

**ANALYSIS OF SOUTH AFRICA'S ICT POLICY THROUGH  
DEVELOPMENTAL STATE AND ICT FOR DEVELOPMENT THEORIES**

**Vusi Moyeni  
0300446T**

A research report submitted to the Faculty of Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management (in the field of Public and Development Management).

March 2013

## DEDICATION

To the Transcendental Reality, the Creator of everything, for the unmerited favour of life, consciousness and intellect.

To the divine Leader of our time, the awaited Saviour, who benefits creation like the sun behind the clouds. Present and felt, yet only visible to those spiritual towers that soar above the clouds.

To my wife, and all my children.

## ACKNOWLEDGEMENTS

I am deeply grateful and indebted to my lecturer and supervisor Lucienne Abrahams, for her encouragement, support, guidance, and constant patience throughout this research process. May God increase her guidance and multiply her blessings.

## ABSTRACT

Developing countries face the challenge of devising ways to advance rapidly through developmental stages. At the turn of the millennium, South Africa focussed its attention on pursuing the twin goals of becoming a ‘developmental state’ and harnessing ICTs to become an advanced inclusive ‘information society’. Despite these pent up aspirations, it has failed to put in place concrete policy enablers and strategies to vigorously pursue these specific goals. Furthermore, while ICT policies express ICT for development (ICT4D) perspectives, few have delivered on their stated objectives.

This policy analysis research investigated seven distinct ICT policies (or policy components) published between 2001 and 2012, examining the extent to which they reflect either developmental state or ICT4D themes. The developmental state perspective is based on four sub-themes, namely developmentalist ideology, state capacity and institutional arrangements, state autonomy, and country context. The ICT4D perspective is based on five sub-themes, namely enabling institutional environment, agile ICT industry, robust ICT infrastructure, human digital capability development, and ubiquitous e-services deployment.

The findings illustrate that ICT policy fairs reasonably well on only one of the nine sub-themes presented above, namely attention to the enabling institutional environment, even if only at the level of principle. The research report notes further that South Africa is headed towards a captured welfare state rather than a capable competitive developmental state, while the major ICT policies exhibit glaring gaps in terms of reflecting either developmental state or ICT4D theories. Finally, the report proposes a series of new directions for policy thinking on ICT-enabled development.

## **DECLARATION**

I 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 ICT Policy and Regulation) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

Vusi Moyeni  
28 March 2013



## TABLE OF CONTENTS

<b>DEDICATION</b> .....	<b>1</b>
<b>ACKNOWLEDGEMENTS</b> .....	<b>2</b>
<b>ABSTRACT</b> .....	<b>3</b>
<b>TABLE OF CONTENTS</b> .....	<b>5</b>
<b>LIST OF TABLES</b> .....	<b>8</b>
<b>LIST OF FIGURES</b> .....	<b>9</b>
<b>CHAPTER 1: EVOLUTION OF DEVELOPMENTAL STATES AND ICT4D</b> .....	<b>11</b>
1.1 CONTEXT AND OVERVIEW .....	11
1.2 DEVELOPMENTAL STATE DISCOURSE IN SOUTH AFRICA .....	14
1.3 INFORMATION SOCIETY DISCOURSE IN SOUTH AFRICA .....	17
1.6 SOUTH AFRICA'S INFORMATION SOCIETY POLICY AND INSTITUTIONS .....	21
1.6.1 <i>The e-Government Policy of 2001</i> .....	22
1.6.2 <i>The e-Education White Paper of 2004</i> .....	24
1.6.3 <i>The ISAD Plan of 2006</i> .....	25
1.6.4 <i>The GPG ICT Development Strategy of 2011</i> .....	28
1.6.5 <i>Scholarly Perspectives on South Africa's ICT Policy</i> .....	29
1.6.6 <i>Chapter Summary</i> .....	32
<b>CHAPTER 2: LITERATURE REVIEW ON CONCEPTUALISATIONS OF DS AND ICT4D THEORIES</b> .....	<b>33</b>
2.1 OVERVIEW .....	33
2.2 DEVELOPMENTAL STATE THEORETICAL FRAMEWORK .....	33
2.2.1 <i>Developmentalist Ideology</i> .....	34
2.2.2 <i>State Autonomy</i> .....	36
2.2.3 <i>State Capacity and Institutional Arrangements</i> .....	38
2.2.4 <i>Country Context</i> .....	40
2.3 ICT4D THEORETICAL FRAMEWORK .....	43
2.3.1 <i>Enabling Institutional Environment</i> .....	44
2.3.2 <i>Digital Capability</i> .....	45
2.3.3 <i>Agile ICT Industry</i> .....	45
2.3.4 <i>Robust ICT Infrastructure</i> .....	46
2.3.5 <i>Ubiquitous e-Services Deployment</i> .....	46
2.5 CHAPTER SUMMARY .....	48
<b>CHAPTER 3: QUALITATIVE RESEARCH DESIGN AND METHODOLOGY FOR ICT POLICY ANALYSIS</b> .....	<b>49</b>
3.1 PROBLEM STATEMENT.....	49
3.2 PURPOSE STATEMENT .....	50
3.3 RESEARCH QUESTIONS .....	50
3.4 QUALITATIVE RESEARCH METHODOLOGY FOR POLICY ANALYSIS.....	51
3.5 RESEARCH DESIGN: THEORY-BUILDING, CONTENT ANALYSIS AND PHENOMENOLOGY .....	53
3.5.1 <i>Research Design: Theory-building</i> .....	54
3.5.2 <i>Research Design: Phenomenology</i> .....	54
3.5.3 <i>Research Design: Content Analysis</i> .....	55
3.6 DATA COLLECTION METHODS: THEORY-BUILDING, CONTENT ANALYSIS, AND PHENOMENOLOGY INTERVIEWS .....	56
3.6.1 <i>Sampling Methodology</i> .....	56
3.6.2 <i>Data Collection Method for Theory-building Research Design</i> .....	59
3.6.3 <i>Data Collection Method for Content Analysis Research Design</i> .....	59
3.6.4 <i>Data Collection Method for Phenomenology Research Design</i> .....	62
3.7 DATA CODING AND ANALYSIS .....	63
3.7.1 <i>Data Analysis Approach</i> .....	63
3.7.2 <i>Data Analysis for Semi-structured Interview Results</i> .....	64
3.8 PERSONAL RESEARCH JOURNEY .....	65

<b>CHAPTER 4: REFLECTIONS OF DS AND ICT4D THEORIES IN SOUTH AFRICA'S ICT POLICY .....</b>	<b>66</b>
4.1 OVERVIEW OF ICT4D AND DS CONCEPTUAL FRAMEWORK THEMES .....	67
4.1.1 <i>Overview of ICT4D conceptual framework themes</i> .....	67
4.2.2 <i>Overview of DS conceptual framework themes</i> .....	68
4.2 ICT4D AND DS THEORIES IN ICT POLICY .....	69
4.2.1 <i>ICT4D and DS Theories in the e-Government Policy of 2001</i> .....	69
4.2.2 <i>ICT4D and DS Theories in the e-Education White Paper of 2004</i> .....	74
4.2.3 <i>ICT4D and DS Theories in the ISAD Plan of 2006</i> .....	77
4.2.4 <i>ICT4D and DS Theories in the ICT R&amp;D and Innovation Strategy of 2007</i> .....	81
4.2.5 <i>ICT4D and DS Theories in the National e-Skills Plan of Action (NeSPA) of 2010</i> .....	85
4.2.6 <i>ICT4D and DS Theories in the GPG ICT Development Strategy of 2011</i> .....	88
4.2.7 <i>ICT4D and DS Theories in the National Development Plan (NDP) of 2012</i> .....	92
4.3 INSIGHTS ON THE POLICY REVIEW PANEL (PRP) AND THE E-HEALTH POLICY PROCESS .....	96
4.3.1 <i>Insights on the Policy Review Panel (PRP)</i> .....	96
4.4.2 <i>Insights on the e-Health Development Process</i> .....	97
<b>CHAPTER 5: ICT POLICY FALLS FAR SHORT OF DS AND ICT4D THEORIES .....</b>	<b>97</b>
5.1 TABULATION OF FREQUENCIES OF THEMES FOUND IN SOUTH AFRICA'S ICT POLICY .....	98
5.1.1 <i>Reflection of the Enabling Institutional Environment Theme in ICT Policy</i> .....	100
5.1.2 <i>Reflection of the Agile ICT Industry Theme in ICT Policy</i> .....	101
5.1.3 <i>Reflection of the Robust ICT Infrastructure Theme in ICT Policy</i> .....	102
5.1.4 <i>Reflection of the Human Digital Capability Development Theme in ICT Policy</i> .....	104
5.1.5 <i>Reflection of the Ubiquitous e-Services Deployment Theme in ICT Policy</i> .....	105
5.1.6 <i>Reflection of the Developmentalist Ideology Theme in ICT Policy</i> .....	105
5.1.7 <i>Reflection of the State Capacity and Institutional Arrangements Theme in ICT Policy</i> .....	107
5.1.8 <i>Reflection of the State Autonomy Theme in ICT Policy</i> .....	110
5.1.9 <i>Reflection of the Country Context Theme in ICT Policy</i> .....	112
5.1.10 <i>Reflection of DS and ICT4D Theories per Policy</i> .....	114
5.2 RELATIONSHIPS BETWEEN DS AND ICT4D FRAMEWORKS .....	116
5.2.1 <i>Relationship 1: Developmentalist Ideology versus Ubiquitous ICT Services Deployment</i> .....	117
5.2.2 <i>Relationship 2: Developmentalist Ideology versus Agile ICT Industry</i> .....	118
5.2.3 <i>Relationship 3: Developmentalist Ideology versus Agile ICT Industry</i> .....	118
5.2.4 <i>Relationship 4: Developmentalist Ideology versus Human Digital Capability Development</i> .....	119
5.2.5 <i>Relationship 5: State Autonomy versus Enabling Institutional Environment</i> .....	119
5.2.6 <i>Relationship 6: Country Context versus Enabling Institutional Environment</i> .....	120
5.2.7 <i>Relationship 7: State Capacity &amp; Institutional Arrangements versus the Enabling Institutional Environment</i> .....	120
5.2.8 <i>Relationship 8: the State Capacity &amp; Institutional Arrangements versus Human Digital Capability Development</i> .....	121
<b>CHAPTER 6: CONCLUSION AND RECOMMENDATIONS .....</b>	<b>121</b>
6.1 CHARACTERISATION OF SOUTH AFRICA AS A DEVELOPMENTAL STATE .....	122
6.2 ICT4D DISCOURSE IN THE CONTEXT OF CHARACTERISATION OF SOUTH AFRICA AS A DEVELOPMENTAL STATE.....	124
6.3 THE EXTENT TO WHICH SOUTH AFRICA'S ICT POLICY REFLECTS THE DS AND ICT4D THEORIES .....	125
6.4 CONCLUSION .....	126
6.5 RECOMMENDATIONS .....	127
<b>REFERENCES .....</b>	<b>129</b>
<b>APPENDIX A: ICT4D SEMI-STRUCTURED INTERVIEW QUESTIONS.....</b>	<b>142</b>
A.1 <i>Introduction and Interview Protocol</i> .....	142
A.2 <i>ICT4D Interview Questions</i> .....	142
<b>APPENDIX B: DS SEMI-STRUCTURED INTERVIEW QUESTIONS.....</b>	<b>143</b>
B.1 <i>Introduction and Interview Protocol</i> .....	143
B.2 <i>Developmental State Interview Questions</i> .....	144
<b>APPENDIX C: E-HEALTH SEMI-STRUCTURED INTERVIEW QUESTIONS.....</b>	<b>144</b>

<i>C.1 Introduction and Interview Protocol</i> .....	144
<i>C.2 e-Health Policy Discourse Interview Questions</i> .....	145
<b>APPENDIX D: POLICY REVIEW PANEL SEMI-STRUCTURED INTERVIEW QUESTIONS ....</b>	<b>145</b>
<i>D.1 Introduction and Interview Protocol</i> .....	145
<i>D.2 Policy Review Panel Interview Questions</i> .....	146
<b>APPENDIX E: LETTER OF CONSENT AND CONFIDENTIALITY .....</b>	<b>146</b>

## List of Tables

Table 3.1	Characteristics of Respondents and Data Sources
Table 5.1	Tabulation of frequencies of DS and ICT4D themes found in ICT Policy
Table 5.2	Tabulation of frequencies of ICT4D themes found in ICT Policy
Table 5.3	Tabulation of frequencies of DS themes found in ICT Policy

## List of Figures

Figure 1: Key Themes and Sub-themes of the DS Conceptual Framework

Figure 2: Key Themes and Sub-themes of the ICT4D Conceptual Framework

Figure 3: Research designs underpinning this study

Figure 4: Theory-building Data Collection Steps

Figure 5: Reflection of ICT4D Theory in the e-Government Policy

Figure 6: Reflection of DS Theory in the e-Government Policy

Figure 7: Reflection of e-Education White Paper of 2004 in the ICT4D Theory

Figure 8: Reflection of e-Education White Paper of 2004 in the DS Theory

Figure 9: Reflection of ISAD Plan of 2006 in the ICT4D Theory

Figure 10: Reflection of ISAD Plan of 2006 in the DS Theory

Figure 11: Reflection of ICT4D Theory in ICT R&D and Innovation Strategy of 2007

Figure 12: Reflection of DS Theory in the ICT R&D Strategy of 2007

Figure 13: Reflection of ICT4D Theory in the NeSPA of 2010

Figure 14: Reflection of DS Theory in the NeSPA of 2010

Figure 15: Reflection of ICT4D Theory in the GPG ICT Development Strategy of 2011

Figure 16: Reflection of DS Theory in the GPG ICT Development Strategy of 2011

Figure 17: Reflection of ICT4D Theory in the NDP of 2012

Figure 18: Reflection of ICT4D Theory in the NDP of 2012

Figure 19: Relationships between DS and ICT4D Conceptual Frameworks

# Chapter 1: Evolution of Developmental States and ICT4D

## 1.1 Context and Overview

Throughout history, countries have continually sought better ways to achieve economic growth and social development for their citizens. Development is defined by the United Nations as “to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community.” (UNDP, 2001). Holistic development entails both wealth creation through economic growth, as well as equitable distribution of that wealth in order to ensure human development (World Bank, 2004). Equitable growth is also defined as “a high rate of economic growth combined with equitable distribution of income and wealth, with egalitarianism meaning that all segments of society are able to share in the benefits of the growth”(Edigheji, 2010:13). The world has seen many instances of economic growth without requisite human development (World Bank, 2004).

Developing economies are faced with the challenge of devising ways to leapfrog developmental stages and put their nations on par with the developed world, to “catch up” with the developed world (Mkandariwe, 2010:59). Shunning this challenge could condemn these countries to the margins of history and perpetual dependency on developed nations. South Africa is one of the most recent African countries to achieve democracy and majority rule. Its development was for centuries lopsided by racial segregationist policies, to favour a minority and exclude the majority of its citizens. As a result, the country is confronted with an enormous legacy of socio-economic disparities, high youth unemployment, and poverty levels that rank amongst the highest in the world (UNDP, 2010). The recent United Nations Human Development Index (HDI) report reflects South Africa at a pitiable ranking of human development (UNDP, 2011).

At the turn of the millennium, South Africa focussed its attention on building a developmental state (DS) in order to accelerate its development and thereby address its burning socio-economic challenges (Gumede, 2009:13). A developmental state was pioneered by Japan in the aftermath of World War II (Castells, 1992; Fine, 2006; Beeson, 2009; Ali, 2010). It is a capacitated state that achieves development through sagacious intervention in the market, harnessing the strengths of all its social players, harmonising

their competing interests, and overseeing and directing these social forces towards achievement of common national developmental goals. A DS achieves all this while remaining immune from capture by any of those social forces (Schiller 1982; Evans, 1989; Mkandawire, 2001; Pillay, 2007). South Africa has in addition committed itself to achieve the United Nation's Millennium Development Goals (MDG) by 2015. These goals are to eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women, reduce child mortality, improve maternal health, combat HIV/AIDS, malaria, and other diseases, ensure environmental sustainability, and develop a global partnership for development (MDGSA, 2010). A DS could therefore also be seen as a key vehicle to achieve these MDG goals.

Indeed, South Africa has a case to make for a DS. In fact, the DS route could be the only way forward for South Africa, especially with the recent global economic crisis having shown that unregulated or self-regulating markets are in the long run unsustainable not only for improvement of human well-being, but also for the market itself (Edigheji, 2010:1). The global economic crisis has thus strengthened the case for developmental states in this century, as evidenced by nationalisation of banks by pro-market states like the US and the UK (Edigheji, 2010:31), and the intervention by the European Union in the economy to rescue crisis affected countries like Portugal, Ireland, Greece, and Spain through imposition of austerity measures. Chang has also shown that even developed countries like France, the UK and US who are today's main proponents of a self-regulating market actually achieved their own development through state-interventionist policies similar to those of a DS (Chang, 2010:86).

In addition to aspiring to a DS, South Africa has also recognised the pivotal role of Information and Communication Technologies (ICTs) in driving development, and crafted its vision as "to establish South Africa as an advanced Information Society in which Information and ICT tools are key drivers of economic and societal development." (Mbeki, 2001). An Information Society is one that is enabled by ICTs, and is defined as a "people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life." (WSIS, 2003). It is a society in which the

production, recording, processing, and retrieving of information in organized networks plays the central role (Castells, 1996).

Pursuant to its Information Society vision, South Africa has developed a number of ICT policies, and launched a number of ICT for Development (ICT4D) projects. The most recent policy initiative is the ICT Colloquium of the Department of Communications (DoC, 2012), whose aim is to create a national integrated ICT policy for South Africa.

This research locates itself within the field of ICT policy and regulation. It investigates the extent to which South Africa's ICT policy supports the twin aspirations of pursuing socio-economic development through building a DS, and establishing an advanced Information Society. This chapter sets the background for this research report. The first part traces historical origins of developmental states, and then reviews academic discourse on the extent to which South Africa could be considered a DS. The conclusion drawn is that while South Africa has some attributes of a DS, it is still far from becoming one, and can at best be considered a weak DS. Next the historical evolution of ICT4D is considered, followed by a review of South Africa's various initiatives to build an Information Society and to harness ICTs for socio-economic development. The conclusion drawn is that South Africa's ICT-driven initiatives have thus far failed to deliver on their stated objectives. Finally, South Africa's ICT policy comes under the spotlight, the rationale being that since South Africa aspires to build a DS that is anchored on ICTs (PNC on ISAD, 2006), its ICT policy objectives would be expected to provide the necessary enablers for such a construction.

The summary conclusion is that since South Africa is still a far cry from becoming a DS, and ICT4D projects to build the DS are not delivering, there is a need to analyse South Africa's ICT policy to determine the extent to which it encompasses and reflects both the DS and ICT4D theories. For that analysis to be possible, theoretical models of a DS and ICT4D should be constructed, and South Africa's ICT policy assessed against those models.

## 1.2 Developmental State Discourse in South Africa

Johnson (1982) is credited with coining the phrase “developmental state”, which he used to explain the post-World War II approach followed by Japan to rapidly industrialise its economy and achieve growth and development. The initial conception of a DS posited by Johnson was "a state in which the political elites aim at rapid economic development and give power and authority to the bureaucracy to plan and implement efficient policies" (Johnson, 1982). Japan is one of four East Asian states that are considered as pioneer developmental states (DS), the others being South Korea, Taiwan, and Singapore (Castells, 1992). These countries followed a state-interventionist approach to economic growth and social development. In this approach, the state directly intervenes in the market in order to drive a socio-economic developmental agenda, instead of allowing the market forces of demand and supply to take their supposedly natural course. The success of these states in orchestrating rapid industrialisation of their economies and thereby leapfrogging developmental stages presented fresh hope for many developing economies around the world. Since then, much focus has been put not only on studying these DS phenomena, but also on trying to emulate and replicate their successful paradigms in other developing countries. The recent global economic crisis of 2008 which saw states like the US and UK nationalising banks, has also focused the world’s attention on the essential role of the state in intervening constructively to regulate the market for sustained economic growth, human well-being and protection of the market itself (Edigheji, 2010:1).

Thabo Mbeki, the second post-apartheid president of South Africa whose tenure ran from the year 1999 to 2008, is attributed with introducing the concept of a DS into local political and academic discourse around 2001 (Ali, 2010:2; DA, 2010). His statements on the concept of a DS followed the publishing by Thandika Mkandawire of a landmark article on the DS in Africa (Mkandawire, 2001). For six years after 2001, the concept of a developmental state remained mere rhetoric and political expediency, until some attributes thereof were finally defined by the ruling party at its 52<sup>nd</sup> National Conference in 2007 (Kuye, 2011:51). The four key attributes of the envisaged South African developmental

state are defined in the ruling party's National General Council Discussion Document as follows:

- The first attribute of a developmental state in our conditions should be its strategic orientation: an approach premised on people-centered and people-driven change, and sustained development based on high growth rates, restructuring of the economy and socioeconomic inclusion.
- The second attribute of a developmental state should be its capacity to lead in the definition of a common national agenda and in mobilising all of society to take part in its implementation. Therefore, such a state should have effective systems of interaction with all social partners, and exercise leadership informed by its popular mandate.
- The third attribute should be the state's organisational capacity: ensuring that its structures and systems facilitate realisation of a set agenda. Thus, issues of macroorganisation of the state will continue to receive attention. These include permutations among policy and implementation organs within each sphere, allocation of responsibilities across the spheres, effective inter-governmental relations and stability of the management system.
- The fourth attribute should be its technical capacity: the ability to translate broad objectives into programmes and projects and to ensure their implementation. This depends among others on the proper training, orientation and leadership of the public service, and on acquiring and retaining skilled personnel (ANC, 2010).

Some of the reaction to what was seen as a generic textbook definition of a DS was that “unfortunately, however, there is lack of a precise definition of the concept. Consequently, there is no consensus among South African policy-makers and academics alike on the nature, policy objectives and institutional characteristics of a democratic developmental state. This is likely to make it difficult for South Africa to construct a democratic developmental state.” (HRSC, 2008).

Since the year 2007, no practical steps were taken to further evolve the defined key attributes into policy objectives and associated strategies to build a developmental state in South Africa. ANC Member of Parliament, Professor Ben Turok, has lamented this stagnation by remarking that "South Africa is becoming a charity rather than a developmental state" (HSRC Review, 2011). Other researchers have stated that "the developmental state model so far is a superficial one in South Africa in which the deep social interventions typical of the Taiwans and the Koreas .... is so far missing. ....Here we are very far from the world of the developmental state" (Freund, 2007). Observing that South Africa already boasts of being a DS without even starting to tread the path of constructing one, Edigheji (2010) remarked that "there is already a tendency among policy-makers to proclaim South Africa as a developmental state – even before undertaking the hard tasks of designing and strengthening developmentalist institutions and formulating and implementing policies that will enable it to achieve its developmentalist goals" (2010:29). This is also evidence that South Africa has not yet begun to construct a DS. The state is not yet adequately capacitated to enhance human capability through effective provisioning of requisite basic services like education, health and to some extent social welfare. Service delivery protests could be testimony to this fact.

In short, South Africa has a stated goal to become a developmental state, and political will and commitment to pursue that goal is clearly evident. It was recently emphasised by the Minister of Public Enterprises that "the developmental state in South Africa has the objective of actively intervening in the economy to drive investment in targeted areas to achieve a long term vision of a higher value added, labour absorptive and racially integrated economy" (Gigaba, 2011). The envisaged South African DS will not only be democratic, but interventionist and will have "the capacity to give leadership in the definition of a common national agenda and in mobilising all sectors of society to participate in implementing that agenda" (PCAS, 2008:119; as cited by Edigheji, 2010:2). What remains is to transcend the rhetoric and take concrete steps to pursue that goal, which many scholarly studies indicate is within the capability of South Africa to achieve (Chang, 2010; Edigheji, 2010; Evans, 2010; Mkandariwe, 2010; Mohamed, 2010; Moses, 2010).

Given this reality of South Africa not being a DS, it is therefore not yet possible to conduct an academic study of the contribution of ICTs towards the developmental state in South Africa. Instead, this research focuses on how South Africa's ICT policy reflects the

developmental state theory, given South Africa's stated ambition and aspiration to pursue that goal.

As stated in the context and overview section, the focus of this research is to investigate how South Africa's ICT policy reflects the twin aspirations of building a DS and creating an advanced information Society. The foregoing was an overview of the historical origins of the concept of a DS in the world, as well as its entry into the South African political and academic discourse. A high-level assessment was also made of the extent to which South Africa could be considered a DS. The following section describes ICTs and their role in development, as well as South Africa's endeavour to establish an Information Society.

### **1.3 Information Society Discourse in South Africa**

The United Nations Development Programme (UNDP) defines Information and Communication Technologies (ICTs) as "...information-handling tools—a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. They include the 'old' ICT of radio, television and telephone, and the 'new' ICT of computers, satellite and wireless technology and the Internet. With appropriate content and applications, these tools are now able to work together, and combine to form a 'networked world'—a massive infrastructure of interconnected telephone services, standardized computing hardware, the Internet, radio and television—which reaches into every corner of the globe." (UNDP, 2001). It is evident from this definition that ICTs process both analogue (e.g. voice) and digital information types. ICTs provide "the ability to access, adapt, and create new knowledge using new information and communication technology" (Warshauer, 2003:9 as cited by Vaughan, 2006:2); for social, political, and economic development purposes.

The society associated with an ICT-enabled socio-economic environment is called the Information Society, defined as "a social structure where the sources of economic productivity, cultural hegemony and political-military power depend, fundamentally, on the capacity to retrieve, store, process and generate information and knowledge." (Castells, 1994:3). E-Transformation or the application of ICTs for development (ICT4D) can thus be considered as the process of building an Information Society. Hanna defines this process as "e-development, ICT-enabled development, information society, and knowledge

economy, collectively. E-transformation is about promoting a new development strategy paradigm, one adapted to the opportunities and challenges arising from ICT. It signifies deep changes in the economy and society brought about by the effective deployment and diffusion of information and communication technology” (Hanna, 2010b:16). Given these overlapping definitions of e-Transformation and ICT4D, this research report uses both terms interchangeably.

The debate has shifted from whether ICTs can be effective catalysts for socio-economic development, to whether the slow pace and hurdles to effective adoption and diffusion of ICTs by developing economies will not entrench the already existing social divisions within and among countries, this time in the form of the digital divide (Castells, 1999:7-9). The debate has also shifted from ‘why’ ICT for Development, to ‘how’ comprehensive and holistic ICT policies can unleash human potential and enhance people’s capabilities to improve their lives (Labelle, 2005:v; UNCTAD, 2006). Real life examples also exist of how ICTs have been employed in the various spheres of human life, including fighting poverty, developing local community, accessing information about livelihoods, enabling better government, crisis prevention, research, environment management, health and fighting disease (Grimshaw & Talyarkhan, 2005:9-10; Labelle, 2005; Avgerou, 2008:138 as cited by Kunene,2010:3; ITU, 2011a). Including in achieving the Millennium Development Goals (Dzidonu, 2010). Research also abounds of countries whose developmental strategies were premised on effective exploitation of ICTs, among them Japan, Korea, Singapore, Malaysia, Philippine, Sri Lanka, India, Nepal, and Vietnam (Lallana, 2003:4).

Globally, the driving force behind the promotion of ICTs as developmental instruments is the International Telecommunication Union (ITU), a specialised agency of the United Nations. The three main tasks of the ITU are to allocate global radio spectrum and satellite orbits, develop the technical standards that ensure networks and technologies seamlessly interconnect, and strive to improve access to ICTs to underserved communities worldwide (ITU, 2011).

South Africa’s first public association of ICTs with development appears to be in 1995 when Nelson Mandela, the first post-apartheid president of South Africa, addressed the ITU Telecom 95 in Geneva. In his speech to the ITU, Mandela stated that “eliminating the

distinction between information rich and information poor countries is also critical to eliminating economic and other inequalities between North and South, and to improving the quality of life of all humanity...Given the fundamental impact of telecommunications on society and the immense historical imbalances, telecommunications issues must become part of general public debate on development policies. Telecommunications cannot be simply treated as one commercial sector of the economy, to be left to the forces of the free market.” (Mandela, 1995). It is important to note that even at that early stage Mandela suggested a state interventionist approach to leveraging ICTs for development. Mandela also offered South Africa as host for the next Telecom Conference which would take place in 1998.

In the same year of 1995, the then Deputy President Thabo Mbeki, addressed the Group of Seven Highly Industrialised Nations (G-7) Ministerial Conference on the Information Society in Brussels. He echoed the same sentiment that “given these disparities, it is clear that bringing the developing world on to the Information Super-Highway constitutes a colossal challenge. We have to address this challenge nevertheless, if we are to promote economic growth and development world-wide, consolidate democracy and human rights, increase the capacity of ordinary people to participate in governance, encourage resolution of conflicts by negotiation rather than war and do what has to be done to enable all to gain access to the best in human civilisation, within the common neighbourhood in which we all live.” (Mbeki, 1995). Mbeki also offered South Africa as host for the follow-up conference.

Indeed in May 1996 the G-7 Information Society and Development (ISAD) conference took place in South Africa per Mbeki’s offer, in what is considered as the first Information Society policy initiative by South Africa (Abrahams, 2010:3). At the conference, South Africa presented a position paper whose aim was “to highlight the importance of the information revolution for developing countries; to raise issues for the developing world regarding the information revolution; [and] to suggest policy pillars to empower developing countries in the global information society” (RSA, 1996:1). The five policy pillars suggested by the position paper, along with recommended next steps to pursue each one of them, focused on using the Global Information Society to meet the needs of the Developing World; creating the Information Society through co-operation between all sectors in a global way; developing a South African Information Infrastructure for the

Information Community, in a Global Context; applications to serve the needs of the developing world; and People Empowerment: investing in Human Resources (RSA, 1996:1-16). Hot in the footsteps of the ISAD Conference followed a conference on “Empowering Communities in the Information Society” which was held in Helderfontein, South Africa, from 15-17 May 1996. In the Helderfontein conference, government and civil society met to chart the way forward to an Information Society in South Africa (Van Audenhove, 2003:21-23). These two conferences are seen as critical milestones in catapulting the Information Society agenda to the centre stage of both government and civil society (ibid).

The aftermath of above two conferences triggered off the historic process of creating telecenters and Multi-Purpose Community Centres (MPCC) across South Africa. The MPCC strategy was key in Sri Lanka’s e-strategy to “focus on societal applications and content development targeted at poverty reduction and social development, connectivity and telecenters to promote access to the Internet and computer literacy, and the use of mass media for broad based dissemination of information and knowledge” (Lallana, 2003:4-14). Sadly, these significant initial efforts to empower the South African society through telecenters and MPCCs were constrained by the fact that “information society policy fell under the same ministry [of Communications] as infrastructure policy and legislation, hence, infrastructure policy was always going to lead.”(Abrahams, 2012:6). This infrastructure policy dominance over Information Society policy also meant that “the focus for the period 1996-2006 would be telecommunications and many poor public policy choices would be made along the way. The telecommunications operators and IT service providers would reap large revenues, but much of South Africa would remain under-developed and excluded from the benefits of the information society.” (Abrahams & Goldstuck, 2010:20-21)

In the period following 1996 leading up to a decade, the Information Society and ICT4D discourse was characterised more by political rhetoric than tangible action. Van Audenhove (2003) argues that the rhetoric was necessary for South Africa to internalise and contextualise what Information Society meant for the country. Amidst this political rhetoric, however, a few national Information Society-related ICT policies were developed, and they are the focus of the next section.

## **1.6 South Africa's Information Society Policy and Institutions**

A number of South African institutions and state organs have a direct impact on Information Society policy. They include the Department of Arts, Culture, Science and Technology (DACST), the Department of Trade and Industry (DTI), the Department of Public Service and Administration (DPSA), the Department of Public Enterprises (DPE), the Government IT Officers' (GITO) Council, the Department of Health (to focus on telemedicine), the Department of Education (DoE), and the Department of Communications (DoC).

The DACST promotes science and technology in South Africa, with IT as one of the major areas of interest. The DTI deals with diffusion of technology within the economic sector, and focuses on e-business for Small Medium and Micro Enterprises (SMMEs). The DPSA oversees the deployment of information technology in the public sector, and focuses mainly on e-government. The DPE manages all State-Owned Enterprises (SOE's), and plays a major role in telecommunications reform and market structure, which includes licensing of rival operators to the incumbent, Telkom. The GITO Council advises the government on IT requirements to enhance government service delivery to South African citizens. The DoE focuses on online educational content and e-education (DPSA, 2001:12-14). The DoC has hitherto been the most dominant state institution in the ICT policy space (Abrahams, 2010:2), as further evidenced by the recent ICT Colloquium which seeks to create a national integrated ICT policy for South Africa (DoC, 2012).

In the rest of this section we provide an overview of only four of the seven Information Society-related policies of South Africa, namely the e-Government policy from the Department of Public Service and Administration (DPSA, 2001), the e-Education White Paper from the Department of Education (DOE, 2003), the Information Society and Development Plan from the Presidential National Commission on ISAD established by former state president Thabo Mbeki (PNC on ISAD, 2006), and the the Gauteng Provincial Government (GPG) ICT Development Strategy of 2011. We conduct a high level review of each one of these policy documents, and assess the extent to which their objectives could be considered achieved. The other three policies to be analysed later in this report are the ICT R&D and Innovation Strategy of 2007, the National e-Skills Plan of Action (NeSPA) of 2010, and the National Development Plan (NDP) of 2012.

### **1.6.1 The e-Government Policy of 2001**

South Africa's e-government policy was produced by the Department of Public Service and Administration (DPSA) after an extensive consultative process that consisted of six phases, and ran from June 1999 to November 2000.

The main issues the policy seeks to address are e-governance, e-services, and e-business.

E-governance is defined therein as “the application of IT to intra-governmental operations, including the interaction between central, provincial and local government. This includes paperless messaging and reporting, electronic document management and archiving, integrated systems for finance, asset and human resource management (including training), as well as systems for real-time collaboration and project management, conferencing, decision support and executive information.” (DPSA, 2001:4-5).

The policy defines e-services as “the application of IT to transform the delivery of public services from ‘standing in line’ to online: anytime, anywhere, by any means, and in interactive mode. The services affected include general information and regulations, education and culture, health consulting and telemedicine, benefits, taxation etc. The new delivery vehicles also offer the opportunity to let people participate in government, by collecting direct and immediate public input in respect of policy issues, specific projects, service delivery problems, cases of corruption etc.” (ibid);

The policy defines e-business as “the application of IT to operations performed by government in the manner of business-to-business transactions and other contractual relations. An obvious example is the procurement of goods and services by government: e-procurement covers the steps from electronic tender to electronic payment. More cases become available for IT application with the spread of outsourcing and the development of public-private partnerships.” (ibid). The envisaged benefits from leveraging ICTs to achieve the above policy objectives include increased productivity, cost effectiveness and improved service delivery; and successful delivery of these will be underpinned by the four IT focus areas of interoperability of government systems, protection of these systems and the data that they process and store from being compromised, achievement of economies-

of-scale by leveraging the government's collective buying power, and elimination of duplication across similar government IT functions.(ibid, 2001:8).

Finally, the policy discusses two fundamental requirements that should be in place in order to sustain the above focus areas. The two fundamentals are crucial IT skills, and an IT Research Programme. For each fundamental requirement as well as the four underpinning IT focus areas, policy recommendations are made, responsibility and accountability assigned, and target delivery periods specified.

