

A VIABLE INFRASTRUCTURE DELIVERY SYSTEMS MODEL FOR ACHIEVING SOCIO-ECONOMIC BENEFITS IN THE NIGERIAN OIL AND GAS INDUSTRY

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Dedication

This study is dedicated to
God Almighty for making this possible.

Declaration

This thesis is submitted under the University of Salford rules and regulations for the award of a PhD degree by research.

This researcher declares that he is responsible for the work carried out in this thesis. Furthermore, he wishes to state that no portion of the work referred to in this thesis has been submitted elsewhere for another degree qualification of this, or any other university.

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Bankole Ositadinma Awuzie

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Abbreviations

AIP	Australian Industry Participation
CMC	Computer Mediated Communication
DCM	Design Construct and Maintain
DfT	Department of Transport
DPR	Department of Petroleum Resources
E & P	Exploration and Production
EPC	Engineering, Procurement and Construction
EPCI	Engineering, Procurement, Construction and Installation
EPCM	Engineering, Procurement and Construction Management
EU	European Union
FPSO	Floating Production, Storage and Offloading
GATT	General Agreement on Tariffs and Trade
GDP	Gross Development Product
GST	General Systems Theory
HDI	Human Development Index
HSCB	Human Social, Cultural Behavioural Model
IDS	Infrastructure Delivery System
IDSL	Integrated Data Services Limited
IMEG	International Management and Engineering Group
IOC	International Oil Companies
IPIECA Association	International Petroleum Industry Environmental Conservation Association
ITT	Invitation to Tender
IUK	Infrastructure United Kingdom
JV	Joint Venture
KRPC	Kaduna Refinery and Petrochemical Company
LCDPs	Local Content Development Policies
LST	Living Systems Theory

M & E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MoEN	Ministry of Environment
MPR	Ministry of Petroleum Resources
NAO	National Audit Office
NAPIMS	National Petroleum Investment Management Services
NASS	National Assembly
NCDMB	Nigerian Content Development Monitoring Board
NEEDS	National Economic Empowerment Development Strategy
NEP	National Economic Plan
NETCO	National Engineering and Technical Company
NGC	Nigeria Gas Company
NGOs	Non-Governmental Organisations
NIP	National Infrastructure Plan
NIPEX	Nigerian Petroleum Exchange
NIPP	National Independent Power Plant
NOGICDA	Nigerian Oil and Gas Industry Content Development Act
NPDC	Nigerian Petroleum Development Company
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
OGC	Office of Government Commerce
OPEC	Organisation of Petroleum Exporting Countries
PDP	Productive Development Policies
PMBOK	Project Management Book of Knowledge
PPMC	Petroleum Pipeline Marketing Company
PPP	Public-Private Partnerships
PPP	Purchasing Power Parity
PQQ	Pre-Qualification Questionnaires
PRPC	Port-Harcourt Refinery and Petrochemical Company

PSC	Production Sharing Contract
QCA	Qualitative Content Analysis
SD	Systems Dynamics
SiF	System in Focus
SME	Small and Medium Enterprise
SSM	Soft Systems Methodology
TCE	Transaction Cost Economics
TMOs	Temporary Multi-Organisations
UN-ESCAP Pacific	United Nations Economic and Social Commission for Asia and the Pacific
VfM	Value for Money
VIDM	Viable Infrastructure Delivery System Model
VSM	Viable Systems Model
WRPC	Warri Refinery and Petrochemical Company
WTO	World Trade Organisation

Abstract

In apparent realisation of the place of procurement in driving the implementation of socio-economic policies, successive governments across the globe are increasingly demanding more from suppliers as it pertains to the delivery of socio-economic benefits. This has resulted in a significant shift in what constitutes success in the respective projects which they commission; from factors related to the 'iron triangle' to contributions of the project to the growth of the local economy. Policies such as the Social Value Act, and the Nigerian Oil and Gas Industry Content Development Act (NOGICDA) in the United Kingdom and Nigeria respectively readily come to mind. Judging by the plethora of literature bemoaning the prevailing high poverty and unemployment rates in developing and resource-rich countries such as Nigeria; it would appear that the implementation of such policies has failed to deliver the expected outcomes. This opinion is affirmed by several studies which point to the possibility of implementation failure in such countries. Surprisingly, none of these studies has made any attempt to explore the manner in which implementation is organised and governed. Obviously, the seeming absence of a veritable platform for implementation analysis constitutes an immense challenge to effective analysis. As a result of this, previous investigators appear to have failed to properly tackle this imbroglio from a holistic and systemic perspective.

To bridge this gap, this qualitative study embarked upon an evaluation of the implementation process using the NOGICD Act as an exemplar. The failure of the nation's economic sectors to achieve sufficient backward linkage with the oil and gas industry, as evidenced by the reported failure of local suppliers to gain entry into the supply chains of major infrastructure projects contributed to this choice. The Viable Systems and Temporary Multi-Organisations theoretical lenses were applied in the conceptualisation of the inherent complex interorganisational relationships thus resulting in the development of a Viable Infrastructure Delivery Systems Model (VIDM); a model premised on systemic and cybernetic principles. The VIDM was then applied in conceptualising and evaluating the extant interorganisational relationships within selected infrastructure delivery system case studies in Nigeria and the United Kingdom depicting the multi-case study nature of the study. A mixture of unstructured, semi-structured, and structured interviews were employed at various stages of the study. Also, policy and publicly available contract documents were explored. Subsequently, the emergent data was qualitatively analysed using pre-set themes, with NVivo software. The findings obtained were used to test various propositions on a within-case and cross-case basis.

It was observed that the VIDM was better positioned to conceptualise and evaluate the various interorganisational interactions within infrastructure delivery systems and how they influence implementation success. Furthermore, the application of the VIDM within the selected cases enabled the discovery of various issues within the IDS capable of undermining successful implementation such as non-alignment of goals within the IDS, excessive government interference, lack of appropriate criteria for measurement of benefits and cognition-related issues.

It is expected that the VIDM would be used by implementation advisors for conceptualising and evaluating interorganisational relationships during policy or strategy implementation cycles and/or for (re)designing implementation processes for viability within the Nigerian oil and gas industry.

CHAPTER 1. INTRODUCTION

1.1. Chapter Introduction

This chapter introduces the context of this study. It commences with a review of the research study's background and proceeds to present a rationale for the research. The research questions are highlighted immediately afterwards, alongside the initial propositions which the researcher held prior to the commencement of the research study. The rest of the chapter is structured accordingly, namely:

- Aim and objectives of the study,
- The scope of the study,
- A brief review of the research methodology utilised,
- Contribution of the research to the body of knowledge,
- A highlight of the thesis structure, and
- Chapter summary.

It is expected that at the end of this chapter a comprehensive understanding of what the study intends to achieve will be developed.

1.2. Background to the Study

Effective infrastructure asset delivery and management remains central to the growth of several economies across the globe (Estache, 2004a, Akintoye et al., 2003, Estache and Limi, 2008, Kirkpatrick et al., 2006a, Calderon and Serven, 2008). This is even more so with infrastructure having been described as largely responsible for improved productivity (Akinyosoye, 2010, Awuzie and McDermott, 2012, Baldwin and Dixon, 2009, Calderon and Serven, 2008). Recently, these economies have shown increasing concern with infrastructure asset delivery and management processes in their bid to boost productivity (Calderon and Serven, 2008). Their areas of concern include the following, whilst not being limited to these issues; financing, procurement, effective and efficient delivery, transparency and accountability issues, project governance and management, administration and partnership oriented issues.

The attention to infrastructure delivery has become more prevalent within developing economies, as these countries have continued to grapple with inadequate and/or obsolete infrastructure stock. These countries, knowing the impact of adequate infrastructure investment and asset provision, have sought to attract substantial investments in their infrastructure sectors. The attainment of regional integration and economic cooperation among neighbouring countries has also been central to new infrastructure-based public policy initiatives (AUC and UNECA, 2012). Through the enactment of new infrastructure delivery policies, they have also sought to deliver socio-economic benefits such as job creation, improved access to employment centres and skill acquisition through apprentices (Arrowsmith, 2010).

Recently, governments in emerging economies have enacted several policies centred upon granting patronage to local suppliers during infrastructure delivery cycles. It was expected that this would lead to a greater retention of the procurement spend and also allow for the enhanced acquisition of skills, in-country (Wells and Hawkins, 2008b). Wells and Hawkins (2008) maintained that effective management of investments in infrastructure and the infrastructure delivery process within critical sectors of these resource-rich countries possessed the potential for the creation of jobs for the citizenry of such countries.

Nigeria has been severally described as one of such developing, resource-rich countries where a huge infrastructure deficit has been identified as hindering the country from attaining sustainable economic growth (Gboyega et al., 2011). With an estimated population of 154 million, Nigeria's population accounts for 47% of the total population of Sub-Saharan Africa (World Bank 2011). It's estimated reserve of more than 36.2 billion barrels of crude oil in 2007 makes it the second largest oil producing nation in Sub-Saharan Africa, behind Angola (CRES, 2008). The country also has a preponderance of gas reserves, measuring about 184tcf, thus making it the world's 7th largest gas reserve. Despite these proven reserves of oil and gas resources in the country, production outputs within the sector have remained at a low level over the last couple of decades (NPC, 2010), thus contributing little to the development of local (in-country) capacity to service the nation's oil and gas industry (Gboyega et al., 2011). This has been blamed on violence and ethnic strife by the host communities as well as the absence of the necessary infrastructure to boost production (USEIA, 2013). Iwayemi (2008) argued that the perennial inability of the oil and gas industry to meet its supply

obligations and other customer needs was caused by the non-availability of the required infrastructure stock for improved productivity and increased output. He stated that an effective oil and gas infrastructure network in the country was imperative for the development of local content. Ekebafé and Joledo (2010) agreed with the views held by Iwayemi (2008), stating that the oil and gas industry in Nigeria was a viable platform for the attainment of local capacity building targets as contained in the local content policy guidelines. This is due to the sector's technological edge, huge potential for job creation, and transferability of industry capabilities through linkages to other sectors of the economy (Ekebafé and Joledo, 2010).

However, this has not been the case. Evidence abounds in contemporary studies on the subject matter, indicating that there has been no strong linkage between the huge oil and gas reserves in the country, its exploration and exploitation and other sectors of the Nigerian economy (Saka and Lowe, 2010b, Adewuyi and Oyejide, 2012). The Nigerian government, through several policy documents and legislations since the commencement of oil and gas exploration in the country, has sought to ensure that subsequent investments made in the oil and gas sector have impacted positively upon the local economy. It was expected that such impacts would include the development and sustenance of stronger cross-sectorial linkages between the oil and gas sector and other sectors. The Vision 20:2020 (NPC, 2010) and the NEEDS(NPC, 2004) policy of the government emphasise the creation of employment and cross-sectorial linkages between the oil and gas industry and other sectors of the Nigerian economy, particularly the development of the local supplier competencies and capabilities. This drive by the government has culminated in recent legislation such as the Nigerian Oil and Gas Industry Content Development (NOGICD) Act of 2010. Warner (2011) attributed the increased advocacy for local content development in countries such as Nigeria, as being borne out of their intention to use such investments in infrastructure to develop indigenous competencies and industries. It is expected that the development of local industries alongside the associated competencies would create more jobs and lead to increased employment, as well as increased competitiveness of such countries among the community of countries around the globe. In the last decade, the Nigerian government has initiated several energy related infrastructure projects such as the National Independent Power Plant (NIPP) projects and the oil and gas pipeline infrastructure to enhance productivity and to provide employment (NPC, 2010, NPC,

2004). This singular act, it was expected, would enable the nation to attain the Millennium Development Goals (MDGs) and provide socio-economic benefits to its populace. Surprisingly, these policies appear to have failed to achieve their objectives, given the continuing issues of high unemployment and rampant cases of abandoned projects, despite increasing investments in infrastructure (Dessy, 2007, Gidado, 2010, Foster and Pushak, 2011). Ineffective implementation has been blamed for such failures (Dessy, 2007).

Extant studies have pointed out that the lack of an effective public policy implementation strategy in most developing and resource rich countries has remained the bane for the attainment of economic growth in these countries (Dessy, 2007, Okoroafor and Anuforo, 2012). Furthermore, Lopez-Acevedo et al. (2012) identified the absence of effective policy monitoring and evaluation (M&E) systems in most countries across the globe, particularly the developing ones. For Africa and most of the resource-rich undeveloped or developing countries, public procurement and policy implementation cycles have been associated with unbridled corruption and lack of transparency (ADB, 2007, Corley, 2011, Mobbs, 2011), hence rendering them incapable of being used as a tool to effectively drive government policies in such climes. These scholars have sought to blame corruption and the lack of transparency as the only possible barriers to the effective implementation of the policies. Pushak and Foster (2011) reveal that a majority of these investments in infrastructure and public policies concerning infrastructure delivery have failed to deliver the desired results, especially when it concerns the attainment of socio-economic goals. They attributed this to the lack of an effective regulatory and legal framework, the presence of adversarial relationships, the absence of standard contracts and incessant duplication of tasks by contracting authorities. Other factors identified include the lack of project management expertise, and lack of transparency in the procurement process. These reasons have also been adduced to as contributing to the government's seeming inability to successfully pursue its local content development policy in Nigeria (Ihua, 2010).

The attainment of a programme or implementation success is generally attributable to the manner in which such an endeavour is organized and governed (Carroll and Burton, 2012, Henisz et al., 2012, Burton et al., 2011, Wallace et al., 2004, Reve and Levitt, 1984). Similarly, achieving optimal implementation of Local Content Development Policies (LCDPs) in a country through infrastructure delivery would be dependent upon

the manner in which the relationships between the various organisations within the procurement system are organised and governed. In Nigeria, there has been an absence of a proper evaluation of these procurement systems to establish their inherent capability to deliver the client's (government's) objectives, as observed by the researcher. Surprisingly, a proper scrutiny of the processes and interorganisational relationships involved in implementing the policies, especially in the face of recent literature pointing to the occurrence of possible disjuncture within the policy implementation cycle, has often been neglected (Nudzor, 2012, Balouga, 2012). Seemingly, this neglect is borne out of the absence of an approach for conceptualising interorganisational relationships and evaluating the impact of such interactions on communication, control and collaboration within the implementation cycle (Proctor et al., 2011, Hartmann, 2011). As a result, the implementation process has been treated as a 'black box'. This research takes the lead in this area by developing an approach for conceptualising the various relationships existing between the multiple organisations within the oil and gas Infrastructure Delivery System (IDS), and evaluating how these relationships impact upon its role as a medium for policy implementation. This study is positioned along the lines of systems viability as propounded by Beer (1984) and the Theory of Temporary Multi-Organisations by Stringer (Stringer, 1967).

The term 'viability' within the context of this study is used to refer to the organisational capacity to "*exist and thrive in sometimes unpredictable and turbulent environments*" (Hoverstadt and Bowling, 2005; 133). This criterion requires organisations to exhibit ultra-stability; that is, the capacity to adapt to its selected environment, or even re-configuring this environment to suit them (Hoverstadt and Bowling, 2005). For them to attain this feature of viability, organisations and systems alike must possess six characteristic attributes and also strong relationships which encourage information flow and seamless communication between parties (Awuzie and McDermott, 2012, Awuzie and McDermott, 2013, Espejo and Gill, 1997). These characteristic attributes include: operation, control, monitoring*, coordination, intelligence, and policy.

1.3. Rationale for the Research

Quite understandably, the policy implementation process as it affects infrastructure delivery, consists of several contractual arrangement(s) which bind various actors and defines their responsibilities towards ensuring successful implementation. However, it

has been established that the actual relationships which exist between these actors often differ from these contractual agreements (de Blois and Lizarralde, 2010). They reiterate the disparity between the actual relationships of these actors and the expected relationships stated within contract. For such delivery systems to perform optimally, an understanding of these actual relationships between actors and its impact upon the implementation process becomes imperative. This study sets out to conceptualise these actual relationships and to subsequently evaluate them for viability from a systems viability perspective.

The need for this study becomes imperative considering that in recent times, various studies have blamed ineffective policy implementation for the dismal performance of the several socio-economic policy initiatives being introduced by successive governments across the world. The impact of these failed policies is mostly felt within the community of developing and underdeveloped countries. Nigeria happens to fall into this league of developing countries where unemployment and poverty levels are presently soaring, despite the prevalence of socio-economic interventions.

Nigeria is currently grappling under severe economic hardship, with more than 60% of its populace living below the poverty threshold despite the fact that it remains one of the world's oil producing nations (Alkali, 2005, Calderon and Serven, 2008). This fact is buttressed by the recent statistics report on poverty released by the National Bureau of Statistics in 2011. This report (see Table 1.1) indicates a continuous rise in the poverty rates over the years.

Table 1.1 Relative Poverty: Non-Poor, Moderately Poor and Extremely Poor (%)

Year	Non-Poor	Moderately Poor	Extremely Poor
1980	72.8	21.0	6.2
1985	53.7	34.2	12.1
1992	57.3	28.9	13.9
1996	34.4	36.3	29.3
2004	43.3	32.4	22.0
2010	31.0	30.3	38.7

Source: www.nigerianstat.gov.ng (2011)

From Table 1.1 above, a trend depicting a steady increase in the percentage of moderately and extremely poor Nigerians can be established. Table 1.1 indicates that about 69% of the Nigerian citizenry were either moderately poor or extremely poor in 2010. Not a lot seems to have changed considering the report on the Human Development Index (HDI) for countries within the OPEC community which was released in 2013. The country ranks lowest on the Human Development Index, (see Table 1.2) despite its huge resource based income.

Table 1.2 OPEC Countries with the Highest and Lowest Human Development Index for 2013

Rank	Country	HDI	Rank	Country	HDI
1	Qatar	0.834	1	Nigeria	0.471
2	UAE	0.818	2	Angola	0.508
3	Kuwait	0.790	3	Iraq	0.590
4	Saudi Arabia	0.782	4	Algeria	0.713
5	Libya	0.769	5	Ecuador	0.724
6	Venezuela	0.748	6	Iran	0.742

Source: UNDP (2013)

On the left side of Table 1.2 is the list of countries with the highest HDIs, whereas countries with the lowest HDIs are listed on the right. The low human development index as highlighted in Table 1.2 portrays the failure of the government to deliver on its promises despite the vast resources accruing to it from escalating oil and gas prices in the international market.

The oil and gas sector of the Nigerian economy remains the most crucial, contributing an estimated 86% of total revenue (Oyejide and Adewuyi, 2011). This major contribution in revenue terms pales into insignificance upon the assessment of the impact of the sector on local employment and human development initiatives (Iwayemi, 2008, Ihua, 2010, Denni-Fiberesima and Rani, 2011). The oil and gas industry in Nigeria has a history of absorbing investments worth approximately \$8bn annually, for servicing of its infrastructure and this is projected to hit \$15bn in 2016-2017 (Iwayemi,

2008). Yet this sector does not have any strong linkage to any other sector capable of generating jobs locally, neither has it enabled local suppliers to develop such competencies which would render them competitive in the international market (Saka and Lowe, 2010a, Adebola et al., 2006, Aigboduwa and Oisamoje, 2013). Also, this sector currently provides employment to less than 1.3% of the total employed population despite the increased effort of the government to drastically reduce the unemployment gap in the country through several policy initiatives (Ihua, 2010, Oyejide and Adewuyi, 2011).

Furthermore, the US Energy Information Administration (USEIA, 2013) has identified a list of upcoming infrastructure projects within the upstream and midstream of the Nigerian oil and gas industry. See Table 1.3 below.

Table 1.3 Upcoming Oil and Gas Upstream and Midstream Infrastructure Projects

Operator	Project	Oil (bpd)	Natural Gas (MMcf/d)	Expected Start Date
Chevron	Olero Creek Restoration Project.	48	N/A	2013-2014
Chevron	Escravos Gas to Liquids Plant	33	N/A	2014
Chevron	Dibi Long Term Project	70	N/A	2016
Chevron	Sonam Field Development	30	215	2016
Chevron	Nsiko	N/A	N/A	2017+
Eni	Zabazaba-Etan	120	N/A	2015-2016
ExxonMobil	Etim/Asasa Pressure Maintenance	50	N/A	2013-2015
ExxonMobil	Bosi	140	260	2016+
ExxonMobil	Erha North Phase 2	60	N/A	2016+
ExxonMobil	Satellite Field Development Phase 2	80	N/A	2016+
ExxonMobil	Uge	110	20	2016+
Shell	Bongo Northwest	40	N/A	2014
Shell	Bongo North	100	60	2016+

Shell	Bongo South west (Aparo)	225	15	2016+
Shell	Forcados Yokri Integrated Project 2	90	N/A	2015-2016
Shell	Southern Swamp Associated Gas 2	85	N/A	2015-2017
Total	Usan Future Phases	50	N/A	2016+
Total	Egina	200	N/A	2017+

Source:(USEIA, 2013)

The Gas Master-plan recently inaugurated by the present administration, consists of the development of a gas infrastructure portfolio estimated to cost \$16 billion over a four year period, from 2010 to 2016 (NPC, 2010). This huge expenditure forms part of the government's public expenditure and thus renders the oil and gas industry as a prime candidate for the delivery of socio-economic benefits. This has necessitated the need for this evaluation of the entire procurement system as represented by the Infrastructure Delivery System (IDS) in this study. A timely evaluation of the interorganisational relationships and development of modalities for the attainment of organisational viability within the IDS would enable the Nigerian citizenry to exploit the benefits accruing from the upcoming investments in the oil and gas infrastructure listed in Table 1.3 above.

Within the context of this study, the IDS serves as a policy implementation medium, providing the linkage between policy formulation and policy outcomes within the realm of infrastructure delivery. It is the vehicle which brings about the outcomes experienced by the population being targeted by the policy.

The second rationale behind the selection of the oil and gas infrastructure is premised on the fact that the study is being sponsored by the Petroleum Technology Development Fund (PTDF), a government agency which is responsible for the development of competent and skilled local manpower resources for the oil and gas industry. The establishment of this organisation apparently highlights the age-long endeavour of the Nigerian government to develop indigenous capabilities to run its oil and gas industry.

1.4. Research Questions and Propositions

1.4.1. Research Questions

- a) What is a viable infrastructure delivery system?
- b) Has the current mode of delivering the oil and gas infrastructure in Nigeria contributed to the attainment of government targets on local content development?
- c) What are the challenges to the development of viable delivery systems for the oil and gas infrastructure in Nigeria?
- d) How can the current system of oil and gas infrastructure delivery be made to attain and maintain viability?

1.4.2. Research Propositions

The propositions for this research include:

- Enhanced local contractor/supplier development and participation in the delivery of infrastructure remains a recognised approach to engendering economic growth within the local economy.
- Effective procurement remains pivotal to the successful implementation of socio-economic policies through infrastructure delivery systems.
- There is an apparent disconnect between policy and implementation within the IDS.
- A viable infrastructure delivery system would lead to effective procurement and the attainment of desirable policy objectives.
- Infrastructure delivery systems can only attain viability if the inter-organisational relationships are effectively organised and governed in such a manner that all the participating organisations share a common objective.
- For the IDS to attain and maintain viability there must be excellent communication and collaboration between all parties to the delivery, usually ranging from the policy formulation through to the subcontractors within the delivery environment.

These initial propositions were developed between two distinct periods: during the researcher's period of engagement in the procurement of infrastructure, and during the review of literature on the subject matter. They remain initial propositions as the development of propositions and continuous testing of such is an on-going activity within the realm of qualitative research such as this (Marshall and Rossman, 1999).

1.5. Aim and Objectives of the Study

1.5.1. Research Aim

This study seeks to *(i) develop a model for conceptualising and evaluating inter-organisational relationships within infrastructure delivery systems for viability and (ii) to identify implementation gaps within such systems and proffer recommendations for the attainment of viability using the model developed in (i).*

1.5.2. Research Objectives

To achieve its set aims, the study shall seek to achieve the under-listed objectives, namely:

1. To determine what constitutes a viable Infrastructure Delivery System (IDS) from a viable systems perspective.
2. To assess the capabilities of the Viable Systems Model (VSM) for evaluating temporary multi-organisational structures such as the IDS for viability.
3. To develop and validate a Viable Infrastructure Delivery System Model (VIDM).
4. To develop an understanding of the existing organisational structures and governance modes and the attendant interrelationships between stakeholders within the IDS.
5. To identify success and failure factors affecting the attainment of viability within such systems, using the VIDM.
6. To proffer recommendations on how to attain and maintain organisational viability.

1.5.3. Relationship between Research Objectives and Research Questions

Table 1.4 below shows the relationship between the underlying research questions and objectives of the study.

Table 1.4 Relationships between Research Objectives and Questions

Research Objective	Research Question
<p>To determine what constitutes a viable IDS from a viable systems perspective.</p> <p>To assess the capabilities of the Viable Systems Model for evaluating temporary multi-organisational structures such as the IDS for viability</p> <p>To develop and validate a Viable Infrastructure Delivery System Model (VIDM).</p>	<p>What is a viable infrastructure delivery system?</p>
<p>To develop an understanding of the existing organisational structures and governance modes and the attendant interrelationships between stakeholders within the IDS.</p>	<p>Has the current mode of delivering the oil and gas infrastructure in Nigeria contributed to the attainment of government targets on local content development?</p>
<p>To identify success and failure factors affecting the attainment of viability within such systems, using the VIDM.</p>	<p>What are the challenges to the development of viable delivery systems for the oil and gas infrastructure in Nigeria?</p>
<p>To proffer recommendations on how to attain and maintain organisational viability.</p>	<p>How can the current system of oil and gas infrastructure delivery be made to attain and maintain viability?</p>

1.6. Research Methodology

To achieve these objectives and ultimately, the aim of this study, a qualitative approach involving the use of multiple case studies was adopted in the conduct of this exploratory study. The case studies availed the researcher the opportunity to identify the various

organisations involved in the IDS, develop an in-depth understanding of the actual relationships which exist between these organisations and to subsequently evaluate the influence of these interrelationships and interactions between these parties on organisational viability of the IDS. The case studies selected for the purpose of this research consisted of a complete representation of the interorganisational relationships present within the entire delivery process of infrastructure projects. The projects were situated in Nigeria and the United Kingdom, for the sake of replication and comparative analysis purposes. Adhering to the tenets of replication logic as described by Yin (Yin, 2009) allows for analytic generalisation of the findings of the study. These interorganisational relationships, which served as the units of analysis in this research, assumed temporary multi-organisational structures which perhaps might not have been recognised by the participants of the project, but were modelled by the researcher to suit the purpose of the study. The case study strategy enabled the researcher to not only develop an in-depth understanding of the phenomenon but also to employ multiple data collection methods: interviews; review of documents; and observation.

This research commenced with an in-depth review of the literature on relevant topics within the realm of the subject matter: the development of a viable IDS. This review of the literature provided the researcher with some theoretical insight into key factors. Following from this theoretical foundation, a preliminary study was conducted to assess the suitability of the VSM in conducting an evaluation of temporary, complex social organisations such as the IDS. This preliminary study consisted of unstructured interviews and an online discussion forum; a type of Computer Mediated Communication (CMC) technique. The results allowed for the development of a conceptual model, the Viable Infrastructure Delivery Systems Model (VIDM). An initial validation of the VIDM was also carried out through structured interviews, wherein policy implementation and infrastructure delivery experts were interviewed at various times across several locations spread between the United Kingdom and Nigeria.

The VIDM was then employed towards gaining a comprehensive understanding of the contemporary IDS, following from the concept of it serving as a *'tool'* and a *'product'*. Semi-structured interviews were conducted among the identified stakeholders on the IDS, on the sort of relationships which exist between them. These stakeholders, selected through a juxtaposition of purposive and snowballing sampling techniques, included:

content development managers in the IOCs; the operator's project managers; the project representatives of the implementing agencies; and the representatives of the contracting firms working on the project cases.

The semi-structured interviews were ordered according to the research questions and emergent data was transcribed and uploaded into the NVivo software. The data was structured in such a manner that all responses to each question from the interviewees were matched against the questions. This allowed for easy comprehension and analysis. Upon the gathering of data and its subsequent analysis, the VIDM was further validated through the case studies and a set of Critical Success Factors (CSFs), as well as pathologies (failure factors) were identified. Recommendations were then proffered based on these findings, thus leading to the development/extension of new a theory on infrastructure delivery systems viability. This is in line with the logic of an abductive approach, adopted by this researcher.

1.7. Scope of the Study

This research is situated within the context of procurement and eventual delivery of oil and gas infrastructure in Nigeria. The term 'oil and gas infrastructure' is used to connote all those facilities utilised for the enhancement of productivity within the upstream and midstream sectors of the oil and gas industry. It applies to facilities such as the Floating Production Storage Operating (FPSO) platforms, refineries and pipelines (Nugruho, 2005) and excludes other kinds of infrastructure such as roads, bridges and railways which might prove essential for oil and gas industry productivity, albeit in a secondary manner. The research seeks to evaluate the impact of the relationships of the various organisations within the delivery system for these infrastructure projects, and the governance mechanisms employed on the successful implementation of the government's policy on Nigerian content development within the oil and gas industry in Nigeria. As a result, the scope of this study shall be confined to these interorganisational relationships as epitomised by the IDS. Therefore, the IDS is described as *the representation of all types of interorganisational relationships existing between various stakeholder organisations during the procurement and subsequent delivery of a particular infrastructure asset*. The scope of this study revolves around these relationships and evaluating their impact on the tenets of systems/organisational

viability. It is also worth noting that the delivery process as used within the context of this study excludes operations and management.

1.8. Contribution to Knowledge

Whereas the effectiveness of the VSM in anticipating, diagnosing, planning for, and implementing large scale organisational change has been severally cited (Beer, 1979, Brocklesby and Cummings, 1996, Espejo, 2003, Hoverstadt, 2008, Polese et al., 2009), there has been no mention of the application of the model in temporary multi-organisations in developing countries, to the knowledge of this researcher. It is the intention of this study to fill this gap. It seeks to contribute to the body of knowledge by *developing a model for anticipating, diagnosing and evaluating temporary multi-organisations for viability based on the tenets of the VSM*. The IDS is a clear manifestation of a temporary multi-organisation.

