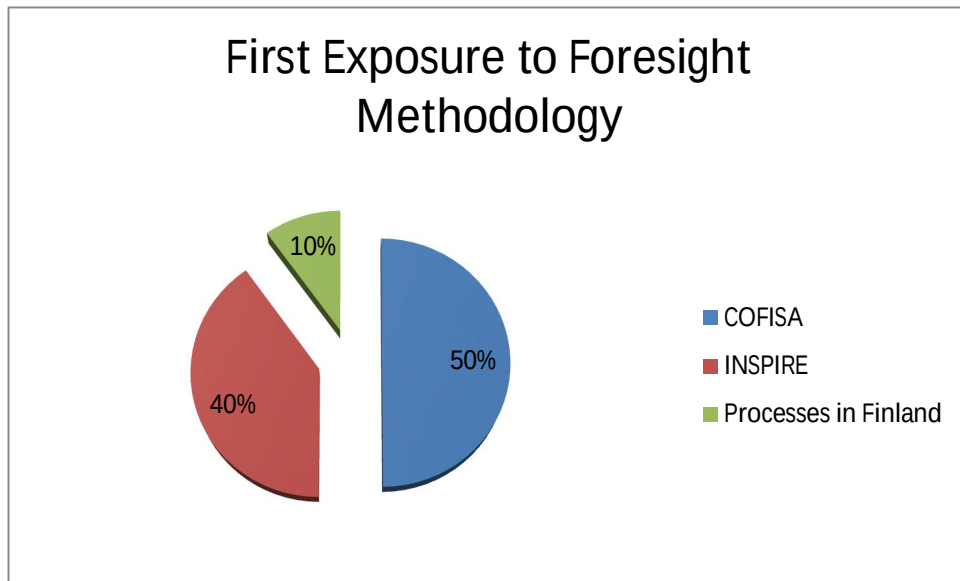


Figure 4.3: First Exposure to Foresight Methodology

Source; Author formulated

Ninety percent of the respondents could adequately describe what foresight is. The general description given by the respondents was that foresight is a technique where someone determines what they need to do today to arrive at a desired future, without today's constraints. One respondent who was uncertain about describing what foresight is indicated that it had something to do with dreaming about the future. The respondents emphasised that with foresight methodology, there are no constraints, the methodology allows for limitless thinking. One respondent indicated that the foresight methodology focuses on what can be (desired future), then creating and systematically developing that desired future through a process called backcasting among other techniques. Therefore foresight was seen as a methodology giving people a space where they can think freely. According to the respondents, that is what people do all the time in practice, especially when they want to think creatively and innovatively.

Most respondents suggested that foresight is most effective for long-range planning, 15 to 30 years. This was supported by contrasting it with short-term planning that tends to focus on problems of today, restricting thinking and the ability to innovate. They suggested that traditional linear methods such as gap analysis are short-term and restrict innovation.

Another respondent argued that foresight methodology is not about the science of planning, but rather the dialogue and inclusive process that the methodology encourages. Foresight is therefore a good way of tackling complexities.

Some criticism of foresight centred on the suggestion that ideas generated through the foresight process tend to be unrealistic. The counter-argument from those respondents who support foresight is that the future may look unrealistic, but it is achievable. Indeed, the innovations seen today were thought to be unrealistic during the early stages of their developments. For example, many people ridiculed the idea of flying as a mode of transport, but now thousands of aeroplanes criss-cross continents.

Other respondents cautioned that foresight could also be used for undesirable futures such as war. Overall, however, it is important to note that foresight discourages prediction of the future. Rather the methodology encourages consideration and preparation for alternative futures, not only desired futures, but also the disasters that are likely to happen at a future time.

Analysis

After securing funding from the Finnish government, with guidance from the PNC on ISAD, it was time to develop the strategy. Given the limited time and the creativity required, the province realised that they needed to find other ways of developing the strategy. The traditional gap analysis or SWOT analysis were not enough. The question on officials' minds was to determine what would be the best methodologies to use to develop the strategy. Some officials in the Provincial Government and team members of the INSPIRE programme had been exposed to an innovative method called foresight.