Have the 2001 e-government policy objectives been achieved thus far?

To answer this question we quote Fraser-Moleketi, Minister for DPSA herself, as cited by Abrahams (2009), who said: "Any incremental improvement in public services through ICT spend should positively impact on millions of people. Can we really say that this is the case? How many ICT projects that have been delivered in the past few years have contributed positively to the millions of people in South Africa?" (Fraser-Moleketi, cited in ITWeb Informatica, 2008).

In its e-Barometer Report of 2010, the World Economic Forum (WEF) also reported: "In the budget vote presentation of the Department of Public Service and Administration on the 21st April 2010, the then Deputy Minister stated 'In the case of South Africa, it is widely acknowledged that there has been limited e-Government progress over the last five years ... There are too many instances of disjointed government services, high delivery costs, and services that are disconnected and complicated to use. It is now time to re-set South Africa's e-Government vision and strategy, to set new targets for the next generation of services, service delivery, and public services and move to higher levels of e-Government maturity.' Despite this restatement of the importance government attaches to e-Government, the progress has been less than stellar. The lack of an overall e-Government strategy leaves government departments with no exemplary blueprint of best practice. Key departmental ICT tenders have also failed to deliver the promised progress." (WEF, 2010:35-36).

Clearly there's still a way to go before the e-Government policy objectives are realised.

## 1.6.2 The e-Education White Paper of 2004

South Africa's e-education policy was produced by the Department of Education (DoE) as a draft in 2003, and gazetted in August 2004.

The White Paper locates the use of ICT in society and education at three levels: within the African continental context, within South Africa as a country, and within South African provincial governments. It defines e-education as follows: "In the South African context, the concept of e-Education revolves around the use of ICT to accelerate the achievement of national education goals. e-Education is about connecting learners to other learners, teachers to professional support services and providing platforms for learning. e-Education will connect learners and teachers to better information, ideas and one another via effective combinations of pedagogy and technology."(DOE, 2003:17). It also sets the e-education policy goal as being to ensure that "every South African learner in the general and further education and training bands will be ICT capable (that is, use ICT confidently and creatively to help develop the skills and knowledge they need to achieve personal goals and to be full participants in the global community) by 2013." (DOE, 2003:19).

The paper then provides an e-education policy framework with four sub-themes: Equity in access to information, in competency and in allocation of resources, access to reliable ICT infrastructure, capacity building that is aimed primarily at educators, and norms and standards to clarify compliance requirements, responsibilities and implementation mechanisms (DOE, 2003:23-24). Finally the White Paper outlines strategic objectives, funding and resourcing options, and implementation strategies.

Have the e-Education policy objectives been achieved thus far?

After conducting an extensive survey of ICTs in South Africa's educational institutions under the auspices of Infodev, and noting some success stories in the projects launched to advance e-education, Isaacs (2007) laments that "of the 25,582 public schools in South Africa, 5,778 have computers used for teaching and learning and 13,011 have one or more computer for administrative purposes. Less than 5% of schools can afford Internet connections and are integrating Internet for teaching, learning, communication, and collaboration. The report states further that in the absence of broadband connectivity, the

quality of the use of ICT for teaching and learning is low. Most schools still struggle to access the 50% discount on Internet services five years after it was first proposed. Schools still don't get ADSL services at discounted rates, and the telcom division that sells wholesale bandwidth has not yet come to an agreement with ISPs to discount upstream bandwidth to them so that they in turn can give discount to schools" (Isaacs, 2007:9-10).

The cost of access is thus still a big constraint for schools. Isaac's finding has recently been confirmed by the WEF's e-Readiness Report which stated that: "ICT is essential in learning institutions, not only for administration, but for teaching and learning as well. Without computers and broadband penetrations, educational institutions are going to fall further and further behind in being able to ensure their students are educated to be able to partake in the global community. Although there are many initiatives underway, there needs to be a clear ICT strategy in education that can be implemented, monitored and measured. This needs to be done in collaboration with the DoC and the Department of Education to ensure that the DoE strategy aligns itself with the National ICT strategy." (WEF, 2010:41).

### **1.6.3 The ISAD Plan of 2006**

In 2001 Thabo Mbeki, who was by then President of South Africa, established the Presidential National Commission (PNC) on ISAD, as well as the Presidential International Advisory Council (PIAC) on ISAD. The PNC on ISAD consisted of representatives from the public and private sectors, and its purpose was to advise Government on the optimal use of ICT to address South Africa's development challenges and to enhance South Africa's global competitiveness. The PIAC on ISAD on the other hand consisted of chief executive officers (CEOs) from major international corporations and experts active in the field of information and communication technology, and its role was to advise Government on addressing the digital divide (DOE, 2003:9). In 2002 PIAC on ISAD "recommended that the country should develop a plan around which all stakeholders would be rallied for the building of an Information Society and which would be a clarion call to all to ensure that activities, initiatives, projects and programmes are aligned, coordinated and integrated. The World Summit on Information Society (WSIS), in which South Africa participated actively, in both the Geneva and Tunis phase in 2003 and

2005, respectively enjoins countries to develop national strategies, to guide the building of the Information Society.” (PNC on ISAD, 2006:1).

In 2006, ten years after the 1996 ISAD conference, the PNC on ISAD developed the ISAD Plan whose dual aim was to articulate a vision for the type of Inclusive Information Society that South Africa aspires to become, and to provide a framework that will guide all initiatives in the area of building an Inclusive Information Society (PNC on ISAD, 2006:2). The South Africa Information Society vision is articulated in the ISAD Plan as “to establish South Africa as an advanced Information Society in which Information and ICT tools are key drivers of economic and societal development.” (ibid).

The ISAD Plan consists of ten policy pillars, which are further unpacked and articulated in the plan (PNC on ISAD, 2006:3-10). The first pillar is the policy and regulatory Environment, and its objective is to ensure a policy and regulatory environment which is predictable, investor friendly, progressive, and enabling, and that strengthens the capacity of the telecoms regulator. The remaining nine pillars focus respectively on universal access, local content, digital inclusion, human capital and skills development, ICT R&D, coordination and integration, funding, institutional arrangements, and measuring the Information Society.

Can the ISAD Plan be considered as an e-Strategy for South Africa? A very recent comparative study of e-strategies conducted by Hanna and Knight concluded to the contrary:

South Africa cannot be said to have an e-transformation strategy—the only effort in this direction was the Information Society and Development (ISAD) Plan of 2006, presented 10 years after the ISAD international conference hosted by the Government. But that plan was a set of goals rather than a strategy for e-development. A new national e-skills plan is critical, but lacks detail and is disconnected from other levers for coevolution of the ICT sector with the other major economic sectors. Subnational policy and strategy is largely concerned with infrastructure connectivity issues like broadband or access centers, rather than with services. The many gaps in the policy landscape create an insufficient basis for e-transformation. What e-development is happening is the result of market forces, with little or no

government role in setting coherent policies, and coordinating investments and building capabilities. What emerged has mostly benefited the established and emerging upper and middle classes. (Hanna & Knight, 2012:198).

On the statements contained in the ISAD Plan itself, an assessment has been made that “the rhetorical nature of these statements must have made it impossible for even the most professional public servant to seriously pursue any particular course of action. The ISAD plan fell down on numerous fronts: (a) lack of strategy – there were just too many imperatives, objectives, pillars, principles and targets to give any clarity to the mission and purpose of government; (b) the actions of government were contrary to the stated intentions as regards a ‘predictable, investor friendly, enabling policy and regulatory environment’; (c) some of the statements were beyond the ambit of ISAD, such as the requirement to develop ‘a sustainable science, technology and research sector’.” (Abrahams & Goldstuck, 2010:24).

What progress has been made in pursuing the ISAD Plan objectives?

To answer this question, we cite the recommendations of the World Economic Forum (WEF) in its 2010 eBarometer report. This report is designed to measure a country’s progress towards an Inclusive Information Society, as required by the tenth pillar of the ISAD Plan. The WEF recommends that “for South Africa to advance more rapidly towards an Information Society, it needs an overall ICT policy framework and strategy that includes all the subsectors that the ISAD plan has identified. The former Minister of Communications announced in his budget speech of 2009, and reiterated in 2010, that this was underway. To quote ‘Last year I pronounced that my department will develop an Integrated ICT Policy Framework which will seek to position ICT as a central enabler for effective service delivery to transform the lives of our people. This comprehensive policy framework will be able to move us towards a people-centred and people-driven, inclusive and sustainable digital economy ... I will soon be making a preliminary discussion paper available to the public for more comprehensive deliberations and inputs.’ To date this has not been completed. Until this guidance is provided, with clear targets and outcomes set, SA will continue to fall behind in growing the Inclusive Information Society at a similar rate to our peer countries. It is therefore recommended that this ICT policy framework and strategy is finalised as soon as possible and the requisite budgets are set aside for the targets to be attained.” (WEF, 2010:23-24).

Evidently, the goal of achieving an inclusive Information Society as envisaged by the ISAD Plan is still not yet within reach.

#### **1.6.4 The GPG ICT Development Strategy of 2011**

Whereas the primary focus of this research report is on South Africa's national ICT policy, the inclusion of this Gauteng provincial ICT Development Strategy of 2011 is mainly due to the fact that it is the latest comprehensive ICT policy endeavour in South Africa since the ISAD Plan of 2006. Secondly, it is the only South African ICT policy that explicitly states its mission as being to enable both the building of a South African DS and an inclusive Information Society (GPG, 2011:2), and is the first to advocate Green ICT and environmentally friendly development (GPG, 2011:34-35). The researcher therefore saw appropriate that it be included in order to analyse it against DS and ICT4D theories and also to compare how it would perform against the older national ICT policies.

The GPG ICT Development Strategy of 2011 was produced by the Gauteng Provincial Government (GPG) following recommendations by the ISAD Plan of 2006 that provincial Information Society models should be developed (PNC on ISAD, 2006:86-89), and is informed by the Gauteng Employment, Growth, and Development Strategy (GEGDS) for 2010-2014. The GPG ICT Development Strategy states its vision as being to build "a fully fledged knowledge economy in Gauteng wherein the information society harnesses the evolution of ICT and ensures that knowledge creation, sharing as well as information manipulation become the engine for economic growth and development" (GPG, 2011:7).

The topics covered by the GPG ICT Development Strategy include the background to the strategy; the vision and strategic objectives of the GPG knowledge economy; a strength, weaknesses, opportunities and threats (SWOT) analysis of the ICT development in the Gauteng province; outlines of strategic focus areas and recommendations; and institutional arrangements required for the implementation of the strategy.

The strategy has 9 strategic objectives and 3 main goals. The strategic objectives are "to provide universal access to broadband (as defined by the national broadband policy) for citizens, business as well as government institutions; to build the Network Infrastructure

and Information Super-highway to encourage the development of advanced workforce with better ICT skills; to enhance economic productivity through ICT infrastructure development in order to lower the cost of doing business and increase connectivity for companies especially SMMEs; to increase the ICT skills capacity within the public and the private sectors to create a pool of ICT practitioners and entrepreneurs; to improve service delivery by providing high quality ICT services through e-government; to build an economic and industrial sector with a focus on ICT, and in particular, software industry; to ensure that innovation becomes part of the economic network in Gauteng Province in relation to ICT; to reduce the carbon footprint of the province through Green ICT; [and] to create employment in the ICT sector”. (GPG, 2011:8).

The goals of the GPG ICT Development Strategy are stated as “Goal 1 Productivity: To create a heightened environment for ICT-enabled economic activity amongst large firms and SMEs; for electronic government services to citizens and business; and for support measures for ICT research and development (R&D). Goal 2 Connectivity Networks: To foster the diffusion of ICT fixed and mobile broadband infrastructure and the connectedness of SMMEs, schools and households, in ways that contribute to reducing the cost of communications and, therefore, of economic participation. Goal 3 ICT skills Capacity: To address the demand for skills in the broad ICT infrastructure and ICT services sectors, as well as in the society at large; and to provide for online learning in every primary and secondary school classroom; as means to increasing South Africa’s future competitiveness and laying the foundation for ICT innovation and sector development.” (GPG, 2011:7).

Given that the strategy was fairly recently developed, it would be premature for this research report to reference opinions on how effective it has been seen to be.

### **1.6.5 Scholarly Perspectives on South Africa’s ICT Policy**

One of the frequent criticisms levelled at South Africa’s policies is that they tend to be pitched at idealistic and unachievable levels of expectations. Schlemmer (2011) cynically points out that “South Africa can, however, challenge the world in one form of production - the output of arcane and overly ambitious policy documents that will wondrously claim to fix all these problems. The record, however, is that they will fail the test of implementation. They tend to

have one thing in common - they are pitched at maximum effects whereas all successful policy is aimed at optimal effects - first and foremost taking realistic account of impediments and counterproductive consequences.” This suggests that there is no requisite capability to implement these ambitious policies, and there might be a need to set achievable policy goals and progressively aim for higher ones as the capability matures and confidence increases.

Nagy Hanna, a thought leader in harnessing ICTs for socio-economic development and transformation, has remarked that “South Africa represents an interesting case of an economically-divided country: partly highly developed, partly underdeveloped. Poor telecommunications policies have reinforced this divide, notwithstanding early visions and high aspirations of an inclusive information society. Highly-developed ICT industries and technological capabilities were not matched with policies and programs to leverage and diffuse ICT, enable local users to appropriate and adapt the new technologies, and promote an inclusive information society. The case promises rich lessons in the political economy shaping the information society.” (Hanna, 2010b:38). This points to a policy weakness which does not enable leveraging of world-class ICT infrastructure to build an inclusive information society.

Abrahams and Goldstuck aptly highlight weaknesses in South Africa’s Information Society And Development (ISAD) plan and the e-government policy, as follows:

The statement is made that the South African ICT policy and regulatory environment is globally recognised as being amongst the best in the world (The PNC on ISAD, c2006: 3). However, in reality, South Africa’s policy and regulatory dispensation has been roundly criticised from several quarters both at home and abroad (Horwitz & Currie, 2007), with few if any complimentary views expressed. The rhetorical nature of these [ISAD plan] statements must have made it impossible for even the most professional public servant to seriously pursue any particular course of action. The ISAD plan fell down on numerous fronts: (a) lack of strategy – there were just too many imperatives, objectives, pillars, principles and targets to give any clarity to the mission and purpose of government; (b) the actions of government were contrary to the stated intentions as regards a “predictable, investor friendly, enabling policy and regulatory environment”; (c) some of

the statements were beyond the ambit of ISAD, such as the requirement to develop “a sustainable science, technology and research sector”. As regards the latter point, a simple statement on ICT R&D would have sufficed. The expansive statement on R&D in the ISAD plan suggests a lack of awareness on the part of the drafters regarding the already substantial work done by other government agencies to foster a 21st century system of innovation, explaining their inability to craft an appropriate positioning for ICT R&D. Finally (d) there are some incomprehensible confusions such as the confusion of broadband and broadcasting, possibly due to a typographical error (ibid: 29) (Abrahams & Goldstuck, 2010:29-32).

This observation highlights the need for South Africa to match its ICT policy objectives to what is practical and realistic to achieve in the South African context, and for government institutions to work in a more coordinated fashion and avoid duplication of effort and cross purposing.

A positive and significant development that should be commended is the recent establishment of the Policy Review Panel (PRP) by the Department of Communications. The scope of the panel is described in the Terms of Reference as being to:

- 4.1 To review the ICT Policy Colloquium report.
- 4.2. The Panel shall review the current policy and regulatory framework in the ICT sector with a view to make recommendations on:
  - a) the appropriate ICT policy and regulatory framework that supports the growth and development of the country;
  - b) ways to achieve the desired ICT policy and regulatory framework, including its implementation options and timeframes where possible;
  - c) the potential impact of reform options on industry, consumers and the community;
  - d) To investigate progress and constraints in ICT Research and Development, ICT skills development, and ICT investment ICT industrial growth contribution
  - e) the principles that will underpin any new framework.

- 4.3. In doing its work, the Panel must take into account the following policy parameters:
- 4.3.1. the development and maintenance of diverse, innovative, efficient and effective ICT market that operates within a competitive environment and in the best interest of the South African public;
  - 4.3.2. The impact of policy settings on industry and government revenues;
  - 4.3.3. Appropriate ways to treat content and the services and applications used to deliver content, which are cross border in nature; and
  - 4.3.4. International ICT policy developments regarding convergence of technologies.
- 4.4. To co-ordinate and provide a forum for stakeholder interaction on all matters related the policy review process;
- 4.5. To liaise with other key stakeholders and agencies to ensure that their views are taken into account in the development of the final report.
- 4.6. In the first instance, the Panel shall provide a progress report to the Minister within three (3) months and a final report with recommendations within six (6) months of its establishment. The Minister may assign additional functions to the Panel during the course of its tenure. (PRP, 2012:2-3)

### **1.6.6 Chapter Summary**

This chapter has set the background for the research report, and overviewed DS and ICT4D discourse within the South African context. It highlighted the fact that despite some semblance of DS attributes, South Africa is still far from becoming one, and after theorising about the concept for at least eight years, the ruling party has finally come up with a definition of a DS for South Africa. Although that could be considered a progress indicator, there is still a policy and strategy vacuum on how South Africa intends to pursue the goal of becoming a developmental state. We've also seen that ICT-driven projects in South Africa are not delivering on their stated objectives, and the blame seems to be apportioned to ICT policy that is seen as idealistic and overly ambitious, not contextualised to concrete realities of South Africa's capabilities and developmental needs. Most of the ICT policies reviewed so far are also silent on the subject of a developmental state, even though discourse on a South African DS was already prevalent when these policies were formulated.

In the following chapter, scholarly literature and discourse is reviewed, in order to develop conceptual models of a DS and ICT4D. The theoretical model will be used as lens through which the extent to which South Africa's ICT policy reflects DS and ICT4D theories will be assessed.

## **Chapter 2: Literature Review on Conceptualisations of DS and ICT4D Theories**

### **2.1 Overview**

This chapter reviews academic literature on the concepts of a DS and ICT4D, in order to develop theoretical frameworks of DS and ICT4D. The frameworks will be used as benchmarks to assess the extent to which South Africa's ICT policy supports DS and ICT4D theories. A review of relevant academic literature and discourse exposes four (4) main themes for the DS, and five (5) main themes for ICT4D. Section 2.2 constructs a theoretical framework of a DS, followed by a theoretical framework of ICT4D in section 2.3.

### **2.2 Developmental State Theoretical Framework**

A developmental state (DS) is “one that is active in pursuing its socio-economic developmental agenda, working with social partners, and has the capacity and is appropriately organised for its predetermined developmental objectives” (Gumede, 2011). It is a state that “is able and willing to create and sustain a policy climate that promotes development by fostering productive investment, exports, growth and human welfare.”(Castells,1992). Perhaps the main distinguishing characteristic of a DS is its application of selective industrial policies that seek to formulate and pursue socio-economic goals and drive the development process, instead of merely planning the rules of the economy and relying on market forces to ensure optimal allocation of resources (Chang, 2010:82; Beeson, 2009:9). This role of the state is defined by Robert Wade (1990) as “governing the market”, and the recent global economic crisis provides testimony that the state should in fact constructively intervene to regulate the market for sustained economic growth, human well-being and for protection of the market itself from failure (Edigheji, 2010:1).

The four (4) main themes of a theoretical developmental state identified in the academic literature review are a developmentalist ideology, state autonomy, state capacity & institutions, and country context.

### **2.2.1 Developmentalist Ideology**

A developmental state is one whose ideological underpinning is developmentalist in that it conceives its mission as that of ensuring economic development (Mkandawire, 2001:290; Edigheji, 2010:28). The DS “establishes as its principle legitimacy its ability to promote sustained development, understanding by development the steady high rates of economic growth and structural change in the productive system, both domestically and in its relationship to the international economy” (Castells, 1992:56-57). The state should also initiate a “hegemonic project to which key actors in the nation *adhere voluntarily*” (Mkandawire, 2001:290; Evans, 2010:46). Furthermore, Pillay (2007) argues that ‘development’ should not be limited to what the World Bank measures with the Gross Domestic Product (GDP) per capita indicator, because that is only of interest to investors who seek to maximize returns on their investments and says “little about the distribution of wealth and development of human beings” (Pillay, 2007:205). Developmentalism thus calls for a distributive social policy. It not only pursues industrialisation for economic growth, but includes simultaneously “implementing policies to redistribute income (intended to minimise unequal distribution resulting from industrialisation), to promote education, and to achieve other social and political goals” (Mukarami, 1992:xxiii; as cited in Edigheji, 2010:9). The developmentalist ideology characteristic of a DS requires the state to be single-mindedly committed to development of both the economic and human capability of its citizens.

The DS, led by elite bureaucrats, employs a powerful planning agency as a vehicle to orchestrate the implementation of calibrated industrial policies (Beeson, 2009; Chang, 2010; Kuye, 2011:54).

Whereas a notion exists that the bureaucrats should be highly educated elites (Johnson, 1982; Evans, 1989), Chang dismisses it by pointing out that even the pioneer developmental states, apart from Japan, started off with poorly skilled officials who were

sent to other countries for training (Chang, 2010:92). South Korea for instance sent its officials to Pakistan and the Philippines for training (ibid). Lack of bureaucratic capacity should therefore be more of a motive to construct a DS than to capitulate (Edigheji, 2010:3). Chang further describes the ideal bureaucrat as one that is diverse and generalist in training, as opposed to specialists and technocrats that might miss the big picture and have a narrowly focussed view of development (Chang, 2010:93). He thus refutes claims that the ideal bureaucrat should be an economist. In the case of Japan and South Korea, he points out that the bureaucrats were mostly lawyers, and in Taiwan and China mostly engineers (ibid).

The DS requires a powerful planning agency to drive selective industrial policies (Beeson, 2009; Chang, 2010). For the agency to be effective, it should have complete control over state-owned enterprises (SOEs) and the Central Bank (Chang, 2010:89). For Japan, an existing agency called Ministry of international Trade and Industry (MITI) was assigned the role of driving selective industrial policy and championing the developmental cause. In the case of South Korea, the planning agency was the Economic Planning Board (EPB) which pursued selective industrial policies and had total control over the banking sector (Chang, 2010:83). In the same period as Japan, France employed a planning agency called Commissariat Général du Plan (CGP – the planning commission) which also pursued sectoral industrial policy and made aggressive use of state-owned enterprises (Cohen, 1977; Hall, 1986, Hayward, 1986; Chang, 1994; as cited in Chang, 2010:84). The “hidden” US developmental state also pursued aggressive selective industrial policy in the post-World War II period, through a number of disguised agencies such as the Advanced Research Projects Agency (ARPA) and the National Health Institute (NHI) (Chang, 2010:85-86).

The single-most important goal of constructing a DS in the 21<sup>st</sup> century is human capability expansion, because it is the key driver of sustainable economic growth and social inclusion (Edigheji, 2010:13; Evans, 2010:44). It has also been argued that rapid educational and capability expansion is intricately linked to successful construction of a DS (Abe, 2006:9; Akoojee, 2010; Evans, 2010).

In summary, the developmentalist ideology theme of a DS requires pursuit of strong sectoral industrial policy by a powerful planning agency constituted by competent elite bureaucrats.

### **2.2.2 State Autonomy**

Autonomy of the developmental state means that the state should be independent and autonomous “from social forces so that it can use these capacities to devise long-term economic policies unencumbered by the claims of myopic private interests” (Mkandawire, 2007:290). Autonomy ensures that the developmental state remains immune from capture by specific social and global interests to the exclusion and detriment of others. State capture will result in government policies and rules protecting and serving the interests of powerful stakeholders (Schiller, 1982). Armed with autonomy, the developmental state should be able to intervene “decisively on behalf of the subordinate classes to achieve impressive results in terms of social development.” (Pillay, 2007:206).

Autonomy of the developmental state alone is not sufficient, because the state could use it in a “predatory manner” (Mkandawire, 2007:290) instead of using it to gain adhesion of key social actors. The state needs instead to be anchored in the society. This autonomy with social anchoring is called embedded autonomy, a concept coined by Evans (1995) to mean that a developmental state has to be “both autonomous from society, as well as deeply embedded with key interests in society” (Evans, 1995). Especially those interests that have a developmental agenda. Evans also states that “embedded autonomy depends on the existence of a project shared by a highly developed bureaucratic apparatus with interventive capacity built on historical experience and a relatively organised set of actors who can provide useful intelligence and a possibility of decentralised implementation” Evans (1989). The embedded autonomy characteristic therefore requires that while the developmental state is autonomous from undue capture and influence, it should simultaneously be embedded in society so as to be in touch with its pulse and be able to proactively identify and harness those key interests that can be instrumental in furthering the developmental agenda. Edigheji expands on this definition of autonomy and presents the concept of synergistic state-society relations (Edigheji, 2007 as cited in Edigheji, 2010:14). These synergistic state-society relations are characterised by trust and reciprocity, and the state has no dominance over its social partners, but provides overall guidance. This is in contrast to embedded autonomy where the state treats capital with mistrust and keeps it at arm’s length (ibid).

Another key enabler for state autonomy is local culture. The local population should be welcoming and supportive of an interventionist state (Beeson, 2009:13). Cultures of pioneer DS were tolerant and supportive of powerful interventionist states (ibid). This might explain the clandestine nature of the US developmental state (Chang, 2010), the culture in the US has been conditioned to be inimical to state intervention.

The focus of state autonomy should also include international interests which could also constrain local policy choices and developmental paths (Beeson, 2009:8). In the case of Japan, the US tolerated and even expediently supported the state interventionist policies of Japan, even though not in favour of them. As such, Japan's economic and political institutions remained immune from external (American) pro-market reformist pressures as the US desperately needed to gain as many allies as possible against the Soviet Union during the Cold War (Beeson, 2009:13). It is the reversal of this very same US policy that is attributed with the unwinding of Japan's DS, when at the end of the Cold War the US started to pressure Japan to open up its domestic economy (Mok, 2007; Beeson, 2009:17). Japan's over-dependence on the US had made it vulnerable to any US foreign policy shifts (Beeson, 2009:18).

Whereas in a 20<sup>th</sup> century DS decisions were taken almost unilaterally by the elite bureaucrats, 21<sup>st</sup> century DS should arrive at developmental decisions through a participatory democratic process (Edigheji, 2010:8; Evans, 2010:43). This will not only ensure sustainable decisions and programmes, but also accede to the reality that there are now many more active and diverse stakeholders than before, and harmonising their diverse and very often conflicting interests is a more complex, daunting and challenging process than before (ibid).

The state autonomy characteristic requires that the developmental state be autonomous and resilient to capture by sectoral interests, to be embedded and have synergistic relations with society. The state should be able to harmonise the often conflicting interests of the various local and international interests.

### 2.2.3 State Capacity and Institutional Arrangements

Establishing the right institutions will be *sine qua non* for successful construction of a DS, because institutions are established primarily to overcome capacity weaknesses of a state, and to design and implement developmental policies (Edigheji, 2010:3). Institutional design should thus be informed by the type of developmental strategy and agenda that the state wishes to pursue, because it is institutional arrangements that determine the capacity of the state (Edigheji, 2010:5). This is due to the fact that institutional arrangements “explain the state’s capacity to define its developmental agenda and to formulate and implement policies in a legitimate and credible fashion towards attainment of its goals” (ibid). As such, institutional arrangements and requisite capacities will vary depending on whether the intent is industrialisation (transformative capacity), provision of basic services (health, education, welfare, capacity expansion), or redressing historical injustices and dispossession (redistributive capacity) (ibid).

A DS should establish institutions that will promote the capacity of the state to drive development and achieve its developmental objectives, not those that will frustrate these objectives. While it is emphasised that pro-development institutions should be contextualised to local realities and not merely carbon-copied directly from other DS (Evans, 2010:37), institutions that are generally imposed on developing countries by international financial institutions are seen as wrong institutions that could undermine and frustrate any DS aspirations (Mkandawire, 2010:64). This is because their policies are not embedded in target societies, they promote downsizing of the role of the state, and totally neglect public investment in physical and human capital (Edigheji, 2010:17). Such institutions instead put emphasis on among others fiscal prudence, protection of property rights (which could frustrate agrarian reform to redress past dispossession), creation of independent central banks (which could be wary to direct credit to the real economy and finance developmental projects), and promotion of private-public partnerships (which tend to be siloed and not integrated into the overall developmental agenda) (Mkandawire, 2010:64). It is these types of institutions that are blamed for the stunted development of many developing African states (ibid).

The main goal of a 21<sup>st</sup> century DS is capability expansion (Evans 2010, Chang, 2010). Capability expansion in turn ensures sustainable economic growth and social inclusion; as

enhanced capabilities are sought after by the state apparatus and the industries (Butler, 2010; Evans, 2010). The requisite state capacity to deliver capability expansion should thus include effective provisioning of public goods like education, health, and social welfare (Edigheji, 2010:14). For these public goods to be delivered the state in addition requires administrative capacity and effective economic management (ibid).

Capacity of a developmental state refers to “the state’s capacity to implement economic policies sagaciously and effectively. Such a capacity is determined by various factors – institutional, technical, administrative and political” (Mkandawire, 2007:290). The state should be able to attract, train and retain highly skilled and competent talent, and be the employer of choice to professionals and experts, and offer long-term rewarding career paths to civil servants (Edigheji, 2010:30).

The state capacity and institutions theme requires that a DS be fully capacitated both in terms of human and technical resources, and state institutions be designed to work in tandem and congruency, not against one another. Since it is institutions that determine both required capacities and policies of a DS, state capacity is also defined as the ability of the state to effectively develop and implement policy (Beeson, 2009).

Another argument advanced with respect to the structural makeup of state institutions is that their arrangements have tended to create adverse conditions which throttle economic growth and reform. The developmental state should thus direct efforts and attention at addressing those institutional design weaknesses in order to ensure a coherent and effective state apparatus. Jordana (2004) introduces the concept of “constellation of institutions” whose arrangements have a direct impact on policy outcomes. Galperin (2004) argues that a more robust approach to state fortification is through institutional design that inoculates it against interest group influence in policy choices and outcomes:

“As noted, policymakers make choices within an institutional structure that defines the information available to them, the policy instruments at hand, the way interest groups are organised, the costs and rewards associated with alternative courses of actions, and the legacy of past policies. This structure not only determines the capabilities and constraints of those who make policy but also of those who try to

influence policy. Thus the choice of institutional design affects the ability of different interests to influence outcomes” Galperin (2004).

This view is supported by Evans who argues that “without coherent bureaucratic institutions, states do indeed reduce themselves to the horrifying caricature predicted by simplistic versions of the neo-utilitarian visions.” Evans (1995).

## **2.2.4 Country Context**

The country context theme of a theoretical DS focuses on those aspects that are not necessarily characteristic of pioneer developmental states of East Asia, but are required for successful construction of a 21<sup>st</sup> century DS. These include a participatory democratic decision-making process, addressing historical dispossession of the majority of citizens, and constructing a DS in a mineral-rich country. It also touches on some potential pitfalls that aspirant DS should take cognisance of.

Most of the pioneer East Asian developmental states were constructed under authoritarian forms of government (Chang, 2010:82-96; Edigheji, 2010:18), as a result it could be contended that a DS cannot take root in a democratic dispensation. Whereas the 20<sup>th</sup> century DS, which focused primarily on industrial transformation, sufficed with a coalition between the state and big business; the primary objective of a 21<sup>st</sup> century DS should not merely be to catch up with the developed world, but also redress past injustices and legacy of dispossession, and provide basic social goods including housing, health, and education (Edigheji, 2010:5). Such an enormous undertaking requires much more complex and broad-based political and social coalitions than those of a 20<sup>th</sup> century DS. Participatory democracy becomes therefore an imperative in order to reach consensus among these diverse interests, to implement policies in a legitimate and credible fashion, and to ensure sustainability of developmental programmes and of the DS itself (ibid). It is has been argued that the eventual failure of the pioneer developmental states was mainly due to their ignoring the importance of public deliberative and consultative mechanisms that would enable the general public to make input into the developmental agenda (Edigheji, 2010:8-9). South Korea was a typical 20<sup>th</sup> Century DS that eventually collapsed as a result of suppressing democratic aspirations, so absence of participatory democracy is considered as

one of the biggest limitations and undoing of a DS (Kim, 2010: 97-125). On the other hand, it has been shown that a strong, legitimate, credible and sustainable DS with sustainable developmental programmes can only be achieved under democratic dispensations, as in the case of Scandinavian developmental states (Chang, 2010:82-96; Edigheji, 2010:18).

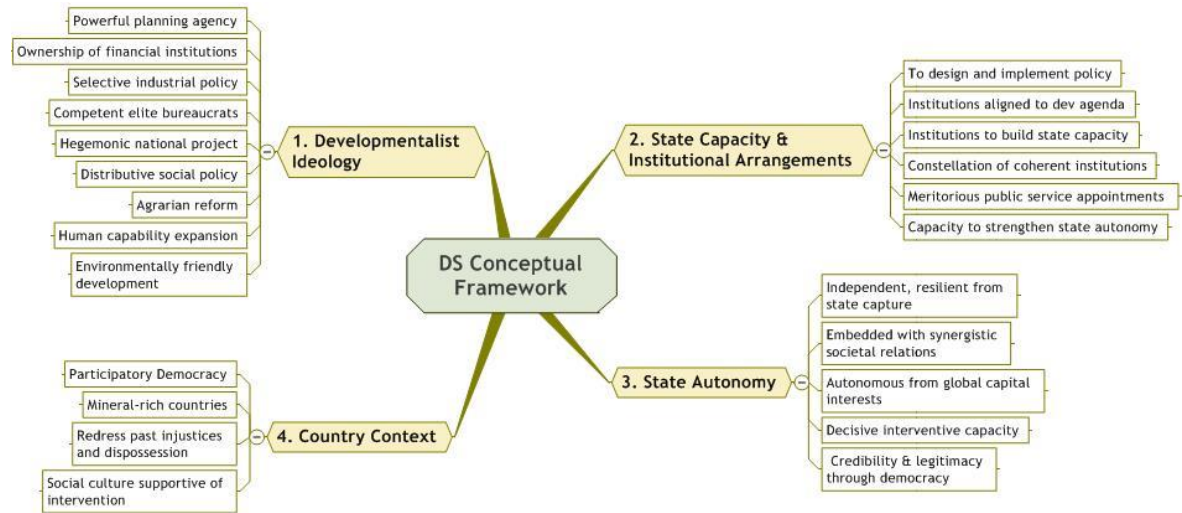
All the pioneer East Asian developmental states were not set in mineral-rich countries. The argument is that states in mineral-rich countries are prone to the “resource curse” phenomenon which would impede them from aggressively pursuing a developmental agenda (Edigheji, 2010:3; Moses, 2010:126). According to the resource curse assumption, mineral resources tend to be controlled by powerful capital interests which capture the state and frustrate any genuine developmental efforts. In some cases, the state over-relies and becomes addicted to the huge revenues generated from mineral resources, and becomes disincentivised from building institutions that will decisively intervene in the economy (Edigheji, 2010:12). Moses refutes this notion by showing how Norway, a country rich in natural resources, was able to effectively employ them to build a strong developmental state. Norway avoided the resource curse by creating two sets of institutions: those that cushioned the petroleum sector against international shocks, and those that represented important interests in such a way that none of them was allowed to dominate others (Moses, 2010).