The research also seeks to fill the gap established by Proctor et al., (2011) within the realm of policy implementation research. They observed that there was an absence of a clear **conceptualisation** of the policy implementation process and an **approach** for the evaluation of the attendant implementation process outcomes. They argue that the various researchers have ended up assessing and evaluating policy implementation from the quality of services delivered by the implementation process or service outcomes, instead of conducting an assessment of the implementation outcomes in themselves. They maintain that this error has led to the lack of sufficient insight into the inherent hindrances experienced during the implementation of policy. This argument is akin to the argument put forward by Vives et al. (2009) where they attempt to distinguish between project management success and project success. Although different models have been developed by Elmore (El-Hasia, 2005) for understanding the policy implementation process, it is expected that, whilst aligning with the views of Proctor et al., (2011), this research will provide *a model which will conceptualise the interactions, both formal and informal, between various organisations involved in the implementation process, thus allowing for an enhanced comprehension and thorough evaluation of the impact of these interactions on the attainment of implementation success from an organisational/systems viability perspective.*

Furthermore, it is expected that this research *would assist policy makers and implementing agencies and especially infrastructure clients in developing countries, such as Nigeria, to understand the actual relationships within the delivery chain and to identify the barriers to effective policy and project implementation.*

1.9. Thesis Structure

This report shall be divided into six distinct parts which are further classified into eight chapters for clarity and ease of comprehension. The sections include;

- a) Chapter One introduces the background of the research and provides a rationale for the study. The scope of the study, the research methodology adopted and the contribution which the research seeks to make are all highlighted within the confines of this chapter.
- b) Chapter Two marks the commencement of the literature review section of the thesis. Literature related to the critical aspects of the study, namely: policy implementation, socio-economic benefits, infrastructure delivery, and local content development. Furthermore, it reviews scenarios of socio-economic policy implementation in Nigeria and the United Kingdom.
- c) Chapter Three discusses the rationale for adopting the system's thinking methodology as the most appropriate methodology for the conduct of the investigation into the IDS. Furthermore, the relevant theories are also highlighted and reviewed, particularly the theories of viable systems, complex organisations, temporary multi-organisations, and stakeholders.
- d) Chapter Four is comprised of a justification of the research methodology adopted for the research.
- e) Chapter Five describes the initial steps to the development and validation of the VIDM. These steps consist of an analysis of the data gathered from expert unstructured and semi-structured interview sessions and the online discussion forums. The data so obtained assisted in the refinement of the conceptual model developed through the literature and provided a platform for the further validation of the model through the case studies.
- f) Chapter Six consists of the intra case analysis of the data obtained in the multiple cases used, and this allowed for the generation of new propositions which would be tested at the cross-case analysis stage of the research.

- g) Chapter Seven deals with the cross-case analysis and the testing of propositions generated during the intra-case analysis stage.
- h) Chapter Eight reviews the validation of the VIDM, providing a conclusion and a set of recommendations for future infrastructure clients and policy makers/implementers in developing countries, as well as making recommendations for further studies.

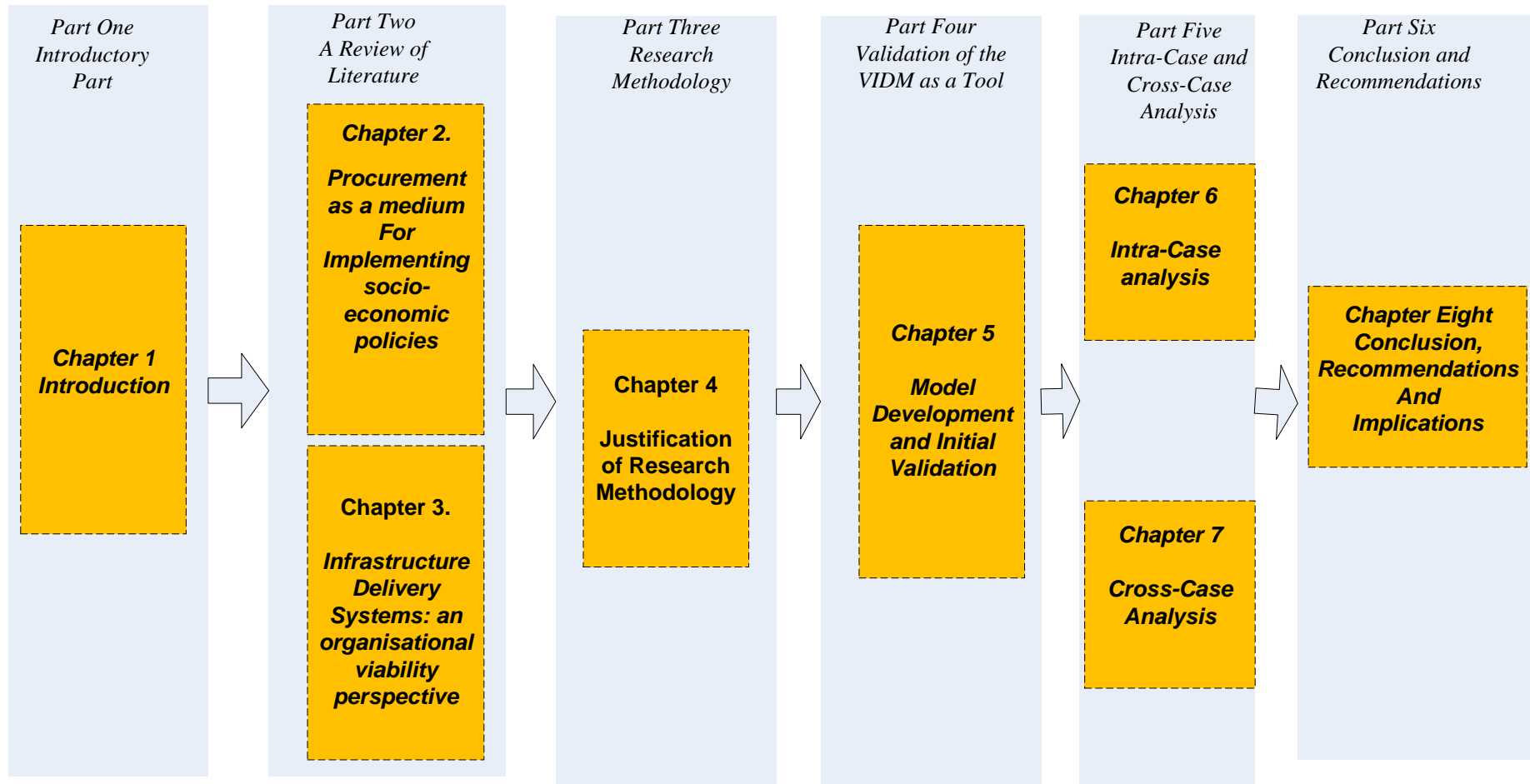


Figure 1.1 Organisational Sequence of the Study

1.10. Chapter Summary and Link

This chapter has provided the platform for the subsequent sections of the study. This platform was premised on the problem areas highlighted in the background and research rationale. The aim, objectives and research questions as well as the relationship between the objectives and the research questions were expressed within this chapter, to ensure increased levels of clarity. Furthermore, the research methodological approach adopted for the study was justified. Subsequently, a proper delineation of the actual boundaries of the study was carried out within the chapter. This was followed by a highlight of the study's relevance and contribution to the body of knowledge. This chapter concluded with an insight into the remaining part of the thesis. The next section comprises the extant literature as it concerns the implementation of socio-economic policies within the Nigerian and United Kingdom contexts.

CHAPTER 2. PROCUREMENT AS A MEDIUM FOR IMPLEMENTING SOCIO-ECONOMIC DEVELOPMENT POLICIES

2.1. Chapter Introduction

Having introduced the context of this study in the previous chapter, albeit briefly, this chapter shall proceed to provide an in-depth description of the contexts within which this study is situated. This study is positioned within the contexts of policy implementation, infrastructure delivery systems, and local content development respectively. It is expected that at the end of the chapter, a comprehensive understanding of the extant relationship between infrastructure delivery, policy implementation and local content development would have been developed.

As a means of achieving this aim, the chapter shall be structured accordingly;

- Policy
- Public procurement
- Local content development
- Procurement systems
- Infrastructure
- Country context perspective- Nigeria and the United Kingdom
- Summary and Link

These themes, it is believed, create room for a systematic contextualisation of the phenomena being studied.

2.2. Policy

2.2.1. Policy and Policy Formulation

There appears to be no widely accepted definition for the term ‘policy’ within the body of existing literature (Waller et al., 2009, Hayes, 2001). Waller et al. (2009) rely on the definition proffered by the Concise Oxford Dictionary wherein it was described as;

“A course or general plan of action to be adopted by government, party, person, etc...” (7).

On the other hand, Titmuss et al. (1974) described the term ‘policy’ as one that was used to refer to those standards which govern any action which is directed at achieving a given objective. They maintained that these standards represented the enactment of change in various facets, namely; situations, systems, practices, and behaviour. Hayes (2001) added that the term ‘public policy’ could be used to describe a purposive and consistent action plan formulated through a specific political process which is produced in response to perceived problems within a particular community and implemented and enforced by a particular public agency. Furthermore, Hill and Hupe (2002) cite Anderson (1975:3) as having defined policy as:

“...a purposive course of action followed by an actor or set of actors in dealing with a problem or matter of concern. Public policies are those policies developed by governmental bodies and officials”.

According to Osman (2002), public policy-making involves a series of very complex processes. He identified these processes as being mostly at the mercy of various socio-political as well as other environmental factors. Waller et al. (2009) agree with the Modernising Government white paper (Cabinet Office, 1999) declaration of policy making as;

“The process by which governments translate their political vision into programmes and actions to deliver outcomes, desired changes to the real world”

The policy-making process was also described as an interactive one, saddled with some level of inherent technicalities creating room for more inputs to be taken into consideration from the wider society (Sabatier, 1991a, Birkland, 2010). For public policies to be effective and create positive outcomes on this targeted population sample, it must derive support from the target population and the implementing actors/agencies during the implementation phase.

Following from these various descriptions of the term ‘policy’, certain attributes can be deciphered as being essential for policies to evolve. Policies must be action plans which are prepared by the government to deliver certain benefits to the populace and which is enforceable by statutorily created public agencies. They also highlight the fact

that the policy-making and implementation circle involves several levels of interaction between stakeholders in the development of recipes (policies) for tackling issues peculiar to a select sample of a given population. They also imply that policies must be implemented for them to attain the purpose of their development. This thus places policy implementation in a very critical position in the delivery of policy outcomes to the targeted community.

2.2.2. Policy Implementation

Implementation, according to DeLeon (1999:314) was described as “*what happens between policy expectations and (perceived) policy results*”. O’Toole (2000) described it as that sort of activity which develops between the development of an apparent intention by the government to perform or not to perform a particular task and the impact of that intention in the real world. Palfrey (2002:2273) stated that implementation theory is an area of research in economic theory that rigorously investigates the correspondence between normative goals and institutions designed to achieve these goals. In their contribution to implementation discourse, DeGroff and Cargo (2009) observed that the concept of policy implementation involved several processes imbued with complex change, wherein the intentions of government undergo some kind of transformation, changing into programmes and regulations directed at ensuring the delivery of certain well-defined outcomes. This view corroborates the earlier position of Parsons (1995), when he declared that the study of the implementation process was synonymous with the study of change.

Mazmanian and Sabatier (1983:20-21) provide a more succinct and elaborate definition in their seminal work on policy implementation. They described implementation as;

“...carrying out of a basic policy decision, usually incorporated in a statute but which can also take the form of important executive orders or court decisions. Ideally, that decision identifies the problem to be addressed, stipulates the objectives to pursued, and in a variety of ways, structures the implementation process. The process normally runs through a number of stages beginning with passage of the basic statute, followed by the policy outputs (decisions) of the implementing agencies, the compliance of target groups with those decisions, the actual impacts-both intended and unintended-of those outputs, the perceived

impacts of agency decisions, and finally, important revisions (or attempted revisions) in the basic statute”.

For the purpose of this study, the term ‘*implementation*’ will be viewed through this definition. The apposite nature of this definition stems from the fact that it treats implementation as an action which sits alongside the policy formulation and policy outcome continuum and possesses the power to enhance the delivery of credible outcomes, if properly managed and organised. It also portrays implementation as a complex multi-actor activity involving several actors/agencies, target groups and implementing agencies.

2.2.3. The Emergence of the Policy Implementation Discourse

Sabatier (1986) and Najam (1995) separately traced the emergence of implementation research to three different phases, namely;

First (Classical) Phase: This phase involved the emergence of several research interests focusing upon an analysis of single cases, concentrating on government’s capability to implement public policies effectively. Studies during this era relied upon the assumption that implementation would automatically occur upon the proclamation of a particular policy (Najam, 1995).

Second (Empirical) Phase: Studies conducted during this era were concerned with proffering explanations for the differences in implementation success or failure rates across various contexts. Najam (1995) maintained that scholars at this stage challenged the assumption of automatic implementation, proffering as it were evidence of implementation failures through detailed case studies. He added that the complex political nature of the implementation process, rather than its otherwise assumed mechanical administrative stance was also observed during this phase of its evolution.

Third (Analytic) Phase: During this era of implementation research evolution, the need to correct the top-down approach adopted by researchers in the preceding phases became noticeable among various researchers. This culminated in a very sharp debate about the potency of the top-down approach when compared to the bottom-up approach. A series of debates during the late seventies and eighties were centred on identifying which of the approaches of policy implementation was most apposite and why. According to Sabatier

(1986), these debates led to the establishment of two schools of thought with each supporting either the top-down approach or the bottom-up approach. Attempts were made to discuss the strengths and weaknesses of the two approaches, at the end of which it was agreed upon that a synthesis of the two approaches may be more appropriate for policy implementation research. See (Sabatier, 1986).

Reviewing these debates further and their impact upon the present day body of implementation research, Hill and Hupe (2002) catalogued the views of several implementation theorists such as Pressman and Wildavsky, who were referred to as not only the founding fathers of implementation research, but also the initiators of the top-down approach to implementation. Other top-down theorists identified by Hill and Hupe (2002) include: Van Meter and Van Horn; Eugene Bardach; Paul Sabatier and Daniel Mazmanian. Van Meter and Van Horn were credited with their attempt to provide theoretical perspectives to the field of implementation research and to further develop a framework for studying implementation research.

This framework was premised upon several theories: organisation theory/organisational change; studies on the impact of public policy and particularly on the impact of judicial decisions; and studies on inter-governmental relations. Furthermore, Van Meter and Van Horn suggested a model in which six variables are linked dynamically to the production of an outcome 'performance': policy standards and objectives; the resources and incentives made available; the quality of inter-organisational relationships; the characteristics of implementing agencies; the economic, social and political environment; the disposition or response of the implementers, involving three elements: their cognition of the policy, the direction of their response to it; and the intensity of that response (Hill and Hupe, 2002).

Michael Lipsky was identified as having championed the initial argument for the adoption of the bottom-up approach when he observed that the street-level bureaucrats remained pivotal to the implementation of any policy, since they comprised of the bulk of the implementing personnel (Hill and Hupe, 2002). Lipsky opined that these street-level bureaucrats wielded much power and were essential components for successful implementation and stressed the need for them to be incorporated during policy formulation. Benny Hjern was also identified as another advocate for the bottom up

approach and made the case strongly for the development of implementation structures. He agreed that the study of implementation must be organisation theory-driven in such a manner so as it does not discriminate against any set of actors, insisting that structures for effective implementation are predicated upon pools of organisations coming together through the processes of consensual self-selection (Hill and Hupe, 2002). In their contribution to this debate, DeGroff and Cargo (2009) maintain that the top-down approach school of thought viewed implementation as resulting from the utilisation of strong bureaucratic management administrative measures: control; coercion; and compliance to gain ultimate adherence to policy objectives, whereas the bottom-up school of thought relies on the proposition that successful implementation can only take place when the implementing agencies and the targeted sample are taken into confidence at the early stages of policy formulation. They traced the end of these debates to the ascendance of the integrated, contingency based models as developed by Goggin et al. (1990).

In clear submission to the views held by the opposing groups, as it concerns the appropriate approach to use in studying implementation research such as this, this study adopted an organisational theory and systemic approach, viewing the entire process of implementation through an organisational and system thinking lens. The adoption of these approaches are supported by the admission of O'Toole Jr and Montjoy (1984) in their seminal work on the absence of a generally accepted theory of implementation. In that piece, they admitted that implementation researchers have continued to employ a diverse range of theoretical perspectives and variables to give sense to their findings.

2.2.4. Policy Implementation as an interorganisational, multi-layered activity

Various scholars have pointed to the implementation process as one that is comprised of several organisations performing distinct functions within the implementation cycle (Hill and Hupe, 2003, Hanf and O'Toole, 1992, O'Toole Jr and Montjoy, 1984, O'Toole, 1986, Lundin, 2007). Citing their seminal work of 1973 titled 'implementation', Hill and Hupe (2002) highlighted the observation made by Pressman and Wildavsky, that if an action depends upon a number of links in an implementation chain, then the degree of cooperation between agencies required to make those links has to be very close to a hundred percent, if a situation is not to occur in which a number of small deficits cumulatively create a large shortfall. Aside from serving as a pointer to the prevalence

of several organisations in the implementation process, the observation also highlights the imperative nature of cooperation and collaboration between these parties to prevent the occurrence of any gap within the implementation process. As if to buttress this assertion, Lundin (2007) in his assessment of the impact of cooperation on the implementation success, stated that cooperation was important for implementation success.

Understanding the implementation process as one that occurs across several layers and between several organisations becomes necessary, as it allows for the development of comprehensive knowledge of such processes. This is especially so considering the fact that the multi-layered and multi-organisational (actor) nature of the implementation process has been blamed for the lack of agreement between implementation researchers on what constitutes the subject of an implementation-based enquiry (O'Toole, 1986). According to O'Toole (1986), this has led to the emergence of two distinct schools of thought among implementation researchers. One such school insists that implementation refers to all that is part of the process, between initial statement of policy and ultimate impact on the world. On the other hand, the second school of thought opined that implementation be restricted to the actions of those charged with handling policy, thus excluding (a) the behaviour of actors who are not officially designated even if technically and/or politically they are necessary participants in the process of converting policy into action, and (b) the matter of whether the prescribed actions are likely to have the expected effect on the real world.

Hanf and O'Toole (1992) and Hill and Hupe (2003) lamented the low level of attention paid to the analysis of interorganisational structures within the realm of implementation research. This, they insisted, is despite the fact that the interorganisational nature of the implementation process posed the greatest constraint to implementation success. Actions within an implementation process must assume multi-lateral dimensions and involve the interplay of several organisations, each individually possessing different perspectives, interests, and levels of influence. However, the capability of each individual organisation to achieve its own objectives would be wholly dependent upon the actions of other organisations, as actions at one level of decision-making will be grossly influenced by the relationships between levels and across functional boundaries (Hanf and O'Toole, 1992). They state that success can only be achieved within the realm of policy formulation and implementation through the creation of

interorganisational decision-systems rather than the fancier top-down structures, as these cannot resolve the institutional mismatch between structures and inherent issues.

On their part, Hill and Hupe (2003) stated that the failure to deal appropriately with implementation processes from a multi-layer perspective posed two major constraints. Firstly, the notion of '*dashed*' expectations on the part of one layer would suggest either a failure of control or the occurrence of several interventions in the policy process that could be referred to as illegitimate. The second constraint is the assumption that the relationship between various layers is a simple and uniform one which can be expected to have similar characteristics in dissimilar situations. They appealed for a rethink by implementation theorists about the manner in which they reflect on the multi-layered nature of implementation, stressing that such a rethink would affect the findings of various studies. Examples of such influences on research findings as observed by Hill and Hupe (2003) include the fact that if there are multiple layers, then some transformation is inevitable in the transmission of a policy objective from top to bottom, whatever the degree of consensus between the various organisations. Another area of influence lies in the fact that lower layer organisations can make legitimate changes to the implementation process without the knowledge of the higher layer organisations.

Hanf and O'Toole (1992) and O'Toole Jr and Montjoy (1984) opined the need for the introduction of interorganisational theory into implementation research. They agreed that this would position the conscious interaction of the several organisations and the influence of these interactions on the achievement of the defined policy outcomes, through coordinated efforts. This implies that when individuals interact with each other within the implementation structure, they do so not as individuals, but as members of an organisation, representing such an organisation. The interorganisational structure as proposed would lead to a shift of focus from the performance of particular organisations within the implementation cycle, to the performance of the relationships between the several organisations.

O'Toole Jr and Montjoy (1984) explain the need for the use of interorganisational structures to describe implementation, stating that only then would the various interdependences existing between the various organisations be clearly understood and analysed. They opined that there is an increased possibility for the increasing complexity within the implementation process to decrease the clarity of policy

mandates. Effective monitoring of such mandates will usually be very difficult within such complex interorganisational settings. Furthermore, the adoption of the interorganisational structure, they insist, will allow for easy identification of the interdependence structure as well as the areas of power within the cycle. They identify three categories of interdependencies which are prone to exist within an interorganisational setting; pooled operating interdependence; sequential operating interdependence; and reciprocal operating interdependence. These various categories of interdependences affect cooperation between organisations within an interorganisational, multi-layered implementation system.

Concluding, Hanf and O'Toole (1992) whilst observing that the effective implementation of policy was dependent upon the ability of researchers to cope with the influence of these interorganisational structures on the management of public policy, reported the emergence of several streams of implementation researchers in contemporary times. The groups identified include: a) researchers interested in policy subsystems and policy communities with particular interests in the structural conditions under which policy is made; b) researchers with an interest in the perceived crisis of governance intent in exploring the role of government in the increasing interorganisational context of implementation; and finally, c) researchers concerned with the thorough analysis of policy implementation through multi-organisational, interorganisational and multi-layer perspectives, and in the management related problems affecting such structural relationships. They state that whereas the former two groups seem to be gaining prominence in recent times, the latter group is still emerging with scant studies carried out in that regard.

This study identifies with the latter group, as it seeks to study the policy implementation process through an interorganisational and multi-layered lens.

2.2.5. Drivers and Challenges to Effective Policy Implementation

Policy implementation has been described as being imperative for the successful delivery of policy outcomes. Across the globe, several instances of policy successes and failures have been attributed to successful or unsuccessful implementation processes. Policy implementation, particularly in developing countries such as Nigeria, has continually posed a challenge to the actual execution of government policies (Obaje, 2009, Lopez-Acevedo et al., 2012, Ibrahim, 2012, Dessy, 2007, Ali, 2006), yet there

appears to be an insufficient amount of literature reflecting the nature of interactions which occur within the interorganisational and multi-layered structure of the implementation process. The citizenry has remained the most adversely affected by the absence of proper policy implementation pathways, as evident from the abysmal outcomes emanating from the implementation of policies in the country.

An Economist report on enabling effective implementation, observed the crucial nature of policy implementation within organisations, stating that failed implementation would lead to unsuccessful efforts and also result in regulatory negligence, thus exposing public and private organisations to a host of legal issues (EIU., 2010). The study reported that ineffective implementation of policy posed major constraints to public and private sector organisations alike. Furthermore, certain facts which emerged from the study included the following;

- The fact that poor implementation was prevalent across the globe;
- The increasing demand for the development and adoption of more effective policy implementation processes/methodologies;
- The under-resourced nature of implementation activities by various organisations;
- The reactive posture of organisations towards implementation, rather than a proactive one;
- Often, interests of senior management within these organisations tend to override those of other stakeholders within the implementation system;
- The increasing tendency to view people as constituting hindrances to the implementation process, rather than as solutions;
- A need for a holistic approach to policy implementation.

According to the same report, such holistic approaches are necessary for proper analysis of the implementation process and usually involves;

“... sufficient resources; the capacity to monitor and learn from mistakes; communication with all stakeholders about the nature and purpose of the change; and the ability to include these same stakeholders in the design of the implementation; and to gain from their insights” (4)

The report identified five separate CSFs for effective implementation, namely: resources; planning and processes; leadership; buy-in (winning support); and finally, technology (EIU., 2010). Contributing, Wanna (2007) added other CSFs, namely; organisational self-awareness; effective governance; support from the top; in-depth understanding of the interaction between policy development and implementation; engagement with other organisations; and continuous monitoring and evaluation.

However adhering to these CSFs has not been easy, as a post-mortem conducted by Wanna (2007) and EIU (2010) seem to suggest. According to the former, factors ranging from poor alignment of the project with strategic direction; poor expression of business requirements; and untested benefits case have proven to be the greatest undoing of various implementation processes. Meanwhile, the latter revealed that policy implementation required an integration of execution into a broader continuum which encompasses both policy formulation and feedback. For effective implementation to occur, the study stressed that companies and government entities must also; consider the risks and benefits of such a policy change and apply resources accordingly; integrate implementation considerations into policy planning and decision-making processes; possess a structured manner for reporting on policy implementation successes and failures and the resultant effect of the change; adopt the lessons from this reporting to improve planning the next time round; look into technology where it might be useful and make good use of the same; ensure regular communication between stakeholders to ascertain their needs and impact of the new policy on their needs; have senior management lead the change; and find structured and unstructured ways not only to keep relevant people throughout the organisation informed about the change, but also to use their insight to improve policy formulation and implementation.

In identifying the barriers to effective implementation, O'Toole Jr and Montjoy (1984) stated that most of the issues confronting implementation emanated from the widely-shared characteristics of people and their patterns of organisation. They added that usually, interorganisational problems experienced during implementation are caused, in part, by the lack of attention to and incentives for coordination among organisations. If policies or organisations set up administrative coordinating units specifically to implement such policies, these problems might be reduced. But such organisations might further fragment structure and inhibit the effective implementation process.

In his contribution, Ali (2006) attributed the causes of policy failures to poor implementation. Assessing the process of education policy implementation in Pakistan, he observed that apart from conventional causes such as the governance structure defects, over-centralisation, inadequate resources, overt dependence on foreign aid, lack of total commitment and support from the political class and the prevalence of unclear or over ambitious policy targets, problems relating to poor cognition on the part of the implementing stakeholders posed a severe challenge to successful implementation. This view was supported by findings emerging from the work of Nudzor (2012). Nudzor in his study of the implementation process using a Ghanaian educational policy exemplar, observed that teachers and the education authority personnel possessed a varied understanding of what the policy objectives were as well as whom the policies were targeted at. On the other hand, he also observed that the failure of the policy makers to understand the policy implementation process was centred upon the absence of continuous interaction, dialogue, feedback and modification of objectives, coping with mixed feelings, and values and norms.

From a Nigerian perspective, there appears to be a consensus between various authors (Okafor, 2007, Onakuse and Lenihan, 2007, Obaje, 2009, Aminu et al., 2012, Makinde, 2005, Okoroafor and Anuforo, 2012) that corruption, lack of continuity in government policies and inadequate resources are responsible for the prevalent implementation deficit in the country. These factors have held the country back from benefiting from expected policy outcomes as intended during the policy formulation stages. Makinde (2005) listed communication, resources, dispositions or attitudes, and the bureaucratic structure as CSFs for effective implementation of policy in Nigeria. Surprisingly, no study has attempted to carry out a holistic evaluation of the interorganisational structure of the implementation process from a systematic perspective in Nigeria, to date.

Thus it becomes imperative to conceptualise these relationships between various organisations within the implementation process in such a manner that it reflects the positions of various organisations and the extant mode of interdependences within the system. This is necessary as it allows for a proper comprehension of the system. Proctor et al. (2011) in lending their support to the development of such conceptualisations, admitted that the determination of how to conceptualize and measure successful implementation has remained an unresolved issue in the field of implementation research. Whereas this study is not going to attempt to measure successful

implementation, it shall concentrate on the evaluation of the implementation process through one of the acclaimed strategies for policy implementation in the contemporary world - public procurement.

2.3. Public Procurement

2.3.1. The Concept of Public Procurement

Thai (2001) traced the history of public procurement to the issuance of the first procurement order in Syria, dating back to between 2400 and 2800 B.C. Miller et al., (2000:59) defines procurement as;

“...the acquisition of goods or services through a transparent, competitive, public process”.

Hunja (2003) affirmed that public procurement involved all processes involved in the purchase of goods and services, with vast amounts from the private sector by the public sector. According to the OECD (2011), public procurement can be described as the purchase of goods, services and works by state-owned companies and the state itself.

From these definitions, it becomes clear that public procurement remains central to government business globally and constitutes a huge component of the government's expenditure. For instance, OECD member states spend an average of 12.6% of their GDP on public procurement (OECD, 2011). This is lower than the amount spent in the developing world, as is evident from Agaba and Shipman (2007). They posit that public procurement usually accounts for about 70% of Ugandan GDP and 40% of Malawi's GDP. Wittig (1999) stated that the public procurement sector is the largest domestic market in less developed countries such as African countries, and as such any improvement therein can have a direct and beneficial effect on the overall economic situation of a country. This goes to show the significance of public procurement to developing economies. The huge expenditure and attendant complexity arising from its multi-actor posture makes public procurement vulnerable to corrupt practices, waste, and fraudulent practices. Notwithstanding, the call for the reform of public procurement practices globally and the role of public procurement in delivering government policy appears to be on the rise (Erridge, 2007, Arrowsmith, 2010, Telgen et al., 2012).

No doubt, public procurement stands out as one way through which socio-economic policies could be implemented. This will be discussed in subsequent sections of this study.

2.3.2. Socio-economic Policies and Public Procurement

Researchers have stressed that the procurement of public facilities such as infrastructure is increasingly being structured in such a manner that it could be used to attain social aims in various countries around the world (Macfarlane and Cook, 2002, Watermeyer, 2003, McCrudden, 2004, McCrudden and Gross, 2006, Kattel and Lember, 2010, Binks, 2006). This is understandable considering the high level of importance which the public procurement system assumes in the procurement of infrastructure, especially in developing countries.

Macfarlane and Cook (2002) observed that the huge public expenditure which is deployed towards the provision of basic amenities in certain areas with high poverty/unemployment rates, could be utilised in such a manner that this investment could also contribute towards resolving such societal malaise. They insist that this can be done through the incorporation of the desired outcomes in terms of employment or poverty reduction levels, into the specification of the product (*infrastructure*), being purchased. Arrowsmith (1995), Binks (2006) and Hawkins and Wells (2006) in separate submissions agreed that governments such as the United States, the United Kingdom and South Africa have resorted to the use of public procurement as a tool for the achievement of socio-economic outcomes. These countries have done this through: the promotion of industrial development by exercising enormous influence on the market, given the enormity of the size of government and secondly through the use of regulatory organs to support social objectives for the welfare of its citizenry. Whilst acknowledging the fact that public procurement has been used in various instances to deliver socio-economic outcomes, McCrudden (2004) admitted that there was an almost complete lack of adequate information detailing the processes through which these outcomes are achieved. Watermeyer (2003) and Arrowsmith (1995) pointed to the absence of both qualitative and quantitative data on the socio-economic outcomes emanating from the implementation of these preferential procurement policies.

Figure 2.1 is an illustration of how public procurement has been used in the attainment of national objectives.