It was then suggested that the province consider using the foresight methodology to prepare the Information Society strategy. As explained by one official, it was agreed to adopt a Foresight driven strategy development process. After a discussion and consultations, the methodology was adopted.

Generally participants understand future planning and the fact that it is important to plan for the future. Some participants were aware of scenarios. It was found that there was general understanding that foresight is about planning for the future without limits and constraints. This is consistent with the findings of the literature review. The most unexpected finding was that most respondents understood foresight to be a long term planning tool, not a short term planning tool. Day *et al* (2009) explained that foresight applies to different levels. At strategic level foresight tends to focus naturally on long-term planning, whereas at tactical level the focus is short-term.

Usually many assume that the foresight process is complicated but it should not be that important for people to understand the technical words. The experience of the process of foresight proved to be even more important in the Northern Cape foresight exercise.

4.2.4 The Effectiveness and Value of Foresight Processes

Findings

More than 90% of respondents agreed that foresight processes were effective in the preparation of the IS strategy in the Northern Cape. Only one respondent was not sure if the process was effective. Table 4.2 outlines some of the benefits and challenges shared by the interviewees.

Table 4.2: Benefits and Challenges of the Foresight Methodology

Benefits and value of foresight	Challenges experienced with foresight
• Bring different stakeholders from different disciplines together • Strategic thinking – thinking out of the box • There are no restrictions to the future dreams • The process is even more relevant for local level planning exercises • The process is also suitable for technology planning	• Some ideas are unrealistic • The processes is time consuming • Foresight method is disjointed

Source: Author Formulated

The processes of foresight were seen to be more valuable, even though people do not always agree on issues because people have different views in general. The benefit of the foresight in the Northern Cape was that it brought together different stakeholders to think about the future, particularly since the participants came from a mixture of backgrounds, expertise, experiences and disciplines.

The method was seen as more relevant and valuable than the traditional linear methods, especially at local level where there is a shortage of resources. It is at this level where people tend to get stuck in the current reality and do not want to think about a future (20 years from the present). Foresight was seen as useful at this level because the methodology encourages strategic thinking. It assists in helping people to use their imaginations, allows people to dream and gives people an out-of-the-box experience. These are the views expressed by the interviewees.

Respondents who have had a chance to experience foresight and other traditional planning methods such as gap and SWOT analysis believe that foresight is more relevant for technology planning. Most see the foresight methodology as a critical

requirement for the preparation of IS strategies. Foresight can help Africa leapfrog in terms of technology development rather than going through long processes of development. According to these respondents, other techniques such as gap analysis are just not enough. Some recommend a hybrid of methods to take advantage of the strengths of other methodologies and to minimise their shortfalls.

As for the shortfalls and challenges of foresight methodology, the respondents shared the following experiences. A few had doubts about the ideas generated through foresight processes. Their concerns were that people were just dreaming and suggesting unrealistic ideas, which are far-fetched pipe dreams with no chance of ever being achieved. Others were suggesting that some of the proposed ideas were outrageous. For example, one of the suggested ideas was to build a university in the Province. This was seen as a bad idea. The respondent argued that the universities of the future are online universities, and that it is not necessary to worry about building a university in the future. Another available option would be the use of distance learning rather than building another university. However, it should be noted that President Jacob Zuma announced in his 2012 State of the Nation Address (SONA) (Zuma, 2012) that the government plans to build a new university in the Northern Cape.

Another challenge expressed was that foresight can be a time-consuming process, especially for people who do not have an appreciation for long-term planning. Some people in the foresight workshops were worried about their time being wasted. Participants commented that they could not see the relevance of planning for something 30 years down the road, and did not see the connection to what was needed in present times. For example, a comment was “I need to sell my products today not in 30 years’ time.”