Most developing countries, especially in Africa, have a legacy of past injustices and dispossessions that need to be redressed, which require aggressive agrarian reform. This was not predominantly the case with pioneer developmental states. Aspirant states cannot achieve a 21<sup>st</sup> Century DS without addressing these legacies where they are applicable (Chang, 2010; Moyo, 2010)

The popular culture of erstwhile developmental states was overwhelmingly supportive of interventionist states; this is not necessarily the case in Western societies, at least not overtly so as shown by Chang in the case of France and the US (Chang, 2010). The recent global recession has provided a favourable climate for the state to constructively intervene in the economy. Coupled with participatory democratic decision-making processes, states will be better positioned to gain the legitimacy and credibility required to intervene sustainably for human well-being (Kim, 2010).

Figure 1 illustrates the conceptual model that exposes the four key characteristics of a developmental state.

**Figure 1: Developmental State Conceptual Framework**



*Source: Researcher's own framework diagram*

In summary, the developmental state should have a developmentalist ideology which is articulated through a national vision and implemented through a national developmental project. The state should have embedded and synergistic autonomy which enables it to be aware of and responsive to the needs of the nation, and to harmonise competing social interests while remaining immune from capture by any of them. It should also be endowed with both technical and human capacity and capability in order to be independent and effective, with all relevant state institutions working in congruency and not at cross paths. It should be noted that the developmentalist ideology is the main foundation and driving force of a developmental state, and that the developmental state theoretical framework does not prescribe specific interventions that should be embarked on, understandably because these would depend on specific country needs.

The following section reviews academic literature in order to develop an ICT4D theoretical framework.

## 2.3 ICT4D Theoretical Framework

The society associated with an ICT-enabled socio-economic environment is called the Information Society, defined as “a social structure where the sources of economic productivity, cultural hegemony and political-military power depend, fundamentally, on the capacity to retrieve, store, process and generate information and knowledge.” (Castells, 1994:3). E-Transformation is the application of ICTs for development (ICT4D), and is thus the process of building an Information Society. Hanna defines this process as “e-development, ICT-enabled development, information society, and knowledge economy, collectively. E-transformation is about promoting a new development strategy paradigm, one adapted to the opportunities and challenges arising from ICT. It signifies deep changes in the economy and society brought about by effective deployment and diffusion of information and communication technology” (Hanna, 2010b:16).

The economy underpinning the Information Society is called the knowledge economy, and is characterised by high levels of knowledge intensive industries, knowledge workers, and innovation (Brinkley, 2006). The knowledge economy is defined as “one in which the generation and the exploitation of knowledge has come to play the predominant part in the creation of wealth. It is not simply about pushing back the frontiers of knowledge; it is also about the more effective use and exploitation of all types of knowledge in all manner of economic activity.” (DTI, 1998 as cited in Houghton & Sheehan, 2000:1). The knowledge economy is also defined from a network perspective as “a hierarchy of networks, driven by the acceleration of the rate of change and the rate of learning, where the opportunity and capability to get access to and join knowledge-intensive and learning-intensive relations determines the socio-economic position of individuals and firms.” (OECD, 1996 as cited in Houghton & Sheehan, 2000:11).

This section reviews relevant scholarly literature in order to derive a theoretical framework for ICT4D, for the application of ICTs to achieve socio-economic development, for building an Information Society. The theoretical framework will then be applied, along with the DS framework, as a lens to assess the extent to which South Africa’s ICT policy supports the twin goals of building a DS and an Information Society.

The reviewed academic literature exposed five (5) key themes for successful application of ICT4D. These are an enabling institutional environment, broad digital capability, agile national ICT industry, robust ICT infrastructure, and ubiquitous ICT development.

### **2.3.1 Enabling Institutional Environment**

The first ICT4D theme identified in the literature review is creation of an enabling institutional environment. It emphasises the need for countries embarking on e-Transformation to establish institutions that will design and implement ICT sector policy (Talyarkhan, 2004:8-15; Vaughan, 2006:4-12; Hanna, 2010b:29-30; Hilbert, 2011:3; Kunene, 2011:7). The institutions should also articulate the e-Transformation vision, and foster national consensus on the e-Transformation strategy (Mansell, 1999:30; Grimshaw & Talyarkhan, 2005:9; Hanna, 2010b:29-30; Hilbert, 2011:3; Kunene, 2011:7). In the process, the state should avoid capture by sections of rent seeking business interests (Hanna, 2010b:29-30), with decisions arrived at through democratic processes that encourage and promote citizen participation (Mansell, 2008b:23-24).

Institutional design should ensure partnership and cooperation among key institutions (Talyarkhan, 2004:8-15; Hanna, 2010b:29-30). Creation of institutions with the requisite capacities to drive e-development is at the core of creating an environment conducive to successful implementation of an e-Transformation strategy. The institutions should also promote “inclusive growth and participatory development” (Hanna, 2010b:29-30) and harness ICTs in an environmentally friendly way (Houghton, 2010; Hanna, 2010b:29-30).

It is crucial that the e-Transformation vision be clearly articulated and contextualised to the country’s developmental imperatives, and not be generic and idealistic. Typical development strategies executed by other countries included distributing locally relevant information, targeting disadvantaged and marginalised groups, promoting local entrepreneurship, improving poor people's health, strengthening education, promoting trade and e-commerce, supporting good governance, building capacity and capability, enriching culture, supporting agriculture, creating employment opportunities, and reinforcing social mobilisation (Grimshaw & Talyarkhan, 2005:9-10). The institutions should also look into funding options for ICT-powered developmental projects, and

consider various sources of funds and financing strategies for same (Bridges, 2001; Talyarkhan, 2004:8; Adam, 2005; Hanna, 2010c).

### **2.3.2 Digital Capability**

The second theme of the ICT4D theoretical framework emphasises the building of digital capability, the diffusion of ICTs in the society. It is about training and capacitation of all sectors of the population to be active, innovative and effective participants in the Information Society (Mansell, 1999:32; Talyarkhan, 2004:8-15; Vaughan, 2006:4-12; Hanna, 2010b:30; Hilbert, 2011:8; Kunene, 2011:8-27). Enhancement of the citizens' ICT capabilities is critical in ensuring sustainability of ICT programs and in bridging the digital divide among the citizens and among countries (Benjamin, 2001; Bridges, 2001a; Hamel, 2010; Hanna, 2010c:199-200; Vaughan, 2011). Given the short life-cycle of ICTs, capability enhancement has to be a continuous process to ensure citizenry is kept abreast of new ICTs and how to effectively leverage them for socio-economic benefits.

Of the key social actors, ICT corporations are seen as the most capable of playing a pivotal role in empowering citizens with ICT capabilities. This stems from the fact that ICT corporations are by default capacitated, and with requisite political will and incentives they can in turn empower the rest of the citizens (Busch, 2010). Strong emphasis is also put on ensuring ICT capability enhancement for rural and grassroots people, to ensure inclusiveness and narrowing of the digital divide (Duan et al, 2009; Hanna, 2010c; Németh, 2008).

### **2.3.3 Agile ICT Industry**

The third theme of the ICT4D theoretical framework focuses on nurturing the national ICT industry, incentivising it to be innovative, to decide on the balance between playing on the supply side versus demand side of the ICT value chain, and local content considerations (Hanna, 2010c:2002). The ICT industry should also ensure accrual of benefits to the broader society. A regulatory and legislative framework is required for the ICT industry, in order to reinforce the competition of market, to reduce wholesale and retail prices, and stimulate innovation. Specific incentive schemes are also required to encourage the ICT industry to

invest and lay out infrastructure in otherwise non-economic areas (Duan et al, 2009:1841).

### **2.3.4 Robust ICT Infrastructure**

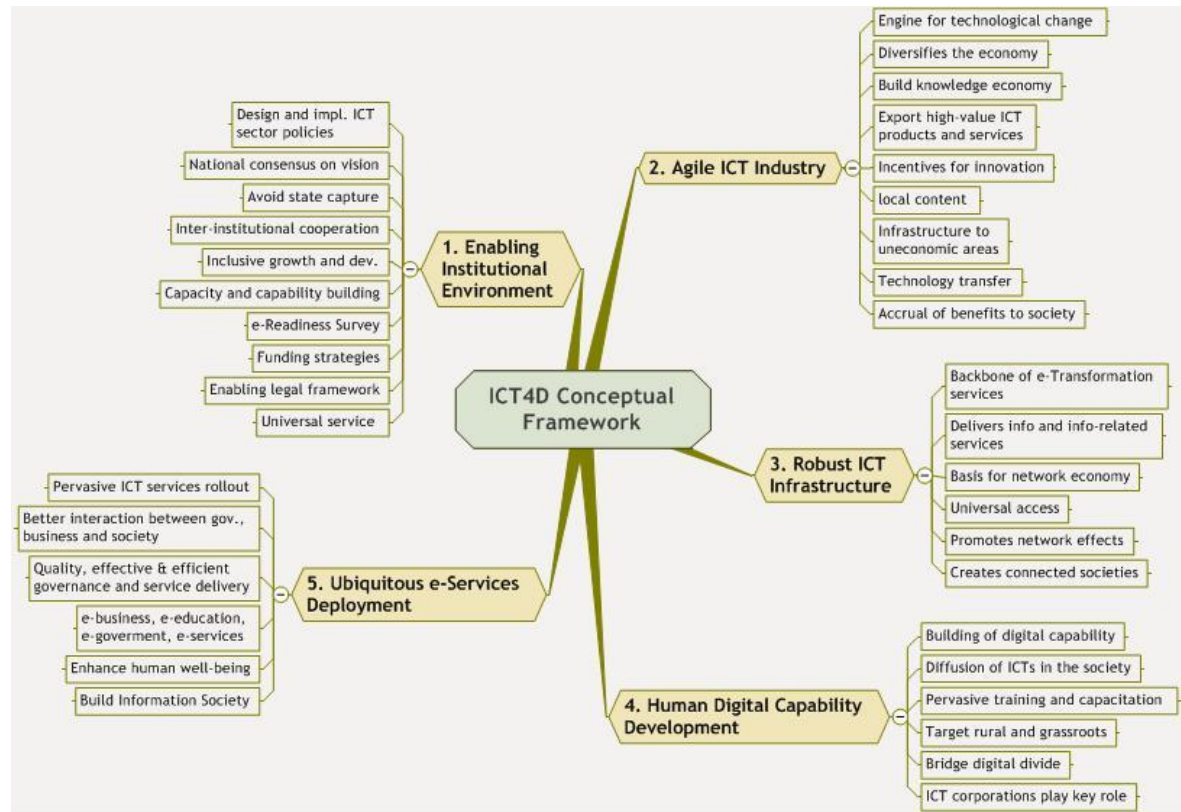
The fourth theme of the ICT4D theoretical framework focuses on building and sustaining a robust Information and Communication Technology Infrastructure, which is the backbone of e-Transformation and all its developmental services (Hanna, 2010b:30-31; Hilbert, 2011:3). ICT infrastructure is focused on the delivery of information and information related services, and so should be scaled accordingly (Grimshaw & Talyarkhan, 2005: 10-11). A sound environment of legislative framework enables people to use services provided through ICT Infrastructure to achieve their goals (Duan et al, 2009:1840). This advances advocacy for universal service and access (Milne, 1998), and is the core basis for the knowledge economy (Castells, 1996).

### **2.3.5 Ubiquitous e-Services Deployment**

The fifth and final theme of the ICT4D theoretical framework focuses on ubiquitous deployment of ICTs across all sectors of the economy (Talyarkhan, 2004:8-15; Hanna, 2010b:31). This entails rolling out ICT services to public, private and civil institutions, and in that way promoting better interaction between government, business and society. For public institutions this would take the form of e-government, which refers to the application of ICTs to improve the quality and effectiveness of public governance and delivery of public services (Garrido, 2004:6). This is in line with the view that puts emphasis on ICTs as instruments that should enhance human well-being rather than on ICTs and market-led values (Mansell, 1999:30). ICTs should also be used to develop the private sector and to empower civil society (Hanna, 2010b:28). The above support the view that e-development should be viewed from two perspectives: the diffusion of ICTs and associated services, as well the value cycle of production, utilisation and impact of ICTs and new media on economic development and social well-being (Abrahams & Goldstuck, 2010:v). A digitally capacitated society which consumes e-services powered by robust and agile ICT infrastructure would be considered an Information Society. Figure 2

depicts key sub-themes of the conceptual framework for effective application and diffusion of ICT4D, for building of an Information Society, for e-Transformation.

**Figure 2: Key Themes and Sub-themes of the ICT4D Conceptual Framework**



Source: Researcher's own framework diagram

These key themes and sub-themes of ICT4D are summarised by Hanna as “an enabling policy and institutional environment, shaped by shared vision, long-term strategy, and institutional leadership; an affordable and competitive information infrastructure; a dynamic ICT industry and innovation system that can adapt the technology to local needs and capture export opportunities; a broad ICT literacy and technical education, and techno-entrepreneurship to harness and master ICT potential; a coherent investment program to apply ICT to modernizing the public sector, and incentives to promote the effective use of ICT for developing the private sector and empowering civil society.” (Hanna, 2010b:28).

It should be noted that the e-Transformation Framework can be adopted by any state that intends to leverage ICTs for its social and economic transformation; it does not have to be a developmental state as such. Contrary to the DS theoretical framework, the ICT4D one prescribes generic developmental interventions that could be implemented, such as e-government, e-education, e-economy, e-health etc. Of course the scope and implementation timelines thereof would be country-specific.

## **2.5 Chapter Summary**

This chapter conducted an extensive literature review on the concepts of DS and ICT4D and developed their respective conceptual frameworks. From studying the above theoretical frameworks, it is evident that there are some overlaps between them. The only two themes that appear to be unique to the ICT4D framework only are “agile ICT industry” and “robust ICT infrastructure”. Nevertheless, an integrated framework of the two could be comprehensive enough to be used as a framework for effective leveraging of ICTs to build a developmental state and an Information Society.

The following chapter describes the design and methodology followed by this research effort.

## **Chapter 3: Qualitative Research Design and Methodology for ICT Policy Analysis**

The previous chapter developed and expounded on specific themes identified through review of scholarly literature relevant to the DS and ICT4D theories, and constructed conceptual frameworks for both ICT4D and DS theories. This chapter provides an in-depth discussion of the design and methodology that underpinned this research. It describes the research process followed to conduct analysis of South Africa's ICT policy and in the process test the DS and ICT4D conceptual frameworks that were developed, and answer the main research question. The chapter also explains the sampling, data collection, and data analysis methods that underpinned this research report, and justifies the choices made.

### ***3.1 Problem Statement***

Developing countries are faced with the challenge of devising ways to leapfrog developmental stages and put their nations on par with their developed counterparts, to “catch up” with the developed world (Mkandariwe, 2010:59). To close this developmental gap, South Africa has focussed its efforts on becoming a DS and on building an advanced Information Society (IS). Despite its aspiration to become a DS, South Africa has hitherto not been able to put in place concrete policy enablers and strategies to vigorously pursue that goal. South Africa also aims to build an IS and thereby address its developmental challenges (PNC on ISAD, 2006), but ICT4D projects have thus far not delivered on their stated objectives. There however are countries that have successfully harnessed ICTs to build developmental states (Lallana, 2003). This research locates itself within the field of ICT policy. The problem being investigated is therefore the extent to which South Africa's ICT policy reflects, supports and enables the twin goals of becoming a DS and building an advanced IS. Among the benefits of this research will be highlighting ICT policy gaps, better understanding of integration points between DS and IS theoretical frameworks, making policy recommendations, and influencing future ICT policy thinking.

### **3.2 Purpose Statement**

Given the above problem statement, the purpose of this research is five-fold: To explore the evolution of DS and ICT4D concepts in the world and how they ushered and manifested themselves in the South African academic and political scenes, to reflect on the progress made by South Africa in pursuing the twin goals of becoming a DS and building an advanced inclusive Information Society. Secondly, to design theoretical DS and ICT4D frameworks. Thirdly, to validate the conceptual frameworks through insights from experts and where possible further improve them. Fourthly, to assess each one of the selected ICT policies against all the themes and sub-themes of the DS and ICT4D theoretical frameworks. Fifthly, to identify and expound upon integration points between the DS and ICT4D theoretical frameworks, and lastly to analyse results from this qualitative research and make recommendations.

Cloete and Wissink list typical reasons for policy analysis as being “to measure progress towards the achievement of policy objectives; to learn lessons from project/programme for future policy review, design or implementation strategies; to test the feasibility of an assumption, principle, model, theory, proposal or strategy; to provide political or financial accountability; to advocate a cause better; for public relations purposes.” (Cloete & Wissink, 2000:212). The reasons for the policy analysis pursued in this research include to test the feasibility of a theoretical model of a DS and ICT4D, to measure progress towards the achievement of ICT policy objectives, as well as to learn lessons for future policy review, redesign or implementation strategies.

### **3.3 Research Questions**

The main research question of this dissertation is:

How do South Africa's ICT policy strengths and weaknesses influence the twin goals of becoming a DS and building an advanced Information Society through ICT4D?

In order to respond to this main question, the following sub-questions will be investigated:

- 1) In what ways does policy and academic discourse characterise South Africa as an aspirant DS?
- 2) Where does ICT4D theory fit within the conceptualisation of South Africa's aspiration to build a developmental state?
- 3) To what extent does South Africa's ICT policy reflect the Developmental State and ICT4D theories?

### **3.4 Qualitative Research Methodology for Policy Analysis**

The research approach shaping this dissertation is based on qualitative, non-empirical research methods. Jary and Jary (1991) distinguish between qualitative and quantitative approaches by stating that “qualitative approaches rely on the *skills of the researcher* as an interviewer or observer in gathering data whereas quantitative methods place reliance upon the *research instruments* employed to gather data and analyse/measure it (for example questionnaires, experiments)” (Jary & Jary, 1991:513-514 as cited in Riley et al, 2000:40). According to Peshkin (1993), a qualitative research approach should be chosen if the purpose of the study involves one or more of the following:

*Description.* They can reveal the nature of certain situations, settings, processes, relationships, systems, or people

*Interpretation.* They enable the researcher to (a) gain new insights about a particular phenomenon, (b) develop new concepts or theoretical perspectives about the phenomenon, and/or (c) discover the problems that exist within the phenomenon.

*Verification.* They allow a researcher to test the validity of certain assumptions, claims, theories, or generalisations within real-world contexts

*Evaluation.* They provide a means through which a researcher can judge the effectiveness of particular policies, practices or innovations. (Peshkin, 1993 as cited in Leedy & Ormond, 2005:134).

A qualitative research approach is therefore relevant to this study due to the subjective and interpretive nature of the concepts of DS and ICT4D. The study meets all the above criteria for choosing a qualitative approach as its purpose involves the description of relationships between the DS and ICT4D concepts, providing insights into interpretations and conceptualisations of these concepts, verifying claims about South Africa's ICT policy, and evaluating the extent to which South Africa's ICT policy reflects the DS and ICT4D theories.

Creswell (2009) also lists typical characteristics of qualitative research studies, many of which are relevant to this research effort. These are:

a) Natural setting – Qualitative researchers tend to collect data in the field at the site where participants experience the issue or problem under study. The information is gathered by actually talking to people. Seeing them behave and act within their context is a major characteristic of qualitative research.

b) Researcher as key instrument – Qualitative researchers collect data themselves through examining documents, observing behaviour or interviewing participants. Even though an instrument is used to gather data, it is actually the researcher who gathers the information.

c) Multiple sources of data – Qualitative researchers typically gather multiple forms of data, such as interviews, observations and documents rather than rely on a single data source. The researcher then reviews all the data, make sense of it and organise it into themes.

d) Participants' meanings – In the entire process, the research focus on the meaning that the participants hold about the problem or issue.

e) Emergent design – The process for qualitative research is emergent i.e. the initial plan for the research cannot be tightly prescribed and, importantly, all phases of the research may shift as the researcher enters the field and begins to

collect the data as the primary aim of the study is to focus on the participants' experiences.

f) Interpretive – Qualitative research is a form of interpretive enquiry, in which researchers interpret what they see, hear and understand. Their interpretations cannot be separated from their backgrounds, history, contexts and prior understandings.

This study displayed all the above characteristics of qualitative research as follows: (a) gathering information by talking to people, since semi-structured interviews with DS and ICT4D subject matter experts were used as data collection instruments; (b) a plethora of documents were examined by the researcher in order to collect secondary data; (c) semi-structured interviews were not the only sources of data, content analysis methods were also employed to gather data about the reflection of DS and ICT4D theories in South Africa's ICT policy; (d) the study depended on the meaning attached by respondents to the phenomena of DS and ICT4D as they manifest themselves in the South African context, this point is also emphasized by Kaplan and Maxwell when they submitted that "the goal of qualitative research is understanding issues or particular situations by investigating the perspectives and behavior of the people in these situations and the context within which they act" (Kaplan & Maxwell, 2005: 30); (e) as detailed in the section 3.9 on "Personal Research Journey", there was a shift from initial assumptions as the research progressed, even the research topic had to be revised; (f) the study required extensive contextualised interpretation of the data that was gathered, as well as analysis of findings from the research. All the above confirm the relevance of a qualitative research approach to this study.

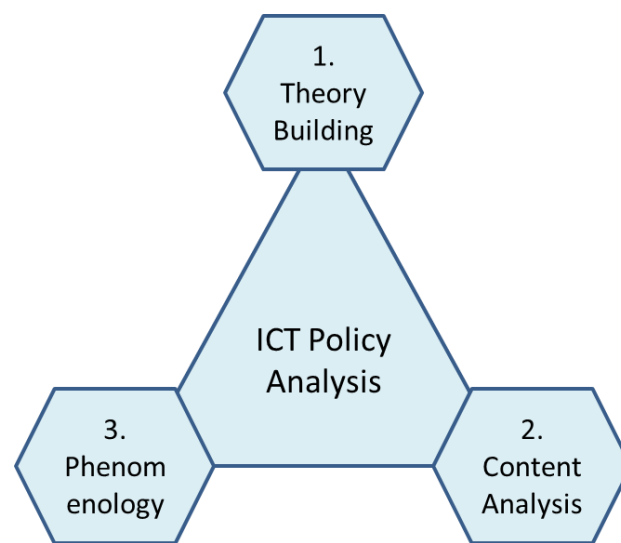
### ***3.5 Research Design: Theory-building, Content Analysis and Phenomenology***

This research was underpinned by three qualitative research designs, namely theory-building, content analysis, and phenomenology, in that order. These three research designs are depicted in Figure 3 and described in the following section.

### 3.5.1 Research Design: Theory-building

The theory-building research design is also called model-building, and was chosen as one of the three research designs for this study because it is “aimed at developing new models and theories to explain particular phenomena” (Mouton, 2008:176-177). It is applicable to theoretical and conceptual studies aimed at developing new models and theories or refining existing theories and models (ibid).

*Figure 3: Research designs underpinning this study*



Theory-building therefore formed the basis for developing the DS and ICT4D theoretical models that are central to this study. The themes and sub-themes that emerged from these models were in turn used as input to content analysis methods which exhaustively searched for occurrences of these themes in the selected South African ICT policies.

### 3.5.2 Research Design: Phenomenology

Phenomenology is the second research design that underpinned this study. Phenomenology puts emphasis on the researcher’s understanding of the meaning and interpretation that social players attach to the reality or phenomenon that confronts them (Babbie & Mouton, 2004; Welman & Kruger as cited in Groenewald, 2004:5). This study more closely fits with the characteristics of phenomenology, where the researcher

“attempts to understand people’s perceptions, perspectives, and understandings of a particular situation” (Leedy & Ormrod, 2005:139). The phenomenological design is relevant to this research in that the phenomenon or situation in this case is contribution of ICT policy to building a DS and an advanced inclusive Information Society in South Africa; the other phenomena are the unfolding DS and ICT4D developmental forces in South Africa. The people in this context are policy makers who define policy objectives and articulate policy intentions, then those charged with interpreting and implementing the policies, as well as often independent researchers who interpret policy outcomes against policy objectives as experienced by the intended recipients, in this case the society at large. The phenomenological design was therefore mainly employed to collect data by means of semi-structured interviews in order to answer the first two sub-questions of this research which are “In what ways does policy and academic discourse characterise South Africa as an aspirant DS?” and “Where does ICT4D theory fit within the conceptualisation of South Africa’s aspiration to build a developmental state?”.

### **3.5.3 Research Design: Content Analysis**

The third qualitative design that underpinned this study was content analysis. Riley (2000) describes content analysis as follows:

It involves identifying and counting certain key words or phrases in piece of writing or in the recording of an interview, conversation or surveys which include unstructured responses...These selected words, phrases or items, by their type or frequency, then allow the researcher to hypothesize some deeper meaning behind them, in addition to providing clear quantitative data. (Riley et al, 2000:104).

The above description perfectly matches the process followed by this study to analyse ICT Policy and determine the extent to which it reflects DS and ICT4D theories. In that process each one of the selected ICT policies was examined for occurrence of the themes and sub-themes of the DS and ICT4D theoretical frameworks, and the frequency was noted. The same process was followed to analyse notes and recordings taken from semi-structured interviews. Themes are the predominant constructs that constitute the DS and ICT4D conceptual frameworks in this study, and it is for reflection of these themes that South

Africa's ICT policy is investigated. The centrality of themes in content analysis is further confirmed by Leedy and Ormrod (2005) when they assert that "content analysis is a detailed and systematic examination of the contents of a particular body of material for the purpose of identifying themes, patterns or biases" (Leedy & Ormrod, 2005:142). Content analysis was therefore used to analyse the selected ICT policies in order to identify reflections of DS and ICT4D themes in them, and to answer the third sub-question of this research which is "To what extent does South Africa's ICT policy reflect the Developmental State and ICT4D theories?"

### ***3.6 Data Collection Methods: Theory-Building, Content Analysis, and Phenomenology Interviews***

The data collection methods employed in this study corresponded to the three qualitative research designs that were chosen to identify and collect data pertinent to the topic under investigation, and these were theory-building, content analysis and phenomenological semi-structured interviews. In the rest of this section we start by describing the sampling methodology followed to select the data sources, and conclude by expounding upon the three data collection methods employed in this study.

#### **3.6.1 Sampling Methodology**

Sampling is the process of choosing subjects for the research, in the case of this study it is to choose interview respondents and the portfolio of ICT policy to analyse, because they are both data sources for the chosen research designs of theory-building, phenomenology and content analysis (Leedy & Ormrod, 2005:144). The sampling methodology adopted in this qualitative study is purposeful sampling, due to the fact that the selection of data sources has to be non-random as they have to be individuals and objects that will yield the most information about the topic under investigation (Leedy & Ormrod, 2005:145; Riley et al, 2000:85). Due to the scarcity of individuals with the type of information required by this research topic within the South African borders, snowball sampling was also employed by "identifying a member of the population of interest and asking them if they knew anybody else with the required characteristics" (Riley et al, 2000:87). The number of data sources in a sample is called a sample size, and a typical sample size for a phenomenological study is from 5 to 25 individuals (Leedy & Ormrod, 2005:139).

This study used a sample size of 6 for semi-structured interview respondents, and a sample size of 7 for ICT policies. For theory-building, the sources were various accredited academic publications on the theories of DS and ICT4D respectively.

Table 3.1 summarises the various data sources whose knowledge was tapped in this research.

**Table 3.1: Characteristics of Respondents and Data Sources**

		Research Design	Interview Date	RESEARCH TOPIC KNOWLEDGE DOMAINS			
				ICT4D	Developmental State	Policy Review Panel	e-Health Policy Discourse
RESEARCH DATA SOURCES	Respondent A	Phenomenology	27/02/2013	X			
	Respondent B	Phenomenology	13/03/2013		X		
	Respondent C	Phenomenology	15/03/2013	X		X	
	Respondent D	Phenomenology	05/03/2013	X			X
	Respondent E	Phenomenology	18/03/2013	X	X		
	Respondent F	Phenomenology	22/03/2013		X		
	e-Government Policy of 2001	Content Analysis		X	X		
	e-Education White Paper of 2004	Content Analysis		X	X		
	ISAD Plan of 2006	Content Analysis		X	X		
	ICT R&D Strategy of 2007	Content Analysis		X	X		
	NeSPA of 2010	Content Analysis		X	X		
	GPG ICT Strategy of 2011	Content Analysis		X	X		
	NDP of 2012	Content Analysis		X	X		
Scholarly Literature	Theory-building			X	X		

The profile of interviewed respondents and the rationale for their selection is as follows: Respondent A is an academic who is an expert in ICT4D and also specialises in the Knowledge Economy. The respondent has also done extensive policy research and

development work for all levels of the South African government, and has written extensively on both Information Society and ICT-enabled development. Respondent B is a Development Bank of Southern Africa (DBSA)-based expert who has written extensively on the prospects of South Africa as a DS. Respondent C is an expert in the ICT4D space, who also serves as a member in the Policy Review Panel (PRP) that was established in 2012 by the Department of Communications (DoC). The respondent was only interviewed on the PRP which forms part of the broader ICT4D space in South Africa. The researcher views the PRP as a significant development in the ICT sector as the DoC draws the best brains and stakeholders across South Africa and tasks them with reviewing the entire portfolio of ICT policies since the advent of democracy and majority rule in 1994, and make recommendations for the way forward.

Respondent D is a Masters student who had completed a qualitative case study which looked at the extent to which the e-health policy development process in South Africa involved the active participation of all the relevant stakeholders. Although the respondent was interviewed on e-health policy discourse, the policy itself was not part of the content analysis data sources as it had not yet been formulated at the time of conducting this research. The inclusion of e-health policy discourse in the semi-structured phenomenological interviews was due to the fact that an e-health policy is long overdue in South Africa, and had it already been in place it would have formed part of South Africa's ICT policy. The aim of the interview was therefore to understand the main findings regarding the current status of e-health policy discourse in South Africa; progress made in the e-health policy development space; challenges faced in e-health and recommendations to overcome them; and why the DS and ICT4D theories are poorly reflected in the e-health policy discourse. All these questions are captured in the relevant questionnaire in appendix C. The respondent was interviewed telephonically after the questionnaire was emailed upfront, due to long distances from the researcher.

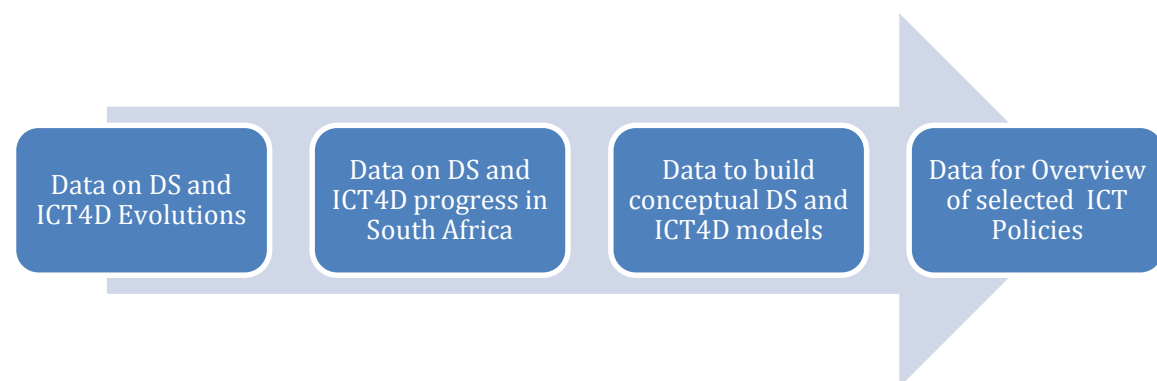
Respondent E is a senior government official in the Gauteng Provincial Government, whose office is tasked with driving the Gauteng ICT Development Strategy that was formulated in 2011. Since that strategy recognises South Africa's aspiration to build a DS and states as part of its mission to support that aspiration, the respondent was therefore interviewed on both ICT4D and DS questions. Respondent F is an academic expert on the concept of DS, who also served in government departments for many years, and has

written extensively on South Africa's road to a DS. This respondent was also interviewed telephonically due to distance.

### 3.6.2 Data Collection Method for Theory-building Research Design

The data collection method for the theory-building research design involved four main steps. The first step was to collect accredited publications on the evolution of DS and ICT4D in the world, and how these developmental concepts ushered into the South African academic and political scene. Secondly, literature was collected on policy discourse, assessments and opinions of researchers and political stakeholders on the progress made in pursuing South Africa's twin goals of becoming a DS and building an advanced inclusive Information Society. Thirdly, accredited and peer reviewed publications of seminal writers were collected on the topics of DS and ICT4D, in order to build theoretical models of a DS and ICT4D respectively. Lastly, a selection of South Africa's ICT policies was collected in order to be analysed against the DS and ICT4D conceptual frameworks, to respond to the research sub-question that pertains to reflection of DS and ICT4D theories in South Africa's ICT policy. Figure 4 depicts these theory-building data collection steps that were followed in this study.

*Figure 4: Theory-building Data Collection Steps*



### 3.6.3 Data Collection Method for Content Analysis Research Design

In this study content analysis formed the heart of analysing ICT policy against DS and ICT4D theories. Leedy and Ormrod (2005) describe the following steps involved in collecting data for the content analysis research design:

1. The researcher identifies the specific body of material to be studied. If this body is relatively small, it is studied in its entirety. If it is quite large (e.g., if it consists of all newspaper articles written during a particular period), a sample (perhaps a random sample) is selected.
2. The researcher defines the characteristics or qualities to be examined in precise, concrete terms. The researcher may identify specific examples of each characteristic as a way of defining it more clearly.
3. If the material to be analysed involves complex or lengthy items (e.g. works of literature, transcriptions of conversations), the researcher breaks each item into small, manageable segments that are analysed separately.
4. The researcher scrutinizes the material for instances of each characteristic or quality defined in step 2. When judgements are entirely objective (e.g., when the study involves looking for appearance of certain words in the text), only one judge, or *rater*, is necessary. When judgements are more subjective (e.g., when a study involves evaluating a teacher's behaviors for the specific activities that each behaviour reflects), two or three raters are typically involved, and a composite of their judgements is used (Leedy & Ormrod, 2005:142).

This study executed the above steps in collecting data for the content analysis research design. Firstly, the study selected seven South African ICT policies as the body of material to be studied; these seven ICT policies were the e-Government Policy of 2001, the e-Education White Paper of 2004, the ISAD Plan of 2006, the GPG ICT Development Strategy of 2011, NeSPA of 2010; the ICT R&D Strategy of 2007, and the NDP of 2012. All the seven policies were selected on the grounds that they are ICT policies whose main objective is to advance the Information Society agenda in South Africa. They individually aim at delivering e-services (e-education, e-government) and e-strategies (ISAD Plan and GPG ICT Development Strategy) respectively for South Africa. With the development of the e-health policy still pending, the study only limited itself to understanding findings of a researcher who

investigated the level of stakeholder involvement in the formulation of the e-health policy in South Africa.

Secondly, the characteristics to be examined in the above four ICT policies were defined in concrete and precise terms. These characteristics were the nine themes identified in the DS and ICT4D conceptual frameworks, with four themes emerging from the DS and five themes emerging from the ICT4D conceptual frameworks respectively. For the DS conceptual framework the identified four themes were developmentalist ideology, state capacity and institutional arrangements, state autonomy and country context; while for the ICT4D conceptual framework the identified themes were enabling institutional environment, agile ICT industry, robust ICT infrastructure, human digital capability development, and ubiquitous e-services deployment. In turn, each one of these themes was further unpacked and defined more clearly into several sub-themes, these lower level sub-themes are reflected in Figures 1 and 2 respectively.