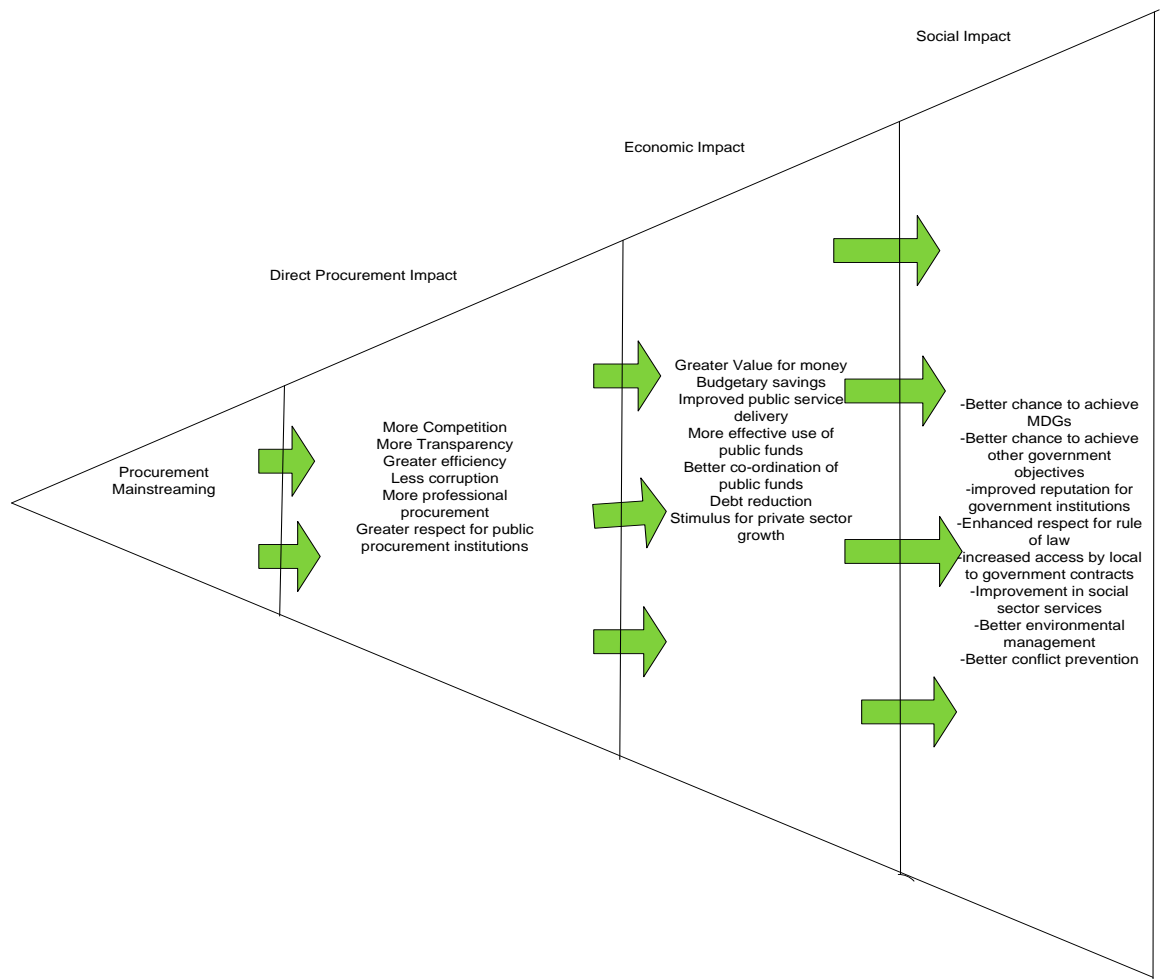


Figure 2.1 Torchlight Diagram

Source: OECD/World Bank (2005)

Figure 2.1 highlights the direct and indirect benefits of public procurement as a tool for achieving policy outcomes as defined within a national context. The second part shows the direct impact of procurement mainstreaming. These direct impacts are often referred to as the primary objectives of the procurement activity. The third and fourth segments of Figure 2.1 depict the secondary impact of the procurement activity and are usually described as the secondary goals.

Telgen et al. (2012) list the several stages of public procurement development: sourcing and delivering of goods and services; compliance with legislation. Warner (2011) stated that large-scale procurement has been severally undermined as an obvious medium for the strategic and procedural development of national industries, Small and Medium

Enterprises (SMEs) and the creation of jobs. He also mentioned various tools of the procurement exercise which can be skewed towards the attainment of these strategic objectives or goals as including; procurement regulations, contracting strategies, vendor pre-qualification, technical standards, bid documents, tender evaluation criteria and contract conditions.

It is expected that the delivery of socio-economic policy outcomes can be achieved during either or a combination of these stages. Several instances abound where public procurement has been applied in the advocated manner.

2.3.3. Public procurement as a Driver of Socio-economic Benefits

There have been several instances with some of the cases presently on-going, globally, where public procurement has been used to pursue the delivery of socio-economic outcomes. Rendered below is a brief review of some of these instances;

- **United Kingdom:** In the United Kingdom, the SCA (Special Contract Arrangement) served as a form of preferential procurement strategy. It was described as a scheme which was aimed at assisting the employers of severely disabled persons within the European economic area to bid for UK government departments and agencies contracts (McCrudden, 2004). According to Erridge (2007), public procurement has been used in the following instances within the UK to deliver socio-economic benefits: Sustainability and the Environment (Home Energy Efficiency Scheme-to combat fuel poverty and the Environment Action Plans concerned with the environment and the effect on the local communities); best value; ethnic minority involvement in public procurement (Race Relations Amendment Act of 2002); and the use of procurement to resolve unemployment issues in Northern Ireland.
- **United States:** The United States of America is not left out in the use of public procurement for the attainment of socio-economic outcomes. Evidence of this can be found in several policies such as: the use of affirmative action to ensure that companies who discriminate do not benefit from government contracts; and the use of 'set-asides' such as contained in the Public Works Employment Act (1977) to provide for the participation of the minority business enterprises so they can benefit from government procurement.

- **Malaysia:** The New Economic Plan (NEP) of 1971 and the National Development Plan of 1991 policies were put forward by the Malaysian government to bring back the ethnic Malays (*Bumiputeras*) into the mainstream of the nation's economy and politics. This group of persons, despite being in the majority, were side-lined in the scheme of things during the era of colonisation, with preference for the ethnic Chinese and the Indians. These latter groups assumed economic and political dominance in the country's affairs, thus leading to, post-independence, a strong advocacy for redistribution of wealth and power in the country (McCrudden, 2004). The use of procurement contracts formed a major component of this redistribution endeavour under the NEP.
- **South Africa:** In post-apartheid South Africa, the use of public preferential procurement was adopted in redressing the impacts of discrimination and inequality in the country. Targeted procurement was adopted in the award of government contracts, hence supporting the constitutional provisions to that effect in the post-apartheid constitution. The policy goals of this targeted procurement include: contracting with persons, or groups of persons, historically disadvantaged by unfair discrimination on the basis of race, gender or disability, and implementing the Reconstruction and Development programme (McCrudden, 2004).

2.3.4. Challenges to the Delivery of Socio-economic Benefits through Public Procurement

Erridge (2007), in lending support to the increasing advocacy for the utilisation of public procurement in driving the delivery of socio-economic benefits, lamented that the potential for the attainment of such lofty ideas was being overshadowed by the current overemphasis on market-led commercial goals. These commercial goals, he argued, place more value on economy and efficiency over and above social, welfare and public value. In furtherance to this claim, he proceeded to identify the regulatory goal, the commercial goal, and the socio-economic goal as the goals against which policy and public values might be analysed.

Whereas the regulatory goals are directed at ensuring that procurement activities and contracts meet the requirements of propriety and transparency, commercial goals are concerned with ensuring that procurement activities and contracts meet the requirements

of economy and efficiency from the client's perspective. Socio-economic goals on the other hand, lean toward the use of public procurement to support wider government policies for the good of the citizenry. The commercial and regulatory goals are pursued from the prism of adherence to and the use of market-driven mechanisms to achieve the direct goals of the procurement exercise: reduced cost, timely delivery and improved quality (Erridge, 2007).

The existence of these goals further leads to and aggravates conflict within the procurement system. The goals become treated on the basis of primary and secondary objectives, with the socio-economic goals seemingly assuming the position of a secondary objective or goal in most cases. This has led to an argument against treating the socio-economic goals as a secondary objective. This argument was championed by Arrowsmith (2010), wherein she argued against the use of secondary objectives in describing socio-economic objectives and advocated for the use of a different terminology such as a horizontal policy. Erridge (2007) discovered the existence of severe conflicts of the goals enumerated earlier. Furthermore, he observed that there has been limited experience of properly structured projects directed at achieving socio-economic goals within these regulatory and commercial constraints, and a scanty dissemination of the outcomes of such projects.

Local Content Development Policies (LCDPs) belong to the class of such socio-economic oriented policies which have come to occupy the centre stage of several infrastructure projects, particularly in naturally resource rich countries, such as Nigeria. This study adopted the Nigerian version of the LCDPs as an exemplar. It explored how the interactions between the various implementers within the implementation structure—an interorganisational structure, influenced the achievement of the policy objectives from a project perspective.

2.4. Local Content Development

2.4.1. What is Local Content?

Local content, a widely used terminology within the global oil and gas industry, can be described as;

“The involvement of local enterprises and labour in planning, design and construction services, as well as the locally added value in transactions occurring throughout the contractors supply chain” (Wells & Hawkins, 2008:7).

In a report for the Nigerian government, Heum et al. (2003) defined ‘local content’ as comprising of any value adding activity which takes place within the shores of Nigeria being executed by a Nigerian owned company. In addition, IPIECA (2011) defined local content as added value brought to a host nation (and regional and local areas in that country) through the activities of the oil and gas industry. This may be measured by project, affiliate, and/or country aggregate and undertaken through: workforce development - employment of the local workforce, and training of the local workforce; investments in supplier development- developing supplies and services locally, and procuring supplies and services locally.

According to Nwokeji (2007), the term ‘local content’ can be used to refer to the degree of existing linkages between the oil and gas industry and other sectors of the economy. Local content from this perspective includes: promotion of local factor input; increment in the percentage of locally available administrative and technical capacity; utilisation of local raw material and components; and the promotion of cross-sectoral linkages between the oil and gas sector and other sectors of the economy (Nwokeji, 2007).

Munson and Rosenblatt (2009) and Tordo et al. (2013) differ on the number of underlying definitional factors for achieving a concise definition of local content development. Whereas Munson and Rosenblatt (2009) identified local content as being defined on the basis of volume or value, Tordo et al. (2013) list six dimensions which influence the definition of local content development. From Munson and Rosenblatt’s viewpoint, a volume-based content protection scheme requires a fraction of the total number of components or raw materials used to produce the final goods to be locally sourced, whereas a value-based content protection scheme requires the value of locally manufactured components to be at least as large as a specified percentage of either the value of all purchased parts or of the final value of the goods.

According to Tordo et al. (2013), these six dimensions need to be taken into consideration when defining local content. These definitional dimensions include;

- Local content policy as being concerned with the need to achieve both an immediate increase in the percentage of locals employed in the oil and gas sector

and a culmination of issues, such as training or cluster developments which are expected to lead to the provision of future local manpower to service the industry;

- Proper determination of what the term ‘local’ in local content connotes. ‘Local’ could be used to describe the ownership of a company from which a particular commodity is purchased, or it could be used to describe the location of the company, even though such a company may be owned by foreign interests;
- Local content as being used to refer to those activities resulting from the activities of a major oil and gas company within a particular locality which add value to the locality’s immediate economy;
- It could also be used to refer to instances where oil and gas companies provide social and economic infrastructure for the locality;
- Local content as assessed from a variety of standpoints within the oil and gas value chain, thus making it subjective according to the aspect the assessor is viewing it from; and
- The variance in the levels of implementation and actualisation of local content development targets over the lifecycle of the oil and gas production activity is another factor to be taken into consideration when defining and setting local content development targets.

2.4.2. Evolution of Local Content Development Policies (LCDPs)

The emergence of LCDPs has been traced by Tordo et al. (2013) to the post World War Two era. They stated that this era witnessed the advent of several import substitution policies. These policies were enacted by various governments across the globe with the intent of correcting observed instances of market and government failures. Owing to the burdensome nature of these policies to competitiveness (Tordo et al., 2013), the policies were dismantled in quick succession by various governments, thus paving way for the emergence of a new wave of policies termed the Productive Development Policies (PDPs). These PDPs are described as policies which were promulgated to strengthen production activities within particular economies (Tordo et al., 2013). It was expected that such policies would stimulate the local economy, thus leading to improved levels of national competitiveness and living conditions for its citizenry. They stated that the LCDPs formed an integral part of these PDPs.

Meanwhile one of the renowned scholars on content protection theory, Grossman (1981), maintained that content protection possessed a long and continuing history of application, particularly in developing, resource rich countries. He attributed the evolution of content protection (a precursor to LCDPs) to the need to protect intermediate stages of production while avoiding some of the domestic and international opposition which added tariffs may attract. Describing the phenomena, he agreed that content protection required the inclusion of a certain level of domestically generated value added or components in a particular end product.

LCDPs have definitely come to stay, at least for the foreseeable future, as they have continued to dominate contemporary discourse within the global oil and gas industry, particularly in the resource-rich nations (Warner, 2011). He attributed this to the fact that several trillions of dollars' worth of goods and services will be purchased across the globe to support activities within the global oil and gas industry for exploration and production activities over the next decade, by private and public institutions alike as well as in the provision of the requisite infrastructure. Furthermore, Warner (2011) acknowledged that whereas there is a commonality of desires within the policy-making realm, for their economies to assume internationally competitive dimensions and attract the necessary investments required to sustain and grow the local economy and allow for the development of indigenous technology, the commercially run private and public contracting entities want guarantees that their expenditures are having the much desired effects on the local economy through effective and efficient management thus ensuring that prices, delivery schedules and quality are on the same scale as it would have been if foreign suppliers were engaged.

An essential question to be answered by policy makers as it concerns local content remains; will their interventions to leverage economic growth from procurement expenditure lead to more skilled and competitive domestic suppliers, or will they serve to perpetuate inefficient and uncompetitive national industries?

2.4.3. The Case 'For' and 'Against' LCDPs

LCDPs have not always turned out as a favourable option for economies seeking to either achieve or optimise their levels of competitiveness among the comity of economies (Warner, 2011). He observed that whereas the attainment of several lofty benefits such as the development of local suppliers seemed possible through the

adoption of LCDPs, the results emanating from various quarters have pointed to the fact that these policies have in some instances, made matters worse for the host country. Furthermore, Warner advocated for a great deal of care to be exercised when formulating and implementing local content policies as;

“it is not inevitable that higher levels of local content invariably lead to economic benefits for the host economy....as the success of achieving local content targets in creating new jobs and filling local order books may be dampened by a concurrent deleterious impact on the country or region’s long-term industrial competitiveness, or may introduce new risks and higher costs to investment projects, or even reduce the volume or timeliness of government revenues from these investments”

Agreeing with Warner’s assertion, Watermeyer (2003) stated that LCDPs such as targeted procurement, should be properly planned and implemented in a manner that ensures that the expected benefits are attained.

In their comprehensive study of the implementation of LCDPs across the globe, Tordo et al. (2013) identified the ‘pros’ and ‘cons’ of these LCDPs. In highlighting the advocacy for increased use of these LCDPs, they listed the following; improvement of domestic value-addition levels through enhanced host country activities, correction of instances of market failure, provision of socio-economic benefits for the host country, and its propensity to act as a medium for compensating for the adverse socio-economic impacts of the oil and gas activity within the host community.

On the other hand, they also identified factors which tend to deride the case for the adoption of LCDPs, namely: the misallocation of resources and/or inefficiencies and the impact of this on welfare standards; misalignment between policy objectives and instruments; the presence of several internal regulations like the GATT to which most countries which are either seeking to or already implementing these PCDPs belong to; and the kind of institutional frameworks existing in host countries seeking to adopt such policies, as the absence of effective institutional frameworks would lead to zero influence of such a policy as it concerns achieving the stated objectives.

These factors notwithstanding, LCDPs are being implemented in resource-rich countries, and new countries such as Ghana, Kenya and Tanzania have joined the fray in recent times. Warner (2011) even reiterated the salience of such polices, as he stated

that they have become a strategic consideration in project delivery within the oil and gas industry.

A highlight of instances of LCDPs across the world has revealed the prevalence of mixed results; a success in certain areas and a failure in other areas.

2.4.4. Review of LCDPs in Literature

Various instances of these content protection schemes or LCDPs abound within the body of existing literature. Tordo et al. (2013) cited several examples of the application of LCDPs in Asia, Venezuela, Brazil and Norway, thus highlighting the fact that they were not exclusively adopted by developing countries alone. They stated that the granting of licenses to domestic suppliers within the Asian continent was pivotal to the astronomical rise of the economic growth rate in those climes, as these licenses served as a boost to productivity levels. Another example lay in the indigenisation of the Brazilian national oil company, Petrobras and a further declaration that the indigenised entity employed only local workers and know-how in 1953. The Republic of Venezuela's hydrocarbon law, passed in 1944 compelling oil majors operating in the country to commence refining activities in-country was cited as another example. In Norway, Nordas et al., (2003) were cited as stating that oil majors operating in Norway handed down jobs to local suppliers in the early days of oil exploration and production in the country, even where this was not deemed cost effective (Tordo et al., 2013). In China, the PDPs as instituted by the government, focused on the formation of Joint Ventures between local suppliers and foreign companies with the sole mandate of engendering technology transfer. Tordo et al (2013) asserted that this was one of the underlying causes of China's economic prosperity in recent times.

Attention was drawn to other examples which sit outside the realm of the oil and gas industry by Munson and Rosenblatt (2009). They cited several instances where content protection had been applied across several industrial sectors. For instance, they cited DeNero and Mahini (1984), Handley (1991), Karp (1992), and Lion (1994) as having attested to a historical increase in value-based percentages across several countries. These increments have ranged from 40% in the Philippines, 50% in Mexico, 54% in Thailand, 60% in China, 70% in Taiwan, 75% in Pakistan, to 85% in Australia. Instances of LCDPs have also been experienced in Argentina, Brazil, Canada, Chile, India, Spain, and the United States (Grossman, 1981). Munson and Rosenblatt added

that penalties had also been utilised by various governments to drive compliance. Examples abound in places like Australia where a 35% duty on imported components has been enacted and in India where the government had requested most foreign equity ownership manufacturing ventures to obtain 90% local content within five years of establishment. In the United Kingdom, Smith (2011) alluded to the fact that oil companies in the North Sea were favourably disposed towards extending patronage to British companies, even before the introduction of the IMEG (International Management and Engineering Group of Britain Limited) report in 1973. The report encouraged the attainment of 70% British participation in the North Sea oil and gas supply chain.

In Africa, several countries are developing and implementing LCDPs, especially the resource-rich ones. This is corroborated by Dynes (2011) when he observed that there was an increasing effort by African governments to improve and/or develop local capacity through extant LCDPs. This increasing effort can be traced to the fact that the extractive industry in Africa contributes significantly to export earnings but makes little contribution to growth (Dynes, 2011). He asserts that this is the case, especially with the increased weighting of infrastructure delivery contract awards based on the bidders' local content development plans. Furthermore, he cites the 2005 Paris Declaration on Aid effectiveness as highlighting the pivotal role which local content has come to assume within the sphere of economic development. However, Wells and Hawkins (2008a) discovered that local contractors, consultants, manufacturers and suppliers have not benefitted from the massive investments in infrastructure development in the developing countries as expected, given the presence of the LCDPs. They add that the kind of decisions taken at the project identification and planning stages could influence the effective implementation of such policies. The African export-import bank's continental local content estimate still stands at around an appalling 10% (Dynes, 2011). This is the time for these nations to act to boost this percentage, especially in the face of the prediction from the Baker III Institute (Nwokeji, 2007) which stipulated that within the next twenty years, the committee of developing countries would be playing host to the production of about 90% of the world's needs. The question remains thus, why have these developing countries, well endowed with natural resources failed to utilise this to their advantage, despite the promulgation of several LCDPs in the distant and not so distant past?

Several reasons within the body of local content research have been adduced for this seeming inability of certain resource-rich countries to achieve the expected benefits. According to the IPIECA report, the kind of regulatory environments and the attendant structure of the regulatory context faced by oil and gas companies, directly impacts on the abilities of these oil and gas companies to initiate, grow and develop new enterprises (IPIECA, 2011). This also adds to the cost of doing business, ultimately negating the feasibility of implementing a local content policy. Warner (2011) agreed with the IPIECA report, as his findings established a direct relationship between cost escalation of oil and gas projects and local content requirements.

The participation of local firms within supply chains of the major players within the oil and gas industry has also been portrayed as central to the attainment of the local content development strategy. These firms, according to the IPIECA (2011), should be imbued with the strengthened capacity to compete globally. The report on the modification of the existing procurement systems and the utilisation of a dedicated supplier or enterprise development programme advocated this direction, but admitted that this was not being done in most cases.

Esteves et al. (2009) in their study on local content development within the Australian oil and mining industry, identified four main barriers to the incorporation of local small businesses into the supply chains of oil majors: the information gap that exists between small and very large companies; the perceived lack of capacity in small enterprises; disincentives created by global supply chain management trends; and barriers arising from corporate policies. The absence of a proper definition of what constitutes 'local' is another impediment to the actual implementation of the local content strategy within the supply chain (Warner, 2011). Key success factors mentioned by the IPIECA report for the successful implementation of the local content development policy include: contextual analysis; early start; long term perspective; free-flowing and transparent information streams.

From the Nigerian context, Omenikolo and Amadi (2010) attempted to catalogue the various impediments confronting the implementation of LCDPs in the country. The impediments identified include: the absence of infrastructure; political instability; poor investment climate; absence of project finance for local suppliers; lack of transparency; poor educational standards; absence of effective environmental, fiscal and legal

policies; lack of efficient and effective resource management; low levels of research and development activities and the organisational structure of the local suppliers, especially the majority which are run as sole-proprietorships. Most of these problems identified by Omenikolo and Amadi (2010) unarguably will be similar to those experienced in other developing economies across the world. Taking a closer look at these issues raised, one may not be mistaken in attributing them to ineffective implementation processes. Surprisingly, whereas certain studies aimed at assessing the impact of LCDPs on the Nigerian economy since its introduction, none have attempted to evaluate it from an interorganisational multi-layered implementation perspective. This has seen the exclusion of various salient factors, as well as the views of certain organisational stakeholders from these assessments, thus rendering such studies incomplete from a systems thinking viewpoint.

From the above-mentioned, it can be observed that the development of LCDPs as socio-economic policies evolved from the need of several economies to become competitive and to provide better welfare conditions for their citizenry in an ever changing world. Although these LCDPs have worked out well in several countries, it has not also fared well in other countries. Procurement of infrastructure has been cited as one of the most pronounced media for the implementation of LCDPs (Watermeyer, 2003, Wells and Hawkins, 2008a, Esteves et al., 2012, Esteves et al., 2011, Esteves et al., 2010) within local communities. However, Warner (2011) reiterated the need for procurement activities to be modified according to the context and the expected objectives of the LCDPs, for it to enhance the chances of achieving the set policy targets. Furthermore, Esteves et al. (2011) , highlighted as it were the benefits for oil majors and major contracting companies to build in the need for local content development into their business strategies, which would accrue from such action.

Figure 2.2 highlights the potentials which can be derived from the effective implementation of the LCDPs through viable procurement systems.

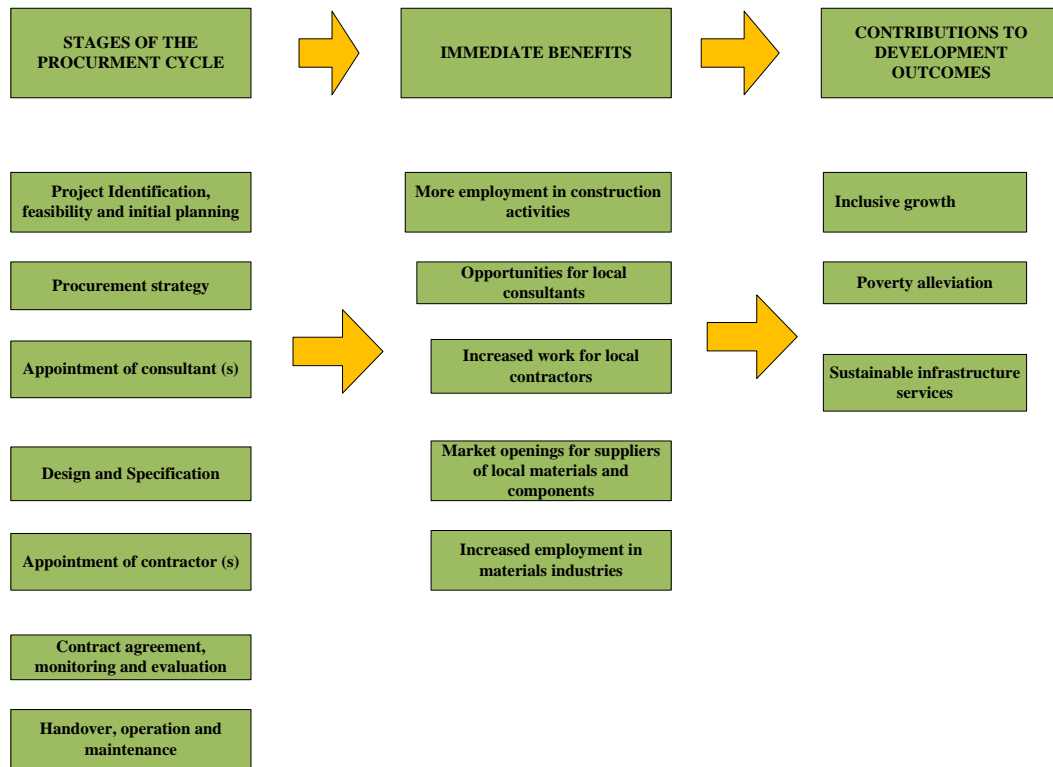


Figure 2.2 Potential Benefits from Efficient Local Content Development

Source: Wells and Hawkins (2008:5)

Deriving from the viewpoints espoused by Warner, Well and Hawkins and Esteves et al., it can be inferred that only such modified procurement systems can actually deliver on local content objectives. Thus, viable procurement systems stand a better chance of meeting these expectations. The concept of viability is considered in detail in Chapter 4.

2.5. Procurement Systems

2.5.1. Procurement Systems-A definition

There has been some confusion as to what actually constitutes a procurement system and what does not. Rowlinson (1999) asserted that what is mostly referred to as procurement systems namely; Design Build approach, Traditional approach and Divided Contract approach were not really procurement systems but rather contract strategies. He admitted that these contract strategies alongside other variables such as the national culture, organisational form, payment methods, overlap of project phases, selection process, source of project finance, contract documents, leadership, authority and responsibility and performance, form what could be referred to as a procurement system. According to Thai (2009), a procurement system entails a lot more than just the

procurement process. It involves important components such as: the overall strategy and policy of the client; the methods and procedures; the personnel and organisation; and above all information.

Based on these submissions, a procurement system, within the context of this study, would be used to refer to the summation of all activities which enable the implementation of government policy towards the attainment of an outcome and comprises of: policy formulation; contract strategies; culture; organisational structure and governance modes; project phases; source of project finance; leadership, authority; responsibility and performance. Considering that the delivery of infrastructure within the oil and gas industry has been adopted as a policy implementation mode for the local content development policy of the Nigerian government, the entire procurement system shall be regarded as the Infrastructure Delivery System (IDS). The forms which these procurement systems assume is dependent upon the government's budgetary decision to either buy the commodity or provide the needed service through in-house departments, or to purchase the same service from other entities. In the case of the Nigerian oil and gas industry, the use of partnerships to deliver the infrastructure is the adopted strategy and as such, the IDS conforms to the delivery of infrastructure and the attendant policy goals through a partnership.

Procurement systems have been mentioned as posing a barrier to the attainment of the effective delivery of socio-economic benefits if not effectively organised and governed (Thai, 2009, Esteves et al., 2012, Warner, 2011). In an earlier work, Thai et al. (2005) identified the characteristics of a sound procurement system from a performance perspective. They asserted that a sound procurement system should possess the capabilities to not only deliver according to the management requirements, but also to policy requirements. Whereas the management requirements constituted: quality; timeliness and cost; minimizing business, financial and technical risks; maximizing competition and maintaining integrity; the policy requirements included: economic goals; environmental protection; social goals and international trade agreements. They maintained that such systems should not be reactive but rather assume proactive capabilities.

2.5.2. Procurement Systems as a Medium for Policy Implementation

The role of procurement systems as implementation tools was brought to the fore in the statement credited to Andrew Smith, former Secretary to the Treasury by Erridge (2007) wherein he stated that;

“Good procurement is essential to the success of the government’s programmes; it provides the link between policy and delivery”.

This accentuates the centrality of procurement systems in the policy implementation process. Considering the link drawn by Hill and Hupe (2002) between policy implementation and governance, the procurement system which happens to be represented by the IDS in this research, has to be effectively organised and subsequently governed to allow for successful implementation. For such systems to be effectively and efficiently organised and managed, a thorough understanding of its multi-process, multi-actor, interorganisational and multi-layered characteristics is imperative. Such an understanding of the nature of interactions between the various organisations, especially from a project perspective, is expected to lead towards the development of an in-depth knowledge about the capabilities of the procurement system. Furthermore, it can allow for the introduction of new measures aimed at optimising these established capabilities.

2.6. Infrastructure

2.6.1. What is Infrastructure?

A universal definition for the term ‘infrastructure’ continues to evade most researchers, thus causing Snieska and Simkunaite (2009) and Prud’Homme (2005) to declare that there was no generally accepted definition for the term infrastructure. They further stated that instead of proffering a definition for the term infrastructure, most researchers had resorted to proffering exemplars of what term infrastructure could be used to refer to. As if to buttress this point, Oyegoke (2010) referred to Miller (2002) as having described the term ‘infrastructure’ as comprising of capital facilities, transportation, public services and utilities and environmental restoration. Howes and Robinson (2005) cited Jochimesen (1966) as also having described infrastructure as a summation of all basic materials, structures, institutional conditions and human resources available to the society, necessary for the proper functioning of the economic sector. Infrastructure has often been classified along economic and social lines (Snieska and Simkunaite, 2009).

Jochimesen's attempt at classifying infrastructure led to the creation of three categories namely; institutional infrastructure, personal infrastructure, and physical infrastructure (Howes and Robinson, 2005).