Although foresight may be time consuming, the general understanding was that the time needs to be spent if you wish to get quality. The perception was also that if you want to achieve outcomes quickly but not innovatively, then foresight would not be the process to adopt. However, if a foresight process is chosen, it is critical to obtain

buy-in from stakeholders and to create an understanding of what the methodology hopes to achieve. This is particularly important for those who have never used the methodology before as a strategy development technique.

Foresight was seen as a disjointed process, according to the respondents. The methodology was seen as making strides towards the development of scientific evidence, but this would take time. Some respondents felt that they would have preferred to wait until the methodology was more developed scientifically before they could trust using it in their strategy development processes.

Although all respondents who attended the workshops indicated that they enjoyed the experience, especially the group discussions, some indicated that workshops were not radically different to the traditional workshops they attend from time to time.

Accordingly structured foresight methods allow participants to dream and use techniques to get to the dream, but if it is not clear what they will be doing with the information in the future, then foresighting may be useless. The respondents did however believe that it was important to incorporate it into strategic planning.

One interviewee suggested that there were no challenges with the foresight methodology in the context of the Northern Cape and the process went smoothly according to him. He claims this was because participants valued the importance of working together to seek solutions in a creative way. In other words, it was not dreaming for the sake of dreaming, but to come up with concrete and innovative solutions.

Analysis

South Africa still faces serious challenges such as poverty, unemployment, inequality, crime and corruption. The current political and economic strategies fail to address these problems. The processes used to develop strategies have not yielded innovative solutions. There is an urgent need to review the way strategies are developed across

the board. The data in this research has shown that there are other dynamic methods that can be used in tandem with the foresight methodology to improve the processes of strategy development.

Traditional techniques such as gap and SWOT analyses are not enough for developing IS strategies. People's attitudes need to change, and the business-as-usual approach to solving problems cannot be allowed to continue. Provincial governments can use dynamic methods such as foresight. The researcher is not recommending that traditional methods of strategy development are completely discarded, as those methods are still important for data supply and analysis. The message is however that those methods on their own are not enough to deal with the complex challenges of today.

Indeed, the future cannot be predicted. That is why methodologies such as foresight provide an opportunity to prepare the way for alternative futures. This presents an opportunity to shape the future while managing disasters and economic crises. Foresight is a continuous process, and the Northern Cape Province will have to revisit the scenarios during the implementation of the strategy. But also, foresight is not a magic box.

4.2.5 Foresight Culture in South Africa and Northern Cape Province

Findings

The main constraint for the adoption of foresight according to all the respondents is the poor prior exposure to the foresight methodology. To build the culture of foresight in the country, more planners should be exposed to this methodology. According to one participant, what is needed is a deeper exposure to futures concepts in general, including the scenario planning methodology.

However, of equal importance if there is to be an increased use of the foresight methodology, is that the country develops the capacity of its citizens to use the methodology. Capacity building initiative should including deliberate plans to make available learning materials on foresight. Currently, there is no concise documentation or handbook on how to use foresight to develop strategies. Therefore what is needed are more publications on the foresight methodology, word-of-mouth awareness creation, more strategic planners who study the foresight methodology, and Masters degrees and Doctoral studies on foresight.

The respondents highlighted that in general, people prefer, and are comfortable with, business as usual, and the usual way of doing things. There is also a tendency to want quick processes and two-day strategic planning sessions.

Already steps have been taken to develop the culture of foresight. The Northern Cape case is one example, with the process to develop the National Development Plan by the National Planning Commission being another good example of long-term planning. The Government is trying to entrench foresight in South African society. However, foresight needs to be part of the national discourse to gain exposure. According to the respondents, Foresight is not new to South Africa. The methodology existed a long time ago during the development of the Freedom Charter in Kliptown, South Africa in June 1955.