Thirdly, the material to be analysed was the seven selected ICT policies, and they were already separate manageable segments of information, which did not require that the researcher further break them into smaller units. Each policy was analysed separately as a whole.

Fourthly, the researcher scrutinized each policy for instances of each of the nine themes and their many sub-sub-themes. In some instances a match was easy to identify in the examined policy, but in other cases judgement was involved. One typical example where judgement became necessary to identify an instance of a theme in a policy material was where the theme called for inclusive growth and development while the policy referred to catering for people with disabilities in the design of ICT technologies. Superficially this match could be missed, but judgement says economic growth and development can never be considered as completely inclusive if certain sections of society are not adequately capacitated to actively participate and contribute and benefit from the democratic and economic processes.

### 3.6.4 Data Collection Method for Phenomenology Research Design

The data collection method for phenomenological studies is semi-structured, open-ended interviews (Wholey et al as cited in Cloete & Wissink, 2000). Leedy and Ormrod (2005) describe the phenomenological interview as follows:

Phenomenological researchers depend almost exclusively on lengthy interviews (perhaps one to two hours in length) with a carefully selected sample of participants. A typical sample size is from 5 to 25 individuals, all of whom have had direct experience with the phenomenon being studied (Creswell, 1998).

The actual implementation of a phenomenological study is as much in the hands of the participants as in the hands of the researcher. The phenomenological interview is often a very unstructured one in which the researcher and participants work together to “arrive at the heart of the matter” (Tesch, 1994, p.147). The researcher listens closely as participants describe their everyday experiences related to the phenomenon and must be alert for subtle yet meaningful cues in participants’ expressions, questions and occasional sidetracks. A typical interview looks more like an informal conversation, with the participant doing most of the talking and the researcher doing most of the listening.

Throughout the data collection process, the researcher suspends any preconceived notions or personal experiences that may unduly influence what the researcher “hears” the participants saying” (Leedy & Ormrod, 2005:139).

This research employed semi-structured interviews as a data collection instrument for phenomenology. The purpose of the interviews was two-fold: to validate the findings from policy analysis, and to highlight any themes that may have been missed by the conceptual frameworks. The interview respondents were as described in the Sampling section above.

### **3.7 Data Coding and Analysis**

This study only applied data analysis methods to findings from content analysis and semi-structured interviews, not to results of theory-building which were the two conceptual frameworks of DS and ICT4D. The data analysis methods applied to content analysis and semi-structured interview results were based on those defined by Leedy and Ormrod (2005). The methods are described next, including how they were implemented in this study.

#### **3.7.1 Data Analysis Approach**

For analysis of results from content analysis, Leedy and Ormrod (2005) outline the process as follows:

Almost invariably, one crucial step in content analysis is to tabulate the frequency of each characteristic found in the material being studied. Thus, a content analysis is quantitative as well as qualitative. In some situations, appropriate statistical analyses are performed on the frequencies or percentages obtained to determine whether significant differences exist relevant to the research question. The researcher then uses such tabulations and statistical analyses to interpret the data as they reflect on the problem under investigation (Leedy & Ormrod, 2005:143).

As outlined by Leedy and Ormrod (2005) above, this study tabulated the frequency of each theme and sub-theme found in each one of the seven selected ICT policies, these tabulations are shown in Tables 5.1, 5.2, and 5.3 of Chapter 5. The themes are derived from the DS and ICT4D conceptual frameworks, and they are nine with several sub-themes per theme. The occurrence of a theme in a policy means that the policy reflects that DS or ICT4D theory, which is the main investigation of this study. The frequency of occurrence of a theme was examined across the four policies and a percentage was determined for that theme, similarly each policy was examined for occurrence of all themes and a percentage was determined for that policy. Furthermore, occurrences of a theme were tabulated for both DS and ICT4D conceptual frameworks combined, for the DS conceptual framework alone, and for the ICT4D conceptual framework alone.

### 3.7.2 Data Analysis for Semi-structured Interview Results

For analysis of results from semi-structured interviews, this study was guided by Leedy and Ormrod (2005), who outline the process as follows:

The central task during data analysis is to identify common themes in people's descriptions of their experiences (Barritt, 1986). After transcribing the interviews, the researcher typically takes the following steps (Creswell, 1998):

1. *Identify statements that relate to the topic.* The researcher separates relevant from irrelevant information in the interview and then breaks the relevant information into small segments (e.g., phrases or sentences) that each reflect a single, specific thought.
2. *Group statements into "meaningful units."* The researcher groups the segments into categories that reflect the various aspects ("meanings") of the phenomenon as it is experienced.
3. *Seek divergent perspectives.* The researcher looks and considers the various ways in which different people experience the phenomenon.
4. *Construct a composite.* The researcher uses the various meanings identified to develop an overall description of the phenomenon as people typically experience it.

The final result is a general description of the phenomenon as seen through the eyes of the people who have experienced it first-hand. The focus is on common themes in the experience despite diversity in the individuals and settings studied (Leedy & Ormrod, 2005:140).

This study followed the above data analysis process did not analyse interview results separately from the content analysis ones. It conducted an integrated data analysis exercise

and used interview perspectives to validate the policy analysis findings and to highlight any additional themes that might have been missed in the conceptual frameworks.

### ***3.8 Personal Research Journey***

This research topic was initially borne out of the need to understand the relationship between the two foremost driving developmental forces of DS and ICT4D in the South African context. The initial assumption was that South Africa is a DS of some sort, and that it had reached a level of advancement in building an Information Society. With those assumptions, the initial research topic was “Inter-relationship between ICT4D policy and the developmental state in South Africa”. After extensive scholarly literature review, and a presentation to the Wits University panel, however, it became evident that although South Africa had pent up intent and political will since 2001 to vigorously pursue a DS, the rhetoric had not yet been translated into policy and strategic enablers to pursue that goal. In the same vein, ICT4D projects to establish an Information Society in South Africa had not been successful, so South Africa could not yet be considered an advanced Information Society.

Given the reality of South Africa neither being a DS nor an advanced inclusive Information Society, it was decided at the October 2010 Wits University panel that the research should be refocused to investigate how ICT policy reflected DS and ICT4D theories. This meant instead of assessing ICT policy against the South African DS, it would be assessed against a theoretical DS model. Similarly instead of assessing ICT policy against a South African Information Society, it would be assessed against a theoretical ICT4D model. This called for fresh academic literature review to develop conceptual models of a DS and ICT4D. The researcher had initially opted to adopt Naggy Hanna’s e-Transformation framework (Hanna, 2010b) as an ICT4D framework instead of researching and developing one, but the research supervisor advised otherwise and so several frameworks were examined to develop a conceptual model of ICT4D. In this new focus, the research topic was duly changed to the current one which is “Analysis of South Africa’s ICT policy through Developmental State and ICT for Development theories”.

Lastly, this study had to take into account a number of developments that took place in the process of the research, these entailed analysis of the National Development Plan (NDP) of 2012, conducting an interview on the Policy Review Panel that was recently appointed by the DoC, and an additional interview on the process of formulating the long-overdue e-health policy, which were it already in place would have definitely formed part of the core ICT policies that were examined. In addition, although not ICT policies perse, the ICT R&D strategy of 2007 as well as the National e-Skills Plan of Action (NeSPA) of 2010 were later added to the material for policy analysis due to their relevance to ICT4D and DS theories. The NeSPA for instance refers to “a developmental state in South Africa” several times (NeSPA, 2010:ii, 5, 10, 23). All these revisions and scope increases made the policy analysis a very iterative process.

## **Chapter 4: Reflections of DS and ICT4D theories in South Africa’s ICT Policy**

This chapter presents findings from investigation of the extent to which South Africa’s ICT policy reflects DS and ICT4D theories. These results are derived from application of the two data collection methods of content analysis and phenomenology (semi-structured interviews), as detailed in section 3.6 above. The findings from content analysis are presented first, followed by those from semi-structured interviews on the Policy Review Panel (PRP) as well as the e-health formulation process.

In the case of content analysis, the corresponding data collection method described in section 3.6 was applied to scrutinize the seven selected ICT policies for instances of each of the nine themes from the ICT4D and DS conceptual frameworks. The nine themes are the four DS framework themes of developmentalist ideology, state capacity and institutional arrangements, state autonomy, country context; and the five ICT4D framework themes of enabling institutional environment, agile ICT industry, robust ICT infrastructure, human digital capability development, and ubiquitous e-services deployment.

The following section starts by overviewing each one of the nine ICT4D and DS conceptual framework themes, and then investigates each one of the four selected ICT policies for instances of these themes.

## **4.1 Overview of ICT4D and DS Conceptual Framework Themes**

### **4.1.1 Overview of ICT4D conceptual framework themes**

The ICT4D conceptual framework exposed five themes. Enabling institutional environment is the first theme of the ICT4D conceptual framework. The key sub-themes this theme that were identified for it through academic literature review are to design and implement ICT sector policies, facilitate national consensus on an e-development vision, avoid state capture by sectorial interests, ensure inter-institutional cooperation, ensure inclusive growth and development, focus on capacity and capability building, conduct surveys and assessments of the Information Society, monitor and evaluate progress on building the Information Society, devise funding strategies for e-development initiatives, put in place an enabling legal framework, and drive Universal Service so that no segments of the society are excluded by law from participating in the Information Society.

The agile ICT industry theme of the ICT4D conceptual framework sees an agile local ICT Industry as the engine for technological change, for diversifying the economy, building the knowledge economy, exporting high-value ICT products and services, the hub that needs to be incentivised to stimulate research, development and innovation, the vehicle for local content development and Green IT, creates employment in the ICT sector, is responsible for driving ICT infrastructure to uneconomic areas through licence conditions for instance, facilitating technology transfer, and ensuring accrual of ICT benefits to society.

The key characteristics of the robust ICT infrastructure theme of the ICT4D framework are that it serves as the backbone of e-Transformation services, delivers information and information-related services, is the basis of the network economy, facilitates universal access, promotes network effects, creates connected societies, and lowers the cost of doing business.

Key sub-themes of the human digital capability development theme of the ICT4D framework are the building of digital capability, diffusion of ICTs in the society, pervasive training and capacitation of citizens, targeting rural areas and grassroots, bridging the

digital divide, and having ICT corporations playing the key role in capacity building and training.

The main purpose of the ubiquitous e-services deployment theme of the ICT4D framework is to drive the rollout of pervasive ICT services; provide better interaction between government, business and society; and improve the quality, efficiency and effectiveness of governance and service delivery. This will be achieved through implementing e-business, e-education, e-government, and other e-services. The desired outcome includes enhancement of human well-being through building and Information Society.

#### **4.2.2 Overview of DS conceptual framework themes**

The DS conceptual framework exposed four themes. Developmentalist ideology is the first theme of the DS conceptual framework and its key sub-themes are a state that drives a developmentalist agenda, a powerful planning agency constituted by competent elite bureaucrats, ownership of financial institutions by the state, pursuit of selective industrial policy, initiation of a hegemonic national project, driving a distributive social policy, implementing agrarian reform, focusing on human capability expansion, and ensuring an environmentally friendly development.

The state capacity theme of the DS conceptual framework focuses mainly on a state's capacity to design and implement policy, state institutions that are aligned to the developmental agenda and not serving global and international agencies, a state that establishes institutions in order to build its capacity, a constellation of coherent institutions that work in tandem and not against one another, pursuit of meritorious public service appointments, and institutions that build capacity to strengthen state autonomy and avoid state capture by sectorial interests.

The state autonomy theme of the DS conceptual framework builds on the State capacity and Institutional Arrangements theme and calls for an independent state that is resilient from capture; a state that is embedded in society, with synergistic societal relations; a state that is autonomous from global capital interests; that has decisive interventive capacity; and that secures credibility and legitimacy through democratic processes.

The country context theme of the DS conceptual framework tackles certain features that were not necessarily hallmarks of classic developmental states but are essential for building a modern DS. Key among those sub-themes is a participatory democratic dispensation; avoiding the so-called resource curse of mineral-rich countries where states are adept at indulging in super revenues from such taxes to the detriment of socio-economic development; the need to redress past injustices and dispossession; and building an interventionist DS in countries where social culture is not necessarily supportive of state intervention

In the following sections, gaps identified in the selected ICT policies are highlighted, as they pertain to the extent to which each policy reflects the DS and ICT4D themes. The policies were scrutinised in the chronological order of their development starting with the e-Government Policy of 2001, followed by the e-Education White Paper of 2004, then the ISAD Plan of 2006, then the ICT R&D Strategy of 2007, then the NeSPA of 2010, followed by the ICT Development Strategy of 2011, and lastly the NDP of 2012.

## **4.2 ICT4D and DS Theories in ICT Policy**

This section describes in detail the ICT4D and DS themes that are reflected in South Africa's ICT policy. The policies are discussed in the chronological order of their formulation.

### **4.2.1 ICT4D and DS Theories in the e-Government Policy of 2001**

In this section the extent to which the e-Government Policy of 2001 reflects the ICT4D and DS theories is determined, starting with the ICT4D theory followed by the DS theory.

#### **4.2.1.1 e-Government Policy of 2001 and the ICT4D Theory**

The e-Government Policy of 2001 reflects the following sub-themes of the enabling institutional environment theme: it recognises the need for strategic planning and creating a vision, for putting an ICT policy framework in place, and defining a legislative framework. Extensive consultation in the process is also emphasised, the concept of *Batho Pele* which means putting people first also entails inclusive development. The policy also recognises the need to assess and measure potential value before deciding on investing in

any ICT project. The policy recognises the need for inter-institutional cooperation and laments the then fragmented nature of institutional relationships, and to address this gap a multi-institutional coordination and monitoring framework is defined. Cooperation amongst state organs is seen as a means to eliminate duplication and wastage. The policy further recognises the potential impact of ICTs on the country's developmental agenda. The policy is however silent on the need for vigilance to avoid state capture by any rent seeking interest (DPSA, 2001:1-24).

The e-Government Policy of 2001 reflects the following sub-themes of the agile ICT industry theme: it recognises the need to develop a local ICT industry and emphasizes that such an industry should go beyond reselling ICT products that are made elsewhere, and should develop core IT skills and not mere sales and marketing personnel for foreign manufactured ICT products. The need for ICT benefits to accrue to the larger society is also expressed, as is innovation to ensure interoperability of ICT solutions. The crucial role of ICT research in enabling e-government is recognised, and similarly the ICT industry is seen as an engine for technological change. The policy has however not linked the ICT industry to building of the knowledge economy, exporting high-value ICT products and services, diversifying the economy, facilitating technology transfers, and deploying environmentally friendly ICT products (DPSA, 2001:7-24).

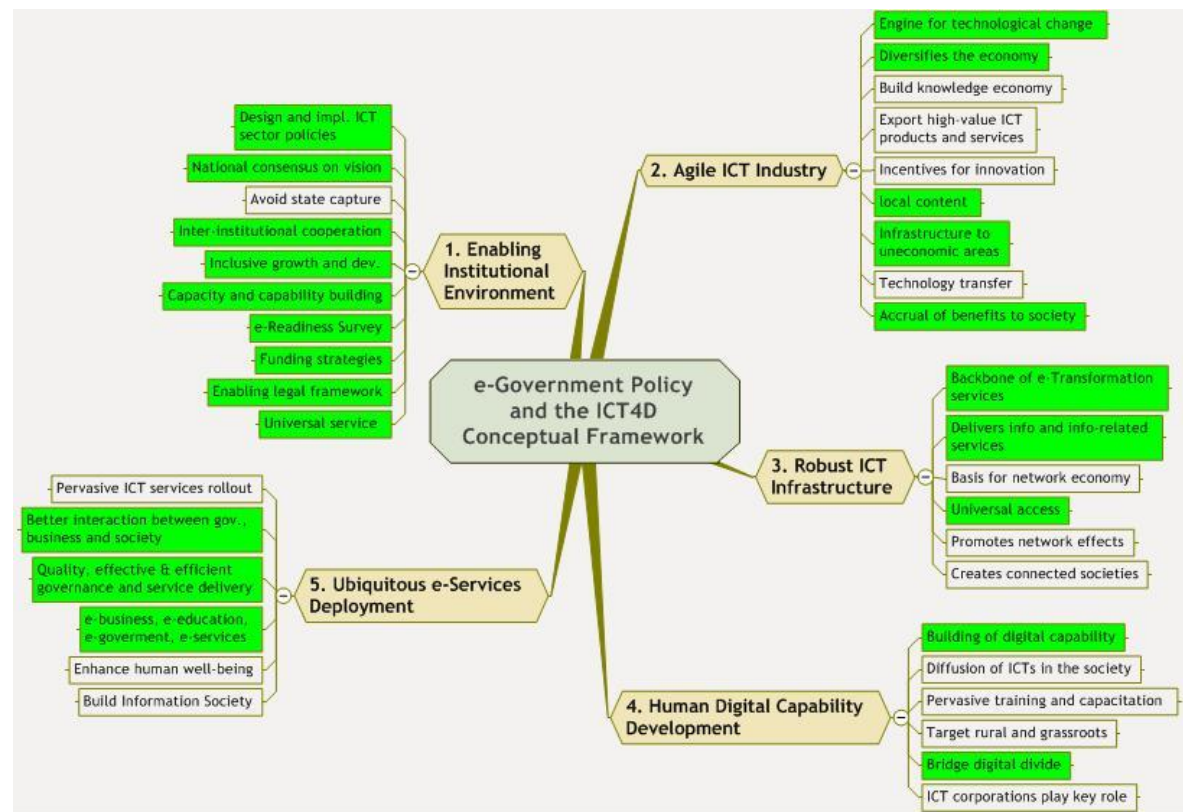
The e-Government Policy of 2001 reflects the following sub-themes of the robust ICT infrastructure theme: it sees ICT infrastructure as a delivery mechanism for information, information-related and e-Transformation services such as e-governance, and as a means for achieving universal access. It however overlooks the other robust ICT infrastructure sub-themes of providing the basis for network economy, promoting network effects, and creating connected societies (DPSA, 2001:4-17).

The e-Government Policy of 2001 reflects the following sub-themes of the human digital capability development theme: it identifies the critical need for development of ICT skills building human digital capability, and bridging the digital divide. It however pays no attention to diffusion of ICTs in the society, pervasive training and capacitation, targeting rural areas and grassroots, and incentivising ICT corporations to play a key role in driving human digital capability development (DPSA, 2001: 5-23).

The e-Government Policy of 2001 reflects the following sub-themes of the ubiquitous e-services deployment theme: it provides detailed definitions of e-governance, e-services and e-business. It also recognises the role of ICTs as enablers for quality, cost-effective and efficient service delivery; increased productivity and elimination of duplication, better interaction and collaboration between the private and public sectors is also envisaged. The policy does not reflect the other key sub-themes of this ubiquitous e-services deployment theme such as pervasive ICT services rollout, enhancing human well-being through ICT services and thereby building an Information Society (DPSA, 2001:4-24).

Figure 5 depicts all the ICT4D themes and sub-themes that are reflected by the e-Government Policy of 2001.

**Figure 5: Reflection of ICT4D Theory in the e-Government Policy of 2001**



#### 4.2.1.2 e-Government Policy of 2001 and the DS Theory

The e-Government Policy of 2001 reflects the following sub-themes of the developmentalist ideology theme: human capability expansion; planning agency (although no decisive powers are explicitly delegated to it as would be the case with a powerful DS planning agency); and industrial policy (DPSA, 2001:5-24). Other than these three sub-themes, the policy is silent on all other key sub-themes of the developmentalist ideology theme of the DS framework, which are ownership of financial institutions, competent elite bureaucrats, hegemonic national project, distributive social policy, agrarian reform, and environmentally friendly development.

The e-Government Policy of 2001 reflects the following sub-themes of the state capacity and institutional arrangements theme: constellation of coherent institutions; institutions to build state capacity; and institutions to design and implement policy. Besides these three

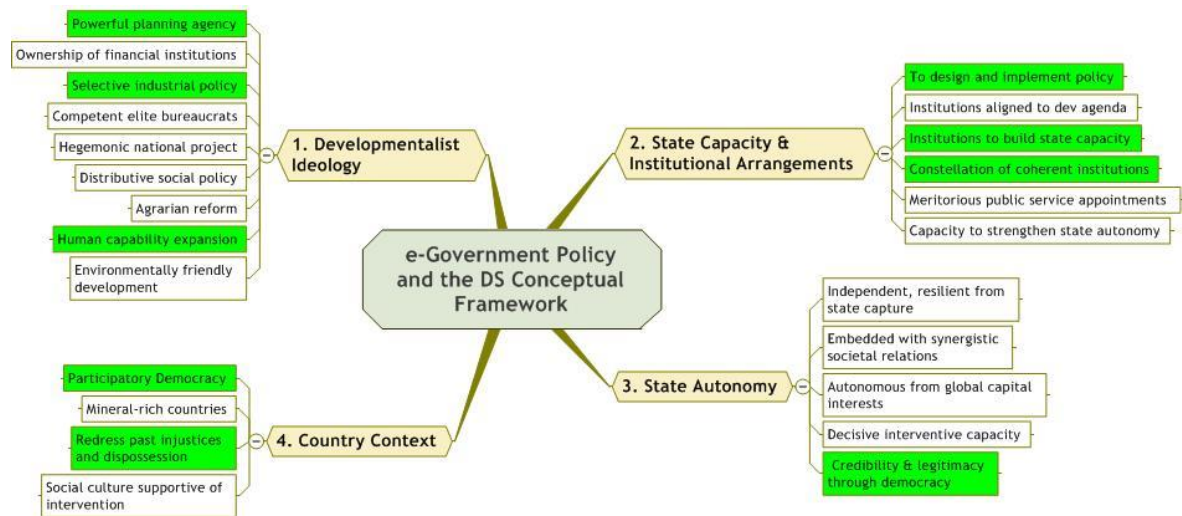
sub-themes, the policy does not require the institutions to be aligned to the developmental agenda, nor are meritocratic appointments to public offices discussed. Also, the building of state capacity is intended for service delivery and does not include strengthening state autonomy and to fortify it against capture (DPSA, 2001: 5- 24).

The e-Government Policy of 2001 only reflects the credibility and legitimacy through a democratic process sub-theme of the state autonomy theme (DPSA, 2001:6-16), it is silent on all the other sub-themes of this theme. The excluded sub-themes are building a state that is resilient from capture by rent seeking sub-themes, is embedded with synergistic social relations, is autonomous from global capital interests, and has decisive interventive capacity. The governing party of the current South African State is a coalition of the liberation organisation (African National Congress), organised labour (South African Congress of Trade Unions), and the South African Communist Party (SACP). This tripartite alliance could explain the absence of reference to state autonomy and state capture in the policy.

The e-Government Policy of 2001 reflects the following sub-themes of the country context theme: redress past inequalities and injustices (as it makes specific policy recommendations for previously neglected communities), the *Batho Pele* concept as well as the consultative process that is promoted entails participatory democracy (DPSA, 2001:7-19). The policy however does not see opportunity in leveraging revenues from mineral resources to finance the e-governance programme, nor does it pronounce itself on the need to encourage a social culture that is receptive of state intervention in directing economic activity. Such a culture seems to be assumed.

Figure 6 depicts all the DS themes and sub-themes that are reflected by the e-Government Policy.

**Figure 6: Reflection of DS theory in the e-Government Policy of 2001**



#### 4.2.2 ICT4D and DS Theories in the e-Education White Paper of 2004

In this section the extent to which the e-Education White Paper of 2004 reflects the ICT4D and DS theories is determined, starting with the ICT4D theory followed by the DS theory.

##### 4.2.2.1 e-Education White Paper of 2004 and the ICT4D Theory

The e-Education White Paper of 2004 reflects the following sub-themes of the enabling institutional environment theme: It links quality education to delivery of economic growth and social development, and promotes the concept of ICT4D in the context of development of the African continent. The policy covers the following sub-themes of the enabling institutional environment theme: allocates responsibility for devising funding strategies for ICT initiatives, inter-institutional cooperation is also covered in fair detail, national consultation and consensus on ICT strategic vision, enabling legislative framework and policy, capacity building, inclusive growth and development, monitoring, evaluation and assessment of readiness and progress in implementing e-education is covered, as is long term strategic planning. The policy is however silent on the need for resilience against state capture, as well as universal service to ensure no law excludes certain sectors of society from participation and deriving e-education benefits. The latter is however implied in the section on the digital divide, and in ensuring equitable supply of ICT tools to schools (DOE, 2003:8-39).

The e-Education White Paper of 2004 reflects the following sub-themes of the agile ICT industry theme: building of the ICT industry, ICT innovation, build knowledge economy, local content, exporting high value ICT products and services, accrual of ICT benefits to society, ICT industry as an engine for technological change, and technology transfer (DOE, 2003:9-41). The policy overlooks the ICT Industry as a means for deploying ICT infrastructure to uneconomic areas, and for diversifying the economy.

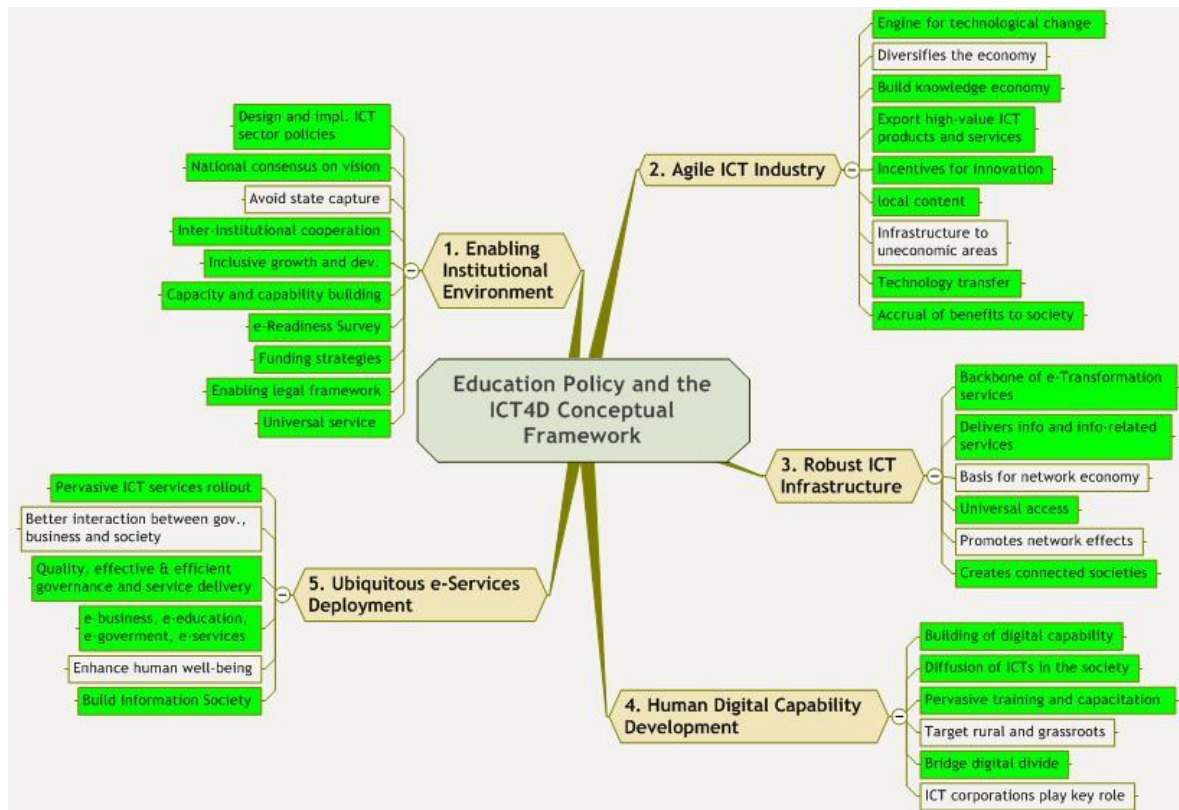
The e-Education White Paper of 2004 reflects the following sub-themes of the robust ICT infrastructure theme: the need to roll out ICT infrastructure that is specifically suited to Africa, to serve as a backbone for e-Transformation services, universal access, creating connected societies, and delivering information and information-related services (DOE, 2003: 10-40). The policy does not reflect the other sub-themes of ICT infrastructure as a basis for the network economy, and the promotion of network effects.

The e-Education White Paper of 2004 reflects the following sub-themes of the human digital capability development theme: bridge digital divide, diffusion of ICTs in the society, pervasive training and capacitation, building of digital capability (DOE, 2003:8-39). The policy does not reflect the other two key sub-themes of targeting rural areas and grassroots, and leveraging ICT corporations to play a key role in human digital capability development.

The e-Education White Paper of 2004 reflects the following sub-themes of the ubiquitous e-services deployment theme: quality, effective and efficient governance and service delivery; e-education; build Information Society; and pervasive ICT services rollout for schools (DOE, 2003:8-41). The policy does not reflect the key sub-themes of better interaction between government, business and society; and that of ubiquitous ICT service deployment as a means to enhance human well-being.

Figure 7 depicts all the ICT4D themes and sub-themes that are reflected by e-Education White Paper of 2004.

**Figure 7: Reflection of ICT4D Theory in the e-Education White Paper of 2004**



#### 4.2.2.2 e-Education White Paper of 2004 and the DS Theory

The e-Education White Paper of 2004 reflects the following sub-themes of the developmentalist ideology theme: human capability expansion; powerful planning agency; and selective industrial policy (DOE, 2003: 8:-39). The White Paper does not reflect the rest of the developmentalist ideology theme of the DS conceptual framework, which are ownership of financial institutions, competent elite bureaucrats, hegemonic national project, distributive social policy, agrarian reform, and environmentally friendly development.

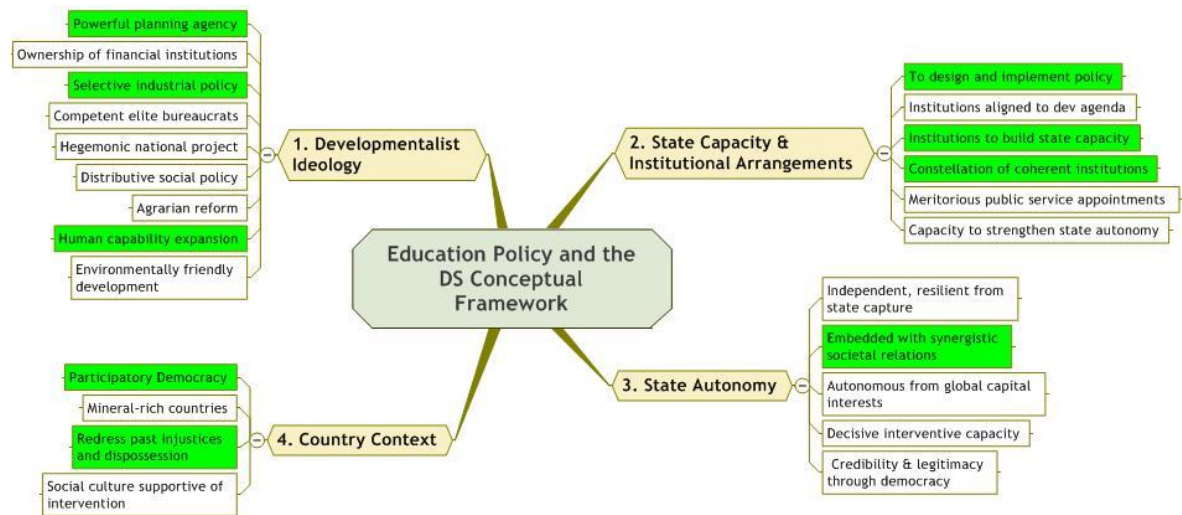
The e-Education White Paper of 2004 reflects the following sub-themes of state capacity and institutional arrangements theme: institutions to build state capacity; institutions to design and implement policy; and constellation of coherent institutions (DOE, 2003: 17-37). The White Paper does not reflect the rest of the sub-themes of the state capacity and institutional arrangements theme of the DS conceptual framework, which are institutions aligned to the developmental agenda, meritocratic appointments to public offices, and capacity to strengthen state autonomy.

The e-Education White Paper of 2004 only reflects the embedded with synergistic societal relations sub-theme of the state autonomy theme (DOE, 2003:10-32). The White Paper does not reflect any of the other sub-themes of the state autonomy theme of the DS conceptual framework, which are the independent and resilient from state capture, autonomous from global interests, decisive interventive capacity, credibility and legitimacy through democracy.

The e-Education White Paper of 2004 reflects the following sub-themes of the country context theme: redress past injustices and dispossessions; and participatory democracy (DOE, 2003: 8-17). The White Paper does not reflect the other sub-themes of the country context theme of the DS conceptual framework which pertain to participatory democracy, and nurturing a social culture that is supportive of intervention.

Figure 8 depicts all the DS themes and sub-themes that are reflected by e-Education White Paper of 2004.

*Figure 8: Reflection of DS Theory in the e-Education White Paper of 2004*



#### 4.2.3 ICT4D and DS Theories in the ISAD Plan of 2006

In this section the extent to which the ISAD Plan of 2006 reflects the ICT4D and DS theories is determined, starting with the ICT4D theory followed by the DS theory.

#### *4.2.3.1 ISAD Plan of 2006 and the ICT4D Theory*

The ISAD Plan of 2006 reflects the following sub-themes of the enabling institutional environment theme: national consensus on vision; capacity and capability building; enabling legal framework; inter-institutional cooperation; funding strategies; e-readiness surveys; inclusive growth and development; universal service; and design and implement ICT sector policies (PNC on ISAD, c2006: 1-80). The ISAD Plan is silent on the need for the state to avoid capture.

The ISAD Plan of 2006 reflects all the sub-themes of the agile ICT industry theme, which are: local content; engine for technological change; building knowledge economy; ICT innovation; accrual of benefits to society; export high value ICT products and services; diversify the economy; technology transfer; and ICT industry as the means for infrastructure rollout to uneconomic areas (PNC on ISAD, c2006:3-89).