In the UK, the OECD (2009) stressed that economic infrastructure drives competitiveness and supports economic growth by increasing private and public sector productivity, reducing business costs, diversifying means of production and creating jobs. Snieska and Simkunaite (2009) maintain that economic infrastructure pertained to any type of infrastructure, usually highways, airports, seaports, telecommunications and electricity, which promotes economic activities, whereas social infrastructure, such as libraries and hospitals, are defined as those infrastructures that boost health, education and cultural standards within the society. Howes and Robinson (2005) in a functional categorization of infrastructure, alluded to the fact that physical infrastructure assets could be classified into the following, namely; - social, trade and technical (economic) infrastructure, where the economic infrastructure could be said to comprise of the long-lived networked, capital-intensive and engineered structures indirectly supporting economic production. For the purpose of this study, the term 'infrastructure' shall be used to connote only economic infrastructure, which can be defined as any physical improvement or structure which possesses the capability to increase the levels of productivity of any given society, thus encouraging better living conditions among its citizenry (Aschauer, 1989, Howes and Robinson, 2005, Baldwin and Dixon, 2009, Akinyosoye, 2010).

2.6.2. Relationship between Infrastructure Capital and Economic Growth

Infrastructure has been identified as a major factor, imperative for sound economic growth (Schubeler, 1996, Kirkpatrick et al., 2006b, Estache, 2004b, Estache and Limi, 2008, Akampurira et al., 2009). The impact of infrastructure on economic productivity has also been highlighted by several authors (Prud'Homme, 2005, Harris, 2003, Estache, 2004b, Hawkins and Wells, 2006). Thus the inherent processes leading to effective and efficient infrastructure delivery has become a central theme to most economic and construction discourses in contemporary times (IUK, 2010, WEF and BCG, 2013, Wells and Hawkins, 2008b). The scenario was aptly captured by Akinyosoye (2010) and Kirkpatrick et al. (2006a), when they stated that direct investment in infrastructure ultimately led to the development of intermediate inputs to

production and the improvement of productivity levels in other sectors of the economy such as manufacturing. He further drew a relationship between the declining investment in infrastructure in Nigeria and the attendant retarding economic growth. This is more prevalent in developing countries where much emphasis is laid on infrastructure development as a means of achieving any meaningful economic growth.

There is considerable evidence within the literature of the relationship between investments in infrastructure and economic growth (Chandler, 1977, Aschauer, 1989). Infrastructure has been identified as a major factor, imperative for economic growth (Schubeler, 1996, Prud'Homme, 2005, Calderon and Serven, 2008, Estache and Limi, 2008, Snieska and Simkunaite, 2009). In most economies such as the UK, there has been a renewed drive for infrastructure development or renewal, with such issues reaching a crescendo in recent times (Akintoye et al., 2003, IUK, 2010). Although this has been keenly challenged by economists (Munnell, 1992, Gramlich, 1994), there seems to be an acceptable level of consensus that investment in infrastructure has led to improved productivity. These improved productivity levels generate some measure of economic growth. The commonly held notion that investment in infrastructure enhances productivity levels has led to increased investment in the provision of infrastructure, especially in developing countries, as an avenue to stimulating their respective economies. Hassen (2000) highlighted the need for a paradigmatic shift of the focus on the infrastructure delivery process from a perspective of the attainment of the primary targets of time, cost and quality within the existing fiscal constraints, to that involving the ability of the delivery process to serve as a medium for the provision of the much sought after socio-economic benefits. He proceeded to outline the salient contributions of infrastructure delivery to economic growth, namely: lower transaction costs; creation of economic linkages; concentration of economic activity; responding to change rapidly; improving productive capacities; creating wealth; jobs creation; and the boosting of demand. From these contributions, capabilities of the infrastructure delivery process to deliver on socio-economic outcomes are not in doubt, particularly in a procurement system capacity.

2.7. Country Perspective- Nigeria and the United Kingdom (UK)

Due to the fact that this study seeks to utilise a comparative case study approach with cases selected between two countries, Nigeria and the UK, it is considered apposite for

the background of the two country contexts to be adequately described, to set the platform for subsequent investigations.

2.7.1. Nigeria- Country Profile

With an estimated population of 167 million and a land mass of approximately 923,768 sq. km, the nation's population accounts for 47% of the total population of Sub-Saharan Africa (World Bank 2013). With an estimated reserve of more than 36.2 billion barrels of crude oil in 2007, Nigeria stands as the second largest oil producing nation in Sub-Saharan Africa, behind Angola (CRES, 2008). The country also has a preponderance of gas reserves, measuring about 184tcf, thus making it the world's 7th largest gas reserve. Despite these proven reserves of oil and gas resources in the country, production outputs within the sector have remained at an abysmal level over the last couple of decades. This has been blamed on violence and ethnic strife by the host communities as well as the absence of the necessary infrastructure to boost production (USEIA, 2013). Iwayemi (2008) argued that the perennial inability of the oil and gas industry to meet its supply obligations and other customer needs is indeed dependent on the non-availability of the required infrastructure stock for improved productivity and increased output. He stated that access to an effective oil and gas infrastructure network in the country was imperative for the attainment of socio-economic development and generation of employment. Ekebafé and Joledo (2010) agreed with the views held by Iwayemi (2008) and added that the oil and gas industry in Nigeria remained a viable platform upon which the advocacy for local capacity building can be premised. This is due to the sector's technological edge, huge potential for job creation and transferability of industry capabilities through linkages to other sectors of the economy.

2.7.1.1. State of Nigerian Oil and Gas Infrastructure

Foster and Pushak (2011) successfully catalogued the current state of Nigerian infrastructure ranging from telecommunications to power and energy, from transportation through to water projects. They lamented the absence of access to potable water projects for the majority of the citizenry and the inadequate power generation and transmission capacity. They stressed the negligible number of motor-able roads. The recent success of the telecommunication sector which was privatized was also highlighted in their study, using it to serve as an illustration of the need for private sector finance and expertise in hitherto public sector areas. Infrastructure delivery in

Nigeria is decentralized along the various tiers of governments namely; Federal, State and Local governments, in such a manner that is similar to the USA approach to infrastructure delivery (Miller et al., 2000). That these various tiers of government have underperformed in the provision of the required infrastructure is no longer news, given the vast amount of available literature which highlights this fact (Okonjo-Iweala and Osafo-Kwaako, 2007, Gidado, 2010, Kauffmann, 2011, Foster and Pushak, 2011).

Nigeria ranks top among African countries, wherein the state of the transport infrastructure among others has been described by Kauffmann (2011) and Hammonda (2006) as strikingly under-developed. After a thorough appraisal of the transportation infrastructure in Africa, Kauffmann (2011) lent credence to the views held by Soludo (2007) and Okonjo-Iweala and Osafo-Kwaako (2007) that the continent in general needed more than the government's investment to bridge the infrastructural deficit. The falling standards in infrastructural development in Africa have resulted from: lack of a coherent policy implementation framework; inadequate financing; financing of socially desirable but non-bankable projects; and high transaction costs (Kauffmann, 2011).

Furthermore, other problems identified as militating against private sector intervention in the provision of infrastructure include: the absence of local capital markets in developing countries, the lack of transparency and the inability of the public sector to effectively negotiate and enter into contractual agreements of such nature with the private sector (Kwak et al., 2009). Akintoye et al. (2003) lamented the lack of project management skills within the public sector especially in developing countries, stressing that this was capable of undermining project success.

The oil and gas sector of the economy is not left out of this infrastructure deficit imbroglio, as production has remained at a stagnated level over the past two decades due to reasons such as strife within host communities and the absence of infrastructure (Foster and Pushak, 2011). Despite its position as the 10th largest exporter of crude oil in the world, the country still imports finished petroleum products for local consumption - an apparent indication of the alarming levels of infrastructural inadequacy. The need for improvement of its infrastructure stock is furthermore accentuated by the desire of the government to increase production to an estimated 4 billion barrels per day by 2020 (CRES, 2008, NPC, 2010). Surprisingly, the oil and gas industry in the country has been the champion of partnerships between the public and private sector in the

exploration and development of oil and gas infrastructure in the country, commencing from the early 1900s (Mobbs, 2011). Surprising in the sense that many studies have continued to advocate for the adoption of partnerships as an appropriate infrastructure delivery mechanism in all the spheres of the Nigerian economy, such as transportation (Okonjo-Iweala and Osafo-Kwaako, 2007, Foster and Pushak, 2011), whereas this system has apparently not brought about the much desired change within the oil and gas industry as evident from results from contemporary research (Obi, 2007, Iwayemi, 2008, de Blois and Lizarralde, 2010). However, Kauffmann (2011) opined that cooperation between the private sector and the public sector should be arranged in such a manner that it would be in the overall interests of the public, through the employment of strong accountability mechanisms, consistent contractual arrangements and effective relationship management.

2.7.1.2. A Review of National Economic Development Plans

Having attained independence from the United Kingdom on the 1st of October, 1960, the Nigerian state was desirous of economic growth and immediately settled into the task of developing a stronger nation. The nation set about the task by the enactment of the First National Development Plan in 1962, to cater for the period between 1962 and 1968, hinged upon the establishment of democratic ideals as well as the erection of structures to support these ideals. Ekundare (1971) restated the cardinal principle of this plan as stated in the policy document, as being not merely a plan for engendering economic growth and population control, but also encompassing the procedures which can be adopted to enable her to take control of her destiny as a country. It was hinged upon the development of the factors of production for economic sustenance. This plan which was adjudged as successful, given the exigencies of that period and the civil war that ravished the eastern parts of the country, was criticized by Ekundare (1971) as not achieving its set goals of resolving the inherent problems with regard to the social, economic, and political imbroglios witnessed in the newly sovereign country. This national plan was succeeded by the Second National Development Plan (1970-1974) which was in cognisance with the times, as Nigeria had just come out of a civil war and there was an urgent need for reconstruction and the attendant oil boom of that era.

This four year plan sought to diversify the economy through the development of physical infrastructure and thus create jobs in the process for its teeming population of

unemployed people. It also identified the nation's inherent social problems, such as the lack of adequate and efficient transport and communication systems, ignorance, poverty and diseases, and the apparent absence of national and personal security and confidence. The level of success of this plan, when measured against the already laid down objectives which it sought to achieve, proved minimal (Lewis, 1977). He stated that the Third National Development Plan from (1975-1980) was the most ambitious plan within the context of Nigerian National Development plans. It had as a major objective, the creation of jobs through massive investment in infrastructure. It was an expensive plan as it was ambitious as well. Whereas the allowance for capital expenditure under the two preceding development plans was NGN2.2Bn and NGN3.0Bn (given an exchange rate of NGN1=US\$1.5998) with expected growth rates of 4% and 6.6% per annum (NGN- Nigerian Naira), the Third National Development Plan proposed a capital investment budget of NGN30Bn with a view to achieving a growth rate of 9% per annum (Lewis, 1977). It planned to, among other objectives, boost the per capita income of the average Nigerian and reduce the level of unemployment through the even distribution of income as well as; an increase in the supply of high level manpower; diversification of the economy; balanced development, and indigenization of economic activity. This development plan was a desirable one for the majority of the populace, as it sought to bring about the much needed social justice and equality needed within the society.

The Fourth National Development Plan was inaugurated by a civilian administration for a period of four years from 1981-1985. It was even more ambitious than its predecessor which failed to achieve the majority of its objectives, given the prevalence of corruption within the society (Ugwu, 2010). It projected a capital expenditure of about NGN82Bn. Unfortunately the objectives of this plan were also derailed by issues such as political and economic instability, as the period witnessed three transitions of government wherein two were by means of coup d'états.

Afterwards, Nigeria witnessed series of development plans, ranging from the Fifth National Development Plan which was postponed indefinitely by the military junta led by Gen. Ibrahim Babangida, and in its stead several other plans called the Rolling Plans (Ugwu, 2010) were inaugurated. These plans were re-evaluated and minor corrections made on a three yearly basis.

Donor agencies and international bodies played and have continued to play very salient roles in the formulation and implementation of policies in Nigeria within this era. Their contributions led to policies that were supposedly introduced to drive economic growth through investment in infrastructure and human capital, including; the Structural Adjustment Programme; Directorate for Food, Roads, and Rural Infrastructure; National Economic Reconstruction Fund; Community Action Programme for Poverty Alleviation; Family Economic Advancement Programme; Vision 2010; and the National Urban Mass Transit Programme (Onakuse and Lenihan, 2007). More recent ones include the National Economic Empowerment Development Strategy (NEEDS) and the Vision 20:2020, currently being implemented by the incumbent administration of Mr. Goodluck Jonathan.

All these policies possess one common attribute, which is the intention to drive economic growth and provide the requisite socio-economic benefits for the Nigerian citizenry through employment, skills acquisition and technology transfer, but unfortunately they have all underperformed, looking at the figures on various assessment forums such as the HDI, world competitiveness and resource governance rankings (UNDP, 2013, WEF, 2013, R.W.I, 2013). The subsequent investments made in infrastructure have not achieved the client's objectives, given the government's desire to engender economic growth and to ensure that it trickles down to the citizenry.

This singular fact plagues Nigeria's desire to achieve the Millennium Development Goals (MDG) in 2015 as previously expected, especially as it pertains to the reduction in poverty figures and the provision of employment. Several researchers have noted the fact that the government being the biggest client within the country, it can adopt the procurement of infrastructure as a means of transferring skills and inherently providing employment for its citizenry, as well as developing its local economies (Winch, 1998, Barlow, 2000, Seaden and Manseau, 2001, Kumaraswamy and Dulaimi, 2001). This has not been possible in the Nigerian context as the issues of corruption and lack of policy continuity continue to beleaguer the infrastructure delivery system in the country, commencing from the formulation of policy to the actual implementation. Onakuse and Lenihan (2007) capture the Nigerian scenario aptly when they stated that,

“policies/programmes in Nigeria are fraught with pitfalls, such as the absence of consistent enabling framework/regulations on infrastructure finance and

funding of small and medium enterprises, especially transportation-rail networks and power supply, that support any development effort that delivers multiplier effects on other sectors within the country, weak institutions/market infrastructure to regulate business activities and enforce contracts and commercial transactions, issues relating to transparency and good corporate governance, poor accountability, perennial misappropriation of public funds added to the unpredictable political and social environment”(44).

The scenario painted above can be held responsible for the systems failure which has indirectly led to the ability of the government to provide infrastructure for its people and thus create an avenue for economic growth. Analysts have blamed the top-down approach to policy formulation and implementation for the inherent inability of these policies, so enunciated to achieve the desired socio-economic outcomes (Onakuse and Lenihan, 2007). Furthermore, they maintained that the nation has till this moment, not given priority to the development of a well-structured mechanism for the effective formulation and implementation of these policies. This assertion amongst others remains the main premise of this research. With the promulgation of the local content development policy and its subsequent signing into law by the incumbent president in April, 2010, it became imperative to ensure that the policy is effectively implemented, especially as it concerns the delivery of the much sought after infrastructure in the oil and gas industry.

2.7.1.3. The Nigerian Oil and Gas Industry- a possible driver of local content development

A plethora of legislations and decrees have been promulgated by successive governments in Nigeria towards engendering the nation's socio-economic development. Its oil and gas industry was one of the sectors which was influenced by this type of legislation. Some laws enacted in Nigeria include the Petroleum (Drilling and Production) Regulations (1969); Industrial Training Fund (1971); Indigenisation Decree (1971); Petroleum Technology Development Fund Decree (1973); the National Office of Technology Acquisition Act (1979); the Nigerian Content Guidelines (2005); and the Nigeria Oil and Gas Industry Content Act (2010). The Nigerian oil and gas industry remained the exclusive territory of the International Oil Companies (IOCs) in areas

ranging from exploration to production, refining and trading. Intervention by the Federal Government resulted in the nationalization of assets of major oil players.

Despite the granting of licenses to indigenously owned oil companies for Exploration and Production (E&P) activities in 1991 by the government, there has been negligible impact of such policies on the national economy. The primary reason for this has been traced to the absence of legal or statutory frameworks for Nigeria to harvest the technological, industrial and economic intangible capital assets being generated by oil and gas activities for diffusion into the local economy (Obaje, 2009).

In real terms, the upstream industry has for decades functioned as an enclave economy with minimal impact on the wider economy despite the fact that an estimated \$40 billion dollars is spent by industry players as direct costs for E&P related activities, annually (Okafor, 2007). Gelderman and Vermeulen (2012) observed that oil and gas companies globally spend between 80% and 90% of their costs on contract related activities. This makes it imperative for policies such as the local content laws to be effectively implemented in Nigeria, to stimulate domestic suppliers and boost their levels of competitiveness. Competitiveness is used in this context in a manner identical to that suggested by Warner (2011). He defined competitiveness as the ability of the domestic supplier or contractor to supply goods or services in an international market, where this market could be entirely within the domestic economy, with foreign and local firms competing against each other in open competition or a market in a foreign country accessible to domestic suppliers.

The need to overturn the current tide and enhance the ability of the sector to make a significant impact on the economy has led to several policies and directives, particularly those listed earlier. The Nigerian Content Guideline was one of the most recent directives aimed at encouraging the development of local content within the industry, before the passing into law of the Nigerian Oil and Gas Industry Content Development Act (2010). However, three years after the act was passed into law, noticeable impact has not been felt within the industry, let alone the wider economy (Balouga, 2012, Omenikolo and Amadi, 2010, Obioma, 2012).

Towards supporting his claim as it concerns the negligible impact of the policy thus far, Obioma (2012) pointed out salient issues as being responsible for his viewpoint: the procedure for the disbursement of funds accruing to the NCDF (Nigerian Content

Development Fund) still remains a mystery as it is not provided for in the policy document; the lack of sufficient data to assess the impact of the policy in its three years after its enactment; and the drastic reduction in the sector's contribution to the GDP. He maintained that during the pre-NOGICD era, the oil industry made a contribution of an estimated 17.8% to the GDP whereas within the NOGICD era, the sector made a contribution of 13.76% at the end of 2012. On the other hand, Balouga (2012) cited a report produced by BGL which alleged that 70% of the contracts awarded to Nigerian companies were being executed overseas. Furthermore, he stated that the gross earnings of the local oil service companies made up for about less than 5% of the sector's aggregate annual contracting budget.

Although both Arogie (2013) and Balouga (2012) agree on the lofty nature of the policy, they expressed their reservations concerning the success of its implementation. Balouga (2012) attributed the reasons for the seeming inability of the act to be properly implemented to what he termed as the "*Knowing-Doing gap*" (24), a sort of disconnection which exists between policy formulation and policy implementation, describing this as the lack of a critical link between strategy and action.

Figure 2.3 depicts the governance structure of the Nigerian Oil and Gas Industry illustrating the various stakeholders in the industry. It is expected that Figure 2.3 will allow for a comprehensive understanding of the nature of relationships within this sector of the Nigerian economy.

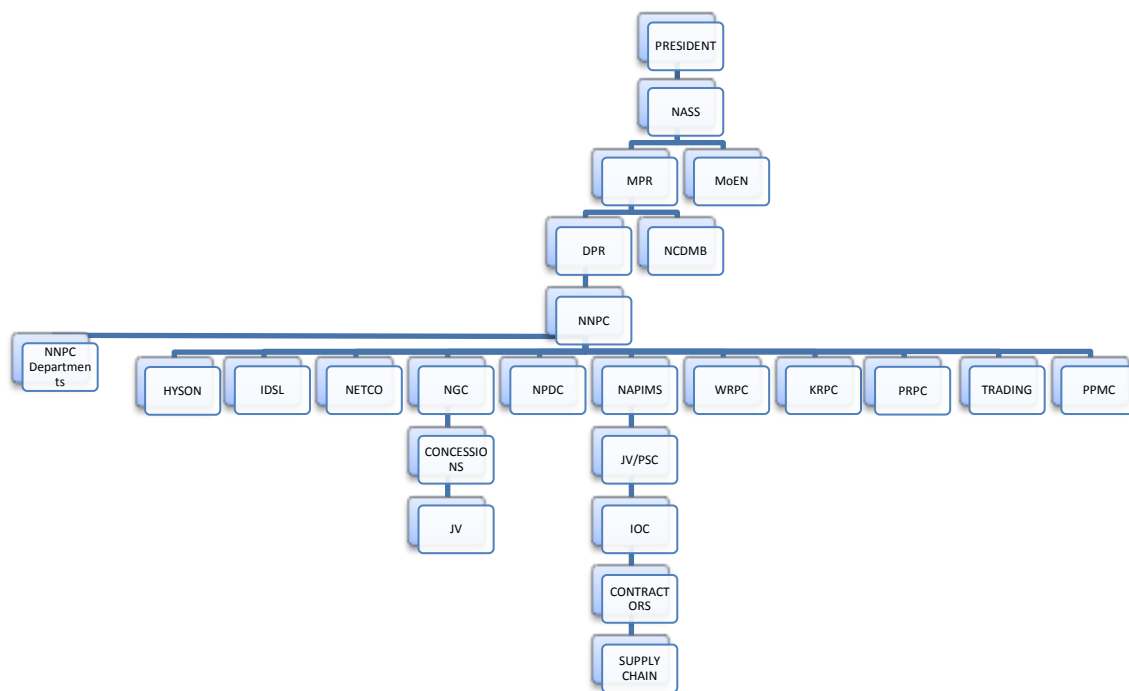


Figure 2.3 A Governance structure of the Nigerian Oil and Gas industry

2.7.1.4. A review of the Nigerian Content Development Act (NOGICD Act 2010)

The Nigerian Oil and Gas Industry Content Development Act, (2010) seeks to increase indigenous participation in the oil and gas industry by prescribing minimum thresholds for the use of local services and materials and to promote transfer of technology and skills to Nigerian staff and labour in the industry.

Although the act consists of 107 sections and applies to all operators, contractors and other entities involved in any project in the oil and gas industry, this research shall focus only on those sections which it deems imperative to the development of viable implementation of the policy. Furthermore, the report also takes cognisance of the establishment of the Nigerian Content Development and Monitoring Board which has been established and vested with the responsibility to implement the provisions of the act, make procedural guidelines and monitor compliance by operators within the oil industry.

Areas which are highlighted in the subsequent section include: the overall policy objectives; a definition of the national content plan; definition of a Nigerian company; Nigerian content as a management philosophy for project execution; a policy implementation mandate; processes for bid evaluation; establishment of project offices;

employment and training activities; research and development; regulations; technology transfer; and utilisation of other service industries.

a) Overall policy objectives

The major thrust of the act as it concerns transactions within the sector are spelt out in section 3 of the act whereby it is stated that: 3(1) Nigerian independent operators shall be given the first consideration in the award of oil blocks, oil field licenses, oil lifting licenses and all projects for which contracts are to be awarded in the Nigerian oil and gas industry, subject to the fulfilment of such conditions as may be specified by the minister; 3(2) there shall be exclusive consideration to Nigerian indigenous service companies which demonstrate ownership of equipment, having Nigerian personnel and the capacity to execute such work, to bid on land and swamp operating areas of the Nigerian oil and gas industry for contracts and services contained in the schedule of this act; 3 (3) compliance with the provisions of this act and promotion of Nigerian content development shall be a major criterion for award of licenses, permits and any other interests in bidding for oil exploration, production, transportation and development or any other operations in the Nigerian oil and gas industry.

Section 106 further defines an ‘operator’ as the Nigerian National Petroleum Company (NNPC), its subsidiaries and joint venture partners and any Nigerian, foreign or international oil and gas company operating in the Nigerian oil and gas industry under any petroleum arrangement. The act’s main policy thrust appears to be the carrying out of all E&P related activities in the sector within the country and the utilisation of Nigerian human and material resources and services.

As a basic principle, the act requires that the promotion of Nigerian content development shall be a major concern in all projects and operations in the oil industry.

The main supports granted in favour of Nigerian companies as it concerns the bidding processes, is enshrined in sections 15 and 16 of the act.

Section 41 provides for the areas where the minister may make regulations ‘setting out targets to ensure ‘full utilisation and growth of indigenous companies’ in the following areas: exploration; seismic data processing; engineering design; reservoir studies; manufacturing and fabrication of equipment; and other facilities as well as the provisions of other support services for the Nigerian oil and gas industry.

Sections 44 and 45 of the act make allowance for the transfer of technology through the requirements for operators to have a programme of incentives to promote transfer of technology, and section 45 encourages the formation of joint ventures and other forms of alliances between foreign and indigenous contractors.

Section 11 sets out the level of Nigerian content required for various activities carried out in the oil and gas industry. This is done through a schedule which lists the various activities that are carried out in the oil and gas industry and then sets out the desired level of Nigerian content in accordance with various units of measurement. Section 11 states that the minimum Nigerian content in any project to be executed in the Nigerian oil and gas industry shall be consistent with the level set out in the schedule. There appears to be a gap here as the act is silent on how the minimum Nigerian content was arrived at.

Section 11 (3) stipulated that the minimum Nigerian content requirements shall be complied with by all “operators, alliance partners and contractors”.

This schedule consists of several subheadings: front end engineering design and detailed engineering services; fabrication and construction; materials and procurement; well drilling services/ petroleum technology; exploration, subsurface, petroleum engineering and seismic data gathering etc. It measures Nigerian content in terms of man hours, size and volume, tonnage, certification, and number and amount of local expenditure.

Section 11(4) accords the minister the rights to permit continued importation for any of the schedule’s functions where it is deemed to be in short supply in-country.

b) The national content plan

Section 7 of the act states that “...in bidding for any license, permit or interest and before carrying out any project in the Nigerian oil and gas industry, an operator shall submit a Nigerian Content Plan (Plan) to the board demonstrating compliance with the Nigerian content requirements of the bill”. Furthermore, it requires operators to deliver a plan which demonstrates compliance with the Nigerian content requirements of the act, when bidding not only for licenses or blocks but also for “...any project in the oil and gas industry”. There is no clear definition of project in this act. Upon a favourable review and assessment of the plan, the operator is to be issued a certificate of authorisation to proceed with the project.

The provisions of sections 10, 11, 12, 13, 29, 31, 38, 39, 43, 44, and 51 require the information to be submitted by the operators to show how the first consideration principle is to be applied to goods, services, employment and training. These provisions also require the submission of research and development plans, technology plans, legal services and a financial services plan. These plans will also need to show how the minimum Nigerian content levels are to be achieved.

c) Definition of a Nigerian company

Section 106 defines a Nigerian company as “*a company formed and registered in Nigeria in accordance with the provisions of the Companies and Allied Matters Act with not less than 51% equity shares by Nigerians*”.

Section 41 (2) states that “*international or multinational companies working through their Nigerian subsidiaries shall demonstrate that a minimum of 50% of the equipment deployed for execution of work are owned by Nigerian subsidiaries*”

d) Nigerian content as a management philosophy for project execution

Section 2 states that “ All regulatory authorities, operators, contractors, subcontractors, alliance partners and other entities involved in any project, operation, activity or transaction in the Nigerian oil and gas industry shall consider Nigerian content as an important element of their overall project development and management philosophy for project execution”.

e) Implementation mandate

Section 69 (1) provides for the establishment of the Nigerian Content Development Monitoring Board (NCDMB).

1) There is established the Nigerian Content Monitoring Board (in this act referred to as "the Board") which shall have the functions and powers conferred on it by this act.

Section (70) provides for the functions of the Board, namely:

- (a) To implement the provisions of this act;
- (b) To implement the regulations made by the Minister in relation to any aspect of this act;

- (c) To supervise, co-ordinate, administer, monitor and manage the development of Nigerian content in the Nigerian oil and gas industry;
 - (d) To supervise, coordinate, administer and monitor the implementation and development of Nigerian content as specified in the Schedule of this act in the operations of operators, contractors and all other entities in the Nigerian oil and gas industry;
 - (e) To appraise, evaluate and approve the Nigerian content plans and reports submitted to the Board in compliance with the provisions of this act;
 - (f) To award Certificates of Authorization and conduct reviews of the Nigerian content plans and reports submitted to the Board in compliance with the provisions of this act;
 - (g) To administer and operate the e-market place and Joint Qualifications Systems set up in accordance with the provisions of this act;
 - (h) To assist local contractors and Nigerian companies to develop their capabilities and capacities to further the attainment of the goal of developing Nigerian content in the Nigerian oil and gas industry;
 - (i) To make procedures to guide the implementation of this act and ensure compliance with all the provisions of this act;
 - (j) To monitor and coordinate the Nigerian content performance of all operators in accordance with the provisions of this act;
 - (k) To design auditing procedures and conduct regular audits for the purposes of monitoring and implementing compliances with the provisions of this act;
 - (l) To provide guidelines, definitions and measurements of Nigerian content and Nigerian content indicators to be utilized throughout the industry;
 - (m) To conduct studies, researches and investigations that may further the attainment of the goal of developing Nigerian content in the Nigerian oil and gas industry;
 - (n) To organize conferences, workshops, seminars, symposia, training, road shows and other public education media to further the attainment of the goal of developing Nigerian content in the Nigerian oil and gas industry;
 - (o) To delegate any of its functions to any agent or operative appointed by the Council;
- and

(p) To legally do anything necessary that needs to be done to facilitate the carrying out of its functions.

Section 59 of the act states that the “*Nigerian Content Monitoring Board shall undertake an effective monitoring of the implementation of this Act.*”

f) Bid evaluation processes

The act allows for consideration of Nigerian Content in bid evaluation exercises and for Nigerian bidders to be conferred certain privileges on the basis of their nationality.

Sectional provisions in this regard include: Section 14 - All operators and project promoters shall consider Nigerian content when evaluating any bid; where bids are within 1% of each other at the commercial stage, the bid containing the highest level of Nigerian content shall be selected if the bid is at least 5% higher than its closest competitor; Section 15 - All operators and alliance partners maintain a bidding process for acquiring goods and services which shall give full and fair opportunity to Nigerian indigenous contractors and companies. Section 16 - the award of contract shall not be solely based on the principle of the lowest bidder. Where a Nigerian indigenous company has capacity to execute such a job, the company shall not be disqualified exclusively on the basis that it is not the lowest financial bidder, provided the value does not exceed the lowest bid price by 10%.

These sections portray the Nigerian content as an essential element in bid evaluation exercises. Where bids received are within 1% of each other, the operator is enjoined to award the contract to the bid with the highest Nigerian content, provided the Nigerian content is at least 5% higher than the closest competitor. In the evaluation of a bid, the act gives a 10% premium in favour of Nigerian companies, so long as it possesses the capacity to perform the contract.

Section 12 and 13 as well as 15 and 16, highlight the primary considerations which the Board will have in mind when conducting the review of the bidding process.

Section 17 (2) stipulates that the Board will be responsible for assessing compliance with the required level of Nigerian content.

Details of documents required to be submitted at different stages of the bidding processes are contained in sections 18, 20, 21, and 22 of the Act.

g) Project Offices

Section 25-27 of the act sets out the provisions of the act as it concerns the maintenance of a project office by operators, or any other body submitting a Nigerian content plan.

h) Employment and training

Sections 28-35 of the act provide for the training and employment of Nigerians. Section 28 (1) states that “Nigerians shall be given first consideration for employment and training in any project executed by any operator or project promoter”.

Sections 30 and 31 make it imperative for the operator or promoter to provide training for Nigerians, especially in areas where they are not employed as a result of being poorly trained or lack of trained Nigerian personnel, and to provide a succession plan of 4 years for a Nigerian to understudy an expatriate working in that area.