After being exposed to the foresight process through COFISA, three companies (Ontolligent Software Services, Kayamandi Informatics and Sakaza Consulting) have used the foresight methodology to conduct more than 20 other strategy projects. The three companies are also involved in the strategy development process in the Northern Cape Province.

Analysis

Although Day *et al* (2009) concluded that foresight is alive and well in South Africa there is no real foresight culture in the Northern Cape Province yet. Initiatives such as

the INSPIRE programme help to sensitise people. Even though the culture of foresight is still a dream in the Northern Cape Province, the foresight process itself was a rewarding experience for most respondents.

To develop the culture of foresight in the country, participants' thinking needs to change. The foresight methodology opens up the future, and helps people think strategically about their future. The methodology also uses techniques to enable people to create a roadmap to achieving their desired dreams. The advantage of adopting a foresight methodology is that it enables the mobilisation of the widest variety of participants. Foresight also draws from different disciplines, among others strategic planning, visioning and environmental scanning. The methodology is known for its ability to free up the minds from present constraints and consequences.

Universities and learning institutions should also play a part in exposing people to the methodology. Most literature and planning courses at universities do not cover foresight, the focus is still on SWOT analysis, gap analysis and other traditional planning techniques. One of the respondents indicated that to build a foresight culture, the frameworks and material that can help people and organisations to use the methodology should be made available. According to the respondent, this is not currently the case. This view is supported by Jackson (2011), who states that foresight framework systems are lacking in general.

Planners should be realistic and remember that foresight is not a silver bullet that will solve all problems. The country still needs skilful planners who think long-term. Skills development and good education are also key factors. According to the respondent, the country is presently focusing on many small things, while the standard of the educational system is degrading.

4.2.6 Other Findings

The Finnish government support for the improvement of innovation systems in South Africa has played a significant role in the introduction of foresight for planning at regional government level in South Africa. This initiative did not just expose people to the methodology, it created entrepreneurs. The company that facilitated the Northern Cape Information Society strategy foresight workshops was introduced to foresight through the process of COFISA. Finland is an example of a country that takes planning for alternative futures seriously. Finland plans for the future using foresight at the highest level of decision making, namely Parliament. The Parliament of Finland is the first parliament in the world that has established a Committee for the Future. The Committee is a multiparty forum founded in 1993 to focus on the future of Finland.

One of the key ideas emerging from foresight was to build a university in the Northern Cape. There was mixed reaction from the respondents on this issue, although the majority felt the idea showed that foresight processes produce tangible results. Some opposed the idea, even calling it outrageous.

Because of its population size, the Northern Cape does not have the critical mass, therefore industry does not want to invest in the province. Planners in the province are faced with a challenge to be creative and innovative when drafting strategies to attract the industry. This provides even more of a reason why the foresight methodology will be valuable.

In the whole of Africa, the Northern Cape and Limpopo have started the process of IS strategy development. Most African countries and regions in the continent have produced ICT strategies, but not Information Society strategies. The Northern Cape and Limpopo are therefore more advanced in comparison to most other African countries. Some of the North African countries are more advanced with regard to broadband penetration, but generally the African continent lags behind in moving towards a knowledge economy.

Chapter 5: Conclusion and Recommendations

This section provides conclusion and recommendations based on the analysis and interpretation of the results of the study.

The argument put forward by the study has been supported by the findings of the research. Foresight processes have been effective in producing an Information Society strategy in the Northern Cape Province of South Africa.

5.1 Conclusion

The study has drawn on knowledge from experienced futurists in South Africa and outside the border (Nyewe, Semwayo *et al* (2011), Day *et al* (2009) and Lewis (2007)).

Nyewe (2011) concluded in his thesis that even though long-term planning is acknowledged as important by state-owned agencies in South Africa, it is not widely practiced. Foresight methodology is also not widely used by these agencies. Semwayo, *et al* (2011) conducted a study of foresight exercises from COFISA and SAFIPA. The conclusion was that the foresight exercise was beneficial and the country should build on the lessons learned. The conclusion of this study is in line with the conclusions reached by the authors above.