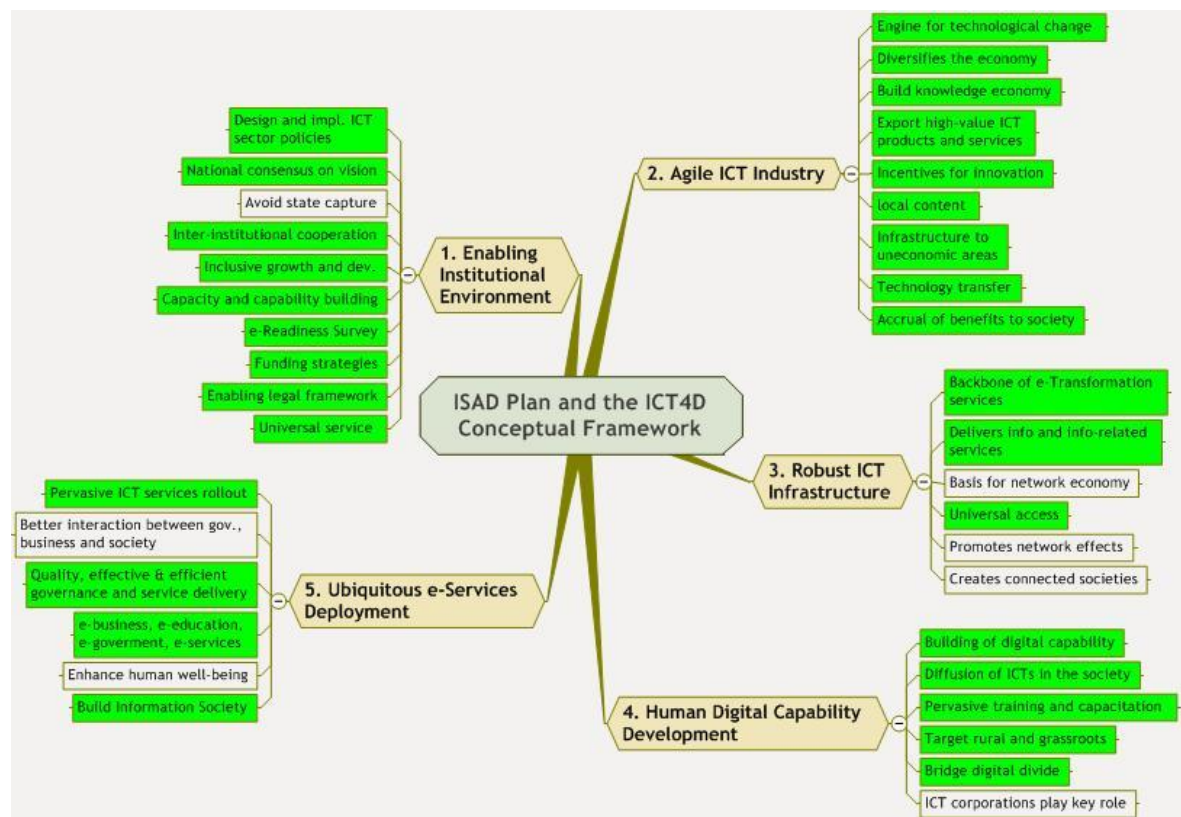
The ISAD Plan of 2006 reflects the following sub-themes of the robust ICT infrastructure theme: backbone of e-Transformation services; universal access; and delivering information and information related services (PNC on ISAD, c2006:26-30). It does not reflect the creation of connected societies, promotion of network effects, and robust infrastructure as a basis for the network economy.

The ISAD Plan of 2006 reflects the following sub-themes of the human digital capability development theme: building of digital capability; diffusion of ICTs in the society; bridge digital divide; target rural areas and grassroots; and pervasive training and capacitation (PNC on ISAD, c2006: 4-44). The ISAD Plan does not reflect the key role of ICT corporations in digital capability development.

The ISAD Plan of 2006 reflects the following sub-themes of the ubiquitous e-services deployment theme: building of the Information Society; quality, effective and efficient governance and service delivery; e-health, e-business, e-government, e-services; and pervasive ICT services rollout (PNC on ISAD, c2006: 1-85). The Plan is silent on the other two key sub-themes which are better interaction between government, business and society, as well as enhancement of human well-being as one of the goals of ubiquitous ICT service deployment.

Figure 9 depicts all the ICT4D themes and sub-themes that are reflected by ISAD Plan of 2006.

**Figure 9: Reflection of ICT4D Theory in the ISAD Plan of 2006**



#### 4.2.3.2 ISAD Plan of 2006 and the DS Theory

The ISAD Plan of 2006 reflects the following sub-themes of the developmentalist ideology theme: powerful planning agency; human capability expansion; distributive social policy; and selective industrial policy (PNC on ISAD, c2006: 1-80). Apart from these four, the Plan does not reflect the rest of the sub-themes of the developmentalist ideology theme of the DS framework, which are ownership of financial institutions, competent elite bureaucrats, hegemonic national project, agrarian reform, and environmentally friendly development.

The ISAD Plan of 2006 reflects the following sub-themes of the state capacity and institutional arrangements theme: constellation of coherent institutions; institutions to build state capacity; and institutions to design and implement policy (PNC on ISAD, c2006:4-

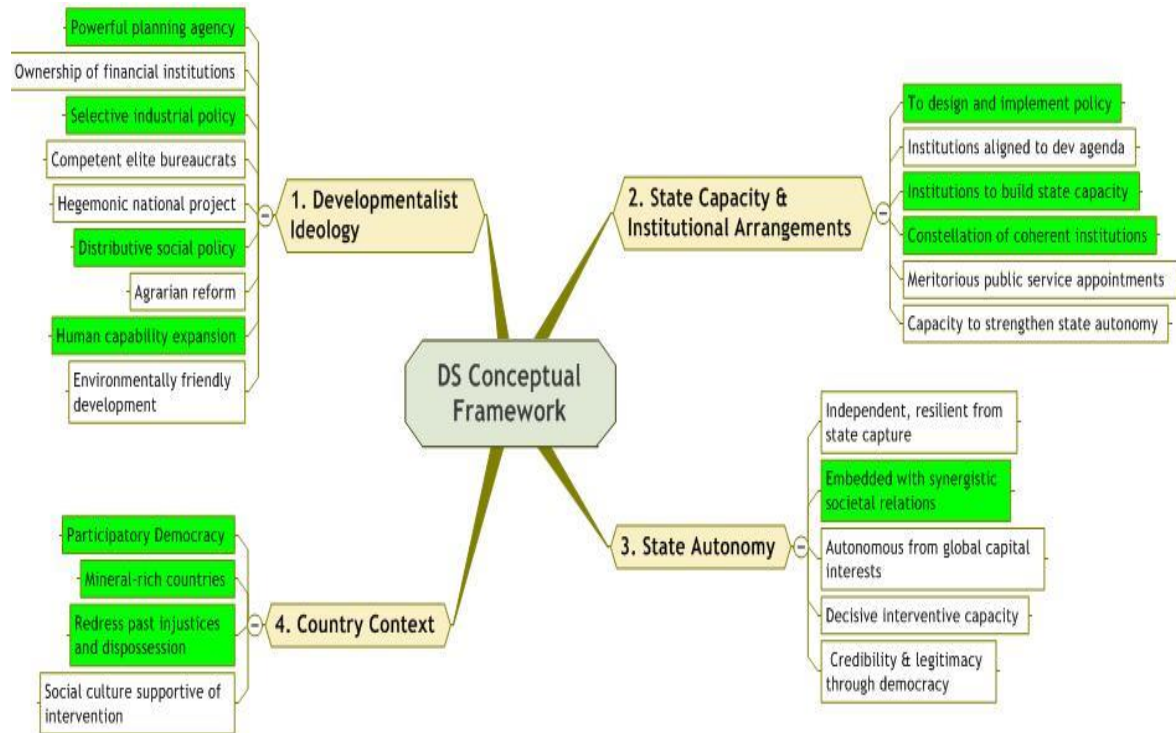
72). The Plan does not reflect the rest of the sub-themes of the state capacity and institutional arrangements theme of the DS conceptual framework, which are institutions aligned to developmental agenda, meritocratic public service appointments, and institutional capacity to strengthen state autonomy.

The ISAD Plan of 2006 only reflects the embedded with synergistic societal relations sub-theme of the state autonomy theme (PNC on ISAD, c2006:1-49). The ISAD Plan does not reflect any of the other sub-themes of the state autonomy theme of the DS conceptual framework, which are the independent and resilient from state capture, autonomous from global interests, decisive interventive capacity, and credibility & legitimacy through democracy.

The ISAD Plan of 2006 reflects the following sub-themes of the country context theme: funding from sources such as mineral revenues; redress past injustices and dispossessions; and participatory democracy (PNC on ISAD, c2006:5-80). The ISAD Plan does not reflect the fourth sub-theme of the country context theme of the DS conceptual framework, which is social culture supportive of intervention.

Figure 10 depicts all the DS themes and sub-themes that are reflected by ISAD Plan of 2006.

**Figure 10: Reflection of DS Theory in the ISAD Plan of 2006**



#### **4.2.4 ICT4D and DS Theories in the ICT R&D and Innovation Strategy of 2007**

In this section the extent to which the ICT R&D and Innovation Strategy of 2007 reflects the ICT4D and DS theories is determined, starting with the ICT4D theory followed by the DS theory.

##### **4.2.4.1 ICT R&D and Innovation Strategy of 2007 and the ICT4D Theory**

The ICT R&D and Innovation Strategy of 2007 reflects the following sub-themes of the enabling institutional environment theme: design and implement ICT sector policies; facilitate national consensus on an e-development vision; ensure inter-institutional cooperation, ensure inclusive growth and development, conduct surveys and assessments of the Information Society, monitor and evaluate progress on building the Information Society, devise funding strategies for e-development initiatives, put in place an enabling legal framework (ICT R&D, 2007:3-69). The ICT R&D and Innovation Strategy does not reflect the following sub-themes: avoid state capture by sectorial interests; focus on

capacity and capability building, and drive universal service so that no segments of the society are excluded by law from participating in the Information Society.

The ICT R&D and Innovation Strategy of 2007 reflects the following sub-themes of the agile ICT industry theme: diversifying the economy; incentives for innovation; local content development; creating employment in the ICT sector; facilitating technology transfer; and ensuring accrual of ICT benefits to society. (ICT R&D, 2007:2-54). The ICT R&D and Innovation Strategy does not reflect the following sub-themes: engine for technological change; building the knowledge economy; exporting high-value ICT products and services; deploying ICT infrastructure to uneconomic areas.

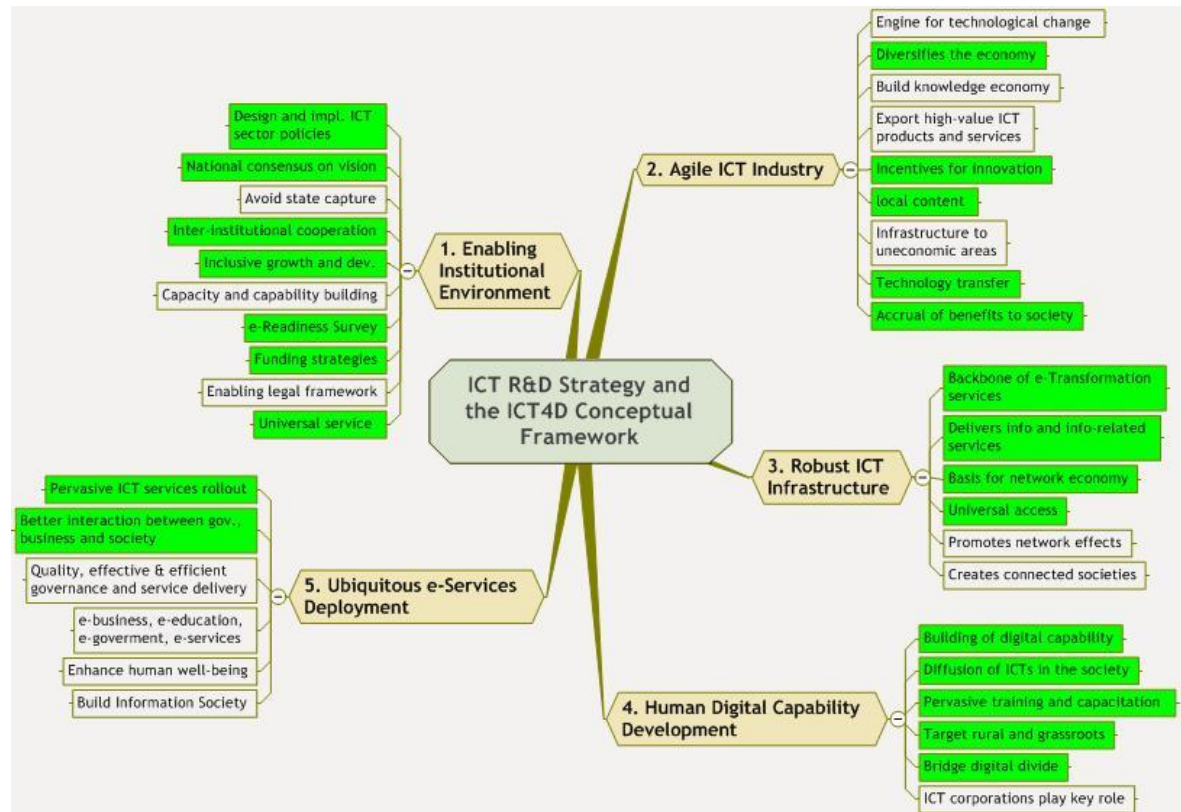
The ICT R&D and Innovation Strategy of 2007 reflects the following sub-themes of the robust ICT infrastructure theme: serves as the backbone of e-Transformation services; delivers information and information-related services, is the basis of the network economy; and facilitates universal access (ICT R&D, 2007:12-61). The ICT R&D and Innovation Strategy does not reflect the following sub-themes: promotes network effects, creates connected societies, and lowers the cost of doing business

The ICT R&D and Innovation Strategy of 2007 reflects the following sub-themes of the human digital capability development theme: building of digital capability, diffusion of ICTs in the society, pervasive training and capacitation of citizens, targeting rural areas and grassroots, bridging the digital divide (ICT R&D, 2007:2-58). The ICT R&D and Innovation Strategy does not reflect the following sub-theme: ICT corporations playing a key role in capacity building and training.

The ICT R&D and Innovation Strategy of 2007 reflects the following sub-themes of the ubiquitous e-services deployment theme: enhance human well-being; build Information Society (ICT R&D, 2007:2-60). The Strategy does not reflect the following sub-themes: pervasive ICT services rollout; better interaction between government, business and society; improve quality, efficiency and effectiveness of governance and service delivery; implement e-business, e-education, e-government, and other e-services.

Figure 11 depicts all the ICT4D themes and sub-themes that are reflected by the ICT R&D and Innovation Strategy of 2007.

*Figure 11: Reflection of ICT4D Theory in ICT R&D and Innovation Strategy of 2007*



#### 4.2.4.2 ICT R&D and Innovation Strategy of 2007 and the DS Theory

The ICT R&D and Innovation Strategy of 2007 reflects the following sub-themes of the developmentalist ideology theme: human capability expansion; and selective industrial policy (ICT R&D, 2007:2-60). The ICT R&D strategy does not reflect the following sub-themes: a powerful planning agency constituted by competent elite bureaucrats; ownership of financial institutions by the state; environmentally friendly development; initiation of a hegemonic national project, driving a distributive social policy, and implementing agrarian reform.

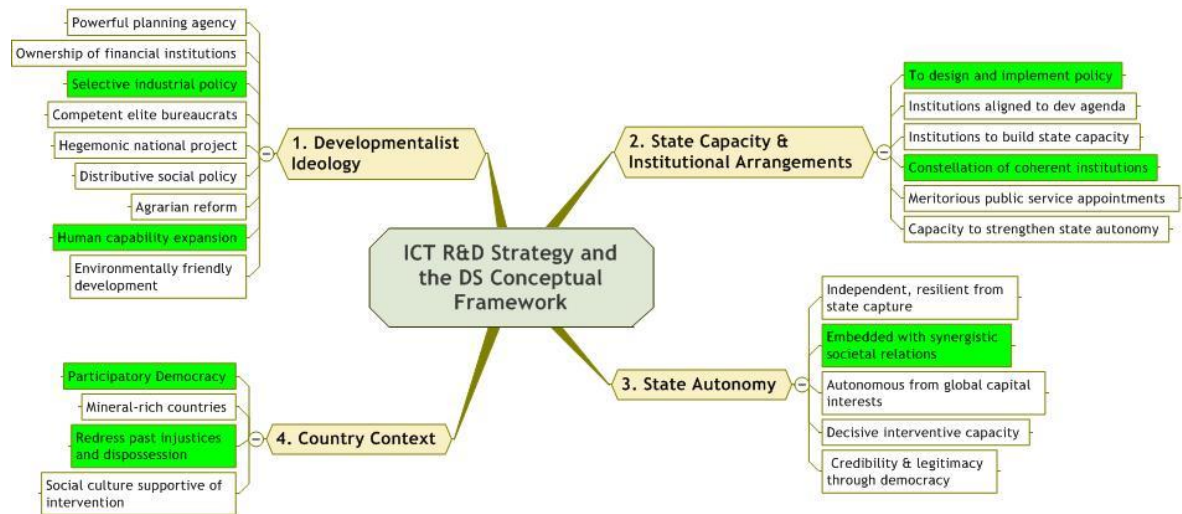
The ICT R&D and Innovation Strategy of 2007 reflects the following sub-themes of the state capacity and institutional arrangements theme: design and implement policy; and a constellation of coherent institutions (ICT R&D, 2007:2-60). The ICT R&D strategy does not reflect the following sub-themes: state institutions that are aligned to the development agenda and not serving global and international agencies, a state that establishes institutions in order to build state capacity; pursuit of meritorious public service appointments, and institutions that build capacity to strengthen state autonomy and avoid state capture by sectorial interests.

The ICT R&D and Innovation Strategy of 2007 reflects the following sub-themes of the state autonomy theme: embedded in society with synergistic societal relations (ICT R&D, 2007:2-60). The ICT R&D strategy does not reflect the following sub-themes: an independent state that is resilient from capture; secures credibility and legitimacy through democratic processes; autonomous from global capital interests; and has decisive interventive capacity.

The ICT R&D and Innovation Strategy of 2007 reflects the following sub-themes of the country context theme: participatory democratic dispensation; the need to redress past injustices and dispossession (ICT R&D, 2007:2-60). The ICT R&D strategy does not reflect the following sub-themes: social culture that is supportive of state intervention; and diverting revenues from mineral resources to drive developmental objectives.

Figure 12 depicts all the DS themes and sub-themes that are reflected by the ICT R&D strategy of 2007.

**Figure 12: Reflection of DS Theory in the ICT R&D Strategy of 2007**



#### 4.2.5 ICT4D and DS Theories in the National e-Skills Plan of Action (NeSPA) of 2010

In this section the extent to which the NeSPA of 2010 reflects the ICT4D and DS theories is determined, starting with the ICT4D theory followed by the DS theory.

##### 4.2.5.1 NeSPA and the ICT4D Theory

The NeSPA of 2010 reflects the following sub-themes of the enabling institutional environment theme: capacity development; readiness assessments; inclusive growth and development; national strategic vision; inter-institutional cooperation; ICT sector policy; enabling legal framework; e-readiness and maturity assessments; and universal service.

(NeSPA, 2010: 2-23). The NeSPA does not reflect the avoiding state capture sub-theme.

The NeSPA of 2010 reflects the following sub-themes of the agile ICT industry theme: the need to build an ICT industry as an engine for technological change; promote innovation and Green ICT products; build knowledge economy; diversify the economy; accrual of benefits to society; local content; exporting high-value ICT products and services; and technology transfer (NeSPA, 2010: ii-20). The NeSPA does not reflect the infrastructure to uneconomic areas sub-theme.

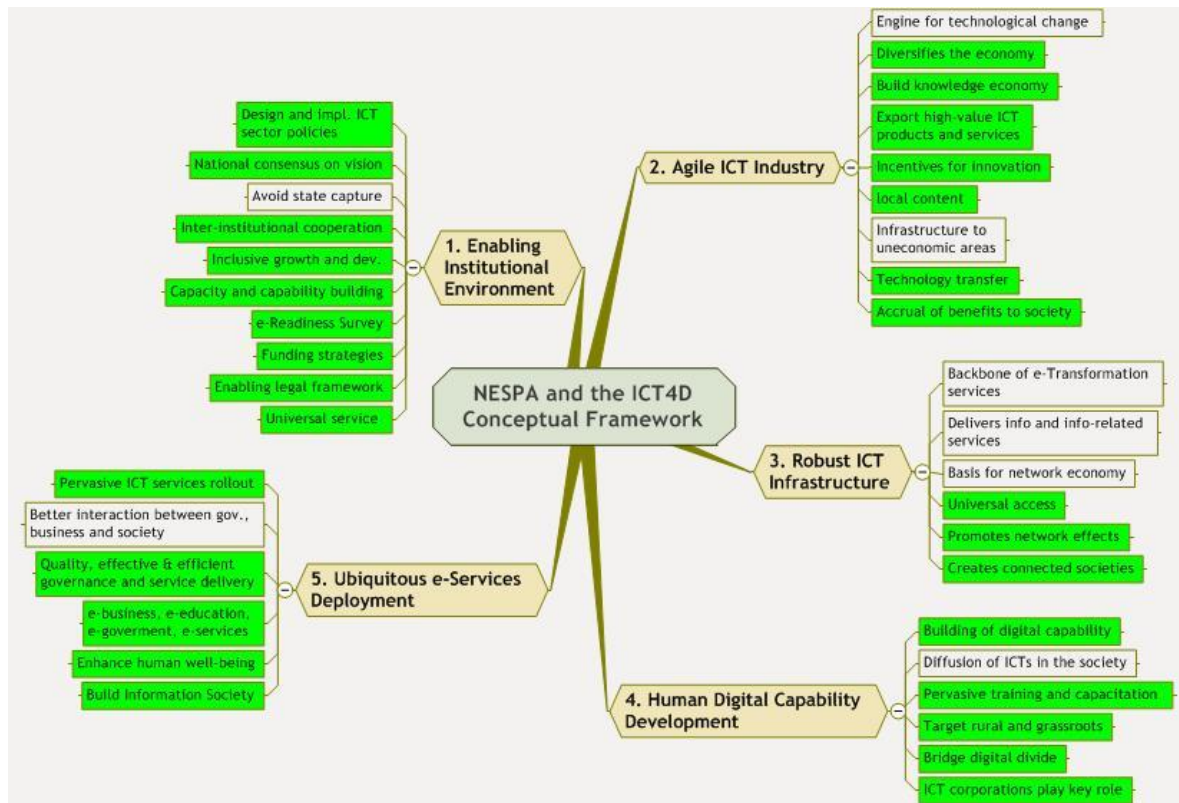
The NeSPA of 2010 reflects the following sub-themes of the robust ICT infrastructure theme: universal access to ICTs; promote network effect and lowering costs; and create connected societies (NeSPA, 2010:2-9). The NeSPA does not reflect the following sub-themes: backbone of e-Transformation; deliver information related services; and infrastructure as a basis for the network economy.

The NeSPA of 2010 reflects the following sub-themes of the human digital capability development theme: bridge digital divide; target rural areas and grassroots; build digital capability; pervasive training and capacitation; and role of ICT corporations in development of human digital capability (NeSPA, 2010:2-20). The NeSPA does not reflect the diffusion of ICTs in society sub-theme.

The NeSPA of 2010 reflects the following sub-themes of the ubiquitous e-services deployment theme: pervasive ICT services rollout; enhance human well-being; quality, efficient and efficient governance and service delivery including employment; e-business, e-government, e-services; and build Information Society (NeSPA, 2011:1-23). It does not reflect the better interaction with government sub-theme.

Figure 13 depicts all the ICT4D themes and sub-themes that are reflected by the NeSPA of 2010.

**Figure 13: Reflection of ICT4D Theory in the NeSPA of 2010**



#### 4.3.5.2 NeSPA and the DS Theory

The NeSPA of 2010 reflects the following sub-themes of the developmentalist ideology theme: agrarian reform; and environmentally friendly development (NeSPA, 2010: 3-18). The NeSPA of 2010 does not reflect the following sub-themes: a powerful planning agency constituted by competent elite bureaucrats; ownership of financial institutions by the state; initiation of a hegemonic national project; a distributive social policy; human capability expansion; and selective industrial policy.

The NeSPA of 2010 reflects the following sub-themes of the state capacity and institutional arrangements theme: institutions to build state capacity; and constellation of coherent institutions (NeSPA, 2010:19-23). The NeSPA of 2010 does not reflect the following sub-themes: design and implement policy; state institutions that are aligned to the development agenda and not serving global and international agencies; pursuit of

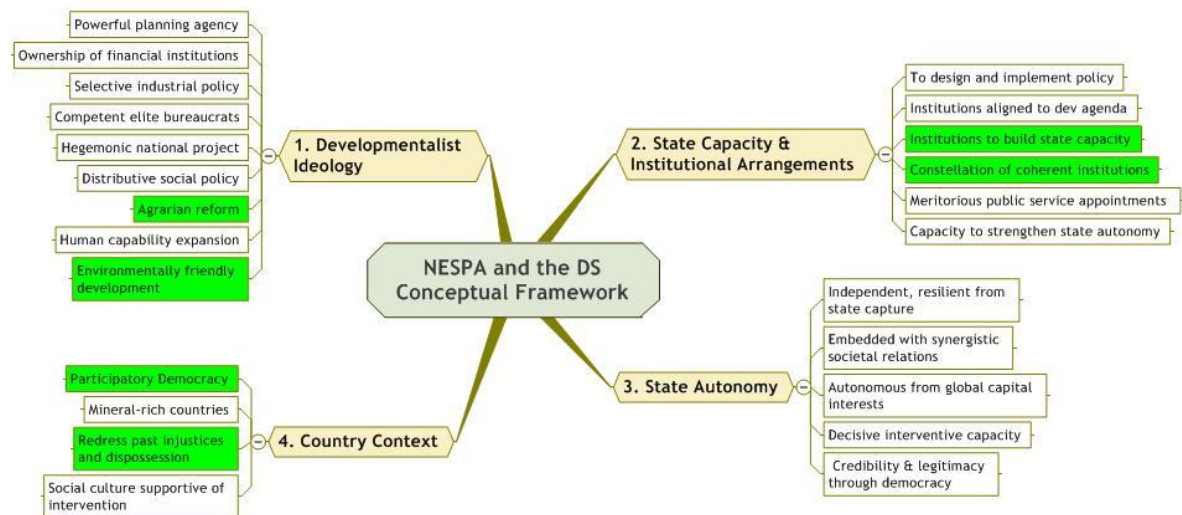
meritorious public service appointments, and institutions that build capacity to strengthen state autonomy and avoid state capture by opportunistic interests.

The NeSPA of 2010 does not reflect any of the state autonomy sub-themes, which are for the state to be embedded in society with synergistic societal relations; independent state that is resilient from capture; secures credibility and legitimacy through democratic processes; autonomous from global capital interests; and decisive interventive capacity.

The NeSPA of 2010 reflects the following sub-themes of the country context theme: participatory democratic dispensation; the need to redress past injustices and dispossession (NeSPA, 2010:1-19). The NeSPA of 2010 does not reflect the following sub-themes: social culture that is supportive of state intervention; and diverting revenues from mineral resources to drive developmental objectives.

Figure 14 depicts all the DS themes and sub-themes that are reflected by the NeSPA of 2010.

*Figure 14: Reflection of DS Theory in the NeSPA of 2010*



#### 4.2.6 ICT4D and DS Theories in the GPG ICT Development Strategy of 2011

In this section the extent to which the GPG ICT Development Strategy of 2011 reflects the ICT4D and DS theories is determined, starting with the ICT4D theory followed by the DS theory.

#### ***4.2.6.1 GPG ICT Development Strategy of 2011 and the ICT4D Theory***

The GPG ICT Development Strategy of 2011 reflects the following sub-themes of the enabling institutional environment theme: capacity development; readiness assessments; inclusive growth and development; national strategic vision; inter-institutional cooperation; ICT sector policy; enabling legal framework; and e-readiness and maturity assessments (GPG, 2011:3-44). The Strategy does not reflect the other key sub-themes which are avoiding state capture, and universal service.

The GPG ICT Development Strategy of 2011 reflects the following sub-themes of the agile ICT industry theme: the need to build an ICT industry as an engine for technological change; promote innovation and Green ICT products; build knowledge economy; diversify the economy; accrual of benefits to society; and technology transfer (GPG, 2011:2-35). The Strategy leaves out the three sub-themes which pertain to local content development, exporting high-value ICT products and services, and leveraging the ICT Industry as a vehicle to deploy infrastructure to uneconomic areas.

The GPG ICT Development Strategy of 2011 reflects the following sub-themes of the robust ICT infrastructure theme: universal access to ICTs; backbone of e-Transformation; promote network effects and lowering costs; deliver information related services; and create connected societies (GPG, 2011:2-41). The sub-theme of ICT Infrastructure as a basis for the network economy is not covered.

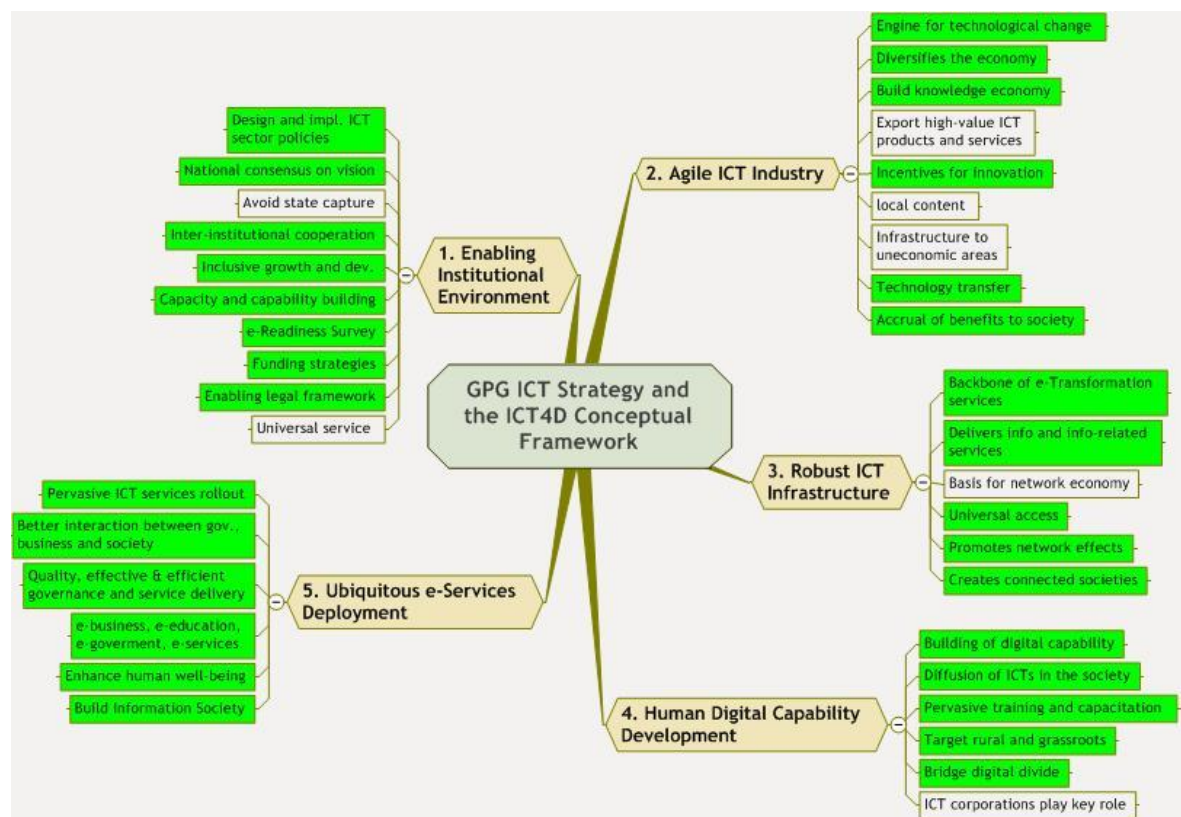
The GPG ICT Development Strategy of 2011 reflects the following sub-themes of the human digital capability development theme: bridge digital divide; target rural areas and grassroots; build digital capability; diffusion of ICTs in society; pervasive training and capacitation (GPG, 2011:2-42). The strategy overlooks the role of ICT corporations in development of human digital capability.

The GPG ICT Development Strategy of 2011 reflects all the sub-themes of the ubiquitous e-services deployment theme as follows: pervasive ICT services rollout; enhance human

well-being; quality, efficient and efficient governance and service delivery including employment; e-business, e-government, e-services; build Information Society; and better interaction with government (GPG, 2011:2-37).

Figure 15 depicts all the ICT4D themes and sub-themes that are reflected by the GPG ICT Development Strategy of 2011.

**Figure 15: Reflection of ICT4D Theory in the GPG ICT Development Strategy of 2011**



#### 4.2.6.2 GPG ICT Development Strategy of 2011 and the DS Theory

The GPG ICT Development Strategy of 2011 reflects the following sub-themes of the developmentalist ideology theme: hegemonic national project; human capability expansion; distributive social policy; environmentally friendly development; selective industrial policy; and powerful planning agency with competent elite bureaucrats (GPG,

2011:2-42). The Strategy does not reflect the remaining two sub-themes which are ownership of financial institutions, and agrarian reform.

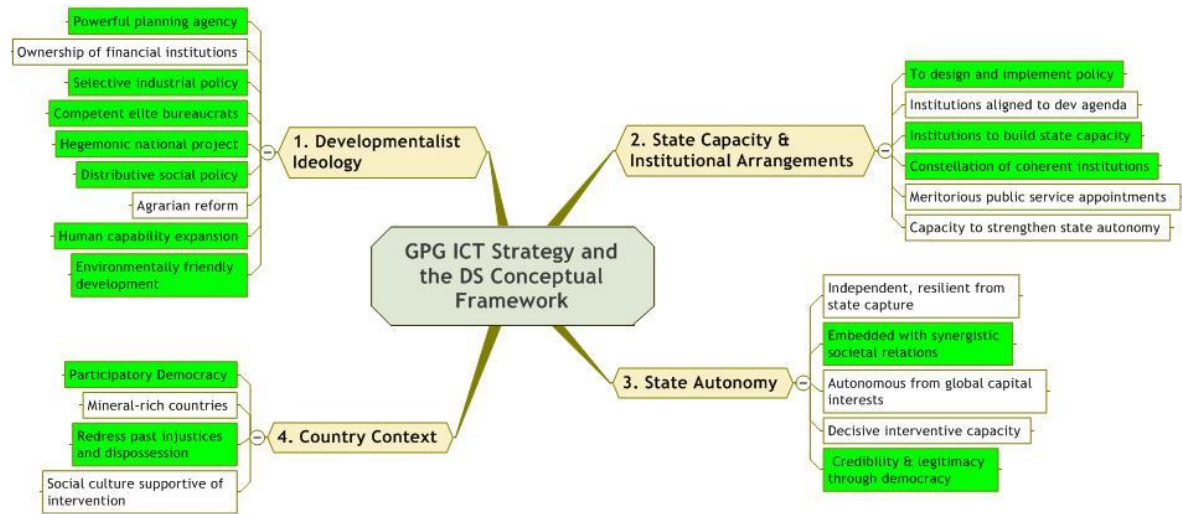
The GPG ICT Development Strategy of 2011 reflects the following sub-themes of the state capacity and institutional arrangements theme: institutions to build state capacity; constellation of coherent institutions; design and implement policy (GPG, 2011:2-44). The strategy does not reflect the rest of the sub-themes which are alignment of institutions to the developmental agenda, meritorious appointment of public servants, and capacity to strengthen state autonomy.

The GPG ICT Development Strategy of 2011 reflects the following sub-themes of the state autonomy theme: embedded with synergistic societal relations; and credibility and legitimacy through democracy (GPG, 2011:11-27). The Strategy does not reflect any of the other three sub-themes which are independence and resilience of state from capture, decisive interventive state capacity, and autonomy from global capital interests.

The GPG ICT Development Strategy of 2011 reflects the following sub-themes of the country context theme: redress past injustices and dispossession; and participatory democracy (GPG, 2011:10-37). The Strategy does not reflect the other two sub-themes of the country context theme which are leveraging super-revenues from mineral resources to finance the establishment of a DS, and fostering a social culture that is supportive of state intervention.

Figure 16 depicts all the DS themes and sub-themes that are reflected by the GPG ICT Development Strategy of 2011.

**Figure 16: Reflection of DS Theory in the GPG ICT Development Strategy of 2011**



#### 4.2.7 ICT4D and DS Theories in the National Development Plan (NDP) of 2012

In this section the extent to which the NDP of 2012 reflects the ICT4D and DS theories is determined, starting with the ICT4D theory followed by the DS theory.