Section 32 stipulates that an operator or project promoter is limited to a maximum of 5% of its management positions as may be approved by the Board. Section 33 provides that all applications for expatriate quota must first be referred to the board. Section 34 provides for the insertion of the labour clause into projects or contracts, stipulating the use of a minimum percentage of Nigerian workers as may be stipulated by the Board.

Section 42 of the act provides for professionals engaged in engineering or professional service provision to be duly registered with professional bodies in Nigeria.

i) Research and Development programmes

Sections 37, 38 and 38 deal with the research and development (R & D) requirements of the act and require operators to submit a programme for the promotion of education attachments, training, research and development.

j) Regulations

Sections 40, 41, and 42 empowers the minister to make regulations in respect of training, and growth of indigenous companies in various areas such as exploration, engineering design and for ensuring that professional employees are registered with Nigerian professional bodies. Section 47 allows the minister to make regulations which requires operators to invest in or set up facilities for the purpose of carrying out any production or manufacturing in Nigeria.

k) Technology transfer

Section 43 provides that an operator must have a programme for the purpose of promoting the transfer of technology into Nigeria, where it concerns the oil and gas industry.

Section 44 provides for an operator to support technology transfer initiatives through the encouragement and facilitation of the formation of joint ventures, partnering and development licensing agreements between Nigerian and foreign contractors.

l) Services

Section 49 of the act requires that all investors ensure all their insurable risks in the oil and gas business, operations or contracts with an insurance company, through an insurance broker registered in Nigeria. However, the operators can place their insurance risks outside Nigeria with the written consent of the national insurance commission who shall ensure that Nigerian local capacity has been fully exhausted (section 50).

Sections 51 and 52 follow the same route, differing only where it concerns the kind of service, legal and financial, respectively.

2.7.2. United Kingdom

2.7.2.1. UK- Country Profile

On the other hand, the United Kingdom (UK) serves as a sharp contrast from the Nigerian scenario reviewed previously. With a population of about 63 million persons and a land mass of approximately 240,000sq km, the UK's population and land mass pales into insignificance when compared to Nigeria on similar dimensions (OECD, 2009). Owing to its GDP which currently stands at an estimated \$2.4 Trillion and a Per Capita of \$40,000, the UK can be referred to as a developed country and an economically advanced country, unlike Nigeria which has been severally referred to as a developing and low-income nation (WEF, 2013). The UK ranks as the sixth and eighth largest economy in terms of nominal GDP and Purchasing Power Parity (PPP) respectively, thus making it one of the world's largest economies (OECD, 2009). Elsewhere, reference has also been made to the fact that the UK stands out as the world's foremost industrialised nation, a trailblazer of sorts. Also the UK is one of the world's leading knowledge-based economies across the globe, owing to the

preponderance of academic institutions and research facilities which dot the country's landscape (WEF, 2013).

However, due to the open nature of the UK's economy and its continuous seamless interaction with the global economy, the country was drastically affected by the economic recession which occurred seven years ago (OECD, 2009). In its wake, the recession led to loss of local businesses and jobs, tightened government expenditure and closure of certain socially oriented policies of government. Ever since, the nation has been on the path of a slow recovery. Following its desire to return to the path of economic prosperity, the incumbent government appears to have heeded the advocacy from several quarters (Erridge, 2007, Arrowsmith, 2010, Helm et al., 2009) clamouring for renewed investments by the government into certain sectors of the nation's economy, as a means of enabling quick recovery from the recession. Of these sectors, there appears to be a consensus among various stakeholders that investments in infrastructure hold the ace in the bid to regain global competitiveness (Helm et al., 2009, WEF, 2013). Given the definition of the term '*infrastructure*' as rendered in section 2.5.1, such accord among stakeholders can be understood. In furtherance to this, the government, through the inauguration of the Infrastructure UK (IUK) and the subsequent commissioning of the National Infrastructure Plan and the Infrastructure Cost review in 2010 and 2011 respectively, set the ball rolling with an emphasis on the delivery of economic infrastructure.

2.7.2.2. Infrastructure Investments and UK's Economic Prosperity

Quite noticeably, evidences of underinvestment in economic infrastructure abounds everywhere in the country, as well as in several policy documents (WEF, 2013, OECD, 2009). This has led to the prevalence of an infrastructure stock that has failed to meet with increasing demand, triggered by an increasing population. A recent NAO report maintained that besides having the most heavily used roads throughout Europe, a fifth of the nation's existing electricity generating capacity was expected to shut down over the next decade (NAO, 2013). As if to buttress the dwindling nature of the country's infrastructure stock even further, the World Economic Forum ranked the UK 28th in the world on the overall quality of infrastructure in its 2012/2013 rankings (WEF, 2013). This was a dismal showing considering the fact that the country was ranked 24th in the 2011/2012 ranking. In 2009, Helm et al (2009) observed that the state of the country's

infrastructure had led to a reduction in terms of productivity when compared to its peers in Europe and the rest of the world. For instance, whereas France possessed a productivity rate of \$53.7 per hour despite its less flexible labour markets, the UK posted a poor showing at \$45.4 per hour.

The need to boost the level of infrastructure in the UK led to the inauguration of the Infrastructure UK and the commissioning of the National Infrastructure Plan (NIP) in 2010. This NIP is expected to swallow about £200BN (Two Hundred Billion Pounds) over a period of five years (2011-2015). It was however also discovered that the UK had a more expensive delivery regime for procuring infrastructure assets and there was an urgent need to review the inherent costs. Most of the issues that led to high infrastructure delivery costs in the UK were attributable to the pre-construction stage and other ancillary costs. In accordance with the desire to speed up the delivery of infrastructure, the IUK report on Infrastructure Cost Review (IUK, 2010) released in 2011, identified five (5) key objectives that could lead to effective and efficient infrastructure development in the UK. These key objectives include; -

- The creation of greater visibility and continuity of the infrastructure investment pipeline through the publication of future investment programmes in the national infrastructure plan,
- Effective governance,
- Greater discipline in the commissioning of projects and programmes,
- Smarter ways to use competition,
- Encouragement of the industry and advisory community to invest in efficiency and the subsequent reduction of direct costs of construction.

As a continuation to the debate on the need for further investments in infrastructure, the NAO report has indicated that the country would require an investment of £310bn, out of which a total of £257bn would be spent over an eight year period, commencing from April, 2012. Sixty-four percent (64%) of this investment is expected to come from private investors. Providing an enabling environment for such private sector investments to be ploughed into the delivery of infrastructure, has since become of major interest to the government. This has led to seasonal reports emanating from various parts of government, particularly the IUK, such as the Infrastructure delivery route-map and the cost review reports. These reports are constantly driving the need for

change within the delivery of infrastructure according to the five objectives listed above, and it is expected that the current efforts would lead to a £2-3bn sustainable annual saving for investors as identified by the Infrastructure Cost Review. Fifteen percent (15%) of this sustainable saving is expected to accrue from civil engineering aspects of the infrastructure delivery process. Figure 2.4 indicates the shift in the financing of infrastructure from the public sector to the private sector in the UK whilst Table 2.1 shows the present ownership and regulatory structure of the UK's infrastructure sector.

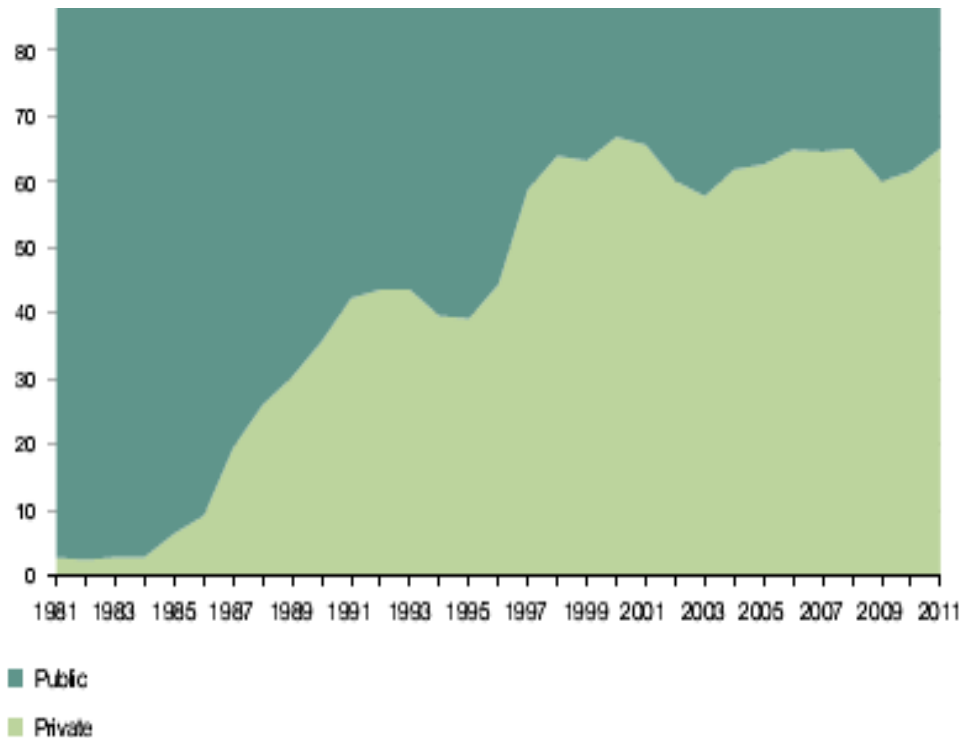


Figure 2.4 Ownership of Infrastructure in the UK (1981-2011)

Source: NAO (2013)

Table 2.1 Ownership structure for UK Infrastructure

	Energy	Transport	Water and Sewerage	Communications	Flood Defence
Ownership	Private	Roads and Tube (Public); National rail, airports and ports (Private)	Private	Private	Mix of public and private
Department responsible for policy	DECC	DFT	DEFRA	DCMS	DEFRA
Who pays?	Consumers	Mix of consumers (as fare or toll payers) and taxpayers.	Consumers	Mostly consumers; Some grant support from taxpayers.	Mostly taxpayers; Some consumer funding via developers
Need identified by?	Needs identified by network companies with regulators. Decisions on generation investment reside with the private companies.	Highways agency or local authority for roads; Network Rail, regulator and DFT for national rail; Private companies for ports and airports.	Water and sewerage companies in association with the regulator.	Private sector identifies commercially viable investment. Department identifies need for supported investment.	Environment agency and regional flood and coastal committees which often include local authority members.
Prices regulated by?	OFGEM	ORR; DFT; Civil Aviation Authority	OFWAT	OFCOM-limited role as most prices are set by the competitive market	-
Price regulation covers?	Transmission and distribution charges (not final charges to the consumers)	Rail-Tract access charges and some fares; Air- Landing charges at Heathrow, Gatwick and Stansted.	Final charges to the consumers.	Prices for third party's use of BT's network	-
Investment financing method	Private by generation, transmission or distribution companies.	Airports and Ports (Private); Railways- Mixed (Public and Private); Most roads are publicly financed.	Privately financed by the water companies	Privately financed	Mostly public financed but with some contributions by developers.

Source: NAO (2013).

Considering that the government's aim in the renewed drive for infrastructure investment was to ensure the promotion of infrastructure spending will promote sustainable growth, increase productivity, generate employment, and meet the needs of future generations (N.A.O, 2013), it could be argued that these investments would be able to enable a steady and quicker recovery from the recession if all these objectives are met. However, for these expected investments to make a more decisive impact upon the UK's local economy, a crucial part of it should be able to be retained within such economies. It can be argued that a large percentage of construction spend can be retained within the local economy for such purposes. This is particularly so, given the recent observation that every £1 spent in construction reverberated by 2.8% within the local economy where such a project is situated (Jackson, 2010). This can have a massive linkage effect on other activities. But for this to be achieved, the construction industry in the country has to be well positioned to win such delivery jobs.

2.7.2.3. Infrastructure, Construction and Socio-economic Policies in the UK

Given its reputation for being able to deliver on the most difficult and innovative projects across the globe, the UK construction industry at its best should be in an advantageous position to benefit from these investments and allow for larger retentions within the local economy (Egan, 1998). It should be able to compete favourably with companies from within Europe for jobs at home and abroad.

However, this has not been the case, as a result of the underperforming nature of the UK's construction industry. Various studies have observed the seeming inability of the construction industry in the country to meet with the expectations of the industry clients (Baiden et al., 2006, Kometa et al., 1994, Kagioglou et al., 1999). The industry has been reported to trail behind its peers in other countries and several studies have been commissioned into the attainment of a turnaround within the industry. It could be argued that the poor performance of the construction industry in part was responsible for the decline in infrastructure development in the country. The need to revamp the industry and reposition it for more effective and efficient delivery brought about reports such as the Latham report of 1994 which talked about the introduction of new practices within the industry. The Egan report of 1998 was another report in this area. It identified five key drivers of change within the industry, namely: committed leadership, a focus on the customer, integrated processes and teams, a quality driven agenda and commitment to people. However, the Egan report is more renowned for the introduction of Key Performance Indicators (KPIs) for measuring progress made, as it concerns these key drivers.

Regarding the identification of the renewed commitment to people as a key driver of change in the industry, the construction industry's reputation for creating employment opportunities for a vast number of persons, particularly during the construction phase is not in doubt. The Egan report called for the improvement of management and supervisory skills at all levels of the industry and longer term relationships with the supply chain. The industry's aging workforce and the growing shortage of skilled manpower in terms of infrastructure skills are becoming tell-tale signs of what the future holds in stock.

Several procurement related policies have been churned out of central government over the last seven years, towards enabling the development of skills and the competitiveness levels of the local suppliers as an avenue to boosting socio-economic growth. These policies have affected infrastructure delivery and the construction industry in several ways. It must be stated that given the policy mix, the varying nature of the ownership structure of most infrastructure delivery activities and the international treaties to which the UK is signed up to, there is no central policy which seeks to enforce strict adherence to the use of only local suppliers for the delivery of infrastructure, as is the case in Nigeria. However, a well-tooled and competitive UK plc would obviously win more jobs in a competitive environment and hence generate more socio-economic benefits for the local economy. These policies include the Sustainable Communities Act (2007), the Localism Act (2011), the apprenticeship schemes, the SMEs agenda (2011), and the Social Value Act (2012).

These policies are all geared towards ensuring that public procurement and subsequent investments in infrastructure make a big impression on the local economies where such expenditures are being made. Whereas the Sustainable Communities Act is aimed at ensuring that procurement decisions taken are in consonance with the desire to develop sustainable communities in the UK, the Localism Act on the other hand led to the decentralisation of power from central government to the regions on planning decisions pertaining to what to procure and how to procure the same. It was expected that the latter would enable local communities to make a difference in their communities, as they would understand what their priorities were and spend accordingly. The SMEs agenda of 2011 was introduced to improve the levels of patronage for the SMEs in public procurement. SMEs are known as job creating entities, thus leading to the adoption of programmes across the OECD supporting SMEs. Most of these programmes have been centred upon: financing; creation of a viable business environment; technology; improved management capabilities; and improved access to markets.

In the UK, the potentials of SMES to serve as engines of growth are enormous, particularly when cognisance is taken of the fact that they constitute 99.9% of the UK's 4.5 million businesses, possessing an estimated turnover of a £1.5Trillion (Cabinet.Office., 2013), and accounting for almost half the net growth in jobs. Impliedly, they cannot be ignored and need to be supported to generate jobs. Unfortunately, they have always been shut out of public procurement due to their size and financial capabilities (Cabinet.Office., 2013). In a bid to stem this tide, the government introduced the SMEs agenda to make government procurement exercises more accessible to them. It was expected that by opening up opportunities for the SME suppliers, the nation would be furthermore, able to stimulate growth and jobs as well as providing access for government to SMEs' expertise and the innovation. In accordance with this agenda, the procurement system has been modified to achieve this objective in the following manner: introduction of lean procurement, abolition of Pre-Qualification Questionnaires (PQQs), development of the contracts finder window, introduction of pipelines, cross government contracts, government's construction strategy and the mystery shopper programme.

Various government departments have keyed into this agenda in recent times, with the Department of Transport's (DfT) target to achieve 18.6% spend with SMEs by March, 2015, hence representing a significant proportion of their expenditure. These SMEs possess greater capacity to impact skills on the citizenry and provide apprenticeships as well, but such benefits would only accrue when they are being granted adequate patronage (Cabinet.Office., 2013).

Another recent policy which advocates for the use of public procurement to provide social economic benefits is the Public Services (Social Value) Act 2012. This is the most explicit of the policies to have been enacted in recent times. The act strives to ensure that;

"...the full weight of the public sector's purchasing power is directed at achieving social and environmental benefits alongside financial efficiency" (Social .Enterprise .UK, 2013).

This act implies that the delivery of socio-economic benefits be considered in equal terms with the cases for financial efficiency when computing Value for Money (VfM) ratios during procurement. In accordance with the dictates of the Act, public bodies would be required to show how programmes they commission may impact upon the socio-economic and

environmental well-being of the area (Social Enterprise .UK, 2013). However, the act excludes such contracts that are under the European Union (EU) threshold.

Having attempted a review of the various policies which are geared towards the delivery of socio-economic benefits to the local economy and the national economy within the UK, this study can declare that the implementation of socio-economic policies in the UK to boost socio-economic benefits, such as jobs and supplier development, through the procurement and infrastructure delivery are affected by ownership and financing structure and arrangements respectively. Furthermore, as a member of the EU, the UK cannot enact and implement LCDPs, explicitly, in the country, rather the country would attempt to ensure that it possesses the right mix of skills required to be globally competitive and to win jobs in a perfect market.

2.8. Chapter Summary and Link

This chapter set out to provide further insight into the various phenomena being studied. This insight was achieved through the proper positioning of the local content development along the policy formulation and implementation continuum. Furthermore, the relationship between implementation structures, public procurement and procurement systems within the context of the study was also developed. In a bid to provide for a rich description of the background for the study, the Nigerian country perspective was fully reviewed alongside the NOGICD Act (2010). Having successfully established the relationship between the various themes mentioned earlier, this study shall proceed to discuss the components of the theoretical framework upon which the study's aim is anchored- organisational viability.

CHAPTER 3. INFRASTRUCTURE DELIVERY SYSTEMS: AN ORGANISATIONAL VIABILITY PERSPECTIVE

3.1. Chapter Introduction

Following from an extensive review of extant literature concerning the major areas of this study; policy implementation, public procurement, local content development, procurement systems, infrastructure and its delivery process, and an in-depth description of the country contexts of the United Kingdom and Nigeria, this chapter shall proceed to reflect on the study's underpinning theoretical lenses in this chapter. The previous chapter provided the foundation for the study by highlighting the prevalence of policy implementation gaps in Nigeria, whereas this chapter shall attempt to provide an insight into the theoretical lenses through which the phenomena can be understood and subsequently addressed. To achieve this aim, the chapter shall be structured accordingly:

- Systems;
- Cybernetics;
- Complexity;
- Viability;
- Organisation and Infrastructure Delivery;
- Governance;
- Stakeholders
- Critical Success/Failure Factors;
- Conceptual Model; and
- Chapter Summary.

It is expected that the conceptual model which will be developed at the end of the chapter shall present the systematic relationship between the various theoretical lenses explored in the chapter and its overall positioning within the body of the state-of-the-art in implementation research.

3.2. Systems

3.2.1. Systems Thinking- A definition

In his attempt to define a system, the unit behind the concept of system thinking and system practice, Checkland observed that a system usually consisted of a set of distinct elements linked together to form a whole, showing, in the process, properties of the whole instead of properties of its component parts. In accordance with his description of what systems were, he described the concept of systems practice as the application of the concept of systems thinking to initiate and direct our daily actions in the contemporary world (Checkland, 1999). Espejo (1994) described a system as a way of viewing the world, labelling it a mental construct of a particular whole, for which the setting up of a group of interrelated subsets to make up the whole remained a possibility. Polese et al. (2009) restated that the concept of systems thinking refocused attention from the part to the whole, suggesting that the individual qualities of the parts become vague whereas their relationship with other parts becomes important.

The systems approach can be described as the approach which takes into cognizance the wider picture, broaching on diverse aspects, concentrating as it were on the interactions and interrelationships between the various parts of the problem which is intended to be resolved (Checkland, 1981). It is based on the postulation that every system is made up of subsystems and that the conglomeration of these systems leads to a whole. The inherent individual characteristics of these subsystems diffuse into the system, leading to a generic characteristic of the whole and not a summation of the characteristics of the individual subsystems making up the parent system. For this approach to be taken seriously, in defiance of the scientific approach to problem solving, Checkland advocated that it should be able to portray an interactive cycle between the development of a particularly relevant theory and testing of the same through the application of a methodology appropriate to the subject matter under study.

In their submission, Vrijhoef and de Ridder (2007) stated that systems theory viewed the world in terms of collections of resources and processes that exist to meet subordinate goals. They identified the two major aspects of the systems theory: synergy and entropy. Whereas synergy entails collaborative working between subsystems to achieve a higher goal than would have been possible if the subsystems were working independently, entropy has to do with the imperative nature of feedback across the chain, to prevent debilitation of the system.

Furthermore, Checkland (1999) maintained that the process of systems thinking as a problem-solving tool starts from the observation of the world as a holistic entity by the observer, in terms of whole entities which are connected in hierarchical forms with other whole entities, resulting in the most basic prescription of what the observer's description will contain, namely: the purpose of the observation, the selected systems, and the different properties of the system such as;

“Boundaries, inputs, and outputs, components, structures, the means by which the system retains its integrity, and the coherency principle which makes it defensible to define the system as a system”

He asserted that a researcher could either employ pre-designed systems for his intended study or research, or engineer the development of his own genre of system based on human activity systems by tackling issues such as;

“The identification, designing and implementation of human activity systems”

In part, this informed the researcher's decision to explore the world of policy implementation from a project perspective, albeit systematically through the use of an already established systems and cybernetic platform - the Viable System Model.

3.2.2. Evolution of Systems Thinking Practice

The concept of systems thinking (General Systems theory-GST) was propounded by Von Bertalanffy and further developed by Ross Ashby as a result of their study of biological organisms in the early 1950's (Kast and Rosenzweig, 1972). The GST has been described as possessing the following aims, namely:

“the conduct of investigations into the isomorphy of concepts, laws, and models in various fields and to help in the useful transfers from one field to another; to encourage the development of adequate theoretical models in the areas which lack them; to eliminate the duplication of theoretical efforts in different fields; and to promote unity of science through the improvement of the communication between various specialists” (Checkland, 1981).

But prior to that time, systems thinking methodology had evolved through an era of intense philosophical rivalry between the proponents of the mechanistic and organismic models, between the 19th and early 20th centuries (Kast and Rosenzweig, 1972). They stated that the origin of GST has been traced by other scholars to the works of Hegel (1770-1831).

Following from his research on the evolution of the systems thinking methodology, Panagiotakopoulos (2005) referred to Decleris (1986) as having developed a table to show how increased complexities have led to continued evolution systems thinking methodologies over four generations. Table 3.1 highlights these four generations and the various problems faced during the respective phases.

Table 3.1 Four generations of Systems Thinking Evolution

Phase of Evolution	Major Contributors	Problem	Idea
First Phase (1916-1940): Precursors	Biology: Bertalanffy (1932); Linguistics: Saussure (1916); Anthropology: Malinowsky (1926), Radcliffe-Brown (1935); Sociology: Talcott Parsons (1937).	Description of Complex Objects/ Phenomena	Definition and Enouncement of Basic Systemic Ideas
Second Phase (1940-1945): Practical Orientation	Operations Research; Rowe, Blackett's Circus (1941), Rand (1946); Policy Science: Lasswell (1951).	Coordination of Complex Actions	Compilation of Optimum Theoretical Model (Modelling/Optimisation)
Third Phase (1945-1970) Formation-'Hard' Systems	Mathematical Theory of Communication: Shannon (1948); Cybernetics: Wiener (1948), Ashby (1952); Network and Linear Systems Theory: Guillemin (1957); General Systems Theory: Bertalanffy, Boulding (1956); Society for General Systems Research: (1954); Systems Analysis; Systems Construction.	Information Transmission, Construction of Complex Artefacts	Information (Information and Control Systems)
Fourth Phase (1970-): Spreading- 'Soft' Systems.	Systems Management; Social Systems Construction: (Spatial Planning, Transportation, Education); Human Systems; and National Systems Organisations-International Institutes	Uncertainty and Change in Complex Systems Behaviour	Dynamic Systems, Information Processing Systems

Source: (Panagiotakopoulos, 2005)

According to Panagiotakopoulos (2005), these four generations were concerned with four different stages of evolution of the systems thinking methodology. Whereas the first generation was more involved with the development of the systems theory, hence driving the advocacy for a departure from reductionism, the second generation was concerned with the creation of the practical application of the theory as necessitated by the emergence of more complex scenarios during World War II. The drive for the development of a practical approach to systems thinking theory led to the evolution of the third generation, which saw to the development of new fields such as cybernetics within the systems thinking community. This generation enabled the application of systems thinking to instances of human-machine relationships (Panagiotakopoulos, 2005). The fourth generation consisted of the widespread application of systems methodology, especially as it concerned its application towards resolving the world's complex social problems.

Following from the abovementioned treatise on the evolution of systems thinking, it can be seen that the approach has come a long way to the present day and has been used to solve many of the organisational and management problems within the walls of the academia and the real world.

3.2.3. A Systems Approach to Policy Implementation

Kast and Rosenzweig (1972) stated that the application of a systems approach in studying organisations was not a new idea but that its broad acceptance among organisational and management theorists was a contemporary phenomenon. This implied that the use of systems in studying organisations and institutions was not supposedly a new phenomenon. Listing some of the delimitations which affected the use of the systems approach in studying complex organisations, Kast and Rosenzweig (1972) observed that any investigation into organisational effectiveness, such as this study, should be based on three distinct levels of analysis: the environment; the social organisation; and the human participants. The inability of the investigator to properly identify these distinct levels and the prevailing relationships among them ultimately leads to failure of such studies. The systems approach is strong when the big picture, or enough of the picture, can be modelled as a viable whole. However, the strength or weakness of the systems approach depended upon the fit between the model and the situation (Jackson, 1988a). Leonard and Beer (1994) admitted that situations which were characterised by high levels of rapid change, multiple interests, limited resources, and high complexity, such as the process of implementing policies, serve as good candidates for a '*systems approach*', as it remained the only approach with a chance of long-term success. Its

adoption means placing much more emphasis on the big picture or the whole and considering the functions of a system’s parts based on their relations with one another and within the system’s larger context.

Prior to the evolution of a systems approach, reductionism was the most prevalent problem-solving methodology within management circles. Reductionism considered the elements in isolation first and then in combination, one by one. Undoubtedly, several advances in science and technology currently being enjoyed in present times have all resulted from reductionism. However, the effectiveness of reductionism as an analytical tool was made more manifest in situations where the problem definitions were shared and goals were clearly identified, unlike in today’s situation where fewer and fewer problems are meeting up with the requisite criteria for its application (Leonard and Beer, 1994). This intractable or recurring problem was an indication that a completely new perspective on the situation was needed. Hence the near absolute adoption of systems approaches in studying real world scenarios. such as the policy implementation process (Hill and Hupe, 2003).

The distinctions between the systems approach and reductionism are highlighted in Table 3.2 below.

Table 3.2 Differences between Reductionism Approach and Systems Approach

Reductionism	Systems approach
Focuses on parts	Focuses on wholes
Linear causality A causes B	Circular causality A causes B causes C causes A
Observer status objective	Observer status subjective
Context not very relevant	Context very relevant
One ‘truth’ or best answer	Multiple truths and answers
Externalities not important	Externalities important
Problems solved	Problems dissolved

Source:(Leonard and Beer, 1994)

Within the context of this study, there is a need to inculcate the entire process of policy implementation through infrastructure delivery into a single picture, thus establishing a fit between the model so utilized and the implementation situation from a project perspective. Also the desire to bring the entire procurement system and the inherent interactions between

the various actors, into one holistic picture partially influenced the researcher to adopt the systems approach, as against reductionism.

3.3. Cybernetics

3.3.1. Defining Cybernetics

According to Pask (1961), the term ‘cybernetics’ has been defined differently by various cyberneticists since its emergence. Whereas Norbert Wiener was cited as having defined it as;

“The science of control and communication in animal and the machine” (Pask, 1961: 15),

Stafford Beer was separately observed as having defined it as;

“The science of proper control within any assembly that is treated as an organic whole” (Pask, 1961:15)

On the other hand, Panagiotakopoulos (2005) stated that the term ‘cybernetics’ derived its meaning from a Greek word, ‘kybernetes’ which meant the science of effective governance. Accordingly, it was involved with the governance of systems through the effective application of communication and control strategies by component parts of the system. Furthermore, Panagiotakopoulos (2005) observed that the attention of cybernetics was more concerned with certain properties of systems which are not dependent upon their material components. He insisted that this attribute of cybernetics allowed for the description of various kinds of systems with the same concepts, with the aim of identifying isomorphisms between them through a total dependence on the use of relations for such abstractions. Heylighen and Josslyn (2001) were cited by Panagiotakopoulos (2005) as having identified the following relational concepts as being predominant within cybernetics; order, organisation, complexity, hierarchy, structure, information and control.

3.3.2. Origin of Cybernetics

Pask (1961) traced the origin of cybernetic thinking to two separate streams of thought, based upon the central position assumed by the desire to understand how stability is established using control mechanisms within systems. The first stream was thought to have evolved from the invention of the ‘governor’ by Watts in the 1800s (Pask, 1961). He described the ‘governor’ as a device that was involved in the development of the principle of negative feedback, due its ability to feedback information in order to affect speed control. The second stream was attributed to the physiological sources wherein, Pask observed, the key notions of

information feedback and control appeared as the ideas of reflex and homeostasis. He stated that whereas the former (reflex) was described as preserving an organism against the flux of its environment, the latter (homeostasis) countered the internally generated changes which are likely to disrupt the proper structure and disposition of parts of the organism. These reflective and homeostatic tendencies are goal-directed and self-regulating, thus enabling the development and attainment of systemic goals through a concentration on this duo.

In a similar vein, Panagiotakopoulos (2005) ascribed the origin of cybernetics to the studies of Norbert Wiener in 1948, through which he set out the development of a general theory of organisational and control relations in systems. Since that period, he added, cybernetics has evolved from the study of control and communication within engineered, artificial systems through to evolved natural systems like organisations, where the ability to set their own goals are inherent, without need for external controls. Accordingly, it has evolved from its original attentions which were channelled towards machines and animals, to the study of life and the mind as well as the explanation of their purposeful or goal-directed behaviour. This highlights the trans-disciplinary and generic nature of cybernetics in studying the manner of control and communication within the extant relationships between organisations within an interorganisational setting, as is the case in the IDS. It can also be used as a major medium for unravelling the attendant high levels of complexity associated with such systems.