The conclusion is that the argument put forward by the researcher is supported by the findings of this study. Foresight processes have been effective in producing an IS strategy in the Northern Cape.

All respondents regard foresight as a useful technique for the preparation of strategies as experienced in the Northern Cape Province. Other provinces and regions can use the lessons learned from the study to inform their own strategy development processes.

In the new era of information and knowledge societies, countries should develop continuous and flexible strategies. A knowledge society is different from the old industrial era, therefore the way of thinking should also be different.

ICTs and knowledge-based economies are increasingly becoming critical to facilitate development, especially in hard-to-reach remote areas. Countries are developing strategies to ensure that they take full advantage of opportunities offered by technologies. Some forward-looking countries are already using foresight to craft their information society strategies, for example Finland, Japan, Australia and the United Kingdom.

Some African countries such as South Africa and Kenya are already engaged in activities that aim to transform their economies into knowledge-based economies. More African countries are expected to follow in the footsteps of these forward looking countries. This study presented lessons learned that can be emulated in other countries and regions.

Planners should consider using the foresight methodology in their planning processes. The findings and conclusions reached in this study confirm that the methodology is usable for the preparation of strategies. But, the foresight methodology is not a panacea for all the problems. It is a useful tool to encourage innovative thinking about the future without constraints.

5.2 Recommendations

This research report has advanced the argument that foresight is usable for the development of strategies that are better adapted to future situations. The research findings have confirmed the relevance of some of the recommendations from the literature review. Specifically the recommendations from the study conducted by Nyewe (2011) and Day *et al* (2009) are consistent with the researcher's recommendations.

1. Nyewe (2011) recommends that the process of foresight should be driven by well trained and skilled facilitators. That way the best results can be attained from the process of foresight. Most respondents from the research confirmed that the meaningful participation in foresight workshops was partly attributed to the good skills of the facilitators. The researcher therefore recommends that policymakers should improve foresight capacity within their planning unit. If they want to use a foresight methodology and there is no in-house capacity, they should outsource the service to capable service providers to ensure credible and quality results. The more successful the processes, the more people will believe in the process and the better the chance of growing the culture of foresight.
2. Day *et al* (2009) recommends a broader base of participation. In the case of the Northern Cape Information Society Strategy Development process, broader base of participation means inclusion of the private sector in the process.
3. Foresight is a learning processes, the Northern Cape should review the scenarios from time to time.

Generally there is potential for doing more with foresight at regional level, COFISA and INSPIRE have been good examples. Using the foresight methodology does not have to be as expensive as critics of the methodology would want people to believe. Provinces, organisations and individuals that wish to use the foresight methodology will benefit from the process but should take the above recommendations into account.

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Appendix A: List of Key Informant Interviewees

Designation	Organisation	Role
Counsellor (Science, Technology and Innovation)	Embassy of Finland	INSPIRE Funder
INSPIRE Provincial Coordinator	Northern Cape Provincial Government – Office of the Premier	INSPIRE Provincial Coordinator
Government Information Technology Officer	Northern Cape Provincial Government - Department of Economic Development and Tourism	Workshop Participant & part of Coordination Team for the INSPIRE Programme
Chief Financial Officer	Northern Cape Provincial Government - Department of Economic Development and Tourism	part of Coordination Team for the INSPIRE Programme
Director (Knowledge Management)	Northern Cape Provincial Government - Department of Economic Development and Tourism	Workshop Participant & part of Coordination Team for the INSPIRE Programme
Programme Manager	Limpopo Development Agency (LIMDEV) - Information Society	Workshop Participant
Chief Executive Officer	Ontolligent	Workshop Facilitator
Chief Executive Officer	Kayamandi Informatics	Workshop Facilitator
Chief Executive Officer	Sakaza Communications and Public Relations	Workshop Facilitator
Chief Executive Officer	M2 Coffee Shop Director	Workshop Participant

Source: Author Formulated