##### 4.2.7.1 NDP of 2012 and the ICT4D Theory

Chapter 4 of the NDP of 2012 that deals with ICT Infrastructure reflects the following sub-themes of the enabling institutional environment theme: design and implement ICT sector policies, national consensus on ICT vision, inter-institutional cooperation, inclusive growth and development, capacity and capability building, e-readiness surveys, enabling legal framework, and universal service (NDP, 2012:189-196). The NDP does not reflect the sub-themes of avoiding state capture, and fundraising strategies for ICT4D projects.

Chapter 4 of the NDP of 2012 that deals with ICT Infrastructure reflects the following sub-themes of the agile ICT industry theme: diversifies the economy, build knowledge economy, incentives for innovation, local content, infrastructure to uneconomic areas, and accrual of benefits to society (NDP, 2012:189-196). The NDP does not reflect the sub-themes of engine for technological change, export high-value ICT products and services, and technology transfer.

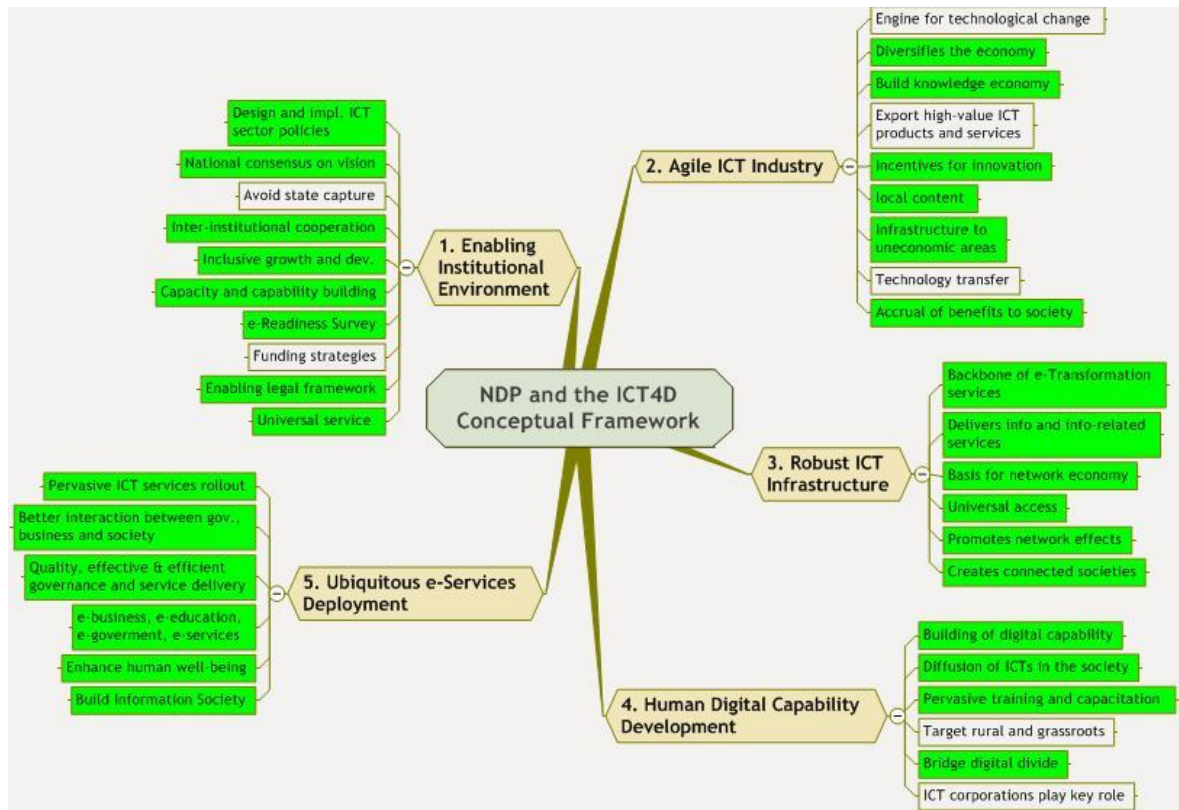
Chapter 4 of the NDP of 2012 that deals with ICT Infrastructure reflects all the sub-themes of the robust ICT infrastructure theme, which are backbone of e-transformation services, delivers information and information related services, basis for network economy, universal service, promote network effects, and create connected societies (NDP, 2012:189-196).

Chapter 4 of the NDP of 2012 that deals with ICT Infrastructure reflects the following sub-themes of the human digital capability development theme: building of digital capability, diffusion of ICTs in the society, pervasive training and capacitation, and bridge digital divide (NDP, 2012:189-196). The NDP does not reflect the sub-themes of targeting rural and grassroots, and ICT corporations playing a key role in human digital capability development.

Chapter 4 of the NDP of 2012 that deals with ICT Infrastructure reflects all the sub-themes of the ubiquitous e-services deployment theme, which are pervasive ICT services rollout, better interaction between government, business and society; quality, effective and efficient governance and service delivery; e-business, e-education, e-government, e-services; enhance human well-being; and build Information Society (NDP, 2012:189-196).

Figure 17 depicts all the ICT4D themes and sub-themes that are reflected by the NDP of 2012.

Figure 17: Reflection of ICT4D Theory in the NDP of 2012



#### 4.2.7.2 NDP of 2012 and the DS Theory

Chapter 13 of the NDP of 2012 that deals with building a capable state reflects the following sub-themes of the developmentalist ideology theme: a powerful planning agency constituted by competent elite bureaucrats, focusing on human capability expansion, and environmentally friendly development (NDP, 2012:407-443). Chapter 13 of the NDP does not reflect the sub-themes of ownership of financial institutions by the state, pursuit of selective industrial policy, initiation of a hegemonic national project, driving a distributive social policy, and implementing agrarian reform.

Chapter 13 of the NDP of 2012 that deals with building a capable state reflects all the sub-themes of the state capacity and institutional arrangements theme, and these pertain to the state's capacity to design and implement policy, state institutions that are aligned to the developmental agenda and not serving global and international agencies, a state that establishes institutions in order to build state capacity, a constellation of coherent

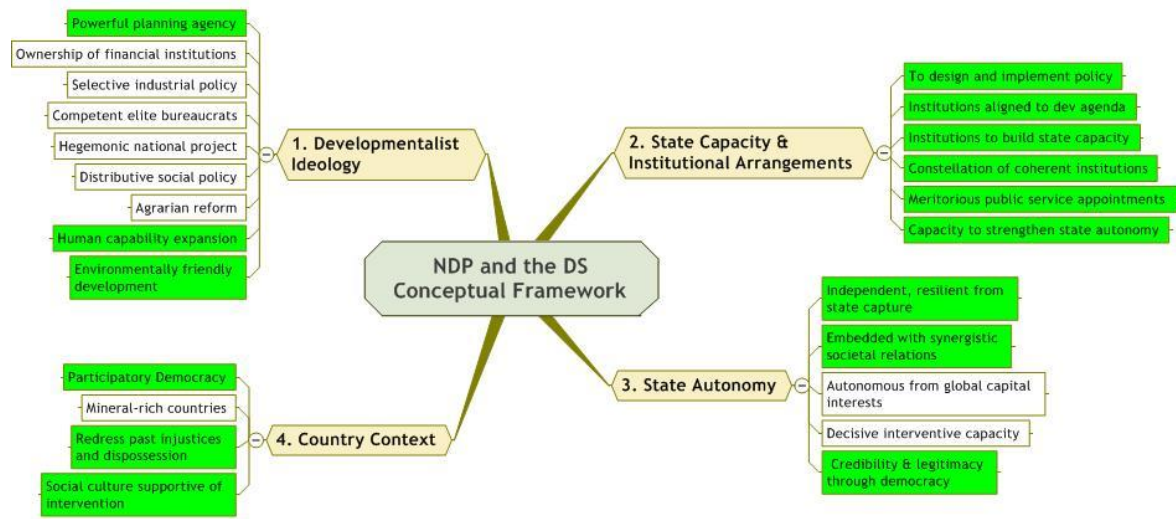
institutions that work in tandem and not against one another, pursuit of meritorious public service appointments, and institutions that build capacity to strengthen state autonomy and avoid state capture by sectorial interests (NDP, 2012:407-443).

Chapter 13 of the NDP of 2012 that deals with building a capable state reflects the following sub-themes of the state autonomy theme: an independent state that is resilient from capture; a state that is embedded in society, with synergistic societal relations; and that secures credibility and legitimacy through democratic processes (NDP, 2012:407-443). Chapter 13 of the NDP does not reflect the sub-themes of a state that is autonomous from global capital interests; and that has decisive interventive capacity.

Chapter 13 of the NDP of 2012 that deals with building a capable state reflects the following sub-themes of the country context theme: participatory democratic dispensation; the need to redress past injustices and dispossession; and social culture that is supportive of state intervention (NDP, 2012:407-443). Chapter 13 of the NDP does not reflect the sub-theme of diverting revenues from mineral resources to drive developmental objectives.

Figure 18 depicts all the DS themes and sub-themes that are reflected by the NDP of 2012.

**Figure 18: Reflection of DS Theory in the NDP of 2012**



The following two sections present findings from the semi-structured interviews regarding the Policy Review Panel (PRP) and the participation of stakeholders in the e-health policy formulation process.

### **4.3 Insights on the Policy Review Panel (PRP) and the e-Health Policy Process**

This section summarises findings from the PRP and e-health policy semi-structured interviews, in terms of findings and recommendations by the respondents.

#### **4.3.1 Insights on the Policy Review Panel (PRP)**

The insights gained from this interview are that the scope of the PRP is likely to grow bigger than is contained in the official terms of reference, and that the allocated timelines are quite tight given the intervening holidays. The panellists seems to be apprehensive of the upcoming elections that their work could be in vain if the incumbent minister is not re-appointed to the position. Another concern is that their recommendations could be too bitter for the sponsor to accept, in this case the interviewed panel member felt that South Africa should evolve to a maturity where the ministry is independent of the ministers as they are changed, but maintain its own culture and vision. The panel however feels honoured by the fact that the ministry of communications is turning to its local experts for advice instead of shunning them for usually expensive foreign expert who tend not to do a good job in transferring skills.

## **4.4.2 Insights on the e-Health Development Process**

The e-health policy is long overdue, and as emerged in other interviews health is one of the key ministries that should be driving the uptake of ICTs given the masses that it serves. The interview revealed that one of the biggest hurdles in the formulations of the e-health policy is lack of involvement and participation by key stakeholders in the process.

Chapter 4 examined all seven selected ICT policies and made findings with regards to the extent they reflect the conceptual DS and ICT4D theories. The following chapter presents and in-depth analysis of these findings.

## **Chapter 5: ICT Policy falls far short of DS and ICT4D theories**

This chapter presents a detailed analysis of the finding from Chapter 4, derived from the content analysis and phenomenological research instruments. The main analysis focuses on results from content analysis of the seven selected ICT policies. The perspectives that emerged from semi-structured interviews will serve the dual purpose of validating the policy analysis findings, and highlighting additional themes and perspectives that could have been missed.

The data analysis method presented by Leed and Ormrod (2005) and explained in section 3.82 stated that “almost invariably, one crucial step in content analysis is to tabulate the frequency of each characteristic found in the material being studied. Thus, a content analysis is quantitative as well as qualitative” (Leedy & Ormrod, 2005:143). Pursuant to that data analysis method, the following section tabulates the policy analysis results from Chapter 4 for the purpose of analysing them, and expounds upon that tabulation structure.

The results tabulated in Table 5.1 expose at least three main perspectives: the frequency of each theme found across the seven ICT policies, the extent to which each individual ICT policy reflects both DS and ICT4D theories, as well as the overall reflection of the themes by the combined seven ICT policies. Given the subjective nature of the policy analysis process, as some judgement is involved identifying themes in a policy, the results tabulated

in Table 5.1 along with the weightings and percentages should be taken as indicative and not conclusive.

The remainder of this chapter focuses on the actual analysis of the tabulated themes taking into account perspectives from the semi-structured interviews. The chapter concludes by discussing the relationships between the DS and ICT4D frameworks that were uncovered by the data collection and data analysis methods.

### ***5.1 Tabulation of frequencies of themes found in South Africa's ICT Policy***

Table 5.1 tabulates the frequency of each theme and sub-theme found in South Africa's ICT Policy as enshrined in the DS and ICT4D conceptual frameworks. The top row of Table 5.1 lists the seven selected ICT policies that were examined, in the chronological order of their development, while the left-most column lists themes of the the ICT4D and DS conceptual frameworks, starting with those of the ICT4D conceptual framework down to those of the DS conceptual framework. Each cell within the table represents an intersection of a framework theme with an ICT policy, and shows the level to which the policy reflects the key sub-themes of that theme.

Each cell within the table is colour-coded according to the legend below the table, with the name of the colour specified inside the cell for black and white or grayscale printing. Beneath the name of the colour is the ratio of the sub-themes that were found in the specific ICT policy to the total number of sub-themes for that specific theme which intersects the ICT policy. For instance the cell in row number 3 column number 6 represents the intersection between the robust ICT infrastructure theme and the GPG ICT Development Strategy of 2011, and shows that the latter policy reflects 5 out of the 6 sub-themes of the robust ICT infrastructure theme, and is thus colour-coded in green.

**Table 5.1: Tabulation of frequencies of DS and ICT4D themes found in ICT Policy**

ICT POLICY FRAME WORK THEME	e- Government Policy of 2001	e- Education White Paper of 2004	ISAD Plan of 2006	ICT R&D Strategy of 2007	NeSPA of 2010	GPG ICT Strategy of 2011	NDP Of 2012	OVERALL
ICT4D: Enabling Institutional Environment	GREEN 9/10	GREEN 9/10	GREEN 9/10	AMBER 7/10	GREEN 9/10	GREEN 8/10	GREEN 8/10	82% (59/70)
ICT4D: Agile ICT Industry	AMBER 5/9	GREEN 7/9	GREEN 9/9	AMBER 5/9	GREEN 7/9	AMBER 6/9	AMBER 6/9	71% (45/63)
ICT4D: Robust ICT Infrastructure	AMBER 3/6	AMBER 4/6	AMBER 3/6	AMBER 4/6	AMBER 3/6	GREEN 5/6	GREEN 6/6	67% (28/42)
ICT4D: Human Digital Capability Development	RED 2/6	AMBER 4/6	GREEN 5/6	GREEN 5/6	GREEN 5/6	GREEN 5/6	AMBER 4/6	71% (30/42)
ICT4D: Ubiquitous e- Services Deployment	AMBER 3/6	AMBER 4/6	AMBER 4/6	RED 2/6	GREEN 5/6	GREEN 6/6	GREEN 6/6	71% (30/42)
DS: Developmentalist Ideology	RED 3/9	RED 3/9	RED 4/9	RED 2/9	RED 2/9	GREEN 7/9	RED 3/9	38% (24/63)
DS: State capacity and Institutional arrangements	AMBER 3/6	AMBER 3/6	AMBER 3/6	RED 2/6	RED 2/6	AMBER 3/6	GREEN 6/6	52% (22/42)
DS: State Autonomy	RED 1/5	RED 1/5	RED 1/5	RED 1/5	RED 0/5	RED 2/5	AMBER 3/5	26% (9/35)
DS: Country Context	AMBER 2/4	AMBER 2/4	GREEN 3/4	AMBER 2/4	AMBER 2/4	AMBER 2/4	GREEN 3/4	57% (16/28)
OVERALL	51% (31/61)	61% (37/61)	67% (41/61)	49% (30/61)	57% (35/61)	72% (44/61)	74% (45/61)	62% (263/427)

**Legend of Policy Reflection: Red = 0% - 49%, Amber = 50% - 74%, Green = 75% - 100%**

The last row reflects the overall frequency of all the themes for each ICT policy along with its percentage, while the rightmost column reflects the overall frequency of each theme across the seven selected ICT policies along with its percentage.

Given the foregoing description of Table 5.1, it can be observed that all policies combined reflect 62% of the DS and ICT4D theories, as reflected in the very last cell of the table (62% is 263/427). This is the main finding of policy content analysis for this research report, and pitches the score in the amber range based on the table legend. At a glance, it is evident that the policies have more greens for the ICT4D framework than for the DS framework. Moving down Table 5.1 taking each row of a conceptual framework theme at

a time, it can be observed in the OVERALL column that the best reflected themes are those belonging to the ICT4D conceptual framework, while the worst reflected belong to the DS conceptual framework.

Moving across Table 5.1 taking each ICT policy column at a time in the bottom OVERALL row, it can be observed that most of the selected policies deliver average reflection of themes in the amber range, the exception being the NDP which just managed to make a green. Most importantly to note is that ICT policy seems to improve in reflection of the DS and ICT4D theories as years progress, with most of the recently developed policies reflecting more of the DS and ICT4D theories. This is an overall perspective taking into account results from all the selected policies for all the themes of the DS and ICT4D conceptual frameworks.

The following sections take each one of the themes in Table 5.1 and conduct the main analysis of the results from Chapter 4, in a bid to determine the extent to which South Africa's ICT policy reflects the DS and ICT4D theories. Table 5.1 will be the main reference point throughout this data analysis exercise. As stated before, analysis of interview perspectives is integrated into the main policy analysis process.

### **5.1.1 Reflection of the Enabling Institutional Environment Theme in ICT Policy**

Table 5.1 shows that a total of 82% of the enabling institutional environment sub-themes are reflected across the seven selected ICT policies and this happens to be the best reflected theme in the Table. The sub-theme that is not reflected by most of the seven policies is the avoidance of state capture by opportunistic interests. This finding is consistent with the perspectives from semi-structured interviews, where respondents indicated that the state is captured at all levels of government. In this context, respondents pointed out that the Department of Communications (DoC) is the one capturing and stifling institutional cooperation by not collaborating sufficiently with other institutions given its key role in ICT policy design and implementation. The respondents considered the DoC as the key and central department in South Africa with regards to ICT policy formulation, and

its major weakness is seen as that it has not sought to collaborate strongly with other ministries.

These key ministries where ICT policy is required are the ministries of health, education, science and technology (MST), the ministry of trade and industry (MTI), provincial governments, and the ministry of local government. These ministries are seen as key and crucial in the establishment of an Information Society because they affect very large numbers of the South African population, they could easily account for 90% of the population. There should therefore be two major collaborative exercises, one with ministry of communications (MoC) and health, education, provincial and local governments, the other between MoC, ministry of trade and industry (MTI) and ministry of science and technology (MST). As for the underlying reasons why MoC has not hitherto forged strong collaboration with other key ministries, it appears from the interviews to be rooted on the fact that many government departments tend to operate in highly restricted silos, which goes against the whole concepts of a developmental state and ICT4D which call for cohesive and collaborative institutional arrangements which work across mandates. The other entity that MoC should collaborate with is the Parliament Portfolio Committee on communications.

### **5.1.2 Reflection of the Agile ICT Industry Theme in ICT Policy**

Table 5.1 shows that a total of 71% of the agile ICT industry sub-themes are reflected across the seven selected ICT policies and this is the second best reflected theme in the Table and on par with the human capability development and the ubiquitous e-services deployment themes. The ISAD plan reflects all sub-themes therefore there is no pattern of unique sub-themes that are not reflected across all the seven policies. It should be noted that only the GPG ICT Development Strategy and the NDP of 2012 highlighted the need to deploy green ICT technologies.

Perspectives of expert interview respondents on this theme are that while the role that CSIR Meraka has played in nurturing the local ICT Industry is recognised and commendable, it is lamentable that its role and mandate is too narrowly focused and not strategically positioned to build an advanced ICT industry sector and an advanced ICT

R&D in industry in South Africa. The view of the respondents is that South Africa has not made significant effort to nurture a local ICT industry. There has been a lot of work done by the Department of Science and Technology (DST) over the last decade to bring the ICT industry into a discussion with government, in order to drive specific areas such as supercomputing. The DST work has attempted to address those kinds of areas using its ICT R&D strategy. The shortcoming of that R&D strategy is that it only focused on the CSIR Meraka institute, which was not wrong, but it was too narrow a focus. It didn't try to build an advanced ICT industry sector, an advanced ICT R&D industry in South Africa. It only sought to activate R&D through CSIR Meraka, but has not gone far enough to actually bring together the efforts of CSIR Meraka and the bigger industry capacity in South Africa. A typical challenge is that we now want South African local industry to build set top boxes for digital TV, but that process is very slow because we don't have an evolving ICT R&D industry. Hence we are not seeing any key ICT technology development in South Africa. CSIR Meraka is seen as a very valuable organisation in South Africa's innovation resource base, but it needs to move to the next level of industry collaboration. This refers to strategic industry collaboration, not just total collaboration on everything but playing to South Africa's strengths in what we are well positioned to do better than other competitive countries.

### **5.1.3 Reflection of the Robust ICT Infrastructure Theme in ICT Policy**

Table 5.1 shows that a total of 67% of the robust ICT infrastructure sub-themes are reflected across the seven selected ICT policies and in terms of ranking this theme is the 3<sup>rd</sup> best reflected in the Table. The NDP of 2012 reflects all the sub-themes and therefore there is no pattern of unique sub-themes that are not reflected across all the seven policies.

The views expressed by expert respondents regarding this theme are that South Africa's infrastructure is very strong and robust; the problem is lack of innovation in access and usage. Billions of rands have been invested in laying out infrastructure by mobile operators, the fixed line operators, and the ICT industry itself. Taking telecoms companies and the ICT industry together, it is a multi-billion rand industry, with highly evolved human resources in many aspects of that industry. But the weakness is how to translate the availability of infrastructure into highly innovative access and usage.

The three main areas that experts believe should be targeted through innovative access and usage are e-commerce, social media and e-government. E-commerce has seen a lot of advances particularly in the services sector which includes banking, financial services, and tourism. Social media is now like a fourth media, because people no longer have to read newspapers, listen to radio or watch TV to know what is going on in their environment, they access a lot of that through social media. Social media also lets people know about what's happening in the media itself, namely newspapers radio and TV. The third element of access and usage, e-government, is very weak. It is there, it does exist, but there's very limited access, adoption, and usage, and limited content provision. It lags far behind e-commerce and social media. The barrier to this access and usage is seen as being on the government side, not on the citizen side because it will never be known what the barrier (if any) is on the citizen side unless it is tested on the government side as a service provider. The problem is therefore seen to be on the supply side, not the demand side. There may be problems on the demand side, but researchers haven't even discovered them because the government hasn't supplied anything. Once the government starts supplying the citizens with online material, and that includes internet, mobile and TV, once the society starts exploiting those technologies to the full, only then can it be determined if there are any problems on the demand side. But we don't even know the problems on the demand side, because we are not supplying. So government needs to be supplying via all its domains and channels. It needs to be hopping onto e-commerce channels, it needs to be supplying through TV and social media. At this stage, the government is failing to supply information, knowledge, resources, transactions, and content through online media.

The vehicle to unblock those constraints in innovative access and usage in order to leverage the abundant infrastructure capacity for South African citizens is CSIR Meraka. Respondents believe that the role of CSIR Meraka has been undervalued and it has not been strategized to its fullest extent. CSIR Meraka could play a very important role in facilitating online strategies for all the crucial government institutions and ministries, in addition to its current limited mandate which is to design technologies and technology applications and solutions. These government institutions, ministries, the provincial governments and local governments lack capacity, and for a long time into the future they are going to lack capacity to do online public service e-government innovation. But CSIR Meraka is well-positioned to do that, it really needs to be brought out of the shadows into

the centre stage, so that it can build and effect online strategies for these major departments. Some of these departments have their own ICT resources. The ministry of health for example has its own kind of e-health focus, but it is weak and is not really effective. Regarding e-education we've had a white paper since 2004 whose delivery timeline was 2013, but they are not succeeding in terms of taking e-education to the mass school audience. GPG has Gauteng Shared Services Centre, but they really have made very little movement in ICT innovation and in terms of e-services, e- health services, and e-education services. So the one main thing to be done is to bring CSIR Meraka to centre stage. Other things that need to be done is working with academic institutions, with NGOs, as the experts believe that terrain hasn't even begun to be explored.

#### **5.1.4 Reflection of the Human Digital Capability Development Theme in ICT Policy**

Table 5.1 shows that a total of 71% of the human digital capability development sub-themes are reflected across the seven selected ICT policies and in terms of ranking this theme is one of the second best reflected in the Table. The sub-theme that is not reflected by all but the NeSPA policy is that of amplifying the role of ICT corporations in driving human digital capability development.

These finding are supported by interview respondents who argued that South African citizens have proved to be very adaptive and when confronted with appropriate technology, a technology which is appropriate in terms of their income levels and their lifestyles, they adopt it. The respondents also argued that the gap is on the supply side which is the state, in terms of not providing appropriate technologies and online content. Recognising this alignment between the findings and the respondents, the researcher still contends that not deliberately leveraging ICT corporations to drive periodic pervasive digital capacitation of citizens could prove to be a lost opportunity, given that technology cycles are short and this creates the need for skills to be refreshed in order to take advantage of new functionality.

### **5.1.5 Reflection of the Ubiquitous e-Services Deployment Theme in ICT Policy**

Table 5.1 shows that a total of 71% of the ubiquitous e-services sub-themes are reflected across the seven selected ICT policies and in terms of ranking this theme is one of the second best reflected in the Table. Given that the GPG ICT Strategy of 2011 and the NDP of 2012 reflect all the sub-themes, there is therefore no pattern of unique sub-themes that are not reflected across all the seven policies.

These findings are consistent with the views of expert respondents that e-services such as e-education, e-government, and e-health have not delivered. Progress was only noticeable in the e-commerce and social media fronts. In addition to perspectives provided in previous sections regarding the need for the ministry of communications to build collaboration with other key ministries and for CSIR Meraka to play a more centre-stage role and the lack of delivery in the e-government service, respondents pointed out as a typical example that the e-education white paper came in the year 2004, and set a focus of 2013, which is this year, but it has achieved very little. There are computers in some schools, but some of those computers are not even used, and some are used to a very minimal extent. They are used as computers but not used for e-education. On another front, we had the e-education white paper in 2004, an ISAD plan in 2006, but we only have an e-health policy being developed in 2012. So clearly not much has been achieved in the area of e-services rollout.

### **5.1.6 Reflection of the Developmentalist Ideology Theme in ICT Policy**

Table 5.1 shows that a total of 38% of the developmentalist ideology sub-themes are reflected across the seven selected ICT policies and in terms of ranking this theme is the 2<sup>nd</sup> worst reflected in the Table. The GPG ICT Development Strategy reflects all but the two sub-themes which are ownership of financial institutions, and agrarian reform. These findings are consistent with perspectives of respondents in a number of ways. Firstly, respondents contended that it is not the ownership of assets and institutions that makes a state to be developmental; instead it is the intelligent and efficient use of those institutions and assets that is characteristic of a DS. Another alignment with respondents is that an intelligent competitive DS should make as its goal focus the achievement of sustained high economic growth with accrual of benefits to make the majority of citizens wealthy, in

contrast to making welfare and redistribution the main focus without putting in place means to sustain them.

Respondents submitted that eighteen years of democracy and majority rule is too short a period to expect South Africa to be a fully-fledged DS and an advanced Information Society given our recent history of lopsided and stifled growth, but that it was not a reason for complacency. South Africa is seen as pursuing a developmentalist approach and not a developmental state approach, and policy makers do not seem to make or to be aware of that distinction. A developmentalist approach is seen as prioritising redistribution and social welfare, followed by some considerations for economic growth. A DS on the other hand would prioritise global competitiveness of the state apparatus resulting in sustained high growth and wealth creation, and through them and indirectly achieve sustainable welfare and distribution. The dominant thinking and discourse in the ruling party is thus seen as developmentalist, and not pursuing a DS. South Africa's pursuit of a developmentalist approach is seen as borne out of the liberation history, the policy being to keep the cake and redistribute it, instead of expanding the cake sustainably and ensuring that more citizens benefit from it, because without expansion it will be depleted and there will be nothing left to redistribute. With a DS you want to expand the cake immediately before you even completely redistribute. The country has to be highly competitive compared to its peers that it trades or will potentially trade with, and building a DS can help achieve that goal. The idea is not to ignore the political and historical context within which the state operates, but to build a DS South Africa needs to focus more on industrialisation and growth, and then redistribute on the back of that growth.

Another perspective that emerged is that the current over-focus by the South African state on policies that seek to redress past disparities such as cadre deployment, affirmative action, black economic empowerment (BEE) are a major barrier to the prospects of a DS. This is because they are in contrast to the characteristic of an intelligent state that is driven by the best brains in the country. The state needs to get all the best talent on board let them think how to make the state competitive and how best to address past disparities. A DS is a thinking state, a state that says we have a historical reality that Blacks have been excluded from the system, we now have to get them into the system, into the state, into the market system, into the economy, and blacks don't have the skills historically. Get all the people with good ideas on board to resolve South Africa's challenges. Start at school level, grab

the top one hundred to the state, grab top students at universities and industry and attract them to the state, and create good careers for them. Let them look forward to work for the state and serve the country to the best of their abilities. The state should stop belonging to the ruling party, and start belonging to the people of South Africa.

Respondents contented that a developmentalist approach tends to call for simplistic nationalisation of mines for instance, but a DS would demand that state-owned companies (SOCs) be really effective and efficient and achieve global competitiveness for the country. Erstwhile developmental states had to create a private sector, but South Africa already has a big private sector to its advantage. The challenge is to create business and industry champions as quickly as possible, to create the “Microsofts and Hitachis” of South Africa who will compete aggressively and effectively in favour of South Africa.

A DS is not about the state, it is about the quality of the use of the state. It is about the quality of the people that run the state. South Africa has a planning agency, but does not necessarily have its best talent in there. The state should get all the people with good ideas on board. The task of the planning agency is also to align the way people think, and that’s where its mandate ends. The government should take on from there and not only align the way the various institutions think but also the way they act which is where the biggest gap is right now.

The other big constraint faced by the South African state highlighted by respondents is that we have an open economy that is heavily dependent on foreign sources of investment funds, a great deal of economic power is held outside of South Africa given also that many South African companies are listed overseas, so the wealth is not credited to South Africa.

### **5.1.7 Reflection of the State Capacity and Institutional Arrangements Theme in ICT Policy**

Table 5.1 shows that a total of 52% of the state capacity and institutional arrangements sub-themes are reflected across the seven selected ICT policies and in terms of ranking this theme is the 5<sup>th</sup> best reflected in the Table. Given that the NDP of 2012 reflects all the sub-themes, there is therefore no pattern of unique sub-themes that are not reflected across all the seven policies.

These findings are confirmed by the interview perspectives which pointed out that most state institutions are weak because they are not necessarily run by bureaucrats with requisite delivery capability and capacity, and that currently there is a lot of siloes with a direction per institution and not a single direction for all institutions, and that the hands-off nature of the ministries in charge of the various institutions and state owned companies result in misalignment in terms of targets and objectives, lack of trust, lots of friction, lack of communication, and lack of insight by the ministries into the working of the agencies and companies they are put in charge of as shareholders.

Respondents expressed the opinion that South Africa has got the institutions and the right policies but doesn't have the quality of people because of historical reasons. The state therefore lacks the quality and capacity to deliver, despite its good intentions and political will. The cadre deployment policy further dilutes this requirement for capacity by excluding other citizens from decision making positions, both Black and White, on the basis of suspected loyalty and lack of struggle credentials. These citizens could otherwise step into the state apparatus and effectively deliver on those policies for the common good of all South Africans and gain credit for the state. A DS is about the quality of those institutions and the people in there. You can build institutions and design policy but if you don't have the quality of capacity you can't deliver on it. So the current state institutions of South Africa are not adequately capacitated to build a DS. Individual talent and capacity is not valued by the state, whereas that is at the heart of innovation for any state and industry. There is an urgent need to make people to feel part of the DS project, currently they feel alienated by the state and its cadre deployment policy. A DS incentivises people to work harder because they know they will be rewarded, that the state provides them with the opportunity to excel, that if you have a good idea you will be rewarded as a South African citizen irrespective of your ideological leanings and partisanship.

Respondents pointed out that there is an urgent need to address state fears, to strike a balance between loyalty and needs of the nation. If we want the country to deliver quickly we should put some of the transformation goals on the back burner in order to deliver for the people on a bigger scale. Many of the people coming on board might not be cadres, the state needs to create an alternative space for the cadres, to find something else for them to do. But there seems to be fear to make those decisions even though they are in the best interest of the country in the long run. The state may have to bring a whole lot of people on

board who are not necessarily ruling party loyalists, to grow the cake and give the cadres something. If the state provides people with opportunities it can create that loyalty because it would be investing in them. If it recruits even those people who are not members, they are likely to become loyal over time. That was the strategy employed by the Communist Party of China. That will strengthen state institutions and provide them with the required capacity to successfully build a developmental state. It is within reach of South Africa but those hard decisions have to be made.

Respondents also pointed out that our state is weak in some parts and strong in some parts, but the weaker parts dominate the stronger parts. It is an uneven state, and the unevenness has permeated all levels of the state through factions who pursue self-enrichment and whose interests are not for enrichment of the country. A strong state is not measured by the span of control, but by performance and delivery. The developmentalist lobby interprets strong as controlling, whereas DS defines strong as delivering and effective. Weak institutions are those that do not deliver such as the municipalities, because they are deeply captured. Strong institutions are those such as the South African Revenue Services (SARS), Treasury, because they deliver and they are effective. There are also agencies of the state with strong developmental capacity, such as the Development Bank of Southern Africa (DBSA) and Independent Development Corporation (IDC), but that would require new mandates because some of them came from the old apartheid era.

In terms of the requirement for a DS to be able to sagaciously intervene and drive selective industrial policy, respondents warned that interventionist would be misguided if it meant that the state should own more and regulate more, on the contrary it only needs to use its assets much better, and regulate more cleverly and to do so in a much more coordinated fashion. There needs to be a clear direction from the state and one direction across, not one direction per ministry. There should be close alignment between the objectives and targets of the state and the targets of its agencies. At the moment there is an uncomfortable relationship between ministries and the boards of the state agencies and companies that they are responsible for. It is possible for a state to be developmental without compromising the integrity of the boards of its institutions and state owned agencies and companies. The role of the state should go beyond just appointing boards; they should have representation in such boards so that mistrust can be eliminated, communication improved, and alignment of targets and objectives achieved. In that way

the responsible ministry will know what the various state-owned companies are actually doing which is not the case at the moment because the ministries are hands-off and believe their work is done once they have appointed the boards. The presence of ministerial representatives in boards of state-owned agencies and companies actually strengthens those companies and agencies. The line minister should also be on the board. Many of the conflicts are not about policy issues but about corruption and about where the surplus and retained earnings of state agencies and companies go.

### **5.1.8 Reflection of the State Autonomy Theme in ICT Policy**

Table 5.1 shows that a total of 26% of the state autonomy sub-themes are reflected across the seven selected ICT policies and in terms of ranking it is the worst reflected in the Table. Some of the sub-themes that are not reflected are as follows: The e-Government policy does not reflect the sub-themes of building a state that is resilient from capture by rent seeking sub-themes, is embedded with synergistic social relations, is autonomous from global capital interests, and has decisive interventive capacity. The e-Education White Paper does not reflect the sub-themes of the independent and resilient from state capture, autonomous from global interests, decisive interventive capacity, and credibility & legitimacy through democracy. The ISAD Plan does not reflect the sub-themes of independent and resilient from state capture, autonomous from global interests, decisive interventive capacity, and credibility & legitimacy through democracy. The GPG ICT development Strategy does not reflect the sub-themes of independence and resilience of state from capture, decisive interventive state capacity, and autonomy from global capital interests.