3.4. Complexity

3.4.1. Complexity Defined

The concept of complexity is one which has continually defied any universal definition (Wood and Ashton, 2010, Mitchell, 2009). They agreed that the word ‘complexity’ meant different things to different people. Mitchell (2009) posited that in the absence of any definite science of complexity, various sciences of complexity could be said to exist. She noted that this has made the development of a universally accepted definition of the term ‘complexity’ impossible. Relying on the work of Seth Lloyd on how to measure complexity, published in 2001, Mitchell (2009) observed that complexity could be defined on the basis of several distinct criteria namely: size, entropy, algorithmic information context, logical depth, thermodynamic depth, statistics, fractal dimensions and the degree of hierarchy. Within the realm of infrastructure delivery and implementation research, measuring complexity according the degree of hierarchies and size and information processing capacity might be seen as apposite. Mason (2007:10) defined complexity as the measure of heterogeneity or

diversity in internal and environmental factors such as departments, customers, suppliers, socio-politics and technology. Baccarini (1996:201-202) identified two different dictionary definitions of the term '*complexity*' which could be likened to projects.

He maintains that complexity could be used to describe endeavours which are (a) consisting of many varied interrelated parts, and (b) complicated, involved and intricate. These definitions proffered in the dictionary and cited by Baccarini (1996), seemed an apt way of describing the endeavour of delivering energy infrastructure. An IDS could be described as having several varied interrelated parts consisting of several tasks, professionals and non-linear sequences which must all be co-ordinated effectively to attain an overall goal. The prevalence of varied stakeholder interests, the application of cutting edge technology, and huge expenditure incurred by the project sponsors makes the process complicated, involved and one fraught with intricacies. Based on his understanding of these dictionary definitions as it concerns projects, Baccarini (1996:202) defined project complexity as "consisting of many varied interrelated parts". He furthermore stated that it can be *operationalised* in terms of differentiation and interdependency. Baccarini (1996) advocated for caution in comparing project complexity to project size and the levels of uncertainty. He stated that the concept of project complexity is entirely different, but acknowledges that these elements can affect the degree of complexity of a project.

3.4.2. Types of Complexity Encountered in Infrastructure Delivery Systems

In his study on project complexity, Gidado (1996) identified two perspectives of project complexity within the construction industry; the managerial and the operative/technological perspectives. Similarly, Baccarini (1996) highlighted the existence of two perspectives to complexity within the project environment. These perspectives include: organisational and technological complexity perspectives. Although Baccarini advised researchers and project managers alike to be explicit on the perspective of complexity they are interested in, it is appreciable to note that both perspectives are applicable to infrastructure projects. Whereas organisational complexity is concerned with the existence of varied differentiated parts of the infrastructure delivery system, by differentiation, technological complexity is concerned with the variety of some aspects of a given task and by interdependency, comprising of all the interdependencies between tasks, within a network of tasks, and across teams and multi-stakeholders (Baccarini, 1996).

3.4.3. Factors Causing Complexity in Infrastructure Delivery Systems

According to Wood and Ashton (2010), the main factors causing project complexity included: organisational complexity; uncertainty; overlap of construction elements; inherent complexity; rigidity of sequence; and the number of trades involved in the project. These factors are overtly responsible for the increasing degrees of complexity within project environments, and especially megaprojects, which if not properly managed, are capable of undermining the performance of the intended project.

Baccarini (1996) emphasised the significance of understanding project complexity by project managers, stating that project complexity was capable of: determining planning, coordination and control requirements; hindering clear identification of project goals; playing a central role in choosing an appropriate project organisational form from a league of alternatives; influencing the selection of project inputs, such as the expertise and experience requirements of specialist tradesmen and professionals; being applied as a principle criteria in selecting a suitable project procurement arrangement for a particular project; affecting the project objectives of time, cost and quality, especially given that the higher the project complexity the greater the time and cost. Thus the significance of project complexity to project success or otherwise cannot be underestimated, hence the compelling need to allow for a thorough understanding of the inherent complexities in an infrastructure delivery system. Although project complexity is but one dimension of attaining project success (Baccarini 1996), it still poses a huge threat to the successful implementation of policy through infrastructure delivery systems in developing countries, especially Nigeria.

3.4.4. Infrastructure Delivery Systems as Complex Systems

Previous research has shown that the failure of most infrastructure projects had resulted from the inability of the project management personnel to understand the process of delivering infrastructure projects as a complex venture (Bertelsen, 2003). He attributed the failure of project management to the fact that it tends to treat projects as ordered and linear activities rather than a complex and dynamic set of activities. As a system's complexity increases, the ability to understand and use information to plan and predict becomes more difficult. In becoming increasingly complex, it becomes difficult to make sense of the system anymore and problematic to adapt to the external environment (Mason, 2007, Rhee, 2000). This scenario is apparent within the infrastructure delivery process. At several intervals during the process, the rationale for the project is lost on the participants, and this poses a major threat to

its performance. According to Rhee (2000:488), the characteristic structural and behavioural patterns in a complex system are occasioned by the interactions between the system's parts.

Complex systems are deterministic in nature and evolve through a phase of instability, which eventually reaches another threshold where a new relationship is established between its internal and external environments and itself. This external environment comprises of elements such as: competition; the economy; socio-cultural-demographic factors; political-legal-government aspects; technology; and the natural environment (Beeson & Davis 2000). Systems such as the infrastructure delivery system are complex systems which ultimately learn from their environment and change their internal structures and procedures accordingly, thus changing the behaviour of the individual elements (Sherif, 2006, Paraskevas, 2006). Mason (2007) admitted that an understanding of the dynamics and behaviour of such systems can only be effectively done by managers who understand these complex interactions. The infrastructure delivery system is no different, as only an understanding of the inherent complex interactions between several participating organisations can guarantee better delivery and subsequently successful performance.

Going by the synthesis of the characteristics of complex systems as contained in Table 3.3, it can easily be seen that infrastructure delivery systems aptly fit into this category of systems.

Table 3.3 Characteristics of Complex Systems from Literature

Authors	Characteristics of complex systems
Morel and Ramanujam (1999)	Presence of a large number of interacting elements within the system. These interactions are associated with the presence of feedback mechanisms, producing as it were, non-linearities within the system
(Styhre, 2002)	Complex systems have also been seen as dissipative structures –a semi-stable configuration that does not correspond to external pressures and manipulations in a linear manner. They operate in non-linear logic. Such a structure can absorb a significant degree of external positions in particular positions, yet allows itself to be significantly altered at other positions by minor influences.
Styhre (2002)	Complex systems possess the ability to self-organise and for adaptation, rather than being imposed upon by the centralised control. This happens through the interaction of several decentralized parts, whereas adaptation refers to the behaviours which allow the system to survive changes within its environments. Adaptation means the overall responsive behaviours of a system to changes in its environment. Feedback loops are major elements of complex systems which enhance their effectiveness as self-organising systems.
Ferlie 2007 (159)	Complex systems possess the ability to portray emergent properties, as patterns emerge as a result of the collective behaviour of the components of the system. These emergent properties are independently observable and empirically verifiable patterns.

3.5. Viability

3.5.1. Concept of Viability

Whereas the Oxford Advanced Learner's dictionary (2010) defines the term viable as connoting the fact that something “*can be done; that will be successful*”, the term as used in this study is in sync with systems thinking literature (Beer, 1979, Hoverstadt, 2008, Schwaninger, 2006b, Espejo, 2003). Therein, the term “*viable*” has been used to connote that particular characteristic of a given system to survive in a given environment, notwithstanding the degree of adversity which the environment exerts on the system (Espejo, 2003).

These systems not only possess the ability to survive, but also to retain within themselves the capability to respond to any uncertainty resulting from its host environment, capable of undermining its performance. Jackson (1988a) observed that for a particular system to attain viability status and remain so, it must possess the capability to respond to both foreseen and unforeseen changes within its environment, even if those changes could not have been foreseen at the time in which the system was being designed. To become and remain viable, a system has to achieve requisite variety with the complex environment that it faces. It must be able to respond appropriately to the various threats and opportunities presented by its environment and also to plan ahead for anticipated changes within its external and internal environments. According to Beer (1979), viability remains a common goal, either long term or, in the case of temporary organisations, at least long enough to accomplish its intended purposes.

Viable systems have been portrayed as possessing the same features as intelligent organisations /systems by Schwaninger (2001a). These features include:

“the ability to adapt, i.e. to change as a function of external stimuli; to influence and shape their environment; if necessary, to find a new milieu, or to reconfigure themselves anew with their environment; and to make a significant contribution to the viability and development of the larger wholes in which they are embedded”.

The concept of viability was propounded by Sir Stafford Beer (Beer, 1979). Deriving from the law of requisite variety as put forward by Ron Ashby and the Conant-Ashby theorem, see (Schwaninger, 2012), he observed that for a system to remain viable and deliver its purposes whilst maintaining its identity within an ever changing world, it would need to consist of several integral layers, all which must be present to make a viable whole. This led to the eventual development of the Viable Systems Model (VSM) by Sir Beer in the late sixties and

early nineties (Leonard and Beer, 1994), based on a cybernetic approach to management of complex systems. This approach relied on the identification of the communication and control systems within complex systems in its bid to understand and unravel the inherent levels of complexity experienced in complex systems.

Based upon the complexity of the delivery system and several instances of unsuccessful policy implementation in Nigeria, especially as it concerns those policies being delivered through the IDS, and the non-availability of research into the development of a holistic and comprehensive understanding of the implementation processes from an interorganisational and multi-layered perspective as is obtainable within such systems, this study adopted a systems viability perspective, with the aim of developing this understanding. It is expected that such an understanding would lead to better conceptualisation of the actual interorganisational relationships, albeit from a project perspective, and subsequent evaluations of the impact of these relationships on successful implementation. This notion led to the central proposition of this study; only a viable IDS can achieve successful implementation of policy. To be viable, organisations must possess the ability to improve upon their existing processes and procedures, to satisfy the stakeholders/customers/clients, and also adapt to the ever dynamic operating environment and this is what the VSM tries to achieve.

From this perspective therefore, a viable IDS can be described as an IDS that possesses the ability to remain ultra-stable within its environment, maintaining internal cohesiveness which leads to the better performance of its self-regulating and self-governing capabilities, and possession of the five mandatory subsystems as established by Beers, working in a defined manner towards the attainment of the systems objectives. Following from this, an IDS can be referred to as having attained viability, not only when there is a proper identification of these subsystems and the parties responsible for executing the tasks of these systems, but also when these parties perform these tasks in such a manner that allows for collaboration and team cohesion within the project environment. In summary, effective coordination and communication channels need to be established and utilised to render such IDS as viable.

3.5.2. Emergence of the Viable Systems Model (VSM)

The evolution of the Viable Systems Model (VSM) can be traced to systems theory and systemic thinking. Schwaninger (2006b) maintained that the VSM remained one of the manifestations of the relationship between cybernetics and management. Espejo (1994)

insisted that systemic thinking entails a comprehension of how parts interact with each other to form a whole, through a self-organizing process. The VSM was essentially derived from this concept of wholes, drawn up from the biological sciences, and particularly the human nervous system, by Stafford Beer in 1971 (Leonard, 2000).

Espejo and Bendek (2011) maintained that the VSM availed observers with an opportunity to see beyond formal institutions, the existence of the social organisations where they can interact and participate in the decision making process. They highlighted the powerful nature of the law of variety postulated by Ashby, which is a relational platform catering for how individuals relate with their situations in changing times and from where Beers took the bearing for the development of the VSM, when viewed as a platform for the comprehension of the requirements of effective and efficient communication channels between local communities and the policy making segment of the society.

The VSM is dependent upon the concepts of complexity and recursivity (Espejo and Gill, 1997). Bearing in mind the nature of complexity as espoused earlier on in this study, the mere fact that cybernetics is focused on the management of complexities in organisations endears the VSM, which is a part of management cybernetics, to anyone trying to manage complexities within an organisation.

The VSM relies heavily upon the concept of recursivity in establishing viability. This concept acknowledges the existence of subsystems within every whole and is further premised on the fact that each subsystem possesses self-regulatory and self-organizing traits and that this process continues to the last single cell available, thus making them effective absorbers of the inherent complexities which might arise out of the system's interaction with its external environment (Espejo and Gill, 1997). They argued that these features of complexity and recursivity and its attendant architecture within a system, lead to improved operational complexity of the system, thus making it more cohesive. Leonard (2000:711) in her study about the application of the VSM in the area of knowledge management, observed that the recursive characteristic of the VSM ensured that

“...each independent viable system is embedded in other more comprehensive systems”.

She opined that the recursive nature of the VSM enabled the investigation and evaluation of policies, goals and models for improvement purposes.

The VSM has been employed as a conceptual tool for appraising organisations, redesigning them and rendering the much needed support for change management within organisations (Brocklesby and Cummings, 1996). Brocklesby and Cummings (1996) further acknowledged that the VSM is not a widely known phenomenon within the realm of management, due to the perceived difficulty in coming to terms with its operability and the fact that they run contrary to the grounded norms of organisational thinking, which lay in the area of hierarchical control structures wherein there exists a top-bottom chain of command. It had been identified as a means of attaining functional decentralization and cohesion of the whole.

Dwelling upon the applicability of the VSM, Brocklesby and Cummings (1996) argued that the VSM remained a tool for the anticipation, planning, and implementing of large scale organisational change. They stated that Beer brought together his knowledge of cybernetics, described as the science of communication and control in organisms and machines, and his study of biological systems to bear. The VSM turned out to be the resultant product from such juxtaposition of knowledge/expertise and is based on the premise that organisations can be viewed from the angle of an organism with an advanced brain capacity. According to Jackson (1988a), Beer's cardinal objective in the creation of the VSM was the need for a generic systems framework that could be used in proffering explanations and analysis about the viability of a given organisation. Figure 3.1 below provides a succinct illustration of the VSM from a recursive organisation perspective.

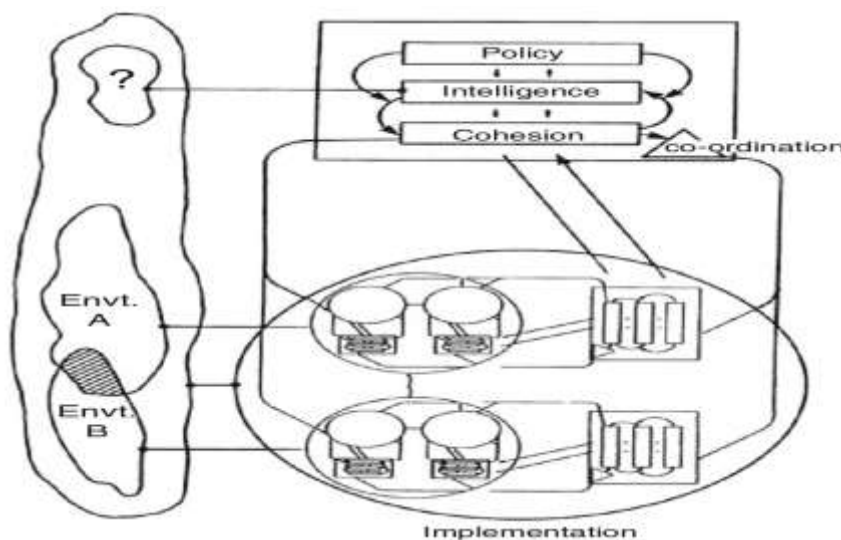


Figure 3.1 The Viable Systems Model

Source: Espejo and Reyes (2011)

Further explanation of the various subsystems is provided in Table 3.4 below.

Table 3.4 Basic Parts of Viable Systems Model

Subsystem (number)	Function
Policy (5)	This is responsible for the policy making duties of the organisation. Its major functions include the provision of overall clarity and purpose for the organisational unit and to prepare a concrete and tenable design for organisational efficiency
Intelligence (4)	This functions as a connection between the VSM and the external environment. Whilst it is responsible for the projection of the organisation’s image and message to the external environment, it is also responsible for obtaining information from the external environment to the VSM. It is future focused but maintains a communication loop with the control subsystem to complement the control function on areas such as maintaining the definition, adjustments and implementation of the unit’s identity.
Control and Monitoring* (3 and 3*)	This subsystem serves as a channel through which resources are negotiated and the issuance of direct line management takes place. The monitoring function is also domiciled within this subsystem, serving as a corroboration agent to the control function so as to ensure accountability.
Co-ordination (2)	These are the systems put in place within a VSM to co-ordinate the interactions between the support functions and between the autonomous units.
Implementation (1)	This system is responsible directly for the production or provision of services to the customer/clients.

Source: (Brocklesby and Cummings, 1996, Espejo, 2003, Jackson, 1988a, Polese et al., 2009) Pfiffner (2010) summarised the various ways through which the VSM could be utilized, namely:

- To build up a precise therapy concept with the quickest possible and unerring procedure.

- To build a simple and clear structure that is still able to cope with proliferating complexity (reliable functioning under conditions of highest variety and dynamics).
- To benefit from the basic rules and natural cybernetic laws of functioning found in natural systems, developed evolutionarily over four billion years by nature (e.g. the “self-“concepts).
- To create the organisational precondition for the gain of market share by a clear anchoring of responsibility for what customers really pay for, because the outside/environment/market perspective is an integral part of the model.
- To integrate outside and inside, present and future, structure and process, operation and management in one systemic, holistic model.

Furthermore, he reiterated the urgency for the development of viable social systems in the economic and societal spheres of today, in the midst of a financial, economic and system crisis, as being greater than ever before.

3.5.3. Understanding Policy Implementation from a VSM perspective

Two distinct systems thinking models have been applied towards the understanding of viability in organisations and/or systems; the VSM and the Living Systems Theory Model (LST). Schwaninger (2006b) identified the areas of similarity between the two models in the following areas: origin; theory-formation; purpose of research and model; what the model represents; and elaboration of theme. Table 3.5 highlights these differences.

Table 3.5 Difference between VSM and LST

Areas of Differences (Similarities)	VSM	LST
Philosophical perspectives	Constructivist approach	Positivist approach
Complexity	Subjectivist approach to complexity	Objectivist approach to complexity
Concept of system	Non-Open	Open
Unit of analysis	Capability and Potentiality	Actuality
Purpose of the system	The Identity of the system.	Associated with openness and integration of subsystems.
Components of the model	Five critical management functions.	Twenty critical subsystems.
(Basis of the model)	Graphically formulated and verbally descriptive (Non-mathematical).	Graphically formulated and verbally descriptive (Non-mathematical).
Principles of organisation	Autonomy, recursion and viability	Operational processes

Source: Schwaninger (2006)

Table 3.5 indicates that whereas the VSM and LST can be applied to the study of systems viability, they do so from different perspectives and adopting contrasting philosophies. These areas of contrast and similarities as highlighted by Schwaninger (2006) are discussed further below.

- a) **Philosophical perspectives:** Wherein Beer's model contrasts with Miller's positivistic approach by maintaining a constructivist approach, given that Beer did not position the VSM as an image of 'the reality out there' (representationally), but as an heuristic aid on which discourses about the diagnosis and the design of the organisation can be firmly based, with the human aspects such as ethos, meaning, sense-making and self-reference, serving as recurrent themes, either as integral parts of the theory or just as aids to its interpretation. Miller's approach is a physicalist approach, allowing for a great degree of concreteness and wealth of detail but is restrictive.
- b) **Complexity and coping with complexity:** The LST's concept of complexity bothers the objectivist. This was based upon the belief by Miller that complexity increases unbrokenly and drastically, up through every level in the

system, from the cell to the supranational systems. Beer regarded the degree of complexity as dependent upon the observer: it is determined by the distinctions he or she makes. Their concepts of complexity management differ correspondingly. Whereas Miller adopted a hierarchical approach, Beer used the concept of recursive complexity management. Beer proceeded from the assumption that decision makers at any level possess similar capacities for dealing with complexity, thus needing complexity to be resolved at any front where it manifests itself.

- c) **Concept of system:** Miller's LST was a perfectly open system as it allowed for constant and seamless interaction between the environment and the system (organisation), whereas Beer's VSM was a non-open system, allowing for the development of an internally coherent system which can respond to the attendant variety being thrown at it from the external and internal environment.
- d) **Unit of analysis:** Whereas Miller lent prominence to the actuality of these systems, Beer, whose model is centered upon the society and organisations, focused on capability and potentiality, and this is the reason for his far-reaching aspiration to specify the necessary and sufficient conditions for the viability of any social system and/or organisations in particular.
- e) **Purpose of the system:** The purpose of the LST is life, wherein survival is implicitly associated with the preservation of the openness and integration of the subsystem. Beer's viability is explicitly defined as the maintenance of identity or; the purpose of the system being what it does.
- f) **Components of the model:** LST has 20 critical subsystems concerning information and matter-energy, whereas the VSM has 5 necessary and sufficient management functions linked by feedback loops which are orientated exclusively to communication, control and pre-control.
- g) **Basis of the model:** Both models are formulated graphically and verbal-descriptively.
- h) **Principles of organisation:** Whereas the LST does not deal with organisational principles but rather operational processes, the VSM elaborates upon autonomy, recursion and viability as principles of organisation.

Schwaninger (2006) summed up this comparison of the LST and the VSM by observing that whereas the LST has an advantage over the VSM in the area of possessing an empirical underpinning, the VSM towers above the LST in two distinct aspects: the strength of theoretical claim/falsifiability; and diagnostic potency. The two models rank as equals in the following areas: concision and stringency; degree of elaborateness and transparency; validity; and reliability, with reservation in favour of the VSM regarding its insightfulness.

According to Pfiffner (2010), the VSM nullified the classical separation between organisational structure and organisational processes, as it is in the classical organisational models by combining these two facets. The VSM also provided the determinants required for distinguishing between good and bad as well as right or wrong, between organisational processes which are otherwise lacking within the classical hierarchical models. He stressed that the model (VSM) was a useful tool, as it integrates all the necessary and sufficient elements for the functioning of the organisation and their interaction in a relatively simple model that repeats itself on every level of recursion.

According to Davies (2007), the VSM provided a language in which to identify key features of a complex reality, and helped in posing significant questions about that reality. As such, the VSM can act in the form of a sensitizing framework, as a way of seeing and thinking which alerts the analyst to alternative ways of understanding. The VSM appears as a sophisticated organisational model which must be observed if an enterprise is to succeed as an adaptive goal-seeking entity. It is geared to tackling problems of differentiation and integration; providing insight into the proper arrangement of command and control systems and into the design of appropriate management information and decision support systems; treating sensitively organisation-environment relations; and yielding specific recommendations for improving the performance of organisations (Jackson, 1988a).

These further affirm the case for the use of the VSM, rather than the LST, in the conceptualisation and evaluation of the relationships within the IDS. To do this more effectively, the policy implementation (IDS) process should be viewed through a series of theoretical lenses relating to organisations.

3.6. Organisations and Infrastructure Delivery

3.6.1. Relationship between Theories of Organisation and Infrastructure

In contemporary studies, the delivery of infrastructure has been enjoying favourable concerns and sustained high levels of interest from organisational theorists. Furthermore, this increased interest has been attributed to the inherent complexities of the modes of relationships between two or more parties to the delivery process. Whereas some of these relationships have been contractual, others have been referred to as being relational. According to Scott et al. (2011b), this interest could be traced to the renewed understanding of the infrastructure and its delivery processes as ‘multi-’ and ‘trans-’ disciplinary endeavours by various scholars, hence necessitating the use of various theories from diverse disciplines to understand the phenomena better. They observed that theories of organisation have been severally applied in studies relating to infrastructure to gain in-depth understanding of the area. Theories of organisation mentioned include; the contingency theory of organisations, the resource-based view theory and the institutional theories.

Apart from this wave of organisation theories, another school of thought which is comprised of several scholars, usually referred to as the Scandinavian school of project management, have made a case for the study of the delivery of projects such as infrastructure, from the dual perspectives of temporality and organisations. Policy implementation processes associated with infrastructure and infrastructure delivery can be described as adopting a temporary multi-organisational design considering the limited timeframes for delivery.

3.6.2. Infrastructure Delivery Systems as Temporary Multi-Organisations (TMOs)

Espejo (1994) in his contribution to the discourse on organisations stated that organisations do not possess the capability to maintain an independent existence, but rather arise as the components of the interrelated parts which maintain interactions with themselves within a particular operational domain. In view of this opinion, he defined an organisation as;

“A complex network of interpersonal interactions with closureemerge when ongoing interactions produce recurrent coordination of actions among participants, thus creating order out of chaos” (Espejo 1994: 205)

In the opinion of Gallagher et al., (2002), organisations are viewed as a group of people operating within given boundaries, collaborating as it were with the sole aim of achieving a common objective. These definitions acknowledge the authenticity of the argument put

forward by Packendorff (1995) that organisations developed from inter- personal and inter-organisational interactions which result in complexities, given the attendant uniqueness of each individual and organisation. Carroll and Burton (2012) take the discourse a little bit further by beaming the searchlight deeper onto project organisations. They describe a project organisation as;

“An information processing challenge to have the right information at the right place at the right time to make a coordinated decision for project efficiency and effective implementation” (Carroll and Burton 2012:13)

Child (1984) stated that the success of a given project is significantly affected by the structure of that particular organisation. He maintained that well-designed organisations contribute immensely to the successful attainment of the core goals. The manner in which an organisation is designed is reflected by the inherent structures in that particular organisation (Gallagher et al., 1997, Daft, 2009, Carroll and Burton, 2012). Carroll and Burton (2012) added that the organisational design is primarily concerned with the process whereby a definite task of the whole organisation is broken down into smaller parts for the subunits, and then these broken down parts are coordinated as a whole, in such a manner that they can fit together to effectively achieve the bigger organisational objective.

Child (1984) advised that caution be exercised by managers of organisations in deciphering whether an organisation was properly designed or not. Miles et al. (1978) declared that the performance of any organisation was greatly affected by the degree of the management’s understanding of the organisation as an integrated and dynamic whole. This knowledge enables them confront future changes in their external environment. According to Child (1984), the design of an organisation should ensure that the following attributes are factored into the design: the need for a framework to assess inter-personal relationships within the organisation; the need for the inclusion of performance measurement systems to aid assessment of personal achievements and contributions towards the attainment of collective tasks; and most especially, the guidelines for choosing the structures and developing them. Information has also been identified as being very pivotal to the success of any given organisation and as such, the design of organisations should encompass the information channels (Carroll and Burton, 2012).

Organisational theorists have continually bemoaned the absence of a standard organisational structure which fits all purposes (Child, 1984, Carroll and Burton, 2012). Rather, they

advocated that the design of organisations should be carried out in such a manner that the common goal assumes a central position around which every other activity revolved. In a further dissection of the organisation, three aspects of an organisational structure which should be considered as prerequisites for organisational success were identified. These criteria include: the allocation of resources for the actualization of the goals and the provision of mechanisms for coordinating these resources; the operations of the organisations; and the decision making strata- strategic level (Daft, 2009).

According to Lahdenpera and Koppinen (2009) project delivery systems can be described as;

“The organisational framework of a project that defines the control mechanisms and the relationships between actors and incentives”

In the sphere of infrastructure delivery, project-organisations are prevalent. These project-based organisations have been designed in such a manner that allows their internal structures to confront the attendant complexity within the infrastructure delivery environment. Unfortunately, Wallace et al. (2004) identify organisational related reasons as major causes of project failures around the globe, whilst Saussier (2000), and Carroll and Burton (2012) admit that there is a relationship between the manner in which a project is organized and the success or failure of that project. According to Nickerson and Zenger (2004), the plethora of literature has left, unattended to, issues relating to the manner of organizing effectively to develop capability or knowledge within firms or inter-firm relationships.

An IDS has been described as pivotal to the success of any infrastructure/project development activity (Lahdenpera and Koppinen, 2009). They stressed the significance of effective delivery systems to the client, as it improves the chances of attaining its objectives. Construction projects which constitute a huge proportion of IDS are complex projects (Baccarini, 1996, Bertelsen, 2003), comprising several relationships between the various participants.

Infrastructure delivery systems, which can be described as project delivery systems in their own right, have been described as being pivotal to the success or otherwise of any infrastructure/policy implementation endeavour (Simkoko, 1992, Tawiah and Russell, 2005). Infrastructure projects are complex projects, especially as they are comprised of several relationships between the various and diverse participants within the particular project environment.

Packendorff (1995) in his review of the theory of project management, stressed that projects have come to be seen as tools and opined that this would mar the principle of project management. He maintained that the perception of projects as tools to be used for the attainment of a goal confers on projects a mechanistic underpinning, leading to the neglect of the diverse intentions of the various individuals or firms participating within the project organisation and those outside it. In line with Bertelsen's advocacy for a change in perception over how the construction process works (Bertelsen, 2003), from one of a linear straightforward process to a complex system existing under the tenets of self-organisation and co-operation, Packendorff (1995) adds that projects should not be studied in isolation, apart from issues such as cultural affinities, conceptions, relationship with the immediate environment, and longitudinal processes, but rather as a temporary organisation consisting of goal-fulfilling subsystems dependent on a pivotal and tactically situated parent system for their existence.

The change from project to organisation albeit temporary, is the relegation of the planning and structure components of project management and the adoption of processes which aid the social interaction between several parties working together to achieve a particular consensually determined task (Packendorff 1995). He stated that this consensual arrangement of tasks in a particular order determined the line of action taken by the team, unlike in the era of projects as tools where planning and structure determined which tasks were to be executed, leaving most participants disoriented and non-committal to the entire construction process. The strength of the organisation lay in the fact that its purpose is derived from the result of people's consensual actions and thoughts, thus being a voluntary task to which they would willingly work towards achieving (Espejo 1994).

Still buttressing the advantage of using temporary organisation theory to describe construction activities rather than projects, Packendorff (1995) reiterated that projects as tools can be viewed only from the owner's perspective and as such would not allow for objective inputs, whereas when treated as organisations, these activities can be seen from diverse perspectives. The fact is that projects as organisations make for better learning curves and knowledge management processes than projects as tools, due to the difference in the sequence of activities contained therein.

Stringer (1967) observed that the nature of social services provision arrangements, of which infrastructure forms an integral part, requires a peculiar mode of organisation, allowing for

the creation of a special structure to cater for inherent management problems. Accordingly, Stringer (1967) had suggested that the delivery process for such services should be viewed as a multi-organisational structure. TMOs differ from conventional organisations in various ways. Whereas the latter could be ascribed to as possessing the following characteristics, namely: a capability to impose upon itself a set of goals with wide ranging applicability throughout its constituent parts, pursuance of these established goals remains critical to its set up and continued existence, presence of a usually hierarchical internal structure depicting the command structure of authority, and a permanence transcending certain tasks; TMOs remain socio-technical systems wherein existing relationships between players are usually conditioned by the task (Stringer 1967). TMOs possess the following features: effective communication; dependency of relationships on tasks which are relevant to the attainment of the overall project goal; and actors possess other interests outside the project, hence the project remains the only reason for their collaboration (de Blois and Lizarralde, 2010).

This research is aligned to the views expressed by Packendorff concerning the increasing need to move projects away from the conventional perspective. From that perspective, projects are merely seen as tools for the accomplishment of some goals set by the owner. Hence the decision of the researcher to view the IDS from an organisation perspective stems from the viewpoints of Packendorff (1995), Stringer (1967) and implementation theorists, Van Meter and Van Horn, as discussed in the preceding chapter. The process of implementing policy through infrastructure delivery could be described as possessing the characteristics of both temporary organisations and TMOs alike as discussed earlier. Fuelled by the desire to portray the entire interorganisational and multi-layered structure of the inherent relationships within this process as well as portraying its temporary nature, henceforth, this study shall deem IDS as TMOs, particularly as it concerns the implementation of socio-economic policies.

Having defined the platform upon which policy implementation can be viewed from an organisational perspective, to reflect its complex manner, another important aspect of such organisations is the adopted modes of governance. Various approaches have been adopted in choosing the governance modes to use in managing organisations. Among this plethora of approaches for organisational governance are: the transaction cost approach as derived from Coarse (1937) and Williamson (1975); and the institution theory. These approaches are reviewed in the subsequent sections as alternative modes of governing organisations.

3.7. Governance

3.7.1. Definition of Governance

Stoker (1998) and (Türke (2008) admit to the lack of uniformity within the existing body of literature, among the various definitions of governance. Stoker (1998) agreed that the academic literature on governance was disjointed and eclectic, pointing toward its theoretical roots which lie within the realms of; institutional economics; international relations; organisational studies; development studies; political science; public administration and Foucauldian-inspired theorists. The contribution made by the theory of governance is predicated on its value as an organising framework, the capacity of governance to provide a framework for understanding and changing processes of governing an organisation. Abednego and Ogunlana (2006) cited the UN-ESCAP (United Nations Economic and Social Commission for Asia and the Pacific) as having defined governance as constituting of all inherent decision making and decision implementation/non-implementation processes within a project. The OGC described governance as the process through which;

“An organisation is directed and controlled and pays particular attention to organisational structure, management and policies” (Crawford and Helm 2009: 74).

According to Milward, Provan and Else (1999:3), governance can be described as;

“Being concerned with creating the conditions for ordered rules and collective action, often including agents in the private and non-profit sectors, as well as within the public sector”

Stoker (1998) maintained that governance is concerned with the creation of conditions for ordered rule and collective action. From these definitions, it can be observed that governance involved the process of organising and leading an entity towards the attainment of an established goal or objective.

Türke (2008), Kooiman (1993) and Stoker (1998) agree that governance requires a high level of interaction for it to be successful. Stoker cited several forms of partnerships available in a governance dyad, from extant literature: principal-agent relations (Broadbent et al 1996); inter-organisational negotiation (Jessop 1996) and systemic-coordination, wherein a great degree of mutual understanding is established, along with an embeddedness which enables organisations develop vision and joint-working capacity, leading to the establishment of a self-governing network. It results in designed, intentionally chosen and adopted governance

orders or structures. Kooiman (1993) observed that the governance concept is one that is predicated upon an interaction process between social and political actors.

Türke (2008) adopted a systems view of the concept of governance. In this systems view, he identified a structure-oriented view and an actor-oriented view as two disparate governance modes applicable to social systems. Whereas the structure-oriented view involves the belief that social systems are self-governing and independent objects which govern themselves through circular, self-referential processes which highlight their identity, the actor-oriented view comprises of social systems composed not only of communications but also of actors as empirical subunits.

According to Türke (2008), a synthetic view of governance should embrace the central proposition that; interactions can be adequately used as key analytic elements of social systems which seek to unite the relevant aspects that define and form relationships between actors. Social systems evolve from these interactions among actors. A perfect understanding of the concept of governance in social systems can then be found in the creation of a distinction between particular interactions and topics, whilst making explicit the conditions which allow for effective reconciliations between the actors and the structures.

This proposition treats governance as evolving from these basic interactions of actors within a structured setting and that is exactly what this study seeks to do. The interactions which emanate from the inherent interrelationships between the multiple-actor settings within the infrastructure delivery organisational field would give rise to the development of a governance model for effective implementation of policy, as put forward by (Hill and Hupe, 2002).

3.7.2. Governing Organisations- Transaction Cost Approach or Institution Theory?

According to Walker and Wing (1999), the need to reduce transaction costs within organisations has led to the avalanche of organisational variety. This is done through the assignment of transaction costs to governance structures which differ from their organisational costs and competencies. The transaction cost analysis (TCE) approach seeks to advocate the adoption of a particular organisational structure over another in its bid to economize. Williamson (1979) described the TCE as an interdisciplinary pursuit which linked aspects of organisational theory to economic principles, overlapping as it were, with the laws of contracting. To carry out this process of determining which organisational structure should be adopted, Williamson (1998:86) opined that, the approach,

“applies this hypothesis to a wide range of phenomena-vertical integration, vertical market restrictions, labour organisation, corporate governance, finance, regulation, and deregulation, conglomerate organisation, technology transfer, and more generally, to any issue that can be posed directly or indirectly as a contracting problem”.

Williamson (1998) asserted that transaction cost economics is concerned primarily with the governance of the existent contractual relationship within an organisation, either inter-firm or intra-firm; maintaining that the transaction economics approach understands the incomplete nature of all complex contracts. Furthermore, he stressed that the most important function of the TCE involved the assessment of seeming bureaucratic failure in institutional terms, by assessing and comparing various hierarchical structures to ascertain the one that is incurring more costs than its peers (Williamson, 1998). Jin (2009) highlights the usefulness of the TCE the allocation of risks within partnerships, especially within the PPP project environment. Jooste and Scott (2012) argued that the TCE approach could be used in checkmating opportunistic behaviour within organisational fields such as the IDS.

Whereas the transaction cost approach has been employed in the studying of project based organisations for the sake of exploring ways of bringing about efficiency within an organisation and reducing transaction costs, several researchers have lamented its inability to consider sociological and psychological influences associated with human behaviour and how it affects governance (Mahalingam and Levitt, 2007, Scott et al., 2011a, Javernick-Will and Levitt, 2009, Levitt et al., 2009). Barley and Tolbert (1997) restated the need to move away from theories which were mainly concerned with efficiency savings, such as the TCE, towards the use of the institutional theory for understanding and governing organisations. Institutions are concerned with the inherent manner in which factors such as: rules; culture; ideas; and normative pressures, shape the existing structures and strategies of organisations (Scott, 2008). It bothers on how these factors spread within a given organisation and how they also fall into a state of disuse (Mahalingam and Levitt, 2007).

They are developed and maintained through continuous interaction between members of a given society. Institutional theory takes into consideration the impact of cultural influence on the decision making processes and the organisational structure. Ho et al. (2009) highlighted the essence of the structured manner in which the members of a given organisation are positioned, according to beliefs and norms, when viewed from an institutional perspective,

towards the attainment of the organisational goals and objectives. The decision of the researcher to premise the research upon the institutional theory and transaction cost economics perspective stems from the contributions made by Hill and Hupe (2002), wherein they observed that

“In economics, an institutional perspective developed that challenged the relatively context-free way in which classical economics analysed market relationships, pointing out the importance of seeing these exchanges within structures with their own rules and expected practices (Coarse 1937; Williamson 1975). But it was within sociology that a concern developed about the impact of institutions that is particularly pertinent for the study of implementation. In some respects institutional analysis is fundamental for the discipline of sociology, raising questions about the extent to which human actions are structurally determined. It is then given an emphasis that is particularly important for organisational activities and thus clearly important for the analysis of implementation”.

Furthermore, they maintained that the institutional theory remained more apposite for implementation based research as it not only took into consideration the economic perspective to institutional analysis as it concerns the implementation process, but also the sociological aspect of human behaviour and interactions. However, this researcher understands the need to allow for a mixture of diverse governance and organisational mechanisms, especially within environments replete with complex relationships (Olsen et al., 2005b) and therefore decided to adopt a mixture of both theoretical lenses in viewing the IDS.

3.7.3. Project Level Governance

Given the concentration of this study on studying the interrelationships which exist in the policy implementation curve as mirrored through a project level perspective, it becomes apposite that the forms of governance which exist at that level be highlighted and reviewed.

According to Olsen et al. (2005b), procurements of infrastructure in the oil and gas industry can be divided into four distinct stages: engineering, fabrication, installation, and commissioning. The complex and intertwined nature of these processes makes the use of a governance mechanism imperative. They posited that the development of such governance or contract mechanisms posed a key managerial challenge to the entire delivery process.

Whereas there is a prevalence of contractual forms used in the oil and gas industries globally, three most prevalent contract forms remain which are; the individual contract; the Engineering, Procurement, Construction and Installation (EPCI) contract; and the project alliance (Olsen et al., 2005b). The key difference in these three forms of contract lies in the role which the client/operator plays in the delivery process. Whereas, in the individual and the EPCI forms, the operator plays the part of a client, he remains a partner in an arrangement wherein there are several contractors within such arrangement, with mutual sharing of risks, rewards and resources under the project alliance mode.

Furthermore, Olsen et al. (2005) described three theoretical forms of contracts: market contracts; internal contracts; and relational contracts. Whereas market contracts are usually characterised by short time horizons, discrete relations and complete information thus leading to a proper and vivid description of the contingencies, internal contracts are concerned with the existence of some sort of hierarchical control and governance and are characterised by the inclusion of systems for decision-making control, routines and procedures. On the other hand, relational contracts refer to those norms of obligation and cooperation for coordinating exchanges, wherein the actors are expected to follow certain patterns of behaviour embodied in a set of shared norms and values. These norms involve: solidarity; reciprocity, and flexibility.

This study shall attempt to investigate the influence which these forms of contracts and their theoretical underpinnings have on the implementation/delivery process of policy/infrastructure. This would be particularly helpful as it views the type of relationships which occur on infrastructure projects and the impact of the governance style on these relationships. Furthermore, Esteves et al. (2011) posited after their investigation into local procurement strategies, that the type of contract actually had an impact on the degree of socio-economic benefits delivered during the procurement activities which they studied.

3.8. Stakeholder Management

3.8.1. Who is a stakeholder?

The origin of the term 'stakeholder' has been subject to divergent views, as there is no unanimously held perspective regarding its origin in management and organisational spheres. For instance Clarkson (1995) acknowledged the disparity between Freeman's (1984) and Preston's (1990) account of the evolution of the term '*stakeholders*'. Whereas the former observed that the term was first used by SRI international in 1963, the latter traced its origin

to the period of the Great Depression when General Electric used the term ‘stakeholders’ to describe its shareholders, employees and customers.

Freeman (1984:46), in his seminal book entitled ‘Strategic Management; A Stakeholder Approach’ describes the term ‘*stakeholder*’ as

“Any group or individual who can affect or is affected by the achievement of the organisation’s objectives”

However in a more recent study, he adjusted this position and stated that anyone who was capable of affecting the survival or the success of any given organisation was qualified to be classified as a stakeholder (Freeman, 2004). The term ‘stakeholder’ has been used to describe all persons or groups who lay claim to a certain degree of ownership or rights or interests in a particular organisation and the inherent activities of that organisation, either in the past, the present or the future (Clarkson, 1995). The PMBOK Guide (PMI, 2008) defined stakeholders as those persons or organisations (customers, sponsors, the performing organisation, or the public) who are actively involved in the project or whose interests may be positively or negatively affected by the performance of or completion of the project. Walker et al., (2008) define a stakeholder as

“individuals or groups who have an interest or some aspect of rights or ownership in the project , and can contribute to, or be impacted by either the work or the outcomes of the project” (23).

3.8.2. Stakeholders – a Classification

Whereas Freeman (1984) and Mitchell et al. (1997) identified the existence of two classes of stakeholders: primary and secondary stakeholders respectively, Cleland (1998), Olander (2007), and PMI (2008) agreed with the classification of stakeholders into two distinct groupings: internal and external stakeholders respectively.

The primary stakeholders (usually consisting of shareholders; investors; employees; customers; and suppliers) are those stakeholders whose activities constitute the lifeline of the organisation and without which the organisation would cease to exist (Clarkson, 1995). The secondary stakeholders are those stakeholders whose activities affect or are affected by the operations of the organisation, even though they are not actively engaged in any direct transaction with the organisation, thus not affecting the organisation’s survival. This group of stakeholders, whilst not having a direct effect on the survival ability of the organisation, can

actually affect the organisation's image negatively or positively. Walker et al., (2008) identified four stakeholder groups namely: upstream stakeholders (a paying customer or end user), down- stream stakeholders (the supply chain); external stakeholders (the host community), independent minded persons who feel that the project will eventually affect them in one way or another. Furthermore, Karlsen (2002) maintained that the following could be categorized as stakeholders within a construction project environment: clients, contractors, labour unions, non-governmental organisations, end users, controlling organisations, public authorities, financial institutions, media, and third parties among others.

3.8.3. Significance of Effective Stakeholders' Management to IDS success

Meredith and Mantel (2000) highlighted the importance of stakeholders to successful implementation. They observed that many project managers ended up delivering objectives which are outside the scope of stakeholder demands, thus resulting in implementation failure. Poor communication, assignment of inadequate resources to the execution of the project, incessant changes in project scope, unfavourable media attention, and negative community reactions to the project have been identified as the problems caused by project stakeholders which directly increases the degree of uncertainty on projects (Karlsen, 2002). Regrettably, despite the established influence of stakeholders on project outcomes, Karlsen (2002) lamented the fact that reactions by management teams to these influences have been typified by causal or reactive actions. The absence of any clearly defined strategies for confronting the impact of these influences has led to the development of the stakeholder management theory/concept. Under the concept of stakeholder management, different stakeholder management methods and approaches have evolved.

Project managers should set about their projects by identifying these stakeholders and determining the degree of influence which they wield, either collectively or individually. The stakeholder management process commences with the process of identifying the stakeholders and understanding the kind of influence which these stakeholders wield upon the project organisation, and then designing a means of effectively managing these influences for the attainment of the project's objectives. PMI (2008) highlighted the continuous nature of the stakeholder identification process within a particular project environment and attempted to distinguish between the internal and external stakeholders. Stakeholders exert a tremendous impact on the project organisation. According to Brenner and Cochran (1991) as cited in Rowley (1997), the choice of an organisation's management is dependent upon the influence of stakeholders on that organisation. Mitchell et al. (1997) buttressed the essential nature of

stakeholder management within a contemporary management environment, whilst Olander (2007) agreed that the effective management of stakeholder interests in a given project posed a daunting challenge for most project management teams and continually remains crucial for the attainment of project success. The daunting nature of this task lies in the existence of divergent expectations arising from diverse stakeholders. Rowley (1997) stated that whereas the identification of stakeholders and their influence on organisational performance is at the centre of the stakeholder management theory, there is a need for the development of theory to look into the manner in which the organisations respond to these influences.

Based on the attributes of stakeholders and the subsequent need for effective identification according to these attributes, Mitchell et al., (1997) developed a stakeholder typology based on the degree of power, legitimacy and urgency which they exhibit. This led to the classification of stakeholders into the three classes: latent, expectant and definitive stakeholders respectively. The latent category is used to classify stakeholder groups that possess only one of the attributes. This category includes: dormant stakeholders - this cadre of stakeholder only possesses power (It is acknowledged that whereas they possess enough power to influence the organisation's performance, the lack of legitimacy and urgency renders their claim to power useless.); discretionary stakeholders - these are those stakeholders who are in possession of the legitimacy attribute whilst lacking any claims to urgency and power to exert any influence on the organisation; and the demanding stakeholders - included in this class are the stakeholder groups only gifted with the attribute of the urgency, whilst lacking the other attributes of power and legitimacy. On the other side of the classification divide, lies the expectant stakeholders.

Within this realm lies those groups of stakeholders who possess a combination of two out of the three attributes already ascribed to stakeholder groups. They include: dominant stakeholders - comprised of stakeholders who possess a combination of legitimacy and power; dependent stakeholders - these stakeholders lack the power but are imbued with the attributes of both the urgency and legitimacy; and the dangerous stakeholders - these stakeholders are regarded as being dangerous due to their ability to exercise the urgency and power attributes coercively or rather illegitimately, as the legitimacy attribute is lacking, in exerting their influence upon the organisation. The third cadre of this classification is the definitive stakeholder group, comprised of those stakeholders who possess all the attributes as identified by Mitchell et al., (1997).

The class of stakeholders who are accorded adequate consideration by the manager within a given project environment are those who are in possession of a combination of the three attributes. However, the inherent dynamics and attendant migration of the stakeholders from one class to another during the project lifecycle has also been highlighted, thus making it imperative for the management of any organisation to continually monitor the dynamics of stakeholder migration at all times (Walker et al., 2008, Atkin and Skitmore, 2008, Mitchell et al., 1997, Olander, 2007).

In the realm of a local content development centred IDS such as the one being studied in this research, the following stakeholders have been identified: national and local governments; national oil companies; communities; NGOs and community-based organisations; internal organisations; other oil and gas companies; lead contractors; business membership organisations and chambers of commerce; and financial institutions (IPIECA, 2011). However, it is pertinent to note that this list of stakeholders remains context dependent and could vary depending on the existence of several variables such as location, legislation and the type of procurement system, among others. Therefore a proper identification of the stakeholders within the IDS would enhance the chances of successful implementation.

3.9. Critical Success/Failure (Pathologies) Factors

3.9.1. CSFs- A definition

There appears to be differing opinions as to the origin of the concept of Critical Success Factors (CSFs) in management literature. Whereas Leidecker and Bruno (1984) attributed the origin of the concept to Daniel in 1960, and its wider exposition by the works of Anthony, Dearden, and Vancil (1972) and Anthony and Dearden (1976) on management control systems, Zhou et al. (2011) traced the origin of the concept to the work of Rockart (1979).

Rockart (1979) applied it in defining the information needs of a CEO and General Manager. Furthermore, he defined CSFs as

“...the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation”.

In appreciation of the context-dependent nature of CSFs, Leidecker and Bruno (1984) defined them from their own perspective as

“...those characteristics, conditions, or variables that when properly sustained, maintained, or managed can have a significant impact on the success of a firm competing in a particular environment” (24).

Adopting Leidecker and Bruno (1984)'s definition for this research, it would be apt to view CSFs within the context of this research as those factors which need to be in place and consistently nurtured throughout the implementation phase within the delivery system, to ensure the attainment and sustenance of viability. Given these definitions, the pivotal nature of these CSFs cannot be undermined within the IDS. Their early identification by the multiple parties involved would usually enhance the organisation's chances of success. Seemingly, there is no widely accepted manner for identifying CSFs in organisations (Leidecker and Bruno, 1984). Citing Hofer and Schendel as having argued about the obvious nature of CSFs, thus providing for their easy identification through sensitivity and elasticity analysis, Leidecker and Bruno (1984) adopt a different position. They declared that the process of identifying these CSFs was context-dependent.

Freund (1988) observed that it was most apt and rewarding for organisations if these CSFs were identified in a top-bottom manner, ranging from the strategic management level to the operational level. He argued that such an arrangement allows for consistency within the entire strata of the organisation as it concerns its common goals/objectives. Zhou et al. (2011) maintained that organisations stood a better chance of identifying these CSFs if it was done at all levels of the organisation and not just at the top as most organisations are wont to do. Pinto and Prescott (1988) bemoaned the use of a regular set of CSFs across the several phases of a project implementation exercise. They stated that the use of a static and regular set of CSFs across a project's lifecycle was erroneous and would not assist managers in achieving the success criteria set by most clients. It is believed that allowing for the identification of CSFs at different levels of the delivery system would allow for the much desired dynamism, as advocated by Pinto and Prescott (1988).

Within the IDS in this research, the CSFs for attaining viability within systems as espoused in the literature by various systems thinking scholars, was adopted and validated by the representatives of the various organisations within the delivery system. Table 3.6 below highlights these CSFs, as obtained through a viability perspective.

Table 3.6 Critical Success Factors for Viability

Author (s)	Key determinants of Organisational/System Viability (CSFs)
Espejo and Reyes (2011); Ríos (2012); Schwaninger (2006); Türke (2008); Brocklesby and Cumming (1996); Polese et al (2009); Nechansky (2010); Leonard (2000); Jackson (1988); Hoverstadt (2011); Golinelli et al (2011); Espejo and Gill (1997); Devine (2005); Davies (2007); Achterbergh et al., (2003) Beer (1984); and Hoverstadt and Bowling (2005).	a) Presence of structural recursion; b) Presence of the five management functions within the organisation, usually described as Systems 1-5; c) A common identity (The purpose of the system); d) Communication between parties; e) Cohesion (alignment of individual and collective interests)/Collaboration; f) Adaptation and flexibility; g) Balanced contributions from component systems.

Compiled by Author (2014)

Going by the CSFs identified by the various authors above, there appears to be a consensus on the salient CSFs necessary for the attainment and sustenance of viability within organisations, both temporary and conventional organisations alike. In furtherance to this discovery, this study will rely upon these CSFs in evaluating the interorganisational relationships which exist within the IDS for viability.

To ascertain the viability of the IDS, an identification of the several stakeholders to such a delivery system is carried out to determine their designated functions. From a systemic perspective, the functions of these stakeholder organisations are mapped against the five management functions required for viability. This establishes a structure of relationships

between these organisations. Subsequently, the interorganisational relationships between these stakeholder organisations within the System-In-Focus (SIF) is then evaluated to establish viability or to identify the failure factors (pathologies) limiting the attainment of viability within such systems. This evaluation is concerned with the manner in which the various organisations execute their tasks to attain the overall systemic objective albeit from cybernetic principles of communication, control and collaboration.

3.9.2. CSFs-a Review of Similar Literature

CSFs are context-dependent. Several studies have sought to identify the various CSFs that are needed to ensure the successes of different projects. Zhang (2005) in his study on CSFs in PPP driven infrastructure projects, having cited several studies on the CSFs required for winning PPP contracts, proceeded to identify CSFs for PPP infrastructure projects. The identified CSFs included: a favourable investment environment; economic viability; a reliable concessionaire consortium with strong technical strength; a sound financial package; and appropriate risk allocation via reliable contractual arrangements. On their part, Yang et al. (2009) identified CSFs necessary for managing project stakeholders for optimum project performance from extant literature and ranked them according to their significance.

Whereas Vaidya et al. (2006) identified the CSFs which might influence the success of e-procurement policy implementation in the public sector, and Babatunde et al. (2012) explored the CSFs for the use of PPP in delivering infrastructure in Nigeria, there seems to be no other study which has attempted to identify CSFs as it concerns the implementation of government public policies through public procurement systems in developing countries, particularly within the oil and gas sector.

3.9.3. Failure (Pathologies) Factors- a Definition

Within the realm of systems cybernetics and the subsequent application of the VSM in the conduct of organisational diagnosis, the barriers to organisational effectiveness have been identified and classified under several connotations. Whereas Beer and some of his co-travellers have identified drivers as attenuators, amplifiers among others (Beer, 1979, Brocklesby and Cummings, 1996, Britton and Parker, 1993), Ríos (2012) classified the barriers as '*pathologies*'. The term '*pathology*' according to Ríos (2012), was drawn from its medical usage. He argued that in the field of medicine, diagnosing pathologies was central to the sort of prescriptions rendered for treating a specific ailment. This researcher agrees with the classification, essentially from its medical perspective and its application to organisational

diagnosis, and applied it to this study. These pathologies are classified into three different cadres: structural; functional; and information systems and communication channel pathologies (Ríos, 2012). A brief definition of these pathologies follows below.

- **Structural Pathologies:** These are those pathologies that arise from the inability of the organisation to effectively combat the attendant complexity, due to some deformity in its structural design and its relationship with its external environment. Several instances of this pathology as identified by Ríos (2012) include: non-existence of vertical unfolding; lack of recursion levels; and entangled vertical unfolding with various interrelated levels membership.
- **Functional Pathologies:** These pathologies are concerned with the total workings of the organisation and arise particularly with essential components (systems) considered imperative for organisations to attain and maintain viability. Pathologies under this grouping include: ill-defined identity; institutional schizophrenia; a non-existent meta-system; inadequate representation through higher levels; dissociation between system 4 and system 3; the ‘headless chicken’ scenario; an inadequate management style; a schizophrenic system 3; weak connections between system 3 and system 1; the hypertrophy of system 3; lack of insufficient development of system 3*; disjointed behaviour within system 1; authoritarian system 2; autopoietic “Beasts”; the dominance of system 1 resulting in a weak meta-system; and the lack of a meta-system. Ríos (2012) maintained that these pathologies affect different systems within the larger system, with the exception of the last two which affect the entire organisation.
- **Communication Channel-Oriented Pathologies:** This group of pathologies arise from the organisational design constraints which impede the free flow of information or enhanced communication among the various stakeholders within an organisation (Ríos, 2012). He identified the various pathologies which belong to this group as comprising of: lack of information systems; fragmentation of information systems; lack of key communication channels; lack of insufficient algedonic channels; and incomplete or inadequate communication channels.

These pathologies are defined as they arise and affect the development and sustenance of viable infrastructure delivery systems as platforms for implementing socio-economic policies in Nigeria and the United Kingdom.

3.10. Conceptual Model- A Viable Infrastructure Delivery Systems Model (VIDM)

Schwaninger (2006b) stated that the VSM provides a formal apparatus for dealing with complex systems of all kinds, and is therefore being adopted increasingly in many fields of inquiry. It has also grown to become recognised as a new language that allows synergetic interaction between different disciplines, thus increasing the possibility of innovative, trans-disciplinary solutions to complex issues. He described organisational cybernetics as the application of the science of control and communication in complex systems.

He observed that the propositions behind the VSM can be summarized as follows: an enterprise is viable if and only if it disposes of a set of management functions with a specific set of interrelationships, identified and formalized in the model. Although several approaches have been applied in an attempt to understand complexity in projects, they have failed to yield any results as they have only led to optimization in one single dimension, leaving the complex organisational issue unsolved (Schwaninger, 2001b, Bertelsen, 2003). In lending his support to the VSM, Schwaninger (2001:212) declared that

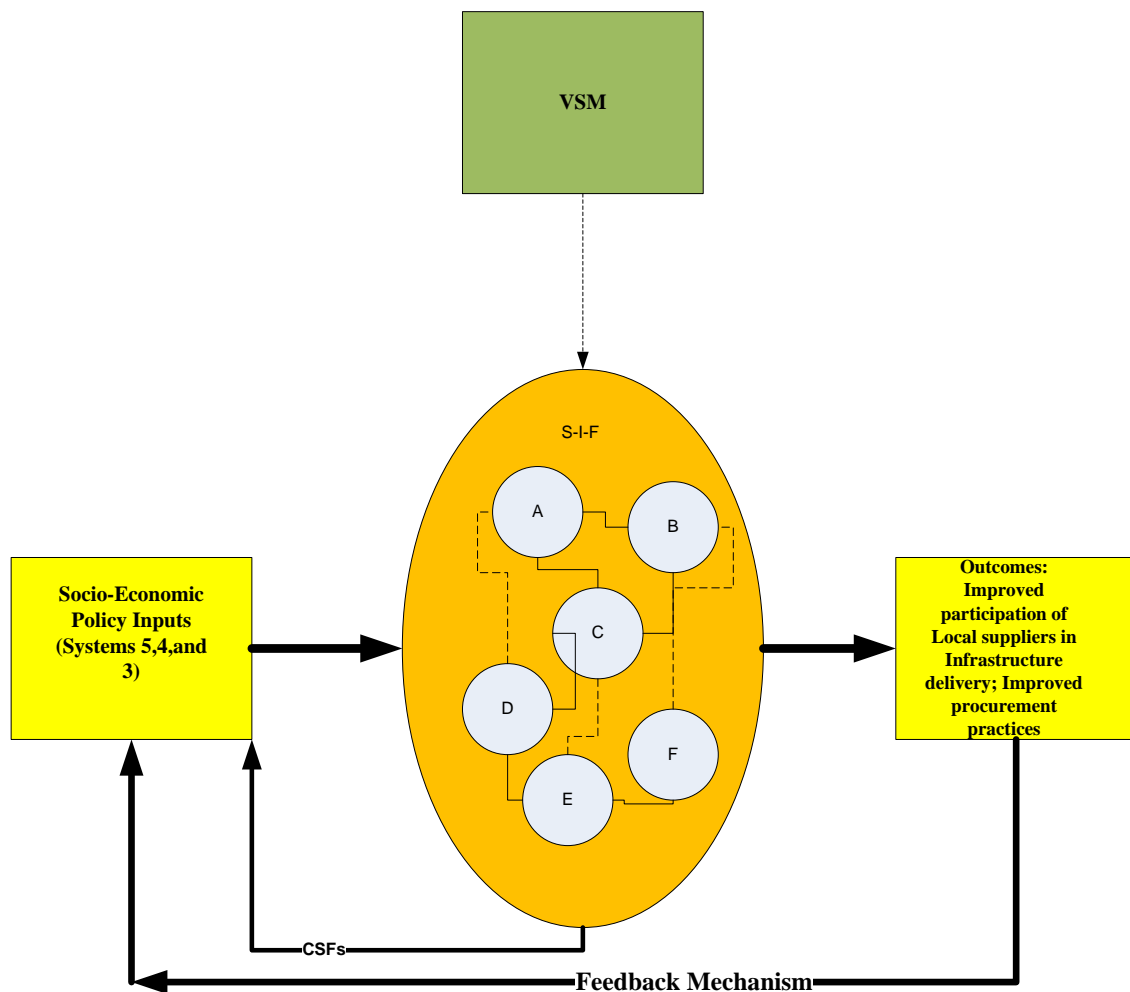
“...the result of an organisational process cannot be better than the model on which the management of that process is based, except by chance”.

Furthermore, he added that systems and complexity models can offer more promising avenues from which organisational leaders can appreciate and address complex organisational dilemmas. The VSM models the organisation as a set of interrelationships and allows for the application of several modes of management and governance approaches. It recognises the delivery process as a social system, constructed by the participants as proposed by Van Marrewijk et al. (2008).

Any attempt to conceptualize and evaluate the various interorganisational interactions which occur within implementation would be a very arduous task, given the observation of Proctor et al. (2011), who states that such feats remained unresolved within the body of implementation research and associated literature. They traced this difficulty to the inability of the clients and targets of such policies to distinguish between implementation outcomes, service outcomes and client outcomes. However, it is hoped that the use of a VSM enabled model would be able to successfully accomplish this, particularly within the realm of policy implementation in developing countries, where ideal and lofty policies have mostly failed to deliver the needed benefits to the target populace (Dessy, 2007).