These findings are consistent with the perspectives of respondents who highlighted that the current state is captured at all levels by opportunistic interests, by factional interests, as well as by global interest. The respondents however cautioned that intervention by the state should not compromise the integrity of the institutions, agencies and companies, it should instead strengthen them. Respondents contended that the state is captured and hamstrung on every level by opportunistic interests: at national, provincial, local and municipality levels; even in deep rural areas the chief has to be a loyalist.

Then there's factional capture. If you are Black because of historical legacy the only place to get opportunities is the state because the private sector is still firmly in white hands, even Black Economic Empowerment (BEE) beneficiaries are selected very carefully to be part of the economic elite, so the ordinary person stands no chance and has almost no opportunity except through the state. So they flock to the state for opportunities but because historically they have been stunted on a massive scale from acquiring essential skills, they capture the state for their own individual enrichment because there are no other avenues. So other than the state those factions have no other avenue to enrich themselves, that space has not been created for them. The state is captured by opportunistic interests who are not interested in the advancement of the country but in their own personal enrichments, both at national, provincial, local and rural levels. People have used politics to capture the state for their own self-enrichment, not that of the wider community. But the DS is for enrichment of the wider community not of a few. A DS wants as many people as possible to be wealthy, not a few.

The South African state is also captured by global interest, because we don't have an intelligent state. In the current global political climate it is almost impossible to avoid global interest and financial institutions but an intelligent state run buy the best brains will consider trade-offs and do what is best for South Africa. An intelligent state will forge the right alliances with foreign interest in a way that does not work against our country. Currently we are captured. If you allow bribery say through the arms deal then you are captured. An intelligent state would know that you should copy what the global powers do and not what they say. An intelligent state would know that global powers subsidize their companies, their farmers, and pay very little attention to the environment, but they oblige developing countries to among others avoid protecting their local industries, to remove all entry barriers, not to subsidise their farmers, and not to control prices of their mineral resources. A capable and intelligent state will know that global powers don't do what they tell you to do, and you would make the best decisions for your state.

To disentangle the state from all forms of capture, the ruling party should use its power and sway to decisively clean up and get rid of the impunity of the factions and opportunistic interests. In pure DS countries a person gets a death penalty for wasting state resources, let alone corruption that is even worse. But to do so lots of courage and political will be required.

Lack of decisiveness by the state was pointed out as another form of capture. The stifling of the government proposed youth subsidy to help fight the high youth unemployment was cited as a case in point. The delaying for whatever reasons of the Gauteng toll road was cited as another example.

### **5.1.9 Reflection of the Country Context Theme in ICT Policy**

Table 5.1 shows that a total of 57% of the country context sub-themes are reflected across the seven selected ICT policies and in terms of ranking this theme is the 4th best reflected in the Table. Some of the sub-themes that are not reflected are as follows: The e-Government policy does not reflect the sub-themes of opportunity in leveraging revenues from mineral resources to finance the e-governance programme, nor does it pronounce itself on the need to encourage a social culture that is receptive of state intervention in directing economic activity. The e-Education White Paper does not reflect the sub-themes of participatory democracy, and nurturing a social culture that is supportive of intervention. The ISAD Plan does not reflect the sub-themes of social culture supportive of intervention. The GPG ICT development Strategy does not reflect the sub-themes of leveraging of super-revenues from mineral resources to finance the establishment of a DS, and fostering a social culture that is supportive of state intervention.

Perspectives from expert interview respondents highlighted that once a country needs a programme of redress then immediately it is undermined from building a DS because it will have to focus some of its resources on redressing, but striking that delicate balance is the problem. The state needs quality people in the state apparatus to think with it and strike that balance. Malaysia had a similar challenge for many years but eventually managed to strike that balance. Striking the balance means the state is going to lose capacity in order to redress past disparities and buy time, but challenge is that it must be very effective at the same time, which it currently is not. Striking the delicate balance could mean the state has to ramp up on competitiveness and expansion, and gradually ramp down on redress over time as high growth and wealth is delivered for the critical mass of the people. We have a country where the majority has been side-lined for centuries, we have to find a way to bring it to the centre stage we can't just ignore that. But it should not be the central thing because we need to grow the economy.

To address this challenge we need a thinking state, a state that says we have a historical reality that Blacks have been excluded from the system, we now have to get them into the system, into the state, into the market system, into the economy, and Blacks don't have the skills historically and eighteen years of democracy and majority rule is too short a period to expect that gap to be closed. One option of addressing the skills gap among the majority of the citizens could be to take the cream of them irrespective of their political loyalties and ideologies and bring them into the state. Then think about how to develop those who are left out and use welfare for those who can't be economically active such as the elderly, and fast-track the others through two tracks. The normal track should be universities, and the second track should be state subsidies to help them acquire technical skills, to give them opportunities and the dignity of earning a livelihood.

There are countries that were initially set in mineral rich countries, such as Norway, but managed to build successful developmental states. States based on resources must use them to industrialise and diversify the economy, and create other industries for the future because they know minerals are not renewable they are going to be depleted in time. South Africa is unfortunately still largely exporting raw materials and buying them back from abroad as finished goods, it is not benefiting on a large scale. Mineral rich countries tend not to feel vulnerable because they have natural resources, then the elite capture them. When people riot they suddenly give them more, which is a sign of failing to deal intelligently with mineral resources.

Another context which was highlighted by respondents as a constraint is the fact South Africa lacks the common visions and commitment to development between the state and big business that erstwhile developmental states had. One problem was that the cultural gap between government and business was unusually large. In South Africa the entire domestic economic ruling class continues to be in white hands, with few black business people who tend to have a dependency relationship with white big business. There continues to be general mistrust between the economic elites and political elites, and this is not in favour of our country.

### 5.1.10 Reflection of DS and ICT4D Theories per Policy

Table 5.2 breaks down the results and focuses only on results of all the selected policies for the ICT4D conceptual framework. This breakdown affects only the individual results of each ICT policy as well as the overall reflection of the policies, it does not affect the results of each individual theme of the ICT4D conceptual represented by the rightmost OVERALL column. A significant improvement in the reflection of each ICT policy can be noticed for the ICT4D conceptual framework.

*Table 5.2: Tabulation of frequencies of ICT4D themes found in ICT Policy*

ICT POLICY FRAME WORK THEME	e- Government Policy of 2001	e- Education White Paper of 2004	ISAD Plan of 2006	ICT R&D Strategy of 2007	NeSPA of 2010	GPG ICT Strategy of 2011	NDP Of 2012	OVERALL
ICT4D: Enabling Institutional Environment	GREEN 9/10	GREEN 9/10	GREEN 9/10	AMBER 7/10	GREEN 9/10	GREEN 8/10	GREEN 8/10	82% (59/70)
ICT4D: Agile ICT Industry	AMBER 5/9	GREEN 7/9	GREEN 9/9	AMBER 5/9	GREEN 7/9	AMBER 6/9	AMBER 6/9	71% (45/63)
ICT4D: Robust ICT Infrastructure	AMBER 3/6	AMBER 4/6	AMBER 3/6	AMBER 4/6	AMBER 3/6	GREEN 5/6	GREEN 6/6	67% (28/42)
ICT4D: Human Digital Capability Development	RED 2/6	AMBER 4/6	GREEN 5/6	GREEN 5/6	GREEN 5/6	GREEN 5/6	AMBER 4/6	71% (30/42)
ICT4D: Ubiquitous e- Services Deployment	AMBER 3/6	AMBER 4/6	AMBER 4/6	RED 2/6	GREEN 5/6	GREEN 6/6	GREEN 6/6	71% (30/42)
OVERALL	59% (22/37)	76% (28/37)	81% (30/37)	49% (23/37)	57% (29/37)	81% (30/37)	81% (30/37)	74% (192/259)

**Legend of Policy Reflection: Red = 0% - 49%, Amber = 50% - 74%, Green = 75% - 100%**

While the progressive improvement in reflection over the years is largely still maintained, it can be noted that when focused on the ICT4D conceptual framework alone, there is a dramatic improvement in the reflection of each individual ICT policy, as well as the overall reflection of all the selected policies against the ICT4D conceptual framework.

Whereas Table 5.2 broke down the overall results and focused only on results of all the selected policies against the ICT4D conceptual framework, Table 5.3 focuses only on results of all the selected policies against the DS conceptual framework. This breakdown

also affects only the individual results of each ICT policy as well as the overall reflection of the policies, and does not affect the results of each individual theme of the DS conceptual represented by the rightmost OVERALL column. A dismal deterioration in the reflection of each ICT policy can be noticed for the DS conceptual framework. While the progressive improvement in reflection over the years is largely still noticeable, it can be noted that when focused on the DS conceptual framework alone, all policies perform dismally, bar the GPG ICT Development Strategy of 2011 which barely manages to enter the amber range. Even the overall reflection of all the selected policies against the DS conceptual drops significantly.

**Table 5.3: Tabulation of frequencies of DS themes found in ICT Policy**

ICT POLICY FRAME WORK THEME	e- Government Policy of 2001	e- Education White Paper of 2004	ISAD Plan of 2006	ICT R&D Strategy of 2007	NeSPA of 2010	GPG ICT Strategy of 2011	NDP Of 2012	OVERALL
DS: Developmentalist Ideology	RED 3/9	RED 3/9	RED 4/9	RED 2/9	RED 2/9	GREEN 7/9	RED 3/9	38% (24/63)
DS: State capacity and Institutional arrangements	AMBER 3/6	AMBER 3/6	AMBER 3/6	RED 2/6	RED 2/6	AMBER 3/6	GREEN 6/6	52% (22/42)
DS: State Autonomy	RED 1/5	RED 1/5	RED 1/5	RED 1/5	RED 0/5	RED 2/5	AMBER 3/5	26% (9/35)
DS: Country Context	AMBER 2/4	AMBER 2/4	GREEN 3/4	AMBER 2/4	AMBER 2/4	AMBER 2/4	GREEN 3/4	57% (16/28)
OVERALL	38% (9/24)	38% (9/24)	46% (11/24)	29% (7/24)	25% (6/24)	58% (14/24)	62% (15/24)	41% (69/168)

**Legend of Policy Reflection: Red = 0% - 49%, Amber = 50% - 74%, Green = 75% - 100%**

It can be clearly seen from the foregoing that ICT Policy reflects extremely poorly when assessed against the DS theoretical framework, and somewhat better against the combined DS and ICT4D theoretical frameworks, and much better against the ICT4D theoretical framework alone.

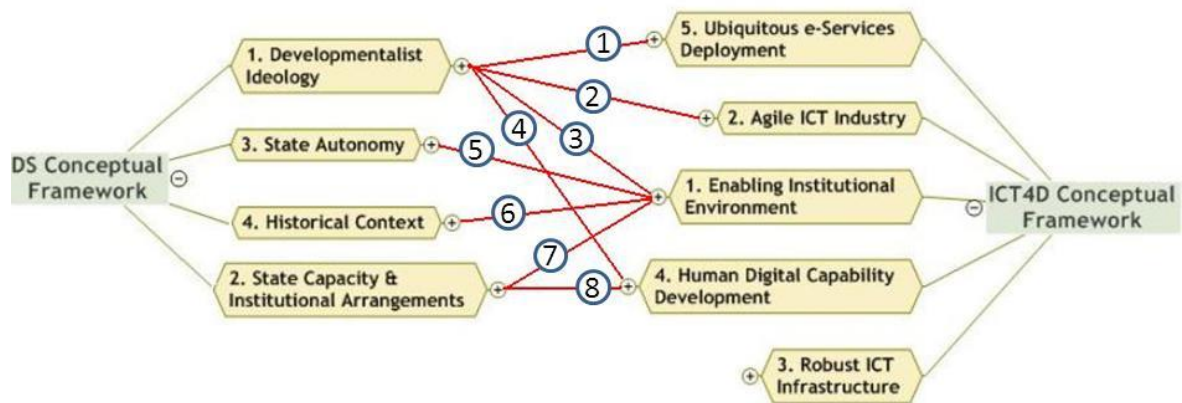
## ***5.2 Relationships between DS and ICT4D Frameworks***

This section compares and contrasts the various attributes of the DS and ICT4D conceptual frameworks, and highlights opportunities to forge convergence between the two frameworks. In terms of similarities, both ICT4D and DS agendas are primarily concerned with socio-economic development and human capacity expansion. Both are expected to be driven primarily by the state apparatus, with other social interests playing a supportive role. Both require implementation of a selective industrial policy which prioritises development of those industries that will have a bigger positive impact on development. Institutional arrangements and cooperation is essential in both frameworks, and they are both concerned with social inclusion and eradication of social and digital divides.

In terms of contrasts, the DS puts strong emphasis on a planning agency with overriding powers across all sectors, including ownership of financial institutions. That is not the case with ICT4D. The DS scope also goes beyond ICT sector, although it could be argued that ultimately ICTs cut across all spheres of life, and that the Information Society pervades the whole state. It is still true that from a developmental project perspective ICTs are just one of many developmental streams. Another contrast is that ICTs are applicable to all types of states, irrespective of whether they perceive themselves as developmental or not, this is intrinsic in the cross-cutting nature of ICTs. As a result of the latter point, state capture does not appear to be a big concern in ICT4D theory. Whereas a DS is expected to be almost entirely funded by the state from resources within the country, it is acceptable and even anticipated on the part of ICT4D that there will be a significant portion of external funding from donors and sponsors. Whereas in the case of the DS a selective industrial policy could include several industries with ICT being just one of them, ICT4D concerns itself with the building of the local ICT industry only, it is in the ubiquitous ICT service deployment that ICT4D touches other industries. ICT4D could in this sense be seen as a service provider to other industries. Whereas competency of the bureaucrats is key in the case of a DS, no such emphasis is placed in the case of ICT4D. Lastly, ICT4D solutions are largely exportable and reusable, whereas a DS approach will of necessity be unique to the target country.

Figure 19 depicts overlaps between the ICT4D and DS conceptual frameworks, deduced from the results presented in Chapter 4. The rest of this chapter will delve and expound on the relationships between these two conceptual frameworks.

**Figure 19:** Relationships between DS and ICT4D Conceptual Frameworks



*Design: Moyeni, V. (2012)*

### 5.2.1 Relationship 1: Developmentalist Ideology versus Ubiquitous ICT Services Deployment

This relationship highlights overlaps between the developmentalist ideology theme of the DS conceptual framework, and the ubiquitous ICT services deployment theme of the ICT4D conceptual framework.

There are two (2) integration points between these themes. The developmentalist ideology theme of the DS theory calls for a hegemonic national project to which key actors in the nation adhere. This sub-theme corresponds to the Pervasive ICT services rollout sub-theme of the ubiquitous ICT Services deployment theme, as both need to mobilise all actors of the nation to achieve their goals.

Another integration point is between the human capability expansion sub-theme of the DS framework on the one hand, and the enhance human well-being and service delivery sub-themes of the ICT4D framework on the other. All these sub-themes are concerned with

human capability expansion through delivery of services such as health, education, and job creation.

### **5.2.2 Relationship 2: Developmentalist Ideology versus Agile ICT Industry**

This relationship highlights integration points between the developmentalist ideology theme of the DS conceptual framework, and the enabling institutional environment theme of the ICT4D conceptual framework.

There are five (5) integration points between these two themes. The developmental vision sub-theme of the DS conceptual framework corresponds to the national consensus on Information Society vision sub-theme of the ICT4D conceptual framework; the selective industrial policy sub-theme of the DS conceptual framework corresponds to the design and implement ICT sector policy sub-theme of the ICT4D conceptual framework; the distributive social policy sub-theme of the DS conceptual framework corresponds to the inclusive growth and development sub-theme of the ICT4D conceptual framework; the ownership of financial institutions of the DS conceptual framework corresponds - only in so far as being a fund raising option and not the ownership part - to the funding strategies sub-theme of the ICT4D conceptual framework. Lastly, the agrarian reform sub-theme of the DS conceptual framework corresponds to the inclusive growth and development sub-theme of the ICT4D conceptual framework.

### **5.2.3 Relationship 3: Developmentalist Ideology versus Agile ICT Industry**

This relationship highlights a single integration point between the developmentalist ideology theme of the DS conceptual framework, and the agile ICT industry theme of the ICT4D conceptual framework.

The environmentally friendly development sub-theme of the DS conceptual framework corresponds to the ICT innovation sub-theme of the ICT4D conceptual framework in that it is through research, design and innovation efforts that environmentally friendly and Green technologies can be developed.

#### **5.2.4 Relationship 4: Developmentalist Ideology versus Human Digital Capability Development**

This relationship highlights integration points between the developmentalist ideology theme of the DS conceptual framework, and the human digital capability development theme of the ICT4D conceptual framework.

There are two (2) integration points between these two themes. The agrarian reform sub-theme of the DS conceptual framework corresponds to the target rural and grassroots sub-theme of the ICT4D conceptual framework, only in so far as paying attention to the lot of rural masses, because the ICT4D theory does not address land reform and restitution which are the main focus of agrarian reform. The other integration point is between the human capability expansion sub-theme of the DS conceptual framework and the building of digital capability sub-theme of the ICT4D conceptual framework as both focus on developing the human capacity.

#### **5.2.5 Relationship 5: State Autonomy versus Enabling Institutional Environment**

This relationship highlights integration points between the state autonomy theme of the DS conceptual framework, and the enabling institutional environment theme of the ICT4D conceptual framework.

There are two integration points between these two themes. The independent and resilient from state capture and autonomous from global capital interest sub-themes of the DS conceptual framework correspond to the avoid state capture sub-theme of the ICT4D conceptual framework in that they all emphasise state autonomy and resilience against capture by rent seeking sub-themes. The second integration point is between the embedded with synergistic societal relations sub-theme of the DS conceptual framework and the inclusive growth and development and national consensus on vision sub-themes of the ICT4D conceptual framework given that both are concerned with a state that is embedded in society, consults and is also on top of issues that affect society, but remains immune from capture.

### **5.2.6 Relationship 6: Country Context versus Enabling Institutional Environment**

This relationship highlights integration points between the country context theme of the DS conceptual framework, and the enabling institutional environment theme of the ICT4D conceptual framework.

There are two integration points between these two themes. The mineral-rich countries sub-theme of the DS conceptual framework corresponds to the Funding Strategies in so far as diverting revenues from mineral mines to developmental projects, as a funding strategy, is concerned. The second integration point is between the participatory democracy sub-theme of the DS conceptual framework and the inclusive growth and development sub-theme of the ICT4D conceptual framework in that both focus on the inclusion and participation of every citizen in the democratic processes. The third integration point is between the redress past injustices and dispossession sub-theme of the DS conceptual framework on the one hand, and the target rural and grassroots and bridge digital divide sub-theme of the ICT4D conceptual framework in that they both seek to redress past injustices that resulted in the present day social and digital divide and exclusion.

### **5.2.7 Relationship 7: State Capacity & Institutional Arrangements versus the Enabling Institutional Environment**

This relationship highlights integration points between the state capacity and institutional arrangements theme of the DS conceptual framework, and the enabling institutional environment theme of the ICT4D conceptual framework.

There are two (2) integration points between these two themes. The design and implement policy sub-theme of the DS conceptual framework corresponds to the design and implement ICT sector policies sub-theme of the ICT4D conceptual framework as they are both concerned with designing and implementing policy. The other integration point is between the constellation of coherent institutions sub-theme of the DS conceptual framework and the inter-institutional cooperation sub-theme of the ICT4D conceptual framework in that both emphasise the need for state institutions to cooperate and work in tandem and not at cross purposes.

### **5.2.8 Relationship 8: the State Capacity & Institutional Arrangements versus Human Digital Capability Development**

This relationship highlights integration points between the state capacity and institutional arrangements theme of the DS conceptual framework, and the human digital capability development theme of the ICT4D conceptual framework.

There is a single integration point between these two themes. The institutions to build state capacity sub-theme of the DS conceptual framework corresponds to the building of digital capability sub-theme of the ICT4D conceptual framework in that although the former focuses primarily of building capacity of the bureaucrats, they also form part of the broader citizenry and so digital capacity building is equally applicable to them.

Chapter 5 has analysed in depth the research findings from Chapter 4 pertaining to the extent that DS and ICT4D theories are reflected in ICT policy. It also discussed overlaps and integration points between the DS and ICT4D conceptual frameworks. The following chapter presents answers to the research questions, and recommendations for future ICT policy thinking.

## **Chapter 6: Conclusion and Recommendations**

This chapter concludes the research report by responding to the main research question based on the analysis that was conducted in Chapter 5. As discussed in section 3.3, the main research question that shaped this study is:

How do South Africa's ICT policy strengths and weaknesses influence the twin goals of becoming a DS and building an advanced Information Society through ICT4D?

The main research question was underpinned by 3 sub-questions which are:

- 1) In what ways does policy and academic discourse characterise South Africa as an aspirant DS?
- 2) Where does ICT4D theory fit within the conceptualisation of South Africa's aspiration to build a developmental state?

- 3) To what extent does South Africa's ICT policy reflect the Developmental State and ICT4D theories?

Answers to the main and sub-questions are provided below. In addition, recommendations are made in order to improve future policy efforts in the DS and ICT4D domains.

### ***6.1 Characterisation of South Africa as a Developmental State***

This section answers the first research sub-question which seeks to establish how policy and academic discourse characterise South Africa as an aspirant DS.

The research findings presented in section 5.1.6 based on content analysis methods backed by expert insight characterise South Africa as predominantly a welfare state that aspires to be a DS but since 2001 when DS rhetoric entered the South African political and academic scenes it has not been able to clearly and uniquely articulate the type of DS it intends to build, or to put in place policy and strategy enablers to sagaciously pursue that goal. South Africa also does not seem to distinguish between a developmentalist approach that seeks to make welfare and redistribution the main focus without putting in place foundations to sustain them, versus a DS that is an intelligent and capable state whose main goal is to be globally competitive and effective and achieve sustained high growth which will make the majority of the citizens wealthy.

The aspiration to become a DS is also seen to be hampered by state capture at all levels, by opportunistic interests, and factional interests within the ruling party. Global interests also dictate policies which they themselves do not implement in their own countries such as lifting of all entry barriers in the promise of Foreign Direct Investment (FDI), not subsidising the farming community, and not protecting local industry which is still fledgling from advanced external competition.

Another hurdle to the DS dream is the policy of cadre deployment which is premised on political loyalty and struggle credentials as opposed to meritocratic appointments to public offices. This practice is seen as depriving the country of the benefits of employing its best talent to solve all the challenges the country is facing and kills its prospects to become a DS because it is a capable thinking state that is run by the best brains in the country across

partisan and demographic groupings. It is seen as alienating citizens who are not seen to be in the fold of the ruling party whereas a pure DS incentivises people to work hard because they know they will be rewarded, and that the state provides them with the opportunity to excel. While the NDP of 2012 proposes compelling strategies to do away with cadre deployment and replace it with pure meritocratic appointments to public offices, it still does not say what alternative space will be created for the cadres going forward. Without that space being created, the proposed strategies might not see the light of day.

State institutions are seen as predominantly weak and siloed, with those fewer stronger ones seen as dominated by the weaker ones that have been captured mainly by those opportunistic interests who due to historical legacy were excluded from political and economic systems and so lack the requisite and essential skills to effectively design and implement policy. Since the private sector is still largely and firmly in white hands these opportunistic interests have no other space for self-enrichment other than the state, hence they capture it. So there is uneven capacity across state institutions, and municipalities appear to be the weakest, coupled with corruption and malfeasance.

The above perspectives have been supported by Kuye (2011) who summarised the internal conditions which are seen as retarding the institutionalisation of a developmental state in South Africa as follows:

- An incompetent, unmotivated bureaucracy which lacks the requisite skills to drive a developmental state.
- Lack of policy coherence and the absence of an overarching vision of development to align the ambitious policy frameworks devised by powerful departmental policy units in separate “silos”, largely disconnected from each other.
- Endemic corruption and patronage.
- The democratic regime which could arguably undermine a developmental state’s ability to pursue long term economic restructuring goals rather than short term political interests.
- The political repression of civil society and the labour movement is inconsistent with the Constitution. However there is little evidence of the governance ability to forge consensual social pacts.

- Any future developmental state could face lack of cooperation or opposition from concentrated conglomerate capital, especially in the minerals-energy complex, and agri-business elites, as well as highly organised trade unions (in event of changes to labour legislation).
- Foreseeable and preventable electricity shortages resulting in outages are indicative of the lack of strategic economic and political foresight of the current regime.
- A history of land dispossession coupled with the slow pace of land reform post 1994. (Kuye, 2011:55-56).

## ***6.2 ICT4D discourse in the context of characterisation of South Africa as a Developmental State***

This section answers the second research sub-question which seeks to establish where ICT4D theory fits within the conceptualisation of South Africa's aspiration to build a developmental state. It therefore seeks to determine if ICT policy and discourse integrate the concepts of ICT4D and DS.

The in-depth analysis of ICT policy conducted in Chapter 4 revealed that despite the predominance of ICT4D discourse in political and scholarly literature, and acknowledgement that the knowledge economy plays an increasingly significant and integral role in the socio-economic development of modern countries (Kuye, 2011:54), South Africa's ICT policy continues to have a blind spot in so far as integrating or at least linking national development plans with ICT4D is concerned. Of the seven policies that were reviewed, the only exception the researcher found is the Gauteng Provincial Government (GPG) ICT Development Strategy of 2011. It is the only ICT policy document in South Africa that explicitly links the aspiration of building a DS with that of ICT4D. The NeSPA of 2010 for instance keeps making loose references to the concept of a developmental state, while curiously the newly developed NDP of 2012 makes no reference to the concept of a developmental state even though it adopts many of the DS

themes. South Africa's ICT policy, with the exception pointed out above, predominantly ignores the linkage between DS and ICT4D theories.

### ***6.3 The extent to which South Africa's ICT policy reflects the DS and ICT4D theories***

This section answers the third research sub-question which seeks to establish the extent to which South Africa's ICT policy reflects the developmental state and ICT4D theories.

As per the results tabulated in Table 5.2 and analysed in detail in chapter 5, the overall extent to which South Africa's ICT policy reflects the DS and ICT4D theories is 62%.

In terms of the ICT4D framework, the ICT policy reflects 82% of the enabling institutional environment theme; 71% of the agile ICT industry theme; 71% of the human digital capability development theme; 71% of the ubiquitous e-services deployment theme; and 67% of the robust ICT infrastructure.

In terms of the DS framework, the ICT policy reflects 57% of the country context theme; 52% of the state capacity and institutional arrangements theme; 38% of the developmentalist ideology theme; and 26% of the developmentalist ideology theme.

Based on the above, the poorest reflection in South Africa's ICT policy is of the DS theory, and within that the state autonomy and developmentalist ideology themes are the worst.

Expert interview respondents also pointed out a number of factors that contribute to the poor reflection of DS and ICT4D theories in South Africa's ICT policy. Among them are that ICT policy and discourse has been influenced by the developmentalist approach to be treated as welfare and not as an economic tool. It emphasises distribution and bridging of the digital divide, which is akin to redressing past disparities, without focusing on ICT as a means to achieve state competitiveness and sustained high economic growth. ICT policy is therefore negatively impacted by the poorly articulated debate of a DS in South Africa, which is also poorly understood, and confused. As a result, many ICT projects are captured through tenders, for instance the ICT project for schools.

The other factor highlighted by the respondents is that the ICT sector is different from the other sectors in that it is driven by competition to a large extent, unlike electricity or water for instance. Another factor that was tabled was that ICT is a very much private sector driven initiative, and so a nuance view of the relationship between the state and the private sector is needed. Therefore ICT policy tends to be largely influenced by the economic elite that are not generally amenable to advancing a DS agenda.

The last factor mentioned was the quality of the experts formulating the policies, they don't ask certain critical questions and as a result those questions are not found in the resultant policies. For instance the e-government policy is too ICT focused, the ISAD Plan is too broad and unfocussed, and did not ask how South Africa should do development, hence it is void of the DS concept. In contrast, the researcher found both the DS and ICT4D concepts together in the GPG ICT development strategy

## **6.4 Conclusion**

This section answers the main question which asks: How do South Africa's policy strengths and weaknesses influence the twin goals of becoming a DS and building an advanced Information Society through ICT4D.

Based on answers to the three sub-questions, as well as the findings tabled in Chapter 4 and analysed in Chapter 5, South Africa's ICT policy fares reasonably well on only the conceptual theme of giving attention to the enabling institutional environment, even if only at the level of principle. It fares dismally on DS conceptual themes. As currently formulated, South Africa's ICT policy weaknesses therefore greatly hamper the twin goals of becoming a DS and building an advanced inclusive Information Society. The research findings further reveal that South Africa is headed towards a captured welfare state rather than a capable competitive developmental state, while the major ICT policies exhibit glaring gaps in terms of reflecting either developmental state or ICT4D theories.

## **6.5 Recommendations**

The researcher makes the following recommendations for future DS and ICT4D interventions:

The DS and ICT4D conceptual frameworks should be adopted as thinking tools that could possibly be expanded over time. The relationships between them as discussed in Chapter 5 should also be adopted with a view to developing a converged integrated DS/ICT4D model.

Close the gaps identified in the GPG ICT Strategy and chapter 4 of the NDP of 2012 and merge the two to form the basis of a comprehensive national DS/ICT4D strategy.

The ruling party should use its power and reach to decisively clean-up corruption and in that way get rid of state capture.

Meritocratic appointments are essential, but the state should create a visible space for cadres so that they are not tempted to seek other avenues to capture the state.

CSIR Meraka should be strategized to the rest of the industry and put in the centre stage of local ICT industry development.

Drive innovation in access and usage in order to leverage the abundant infrastructure capacity to create network effects for citizens, build connected societies, and participate in the knowledge economy.

In the same way that the state incentivises licensees to roll out infrastructure to uneconomic and underserved areas of the country, it should find a way to incentivise ICT corporations to drive pervasive human digital skilling and capacitation since ICT is largely private sector driven. Ignoring to deliberately leverage ICT corporations to drive periodic pervasive digital capacitation of citizens could prove to be a lost opportunity, given that technology cycles are short and get upgraded quite frequently and this creates the need for skills to be refreshed in order to take advantage of new functionality and the benefits it brings.

Pervasive e-services deployment should be driven more aggressively, in order to facilitate efficient and effective engagements between government departments and the citizens and business.

To ensure coherence of policy from formulation to implementation, government should either develop internal policy formulation competency or always allocate internal resources to collaboratively develop policy with external experts.

While recognising that South Africa is a developing economy and has more pressing needs than the developed world, ICT policy should still give preference to environmentally friendly technologies whenever they can be sourced.

Ensure representation of government and line ministries in boards of state agencies and state owned companies to ensure strategic alignment, trust, communication, and strengthening of those state owned entities. The respondents however cautioned that intervention by the state should not compromise the integrity of the institutions, agencies and companies, it should instead strengthen them.

In terms of the Policy Review Panel (PRP), consider leveraging more the expertise of academic experts, to get the most balanced policy as opposed to a possibly compromised policy to serve the interests of conflicted investors and operators with vested interest in the sector

The other weakness of the state highlighted is that we have an open economy that is heavily dependent on foreign sources of investment funds, a great deal of economic power is held outside of South Africa given also that many South African companies are listed overseas so the wealth does not accrue to South Africa. The state should demand that all South African business be listed locally so that those funds can be available to pursue developmental objectives.

## References

- Abe, M. (2006). The Developmental State and Educational Advance in East Asia, *Educate ~*, 2006, vol 6, no. 1, (pp, 6-12.)
- Abrahams, L. (2009). e-Governance policy 1999-2009: paths and limitations to progress, LINK Centre, Graduate School of Public and Development Management, University of the Witwatersrand, Johannesburg.
- Abrahams, L. (2011). South Africa's e-Development Still a Futuristic Task, *Journal of the Knowledge Economy*, 2011, vol 2, no. 1, (pp, 145-171.)
- Abrahams, L. & Goldstuck, A. (November 2010). The state of e-development in South Africa: a view from the end of the first decade of the 21st century, LINK Public Policy Paper Series No.11, LINK Centre, Graduate School of Public and Development Management, University of the Witwatersrand, Johannesburg.
- Adam, L. (2005). Financing ICTs for development with focus on poverty, *Document prepared for Instituto del Tercer Mundo (ITeM)*, January 2005. Retrieved May 02, 2009, from <http://www.wsispapers.choike.org>
- Akoojee, S. (2010). Intermediate skills development in South Africa: understanding the context, responding to the challenge. In: Edigheji, Omano, (ed.), *Constructing a Democratic Developmental State in South Africa Potentials and Challenges*. Cape Town: Human Sciences Research Council Press, pp. 261-284.
- Alampay, E. (2006). Beyond access to ICTs: Measuring capabilities in the information society. *International Journal of Education and Development using ICT* [Online], 2(3). Retrieved January 25, 2012, from <http://ijedict.dec.uwi.edu/viewarticle.php?id=196>.
- Ali, N. (2010). Interrogating The Concept of the Developmental State in Southern Africa: What's Power Got To Do With It? Department of Political Science, University of Toronto. Paper prepared for the Annual Meeting of the Canadian Political Science Association Concordia University, Montréal, June 2010
- ANC, (2010). Transformation of State and Governance. National General Council Discussion Document, July 2010. African National Congress (ANC). Retrieved November 15, 2011, from <http://www.anc.org.za/docs/discus/2010/legislaturez.pdf>
- Babbie, E., Mouton, J. (2004). The Practice of Social Research, *Oxford University Press*, Cape Town.
- Beeson, M. (2009). Developmental States in East Asia: A Comparison of the Japanese and Chinese experiences. *Asian Perspective*, Vol.33, No. 2, 2009, pp. 5-39.

- Benjamin, P. (2001). Telecentres and Universal Capability. A study of the Telecentre Programme of the Universal Service Agency in South Africa, 1996 – 2000, *PhD Candidate*, Aalborg University.
- Bernstein, M. (2007). Regulatory Economics and its discontents: some theoretical and historical observations, *Info*, vol.9 no. 2/3
- Bridges,(2001a).Spanning the Digital Divide: Understanding and Tackling the Issues.Retrieved May 15, 2007, from [http://www.bridges.org/spanning/pdf/spanning\\_the\\_digital\\_divide.pdf](http://www.bridges.org/spanning/pdf/spanning_the_digital_divide.pdf)
- Bridges, (2001b). Comparison of E-Readiness Assessment Models. The Bridges Organisation (Bridges). Retrieved April 25, 2008, from <http://www.bridges.org/ereadiness/tools.html>
- Bridges, (2005). The Real Access/ Real Impact framework for improving the way that ICT is used in development. Retrieved May 15, 2007, from [http://www.bridges.org/files/active/0/RealAccess\\_concept\\_FINAL26Dec05.pdf](http://www.bridges.org/files/active/0/RealAccess_concept_FINAL26Dec05.pdf)
- Brinkley, I. (2006). Defining the Knowledge Economy. London: The Work Foundation. Retrieved August 03, 2008 from [http://www.theworkfoundation.com/DownloadPublication/Report/65\\_65\\_defining%20knowledge%20economy.pdf](http://www.theworkfoundation.com/DownloadPublication/Report/65_65_defining%20knowledge%20economy.pdf)
- Busch, T. (2010). Capabilities in, capabilities out: overcoming digital divides by promoting corporate citizenship and fair ICT. *Ethics and Information Technology*, 2011, Volume 13, Number 4, Pages 339-353
- Castells, M. (1992). Four Asian Tigers with a Dragon Head: A Comparative Analysis of The State, Economy and Society In The Asian Pacific, *Rim*, pp. 33-70 in *Henderson, R. and Applebaum, J. (eds). State and Development in the Asian Pacific Rim*, London, Sage Publications, 1992
- Castells, M. (1994). European Cities, the Informational Society, and the Global Economy, *New Left Review*, 204(March/April): 18-32.
- Castells, M. (1996). *Information Age: Economy, Society and Culture, Volume I: The Rise of the Network Society* (Blackwell, Oxford)
- Castells, M. (1999). Globalisation and Social Development, *UNRISD Discussion Paper No. 114*, September 1999
- Castells, M. (2000). Materials for an exploratory theory of the network society. In *British Journal of Sociology, Jan-Mar 2000*, 51 (1), 5-24. London: Routledge. Retrieved January 29, 2010 from <http://www.blackwell-synergy.com/links/doi/10.1111/j.1468-4446.2000.00005.x/enhancedabs/>
- Cloete, F., Wissink, H. (2000). Improving public policy, JLVan Schaik's, Pretoria

Cohen, T. (2001). Domestic Policy and South Africa's Commitments under the WTO's Basic Telecommunications Agreement: Explaining the Inertia, *Journal of International Economic Law*, Oxford University Press.

Cosatu,(2005). A developmental state for South Africa?, *Discussion paper for the 2005 Central Committee*, Congress of South African Trade Unions (Cosatu ), Johannesburg. Retrieved February 09, 2011, from <http://www.info.gov.za/view/DownloadFileAction?id=68777>

Creswell, J.W. (2002). *Research Design: Qualitative, quantitative and Mixed Method Approaches*, Sage Publications, London.

Creswell, J.W. (2009). *Research Design Qualitative, Quantitative and Mixed Methods Approaches*. 3<sup>rd</sup> Edition. Sage Publications Inc

DA, (2010). Development or Domination? A critique of the ANC's plan for a "developmental state". Democratic Alliance (DA), February 2010

DOE, (2003). White Paper on e-Education. Department of Education (DOE). Pretoria

DPSA (2001) Electronic government, The digital future. A public service IT policy framework, Department of Public Service and Administration (DPSA), Pretoria, accessed on 2 June 2009 from <http://www.westerncape.gov.za/Text/2003/12/egovernmentpolicy.pdf>

Dholakia, R., Harlam, B. (1994). Telecommunications and economic development: an econometric analysis of the US experience, *Telecommunications Policy* 1994, 18 (6) 470-477

DOT Force, (2001). Digital Opportunity Task (DOT) Force Report, G8 Genoa Summit in 2001.

DTI, (2007). Implementation of Government's National Policy Framework: Industrial Policy Action, August 2007, Department of Trade and Industry (DTI), Pretoria.

DTI, (2010). Implementation of Government's National Policy Framework: Industrial Policy Action, February 2010, Department of Trade and Industry (DTI), Pretoria.

Duan, M., Warren, M., Lang, Y., Lu, S. and Yang, L. (2009). An analysis of ICT development strategy framework in Chinese rural Areas, in IFIP International Federation for Information Processing, Volume 295, *Computer and Computing Technologies in Agriculture II, Volume 3*, eds. D. Li, Z. Chunjiang, (Boston: Springer), pp. 1835–1844.

Dzidonu, C. (2010). An Analysis Of The Role Of ICTs To Achieving The MDGs, President, Accra Institute of Technology (AIT).

Esselaar S, Gillwald A (2007) South African Sector Performance Review 2007, Policy Research Paper No 8, LINK Centre, Graduate School of Public and Development Management, University of the Witwatersrand, Johannesburg, accessed on 30 January 2010 from <http://link.wits.ac.za/papers/TSPR2007.pdf>

Evans, P. (1995). *Embedded Autonomy: States & Industrial Transformation*, Princeton University Press, Princeton, Chapter 10.

Evans, P. (2010). Constructing the 21st Century Developmental State: Potentialities and Pitfalls. In O. Edigheji (Ed.), *Constructing a Democratic Developmental State in South Africa* (pp. 37-58). HSRC Press. Retrieved from <http://www.hsrcpress.ac.za>

Evans, P. . (2010). Constructing the 21st Century Developmental State: Potentialities and Pitfalls. In O. Edigheji (Ed.), *Constructing a Democratic Developmental State in South Africa* (pp. 37-58). HSRC Press. Retrieved from <http://www.hsrcpress.ac.za>

Fine, Ben. (2006). The developmental state and the political economy of development. In *The new development economics: after the Washington Consensus*, ed. Ben Fine and Jomo K.S. London: Zed Books.

Fine, Ben. (2010). Can South Africa Be a Developmental State. In: Edigheji, Omano, (ed.), *Constructing a Democratic Developmental State in South Africa Potentials and Challenges*. Cape Town: Human Sciences Research Council Press, pp. 169-182.

Freund, B.(2007). South Africa as developmental state? Part two, Policy and political choices, *Africanus*, Vol 37, Issue 2, Pages: 191-197

Galperin, H. (2004). Beyond Interests, Ideas and Technology: an Institutional Approach to Communication and Information Policy, *The Information society* 20.

Garrido, M. (2004). A Comparative Analysis of ICT for Development Evaluation Frameworks, Center for Internet studies, U n i v e r s i t y o f W a s h i n g t o n

Gelb, S. (2006). The RDP, GEAR and all that: reflections ten years later  
*Transformation: Critical Perspectives on Southern Africa* - 62, 2006, pp. 1-8

Gigaba, M. (2011). A Public Lecture by Malusi Gigaba, Minister of Public Enterprises, at Wits University on 07<sup>th</sup> June 2011

Gillwald, A. (2004). Good intentions, poor outcomes: Telecommunications reform in South Africa

Gillwald A., Kane, S.(2003c). South African Telecommunications Sector Performance Review, *LINK Centre Public Policy Research Paper, No. 5*, University of the Witwatersrand, Johannesburg.

GPG, (2011). ICT Development Strategy. Gauteng Provincial Government (GPG), Pretoria

Grimshaw, D., Talyarkhan, S. (2005). A Best Process Approach for Using ICTs in Intermediate Technology Development Group. The Schumacher Centre for Technology and Development, Bourton Hall, Bourton-on-Dunsmore.

Groenewald, T. (2004). A Phenomenological Research Design Illustrated. *International Journal of Qualitative Methods* , 3 (1).

Gumede, V.(2011). Politics: Developmental State in the Making. *The New Age, One Country One Paper*. Retrieved November 17, 2011, from [http://www.thenewage.co.za/printstroy.aspx?news\\_id=447&mid=186](http://www.thenewage.co.za/printstroy.aspx?news_id=447&mid=186)

Gumede, W. (2009). Delivering the democratic developmental state in South Africa, Development Planning Division. *Working Paper Series No.9*, DBSA. Midrand.

Habib, A. (2009). Reflections on the Development State for South Africa. *Polity*. Retrieved April 17, 2012, from <http://www.polity.org.za/>

Hajer, M., Wagenaar, H. (2000). Deliberative Policy Analysis: Understanding Governance in the Network Society, *Cambridge University Press*

Hamel, J. (2010). ICT4D and the human development and capabilities approach: the potentials of information and communication technology. Published in: *Human Development Research Paper Series (HDRP)* , Vol. 37, No. 2010 (27. September 2010): pp. 1-77.

Hanna, N. (2009). e-Transformation: Enabling New Development Strategies. Springer, New York

Hanna, N. (2010a). International Experience in e-Transformation. Springer Science+Business Media, LLC 2010

Hanna, N. (2010b). e-Transformation: Enabling New Development Strategies. *Innovation, Technology, and Knowledge Management*, 2010, vol 2, Pages 103-118

Hanna, N. (2010c). Transforming Government and Building the Information Society, *Innovation, Technology, and Knowledge Management*, 2010, vol 1, Pages 199-225

Hanna, N. (2011a). International Experience in e-Transformation. *Journal of the Knowledge Economy*, 2011, Volume 2, Number 1, Pages 1-2nformation Technology, Pages 229-246

Hanna, N. (2011b). Holistic e-Development. *Journal of the Knowledge Economy*, 2011, Volume 2, Number 1, Pages 1-2nformation Technology, Pages 229-246

Hanna, N., Knight, P. (2012). Comparative Experience and Lessons in e-Transformation. *Innovation, Technology, and Knowledge Management*, 2012, National Strategies to Harness Information Technology, Pages 195-231

Harris, R. (2004). Information and Communication Technologies for Poverty Alleviation, (Kuala Lumpur: UNDPAPDIP, 2004), pp.35-36

Hilbert, M.R. (2011). Towards a conceptual framework for ICT for Development: lessons learned from Latin America. Poster for the International Conference on Information and Communication Technologies and Development - ICTD2010, 13-16 December 2010. Egham: UNESCO Chair in ICT4D, Royal Holloway University of London.

Hirst, P. (2000). Democracy and Governance, in Pierre, J (ed) (2000) Debating governance, *Oxford University Press*, Oxford

Houghton, J., Sheehan, P. (2000). A primer on the Knowledge Economy. Centre for Strategic Economic Studies, Victoria University

Houghton, J. (2010). ICT and the Environment in Developing Countries: A Review of Opportunities and Developments. *IFIP Advances in Information and Communication Technology*, 2010, Volume 328, What Kind of Information Society? Governance, Virtuality, Surveillance, Sustainability, Resilience, Pages 236-247

HRSC, (2008). Conference on The Potentials for and Challenges of Constructing a Democratic Developmental State in South Africa, Human Science Research Council (HSRC). Retrieved July 4, 2010, from <http://www.hsrc.ac.za/Event-337.phtml>

Hyder, S. (2005). The information society: Measurements biased by capitalism and its intent to control dependant societies – a critical perspective, *The international Information & Library Review* (2005) 37, 25-27

IBM, (1997). Information Society - The Net Result - Report of the National Working Party for Social Inclusion. The IBM Community Development Foundation report [1997]

ICT R&D, (2007). ICT Research & Development and Innovation Strategy. Department of Science and Technology (DST). Pretoria

Isaacs, S. (2007). ICT in Education in South Africa, Survey of ICT And Education In Africa: South Africa Country Report. Retrieved July 4, 2011, from [www.infodev.org](http://www.infodev.org)

ITU, (2011). International Telecommunication Union: Committed to Connecting the World. Retrieved April 4, 2012, from [http://www.itu.int/dms\\_pub/itu-s/opb/gen/S-GEN-HLPW-2011-PDF-E.pdf](http://www.itu.int/dms_pub/itu-s/opb/gen/S-GEN-HLPW-2011-PDF-E.pdf)

ITU, (2011a). International Telecommunication Union: Enabling Tomorrow's Digital World. Retrieved April 4, 2012, from [http://www.itu.int/dms\\_pub/itu-d/opb/reg/D-REG-TTR.12-2010-SUM-PDF-E.pdf](http://www.itu.int/dms_pub/itu-d/opb/reg/D-REG-TTR.12-2010-SUM-PDF-E.pdf)

ITWeb Informatica 2008, Excerpt from address to the GovTech Conference by the Minister for Public Service and Administration, Geraldine Fraser-Moleketi, August 2008, cited in *Effective e-Government*, 4<sup>th</sup> Edition, ITWeb Informatica, Cape Town, page 88.

James, T., et al. (2008). Public access to information & ICTs: South Africa. Public Access Landscape Study final report, presented by Icteam Consulting to University of Washington Center for Information & Society (CIS), Seattle.

Jipp, A. (1963). Wealth of Nations and Telephone Density, *Telecommunications Journal*, July 1963

Johnson, C. (1982). MITI and The Japanese Miracle: The Growth of Industrial Policy, 1925-1975. California: Stanford University Press.

Jordana, J., Levi-faur, D. (2004). The politics of regulation in the age of governance, in Jordana, J & Levi-Faur, D (2004) *The Politics of Regulation: Institutions and Regulatory Reforms for the Age of Governance*, Edward Elgar, Cheltenham

Kaplan, B., Maxwell, J. (2005). Qualitative Research Methods for Evaluating Computer Information Systems. In J. Anderson, & A. Carolyn (Eds.), *Evaluating the Organizational Impact of Healthcare Information Systems* (pp. 30-55). New York: Springer.

Kawabata, E. (2001). Sanction power, Jurisdiction, and Economic Policy-making: Explaining Contemporary Telecommunications Policy in Japan, University of Oklahoma, *An International Journal of Policy an Administration*, vol. 14 no. 4, (pp, 399-427)

Kim, J. (2010). Limits of the authoritarian developmental state. In: Edigheji, Omano, (ed.), *Constructing a Democratic Developmental State in South Africa Potentials and Challenges*. Cape Town: Human Sciences Research Council Press, pp. 97-125.

Kleine, D. (2008). The Ideology behind the Technology. Chilean Microentrepreneurs. *Geoforum* (2008). Doi:10.1016/j.geoforum.2008.02.006

Kuye, J.O. (2011). The South African development state debate: leadership, governance and a dialogue in public sector finance, *African Journal of Public Affairs*, 5(2), 48-68

Kunene, N. What can late adopters learn from the formulation and forming of successful national ICT4D strategies- An institutional process model on ICT innovation. Pre-AMCIS Workshop 2011, College of Business, University of Louisville, USA.

Lallana, E. (2003). Comparative Analysis of ICT Policies and e-Strategies in Asia. Asia-Pacific Development Information Programme (APDIP), United Nations Development Programme (UNDP). Retrieved August 14, 2011, from [www.apdip.net/asian-forum](http://www.apdip.net/asian-forum)

Labelle, R. (2005). ICT Policy Formulation and e-Strategy Development. A Comprehensive Guidebook. United Nations Development Programme-Asia Pacific Development Information Programme (UNDP-APDIP) – 2005

Leedy, P., Ormrod, J. (2005). Practical Research: Planning and Design, 8/E, *Merrill Publishers*

Levy, B., Spiller, P. (1996). A Framework for Resolving the Regulatory Problem, in Levy, B & Spiller, P (eds) (1996) *Regulations, Institutions, and commitment*, Cambridge University Press, Cambridge

Love, D. (2005). An Overview of the South African Telecommunications Industry: From Pre-1994 Policy-making to Gloomy 2005 Realities, *Honours Research Report* submitted to the University of the Witwatersrand. Supervisor: Professor Tom Lodge.

Mandela, N. (1995). Nelson Mandela's Speech at the Telecom 95 Opening Ceremony. 7th World Telecommunications Conference and Exhibition. 3rd October 1995, Geneva Arena. Retrieved Oct 15, 2009, from <http://www.itu.int/TELECOM/wt95/pressdocs/manddist.html>

Mansell, R., Wehn, U. (1998). The Potential Uses of ICTs for Sustainable Development, Chapter 5 in *Knowledge Societies: Information Technology for Sustainable Development*, Oxford University Press. Retrieved January 10, 2011, from <http://www.questia.com/PM.qst?a=o&d=74427657>

Mansell, R. (1999). The information society and ICT policy: A critique of the mainstream vision and an alternative research framework. Department of Media and Communications, London School of Economics and Political Science, London, UK

Mansell, R. (2008a). *The life and times of the information society: a critical review*. In: Media@LSE Fifth Anniversary Conference: Media, Communication and Humanity 2008, 21 - 23 September 2008, LSE. (Unpublished)

Mansell, R. (2008b). Social Dimensions of Information and Communication Technology Policy. In IFIP International Federation for Information Processing, Volume 282; Chrisanthi Avgerou, Matthew L. Smith, Peter van den Besselaar; (Boston: Springer), pp. 15–28.

Marais, M. (2011). Analysis of the factors affecting the sustainability of ICT4D initiatives. 5th IDIA Conference: ICT for development: people, policy and practice, Lima, Peru, 26 - 28 October 2011

Mbeki, T. (1995). Thabo Mbeki at the G-7 Conference on the Information Society'. Retrieved May 15, 2007, from <http://www.ispo.cec.be/g7/press/thabo.html>

Mbeki, T. (2001). State Of the Nation Address of the President of South Africa, Thabo Mbeki, at the National Assembly Chamber, Cape Town, 9 February 2001

Melody, W. (2002). Assessing Telkom's 2003 Price Increase Proposal: Price Cap Regulation as a Test of Progress in South African Telecom Reform, and E-economy Development, LINK Centre at University of the Witwatersrand, Johannesburg; South Africa. Retrieved January 25, 2008, from <http://link.wits.ac.za/research/wm20021130.htm>

Meraka Institute (Meraka), (2010). Retrieved October 07, 2010, from <http://www.meraka.org.za/>

Miller, J. (1999). "Entering the Information Age: Setting priorities in South Africa, 2nd International Al Shaam Conference on Information Technology, 26-29 April, Damascus, Syria.

MDGSA, (2010). Millennium Development Goals in South Africa (MDGSA), MDG in South Africa. Retrieved July 25, 2010, from <http://www.undp.org.za/millennium-development-goals/mdgs-in-south-africa>

Milne, C. (1998). Stages of universal service policy, *Telecommunications Policy*, Volume 22, Issue 9, October 1998, Pages 775-780

Mkandawire, T. (2001). Thinking about developmental states in Africa, *Cambridge Journal of Economics* 35, 3: 289–313.

Mok, K. (2007). Withering the State? Globalization Challenges and Changing Higher Education Governance in East Asia. *Springer International Handbooks of Education*, 1, Volume 19, International Handbook of Urban Education, 2, Pages 305-320

Molla, A. (2000). Downloading or uploading? The information economy and Africa current status. *Information for Development*, vol. 9, pp. 205-221.

Moses, J. (2010). Foiling the Resource Curse: wealth, equality, oil and the Norwegian state. In: Edigheji, Omano, (ed.), *Constructing a Democratic Developmental State in South Africa Potentials and Challenges*. Cape Town: Human Sciences Research Council Press, pp. 126-145.

Mouton, J.(2008). *How to succeed in your Masters and doctoral studies*, Van Schaik Publishers, 2008

Mutula, S. (2007). Digital Divide And Economic Development: Case Study Of Sub-SaharamAfrica. Department of Library and Information Studies, University of Botswana, Gaborone, Botswana.

Naidoo, J. (1997). Speech at the official launch of SATRA, 10 February, Department of Communications. <http://www.doc.gov.za/docs/sp/1997/sp970210.html>

Naidoo, J. (1997a). Speech at Teletraffic '97, Department of Computer Sciences, Rhodes University. Department of Communications. <[http://www.gov.za/docs/sp/1997/teletraffic\\_97.html](http://www.gov.za/docs/sp/1997/teletraffic_97.html)>

Naidoo, J. (1997b). Speech entitled 'Taking South Africa into the 21st Century'. Department of Communications. <http://www.gov.za/docs/sp/1997/>

Naidoo, J. (1997c). Speech entitled 'Bringing the Poor into the Knowledge Society'. Department of Communications. <http://www.gov.za/docs/sp/1997/>

Naidoo, J. (1997d). Speech entitled 'Deregulation No Answer to South Africa's Problems'. Department of Communications. Retrieved January 25, 2011 from <http://www.gov.za/docs/sp/1997/>

Naidoo, J. (1997e). Speech entitled 'Restructuring South Africa's telecommunications for the 21st century'. Department of Communications. Retrieved January 25, 2011 from <http://www.doc.gov.za/docs/sp/1997/>

Naidoo, J. 1997f. 'The Strategic Role of Telecommunications in South Africa', Eskom Megawatt Conference Centre, 18 March. Department of Communications. Retrieved January 25, 2011 from <http://www.doc.gov.za/docs/sp/1997/sp970318.html>

Naidoo, J. 1997g. 'The Role and Vision of Government in the Emerging Information Society', National Information Technology Forum Dinner, 18 August. Department of Towards an Integrated Information Society Policy in South Africa

Naidoo, J. 1997h. 'The Case For and Against Competition in Emerging Markets', The Financial Times World Telecommunications Conference, 2 December. Department of Communications. Retrieved January 25, 2011 from <http://www.doc.gov.za/docs/sp/1997/sp971202.html>

Naidoo, J. 1998. Speech at the Conference on Education and Broadcasting, Benoni, 2 February. Department of Communications. Retrieved January 25, 2011 from <http://www.doc.gov.za/docs/sp/1998/sp980202.html>

Naidoo, J. 1998a. Speech at the World Telecommunications Development Conference 1998, Valetta, Malta, 24 March. Department of Communications. Retrieved January 25, 2011 from <http://www.doc.gov.za/docs/sp/1998/sp980324.html>

Naidoo, J. 1998b. Speech at the Inauguration of the DoC's Chair in Telecommunications and Expert Systems, Eastern Cape Technikon, Butterworth Campus, 21 April. Department of Communications. Retrieved January 25, 2011 from <http://www.doc.gov.za/docs/sp/1998/sp980421.html>

Naidoo, J. 1998c. Speech at the Launch of the Centre of Excellence in Rural Communications, ML Sultan University, Durban, 13 November. Department of Communications. Retrieved January 25, 2011 from <http://www.doc.gov.za/docs/sp/1998/sp1113r.html>

Naidoo, J. 1998d. Summary of an Address to the SABC Group Executive, SABC News Staff, Johannesburg, 2 December. Department of Communications. Retrieved January 25, 2011 from <http://www.doc.gov.za/docs/sp/1998/sp1202r.html>

Naidoo, J. 1998e. Speech at the Confederation of Indian Industries, New Dehli, India, 7 December 1998. Department of Communications. Retrieved January 25, 2011 from <http://www.doc.gov.za/docs/sp/1998/sp1207.html>

Nattrass, N. (1996). Gambling on investment: Competing economic strategies in South Africa, in *Transformation*, vol.31: 25-42  
NDP, (2012). National Development Plan (NDP), Vision for 2030. National Planning Commission (NPC). Pretoria

Németh, S. (2008). Information Society Working for Inclusiveness: Scales, Actors and Peripheries. University of Joensuu

NeSPA, (2010). National e-Skills Plan of Action (NeSPA). Department of communications (DoC). Pretoria

Ojo, T. (2005). Wiring sub-Saharan Africa for development, Algonquin College, Ottawa, Canada. *International Journal of Education and Development using ICT* – vol. 1, no. 3(2005)

Osterwalder, A., Rossi, M., Dong, M. (2001). The Business Model Handbook for Developing Countries, Ecole des HEC, University of Lausanne, 1015 Lausanne, Retrieved March 15, 2007, from <http://inforge.unil.ch/aosterwa>

Peña-López, I. (2008) “Economic Benefits of ICTs” In *ICTlogy*, #52, January 2008. Barcelona: ICTlogy. Retrieved Oct 07, 2011 from <http://ictlogy.net/review/?p=677>

Peña-López, I. (2010). Research in ICT4D: the convergence of social sciences and technology. In *ICTlogy*, #74, May 2010. Barcelona: ICTlogy.

Peter, B., Evans, P. (1989). Predatory, Developmental, and Other Apparatuses: A Comparative Political Economy Perspective on the Third World State

Pillay, D. (2007). The stunted growth of South Africa's developmental state discourse : part two : policy and political choices, *Africanus*, Vol 37, Issue 2, Pages: 198-215

The PNC on ISAD (c2006). Towards an inclusive information society in South Africa. Presidential National Commission on the Information Society and Development: Pretoria. Retrieved Oct 15, 2011, from [http://www.pnc.gov.za/index.php/component/docman/cat\\_view/63-isad-documents](http://www.pnc.gov.za/index.php/component/docman/cat_view/63-isad-documents)

RDP, (1994). The Reconstruction and Development Programme (RDP), South Africa. Retrieved August 10, 2010, from <http://www.nelsonmandela.org/omalley/index.php/site/q/03lv02039/04lv02103/05lv02120/06lv02126.htm>

RSA (1996). The Information Society And The Developing World: A South African approach, South African Government position paper, Information Society and Development (ISAD) conference, May 1996, Gallagher Estate, Republic of South Africa (RSA) Johannesburg. Retrieved November 10, 2011, from <http://people.cs.uct.ac.za/~edwin/MyBib/1996-isad.pdf>

RSA, (2010). State of Public Service Report 2006: Assessing the Capacity of the State to Deliver. In *Public Service Commission* (Ed.), Republic of South Africa (RSA), South African Government Online.

Rostow, W. (1960). *The Stages of Economic Growth: A Non-Communist Manifesto*, Cambridge University Press, London.

Sachs, J., Warner, A. (1997). Sources of slow growth in African economies, *Journal of African Economies*, vol 6, no. 3, pp. 335-376.

Schiller, D. (1982). *Telematics and government*, Norwood, NJ: Ablex

Schlemmer, L. (2011). How stable is South Africa? Friedrich-Naumann-Stiftung für die Freiheit. Retrieved January 11, 2012, from <http://www.politicsweb.co.za/>

Schuppan, T. (2008). E-Government in developing countries: Experiences from sub-Saharan Africa, *Government Information Quarterly*, in Press, Corrected Proof. Retrieved January 15, 2009, from [www.sciencedirect.com/innopac.wits.ac.za/science](http://www.sciencedirect.com/innopac.wits.ac.za/science)

Singh, S. (2010): The South African ‘Information Society’, 1994–2008: Problems with Policy, Legislation, Rhetoric and Implementation, *Journal of Southern African Studies*, 36:1, 209-227. Retrieved December 01, 2011, from <http://www.tandfonline.com/doi/abs/10.1080/03057071003607444>

Riley, M., Wood, R., Clark, M., Wilkie, E., Szivas, E. (2000). *Researching and Writing Dissertations in Business and Management*, Thomson Learning.

Talyarkhan, S. (2004). *Connecting the first mile: A framework for best practice in ICT projects for knowledge sharing in development*

Twinomurinzi, H. & Phahlamohlaka, L. J. & Byrne, E (2009). *Towards a critical-interpretive analysis framework for ICT4D in government*

UNCTAD (2006). *Using ICTs to Achieve Growth and Development*. Background paper by the UNCTAD secretariat. Geneva: UNCTAD. Retrieved February 28, 2011 from [http://www.unctad.org/en/docs/c3em29d2\\_en.pdf](http://www.unctad.org/en/docs/c3em29d2_en.pdf)

UNDP, (2001). *Today’s Technological Transformations - Creating the Network Age*, Chapter 2 in *Human Development Report 2001: Making Technologies work for Human Development*, United Nations Development Programme (UNDP), New York. Retrieved September 3, 2007, from <http://www.undp.org/hdr2001>

UNDP (2010). *South Africa MDG Report 2010*. United Nations Development Programme (UNDP)

UNDP (2007) *Human Development Report 2006: HDI Country Fact Sheet - South Africa*. United Nations Development Programme (UNDP).

UNDP (2007) Human Development Report 2011: HDI Country Fact Sheet - South Africa. United Nations Development Programme (UNDP). Retrieved October 07, 2011, from <http://hdr.undp.org/en/statistics/>

Van Audenhove, L. (2003). Towards an Integrated Information Society Policy in South Africa:  
An overview of Political Rhetoric and Policy Initiatives 1994 – 2000

Vaughan, D. (2006). ICT4D - Linking Policy to Community Outcomes. Partners in Micro-development Inc.

Visser, W. (2004). Shifting RDP into GEAR. The ANC government's dilemma in providing an equitable system of social security for the "new" South Africa. University of Stellenbosch, South Africa. Paper presented at the 40th ITH Linzer Konferenz, 17 September 2004

Wade, R . (1990). Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization

WEC, (2010). e-Barometer Report, South Africa 2000-2009. World Economic Forum (WEC), Retrieved Oct 07, 2011, from <http://www.weforum.org/news-0>  
[http://www.pnc.gov.za/index.php/component/docman/cat\\_view/63-isad-documents](http://www.pnc.gov.za/index.php/component/docman/cat_view/63-isad-documents)

Wenzel, P. (2006). Policy Analysis and Implementation Research Briefing Series, PO Box 66018, Broadway 2002, Johannesburg.

WSIS, (2003). World Summit on the Information Society (WSIS): Declaration of Principles, Building the information Society, a Global Challenge for the Millennium. Geneva 2003.

World Bank, (1998). Knowledge for Development: World Development Report, Oxford University Press, New York.

World Bank, (2004). What is Development?: World Development Report. Retrieved 03 April 2012, from [http://www.worldbank.org/depweb/english/beyond/beyondco/beg\\_01.pdf](http://www.worldbank.org/depweb/english/beyond/beyondco/beg_01.pdf)

# **Appendix A: ICT4D Semi-Structured Interview Questions**

## **A.1 Introduction and Interview Protocol**

My name is Vusi Moyeni. I am a student at the University of Witwatersrand, conducting a Master of Management research in ICT Policy and Regulation (MMICTPR), student number 0300446T. This is an independent study, and the research interview is voluntary, confidential and anonymous.

The topic of this research is Analysis of South Africa's ICT Policy through Developmental State (DS) and ICT4D theories. The research seeks to establish the extent to which South Africa's ICT Policy reflects DS and ICT4D theories. The full research report will be available to you on request. The researcher requests to use a Dictaphone to help with note-taking and accuracy.

The following set of questions focuses on the ICT4D theory and seeks to tease out and solicit the respondent's opinion on five (5) themes of the ICT4D theoretical framework identified through academic literature review. The interview should take at most 30 minutes.

## **A.2 ICT4D Interview Questions**

### **Enabling Institutional Environment**

Question 1: In what ways are South Africa's ICT institutions providing an enabling environment for building a South African Information Society?

### **Agile ICT Industry**

Question 2: To what extent has South Africa nurtured a local ICT Industry and what role is this industry envisaged to play in the economy and in building an Information Society?

### **Robust ICT Infrastructure**

**Question 3:** How ready is South Africa's ICT Infrastructure to deliver on universal access targets and to serve as a backbone for a network-based knowledge economy?

### **Human Digital Capability Development**

**Question 4:** To what degree can South African citizens be considered as adequately capacitated to actively participate, contribute, leverage and benefit from the Information Society?

### **Ubiquitous e-Services Deployment**

**Question 5:** How far has South Africa progressed in achieving pervasive deployment of e-services such as e-health, e-education, e-business, e-government etc.?

### **Policy Alignment**

**Question 6:** Why is developmental state theory poorly reflected in ICT policy?  
Why is ICT4D theory poorly reflected in ICT policy?

## **Appendix B: DS Semi-Structured Interview Questions**

### **B.1 Introduction and Interview Protocol**

My name is Vusi Moyeni. I am a student at the University of Witwatersrand, conducting a Master of Management research in ICT Policy and Regulation (MMICTPR), student number 0300446T. This is an independent study, and the research is voluntary, confidential and anonymous.

The topic of this research is Analysis of South Africa's ICT Policy through Developmental State (DS) and ICT4D theories, the research seeks to establish the extent to which South Africa's ICT Policy reflects DS and ICT4D theories. The full research report will be available to you on request. The researcher requests to use a Dictaphone to help with note-taking and accuracy.

The following set of questions focuses on the DS theory and seeks to tease out and solicit the respondent's opinion on four (4) themes of the DS theoretical framework identified through academic literature review. The interview should take at most 30 minutes.

## **B.2 Developmental State Interview Questions**

### **Developmentalist Ideology**

**Question 1:** How does policy and academic discourse characterise South Africa as a developmental state (DS)?

### **State Capacity and Institutional Arrangements**

**Question 2:** In what ways can the South African state apparatus be considered as adequately capacitated to tackle the daunting task of building a DS? Specifically, to what degree are South African state institutions designed for an interventionist DS as opposed to fiscal prudence and the reduced role of state demanded by international financial institutions?

### **State Autonomy**

**Question 3:** In what ways can the South African state be considered as hamstrung by local and global interests from sagaciously pursuing the goal of becoming a DS?

### **Country Context**

**Question 4:** To what extent will the envisaged South African DS be contextualised to historical realities including those of redressing past disparities and diverting revenues from mineral resources to support a distributive social policy?

### **Policy Alignment**

**Question 5:** Why is developmental state theory poorly reflected in ICT policy?

## **Appendix C: E-Health Semi-Structured Interview Questions**

### **C.1 Introduction and Interview Protocol**

My name is Vusi Moyeni. I am a student at the University of Witwatersrand, conducting a Master of Management research in ICT Policy and Regulation (MMICTPR), student number 0300446T. This is an independent study, and the research is voluntary, confidential and anonymous.

The topic of this research is Analysis of South Africa's ICT Policy through Developmental State (DS) and ICT4D theories. The research seeks to establish the extent to which South Africa's ICT Policy reflects DS and ICT4D theories. The full research report will be available to you on request. The researcher requests to use a Dictaphone to help with note-taking and accuracy.

The following set of questions focuses on the ICT4D theory and seeks to tease out and solicit the respondent's opinion on progress made in the e-health policy discourse landscape. The interview should take at most 30 minutes.

## **C.2 e-Health Policy Discourse Interview Questions**

Question 1: What are the main findings regarding the current status of e-health policy discourse in South Africa?

Question 2: What progress has been made in the e-health policy development space?

Question 3: What challenges face e-health and what are recommendations to overcome them?

Question 4: Why are the developmental state and ICT4D theories poorly reflected in this ICT policy discourse?

## **Appendix D: Policy Review Panel Semi-Structured Interview Questions**

### **D.1 Introduction and Interview Protocol**

My name is Vusi Moyeni. I am a student at the University of Witwatersrand, conducting a Master of Management research in ICT Policy and Regulation (MMICTPR), student number 0300446T. This is an independent study, and the research is voluntary, confidential and anonymous.

The topic of this research is Analysis of South Africa's ICT Policy through Developmental State (DS) and ICT4D theories. The research seeks to establish the extent to which South Africa's ICT Policy reflects DS and ICT4D theories. The full research report will be

available to you on request. The researcher requests to use a Dictaphone to help with note-taking and accuracy.

The following set of questions focuses on the recently established Policy Review Panel (PRP) and seeks to tease out and solicit the respondent's opinion on the establishment of the PRP. The interview should take at most 30 minutes.

## **D.2 Policy Review Panel Interview Questions**

Question 1: Other than what is reflected in the published Terms of Reference (ToR), what are other roles and responsibilities of the PRP?

Question 2: Why should the PRP not become a permanent body?

Question 3: The lack of direct reference to the developmental state in the expected deliverables of the PRP

Question 4: How would you gauge the progress made by the PRP thus far?

Question 5: What are the likely impediments in the path of the PRP, and why?

## **Appendix E: Letter of Consent and Confidentiality**

(to be signed by all research respondents)

I ..... hereby consent to participate as a research respondent in Vusi Moyeni's Master of Management in ICT Policy and Regulation (MMICTPR) Programme studies at Wits University, student number 0300446T. I understand that data collected and analysed as a result of the research will form part of the main body of his Master's Research Report to be submitted to the University of the Witwatersrand. I also understand that his research report will be used for educational purposes. I understand that I will be guaranteed anonymity (through the use of pseudonyms) if I so request, during the actual research process as well as in the final research report.

By signing this letter of consent, I consent to the following - [Cross (X) the relevant blocks]:

- Participating in interviews
- The researcher taking field notes
- Interview sessions being audio-taped

I expect to be given a copy of this consent form to keep.

.....

Signed Date

The following information on interview participants is optional:

Name : \_\_\_\_\_

Job Title : \_\_\_\_\_

Institution: \_\_\_\_\_