The use of the VSM to develop a conceptual model for understanding the IDS is premised on the aforementioned capabilities and provenance of the VSM, in the provision of an enhanced platform for a holistic comprehension of organisations. Marshall and Rossman (1999) reiterated that conceptual models were imperative in the conduct of a research study. Bernard and Ryan (2010) stated that such models could be classified into: statistical models; actor interaction models; process models; decision models; and transition models. In this study, the VSM serves as an actor interaction model, as it provides the framework for understanding the interactions between several implementation stakeholders (actors) within the IDS. Bernard and Ryan (2010) added that these actors could range from countries and organisations through to individuals, depending on whether the study was economically inclined or socially inclined.

Figure 3-2 below depicts the conceptual model for this study- the VIDM.



SiF= System-in-Focus

Dotted Lines= Interorganisational interactions

A-F =The various organisations within the S-i-F

Figure 3.2 Conceptual Model

Source: Author (2014)

Through this conceptual model, the socio-economic policy implementation process as represented through the IDS is likened to an organisation. The organisation responsible for policy formulation is situated at System 5, whereas the organisations responsible for the implementation and planning of policy implementation dwell at System 4. The client, organisation or project sponsor situated at System 3 is responsible for the execution of the coordination (System 2) function over the implementation environment (System 1). Given its

nature as a non-open system of the enabling VSM, the implementation level (System 1) interacts constantly with the present external environment, whereas the intelligence level (System 4) interacts with the future environment. In the VIDM, the monitoring function (System 3*) is a function which is executed by the Metasystem; a group which consists of Systems 5, 4, and 3 respectively. In the conceptual model, the VIDM is expected to be used to conceptualise the relationships between the various organisations within the process box of the normal systems diagram. Furthermore, it is expected that such a conceptualisation would avail the researcher the opportunity to evaluate such interorganisational relationships for viability using the CSFs identified earlier, in Table 3.6. Whereas the policy input section of the model represents the Metasystem, the process section represents the implementation system, otherwise referred to as the System-in-Focus (SiF). It connotes the project delivery environment where the impact of the interorganisational interactions leading to the delivery of the infrastructure and /or socio-economic policies is expected to be felt. This relationship does not form part of the IDS as described within the context of this study, as the study is only concerned with the interactions between primary stakeholders involved directly with the delivery of the asset or policy objective, as the case might be.

3.11. Chapter Summary and Link

In this chapter, the theoretical lenses through which the phenomena under investigation will be conducted, was developed. These lenses ranged from systems thinking to cybernetics, from temporary multi-organisations to governance theories, from various theoretical approaches to organisational management and governance, such as the Transaction Cost Economics approach, institutional approaches and stakeholder theory, to the Critical Success/Failure (Pathologies) factors.

During this process, adequate justification was made for the adoption of the systems cybernetic principle of system (organisational) viability as the cardinal principle for evaluating the gaps identified in the literature reviewed in the previous chapter. Considering that in that chapter, there was a noticeable ascendance in the advocacy for future studies into implementation studies, not only to consider implementation as an interorganisational and multi-layered process, but to also ensure that these features are taken into consideration when carrying out such studies. Unarguably, these features can only be taken into consideration through the adoption of a systemic and holistic approach to the implementation process, hence the route taken by this particular study.

Having reviewed these theoretical lenses and their relationship within the realm of policy implementation through the IDS, the study proceeded to develop a conceptual model to depict these relationships. This conceptual model was named the VIDM.

In the subsequent chapter, research methodology to be adopted in the conduct of the study and attainment of the study's aim will be discussed. The highlights of this discourse will be the place of the VIDM in the accomplishment of the study's aim (as a 'tool' and a 'product') and how as such, it impacts on the methods employed during the course of the data collection and analysis.

CHAPTER 4. JUSTIFICATION OF RESEARCH METHODOLOGY

4.1. Chapter Introduction

The purpose of this chapter is to describe the study's underlying philosophical paradigms and research strategy. The chapter will also provide an insight into the techniques utilised in both the collection and analysis of data. Furthermore, it will provide an in-depth justification of the research methodological framework adopted by the researcher for this research.

Having situated this study within the realm of interpretivist and/or social constructivism, a multiple case study research strategy was considered most appropriate. The study relies on a mixture of face-to-face interviews, document analysis and online discussion forums in the collection of data, hence allowing for the use of qualitative content analysis.

The data collection and analysis phases of the study spanned a period of one year and eight months, commencing in August, 2012 and ending in April, 2014. The field work was carried out across several project office locations in Nigeria and in the United Kingdom.

For the sake of engendering clarity, this chapter is structured along seven distinct yet interrelated sections, namely:

- Review of the study's initial steps
- Review of the concept of research methodology
- Highlight of the study's methodological framework
- The concept of the VIDM as a 'Tool' and a 'Product'
- Credibility and Trustworthiness issues
- Constraints and Limitations
- Chapter Summary

It is expected that at the end of the chapter, the methodology applied in the collection of data and its subsequent analysis and the rationale for the adoption of such a methodology will have been presented clearly.

4.2. Review of the Study's Initial Steps

Gray (2009) and Saunders et al. (2012) agree that most research activities often evolve from the researcher's experiential knowledge or from an extensive review of literature on a particular area of interest. The researcher's experiential knowledge can be driven by personal experiences or observations about a particular phenomenon within the context of the society to which he belongs and/or from work-place oriented interactions.

In arriving at the decision to undertake this particular study, the researcher was motivated by a mixture of the two reasons adduced previously by Gray (2009) and Saunders et al. (2012).

As a Nigerian, concerned about the high incidence of poverty in the country and the seeming inability of the government's extant policies to halt this, the conduct of an analysis of some of the implementation of these policies comes across naturally as necessary. The drive to assess the contemporary implementation process is buoyed by the increasing global advocacy for the utilisation of procurement to drive the attainment of social economic benefits for the local economy in many areas of the world, in recent times (Watermeyer, 2003, Wells and Hawkins, 2008, Thai, 2001, Snieska and Simkunaite, 2009, McCrudden, 2004, Macfarlane and Cook, 2002, Arrowsmith, 1995, Binks, 2006) and the high proportion of government expenditure which is channelled towards the procurement of goods and services.

Although the Nigerian government has initiated several socio-economic policies in the distant and not so distant past (NPC, 2004, NPC, 2010, MPR, 2010), the current state of poverty and unemployment in the country has been on the ascendancy in recent times, despite the promulgation of various policies meant to engender job-driven economic growth (ADB, 2013). One such policy is the Nigerian Oil and Gas Industry Content Development Act (NOGCID, Act 2010) which this researcher has decided to use as an exemplar in this study (See Chapter 2).

Upon a subsequent review of the plethora of research papers examining similar phenomena (the implementation of the NOGCID Act), the researcher discovered the prevalence of studies which made attempts to highlight the non-existence of linkages between the nation's oil and gas industry and other sectors of the economy such as; construction and construction output (Saka and Lowe, 2010a, Saka and Lowe, 2010b); Small and Medium scale Enterprises (Ihua, 2010); backward linkages with the Nigerian economy (Adewuyi and Oyejide, 2012); development of local technological know-how by indigenous oilfield servicing firms through innovative capabilities (Jegade et al., 2012, Ozighbo, 2008); the regulatory impact brought to

bear on the industry through content development by the Nigerian Oil and Gas Industry Content Development Act of 2010 (Atsegbua, 2012); and the issue of struggling local suppliers (Vaaland et al., 2012).

However, it would appear that these studies did not take into consideration the interorganisational and multi-layered nature of the implementation process (Section 2.24). It is this researcher's opinion that the provision of a platform which takes this into consideration would enable a more systemic assessment of the entire implementation process, hence allowing for the identification of the real reasons for the implementation deficit being experienced, if any at all; particularly as it affects procurement systems developed for the delivery of infrastructure in the nation's oil and gas industry.

Extant studies have held that the manner in which the procurement system was organised ensured the system's capability to deliver the client's main objective (Larson and Gobeli, 1989, Awuzie and McDermott, 2012). Similarly, researchers have also argued that success factors for projects should not be confined to the 'iron triangle' of time, cost, and quality but rather extended to other objectives, as the client might deem salubrious to his own interests (De Wit, 1988, Pinto and Slevin, 1988, Pinto and Mantel Jr, 1990, Shenhar et al., 2002). Hence, armed with these propositions, the researcher set out to enhance his understanding of the procurement system as presently organised within the realm of the oil and gas industry in Nigeria, and to ascertain the viability or otherwise of the system, especially as it concerned the delivery of the client's success criteria (the implementation of the NOGCID Act). Organisational viability, as applied in the context of this research, is used to connote the ability of a given system to maintain a separate existence within a given environment, notwithstanding the degree of adversity or comfort which the environment exerts on such a system (homeostasis) and to deliver what is expected of it (Espejo, 2007).

Subsequent sections will discuss the methodology adopted in the execution of this policy implementation analysis, along with the necessary justifications for the adopted methodology.

4.3. Research Methodology

Wilson (1990) describes the term 'methodology' as being merely representative of a particular set of guidelines which avails an analyst with the opportunity to devise ways of resolving a given problem. Research methodology, on the other hand, highlights the underpinning justifications for the utilisation of particular philosophies, strategies, methods and approaches within the realm of research (Miles and Huberman, 1994, Jankowicz, 2005,

Walker, 1997). Therefore, research methodology encompasses all the processes applied during the course of a research activity to achieve the aim and objectives of that particular study. Whereas the application of a given methodology may involve the use of one or more methods, it is pertinent to note that it does not equate to being a method. However, the choice of the appropriate methods or techniques to be applied is dependent upon the methodology in use (Wilson, 1990).

Admittedly, there are several conflicting taxonomies within research methodology literature for describing its different components, as various researchers have used different taxonomies to define and/or describe the same components. For instance, whereas Saunders et al. (2012) classifies deduction, induction and abduction as research approaches, Blaikie (2010) lists them as research strategies. Due to the need to maintain consistency during the course of this study, this research relies solely on the taxonomy utilized by Saunders et al. (2012), as contained in the methodological framework of the study, as highlighted in Figure 4.1.

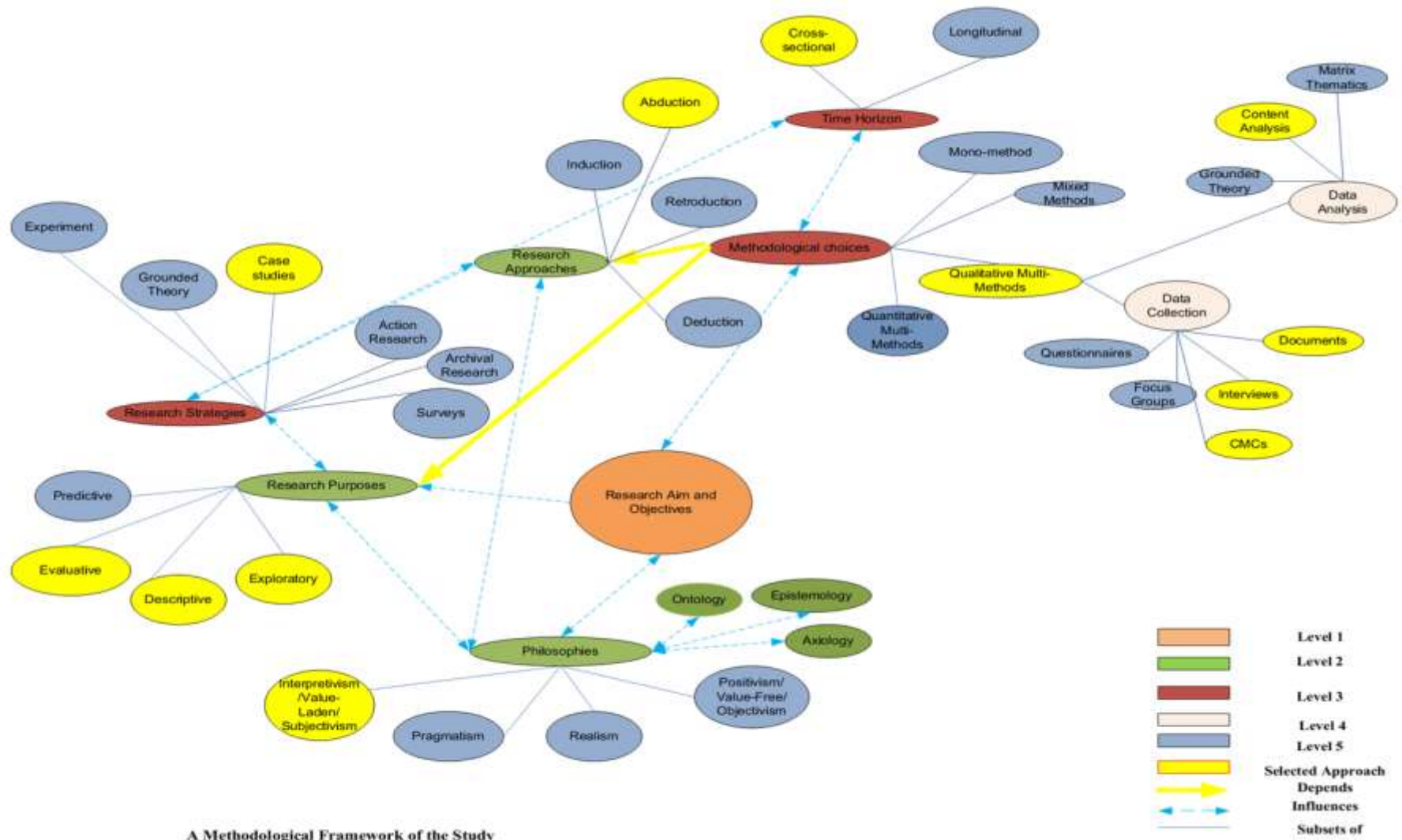


Figure 4.1 A Methodological Framework of the study

Figure 4.1 renders a concise illustration of the positioning of this particular study. Also, it highlights the relationships (dependencies and influences) existing between the various elements of the research methodology. It does this by presenting the elements of the research methodology such as the research aim and objectives, the research philosophies, purposes, approaches, and methodological choices according to levels 1-5 respectively. Whilst level 1 indicates the starting point of the research, the research's aim and objectives, level 2 on the other hand shows those elements of the research methodology which influence and are influenced by the research's aim and objectives. Various aspects of the methodology within level 3, particularly the methodological choices are dependent on the purpose and selected approach of the study, the level 2 elements. Elements adopted for this particular study are indicated by the yellow icons in the diagram.

In the subsequent sections, the rationale behind the selection of these elements in yellow are discussed. The aim and objectives of this study have been previously stated in Chapter 1. With the need to achieve the aim of the study, the application of an appropriate philosophical stance would prove invaluable; hence the need for the researcher to review available research philosophies to ascertain which one would be most suitable for the intended study.

4.4. Research Philosophy

Contemporary researchers should ordinarily possess the ability to reside within the confines of their philosophical preferences and also retain the capability to justify these philosophical preferences in the midst of other alternatives (Johnson and Clark, 2006). In selecting the appropriate philosophy, it is imperative that the researcher takes due cognisance of the influence of issues relating to epistemology, ontology and axiology on the attainment of his set research objective (Saunders et al., 2012, Bryman, 2012).

4.4.1. Ontological considerations

Bryman (2004) maintains that ontological issues are concerned with;

“questions on whether social entities can and should be considered objective entities that have a reality external to the social actors, or whether they can and should be considered social constructions that can be built up from the perceptions and actions of social actors.” (pp. 16).

Furthermore, he categorizes ontological considerations into: objectivism and subjectivism. Whereas objectivism is premised on the fact that;

“Social phenomena and their meanings have an existence that is independent of social actors”, (pp.16)

Subjectivism is premised upon the fact that social phenomena and their meanings are in a state of flux, being continually affected by the social actors.

4.4.2. Epistemological considerations

Saunders et al. (2012) define ‘*epistemology*’ as any knowledge that is considered as acceptable within a given field of study. In addition, Guba (1990) describes epistemology as comprising all processes through which the researcher has acquired knowledge about reality. Epistemology is categorised along three broad divides in most literature: positivism; interpretivism; and realism (Denscombe, 2007, Maxwell, 2005).

Interpretivism evolved from phenomenology, the study of how human beings make sense of the world around them, and symbolic interactionism (Bryman, 2004). Whilst portraying interpretivism as an epistemological leaning which sharply contrasts with the positivistic cadre, he observes that interpretivism evolved out of the perceived need for an approach that takes into cognizance the differences between people and natural science objects.

Positivism is concerned with credible data generated through direct observation of a given phenomenon (Saunders et al., 2012). Other features of positivism include: the centrality of the use of existing theory in the development of hypotheses; its affirmation of the researcher’s neutrality to the data collection process due to his externality to the process; and the value-free nature of the collected data as a result of the researcher’s non-interference in the collection process. Bryman (2012) states that this class of epistemology prides itself as adhering strictly to the following tenets: restriction of the application of the knowledge terminology only to phenomena that can be sensed (touched, felt, seen, tasted, and heard); utilisation of theory to generate a testable hypothesis, thus enabling the various explanations of laws to be studied; a distinction between scientific and normative statements; and the conduct of scientific research in such a way that it is value free and not value laden.

On the other hand, realism is concerned with the notion that there exists a reality which is quite independent of the mind (Saunders et al., 2012).

4.4.3. Axiological Considerations

Axiology is defined as the research paradigm that is concerned with the judgment of value, and can be divided into value-free and value-laden (Saunders et al., 2012). The choice of the

researcher's philosophical approach depicts the kind of value which he intends to bring to the research study.

4.4.4. Philosophical stance of the study

In selecting an appropriate research philosophy, effort should be made by the researcher to take a retrospective look at not only the research aim, but more importantly, his personal views on knowledge creation and the nature of reality (Bryman, 2012). The previous section provided an understanding of the various facets of the research philosophy element. In selecting an appropriate philosophical stance for this study, it is pertinent to understand that the study is deeply embedded in social interactions (interorganisational relationships and policy implementation) within a particular setting (IDS). Also, it is concerned with both the development of a model for evaluating these social interactions and the impact of such interactions on the success of the IDS from an organisational viability perspective. The study will be driven by the perceptions and experiences of all the parties to the IDS whose interactions are to be evaluated. Ultimately, such knowledge will enable an in-depth understanding of these interactions, hence allowing the researcher to compare their actual interactions with the actions stipulated with the governing regulations or directives, governing their interactions within the IDS. Also, over time this researcher has believed in the contribution of societal factors to his perception of reality and knowledge. For instance, he believes that his personal ethos as it concerns salient issues like religion and vices were greatly shaped by the environment within which he grew. Therefore, he can lay claim to being an interpretivist/ social constructivist, believing that knowledge and the nature of reality is context dependent and as such, will be created by the society, from an agglomeration of the individual perceptions of the members of a particular society. That said, it is pertinent to note that adopting such an approach will enable the researcher to discover any implementation deficits within the IDS, as well as the factors responsible for such deficits (pathologies). These considerations make the adoption of an interpretivist, subjectivist and value-laden approach, a natural route for this research.

4.5. Research Approach

The choice of a research approach is significant to the development of the best procedures for addressing a research problem and particularly for answering research questions formulated to deal with it (Blaikie, 2010). Bryman (2012) observes that research approaches are imperative for linking up theory with the research during the course of the research. Easterby-

Smith et al. (2008) adduce the following reasons as to why the choice of a research approach remains imperative in the conduct of research: the choice of the research approach allows the researcher to arrive at an informed decision about the structure of his methodological choice; it enhances the choice of the appropriate research approaches and strategies alongside with the methods required for conducting that particular endeavour; and it also allows the researcher to make provisions for constraints which might arise in the course of the research exercise. Whereas Saunders et al. (2012) mentioned three variants of research approaches: deduction, induction, and abduction, Blaikie (2010) adds retroduction to the list of research approaches.

Researchers are continually faced with the dilemma of choosing an appropriate approach for selecting the link between theory and research. In view of this apparent difficulty, Bryman (2012) identifies two salient factors guiding researchers in making such selections, namely; the question of what form of theory the researcher is referring to, and the purpose for which the data in question was to be used i.e. theory-testing or the development of a new theory. Table 4.1 below highlights the four approaches and their individual attributes.

Table 4.1 The Logic of Four Research Approaches

	Inductive	Deductive	Retroductive	Abductive
Aim	To establish universal generalisations to be used as pattern explanations.	To test theories, to eliminate false ones and corroborate the surviving theories.	To discover underlying mechanisms to explain observed regularities.	To describe and understand social life in terms of social actors' motives and understanding.
Start	Accumulate observations or data; Produce generalizations.	Identify a regularity to be explained; Construct a theory and deduce a hypothesis.	Document and model regularity; Construct a hypothetical model of a mechanism.	Discover everyday lay concepts, meaning and motives; Produce a technical account from lay accounts.
Finish	Use these laws as patterns to further explain observations.	Test the hypotheses by matching them with data.	Find the real mechanism by observation and /or experiment.	Develop a theory and test it iteratively.

Source: Blaikie (2007)

The deductive approach to linking theory to research is usually associated with the positivism school of research, while the inductive approach is associated with interpretivism. This is the case, especially in the face of the application of deductive approaches for theory testing and the inductive approach for theory development.

On the other hand, different notions exist about the meaning of the abduction approach. For Saunders et al. (2012), it is the mid-point between the inductive and deductive approaches and consists of a back and forth movement between the two predominant approaches, in the researcher's bid to link theory to the research. (Bryman, 2012) describes it as a mixture of the inductive and deductive approaches, a point that Dubois and Gadde (2002) disagree with. They state that it is an entirely different approach from a mixture of induction and deduction and as such, should not be described as such. Dubois and Gadde (2002) state that whereas the deductive approach can be described as a research pathway that is concerned with building up a hypothesis from an existing theory and testing it, the inductive approach as being concerned with the generation of theory from the collected data. The abductive approach is concerned with the discovery of new variables and other relationships through the utilisation of an existing theory. The existing theory in the case of the latter is not tested as is the case in deductive logic, but rather it is used to enable an understanding of the phenomenon being studied.

Similarly, Blaikie (2010) defines the abductive approach as the process through which the researcher gathers lay accounts of the phenomenon in question, understanding all the inherent gaps and deficiencies before proceeding, in an iterative manner, to develop his own account based on the understanding he has so obtained. He adds that the abductive approach proceeds from a lay account of how social actors describe their ways of life to technical, social scientific descriptions of that social life. This alternating process means that theory is generated as an intimate part of the research process; it is not invented at the beginning, nor is it just produced at the end, as is the case in the deductive and inductive reasoning approaches. Abductive approaches are usually associated with interpretivism (Blaikie, 2010).

4.5.1. Justifying the Adoption of the Abductive Approach

The selection of the abductive approach to this research is premised on its potential for theory generation in exploratory, descriptive and evaluative research; see Table 4.2. The abductive approach has proven to be capable of providing the researcher with a deep insight into the phenomena being studied (Blaikie, 2010). In this particular study, the researcher is interested

in exploring the concept of the IDS through a viable systems theoretical lens and achieving an in-depth understanding of the interorganisational interactions within the IDS. Furthermore, the ability of the abductive approach to allow for the application of an extant theory - the Viable Systems theory - as manifested through the VSM- in generating an understanding of the IDS. Also, its usefulness as it pertains to systematic combining as advocated by Dubois and Gadde (2002), renders it a worthwhile approach. According to Dubois and Gadde (2002, 2014), systematic combining involves those procedures which allow for the simultaneous evolution of theoretical frameworks, empirical fieldworks and case analyses, resulting in the development of new theories. Figure 4.2 below provides a diagrammatic illustration of the systematic combining framework.

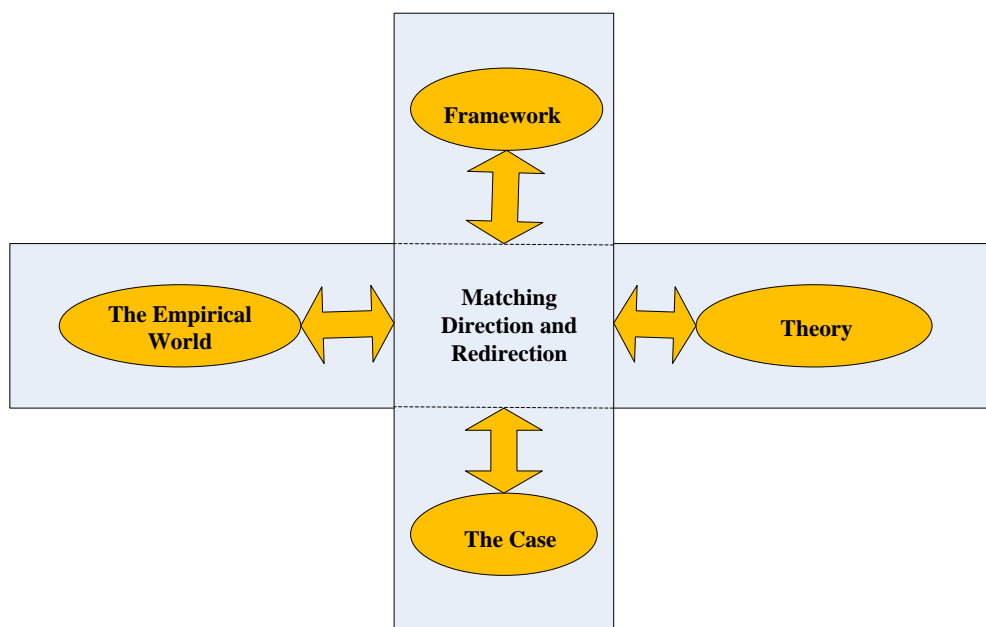


Figure 4.2 Systematic Combining Framework

Source: Dubois and Gadde (2002)

In this study, such concepts allowed for the combination of the viable systems theory, the theory of Temporary Multi-Organisations and implementation theory in the eventual conceptualisation, evaluation of the VIDM and the eventual development of a new theory.

This VIDM was then relied upon during data analysis to aid an understanding of the interorganisational relationships existing within each IDS from the prism of the VIDM. This resulted in the use of the lay accounts of the various stakeholders as it pertained to their interactions with representatives of the other organisations in developing individual VIDMs

for each IDS, identifying as it were, various pathologies and CSFs which occurred within these respective VIDMs. This process was purely iterative in nature necessitating a forward and backward movement between the various facets as shown in Figure 4.2. This is the basis of systematic combining as espoused by Dubois and Gadde (2002, 2014). See the section 4.8.4 for further clarification.

4.6. Research Purpose

According to Blaikie (2010), research purposes are concerned with the type of knowledge sought after by the researcher whilst taking a decision to embark on a research activity. He admits that although several purposes exist, it is not uncommon to find a particular research activity, wherein the researcher has set of purposes instead of one purpose. Often, this occurrence is dependent on the degree of complexity involved.

In Table 4.2 below, Blaikie (2010) explores the relationships between the variety of research approaches and the type of research purposes.

Table 4.2 Research approaches and the contexts where they are used

Various research approaches and the contexts in which they are of apt application						
Purpose	Inductive	Deductive	Retroductive	Abductive	Types	of research question
Exploratory	3			3	What	
Descriptive	3			3	What	
Explanatory	1	3	3		Why	
Predictive	2	3			What	
Understanding				3	Why	
Change		1	2	2	How	
Evaluative	2	2	2	2	What and why	
Assess impacts	2	2	2	2	What and why	

*3=major activity; 2=moderate activity; 1=minor activity.

Source: (Blaikie, 2010)

4.6.1. Purpose of this Study

Following on from the aim and objectives of this study, it becomes easy to decipher the purpose of this study. Besides the development of the VIDM, it is expected that this study will be able describe the interactions between organisations within the IDS, thus enabling a more in-depth understanding of these interactions (phenomena). In turn, such understanding accords the researcher the opportunity to explore these relationships from a policy implementation perspective and to evaluate the influence of the relationships on the implementation process (IDS). Therefore, it can be inferred that the purpose of this study is situated within the boundaries of **descriptive, understanding phenomena, exploratory, and evaluative regimes**.

From Table 4.2 above, it would appear that the abductive approach is suitable for the conduct of studies with purposes centred upon exploratory, descriptive, understanding a certain phenomenon, change, evaluative and impact assessment based research, such as this particular study.

4.7. Research Strategy

Saunders et al. (2012) describes research strategy as the strategy which the researcher intends to apply in providing answers to the research questions. The research philosophy adopted for any particular piece of research affects the type of strategy chosen by the prospective researcher (See Figure 4.1). Although these strategies include; survey, experiment, case study, mixed methods research, action research, grounded theory, ethnography, narrative inquiry, and archival research, Table 4.3 below attempts to differentiate between the predominant ones; namely; experiments, case studies and surveys.

Table 4.3 Difference between Experiment, Case Study and Survey Strategies

Experiment	Case Study	Survey
Investigation of a relatively small number of cases	Investigation of a relatively small number of cases.	Investigation of a relatively large number of cases.
Information gathered and analysed about a small number of features of each case	Information gathered and analysed about a large number of features of each case.	Information gathered and analysed about a small number of features of each case.
Study of cases created in such a way as to control the important variables	Study of naturally occurring cases; or, in ‘action research’ form, study of cases created by the action of the researcher but where the primary concern is not controlling the variables to measure their effect.	Study of a sample of naturally occurring cases; selected in such a way as to maximize the samples’ representativeness in relation to some larger population.
Quantification of data is a priority	Quantification of data is not a priority. Indeed, qualitative data may be treated as superior.	Quantification of data is a priority.
The aim is either theoretical inference- the development and testing of theory- or the practical evaluation of an intervention	The main concern may be with understanding the case study in itself, with no interest in the theoretical inference or analytical generalization. Alternatively, the wider relevance of the findings may be conceptualized in terms of the provision of the vicarious experience as a basis for naturalistic generalization or transferability.	The main aim of this research strategy lies in empirical generalization, from a sample to a finite population, though this is sometimes seen as a platform for theoretical inference.
This strategy focuses on contemporary events	This also focuses on contemporary events.	Surveys focus both contemporary and non-contemporary events alike.
Experiments are usually used when answering the ‘why’ and ‘how’ questions	Case studies are also concerned with providing answers to ‘why’ and ‘how’ questions in any given investigation.	Surveys on the other hand are used in providing answers to the questions commencing with: Who, What, Where, How many, and How much?

(Yin, 2009, Saunders et al., 2012, Amaratunga and Baldry, 2001, Denscombe, 2007, Dubois and Gadde, 2002)

4.7.1. Case Study as a Research Strategy of Choice

The decision to adopt the case study strategy in this study is premised upon the evidences drawn from Table 4.3 above, based on its strengths and limitations when compared to the experiment and the survey strategies respectively. Also, there appears to be a widely held consensus between various researchers on the suitability of the case study research strategy for studies that are concerned with generating an in-depth understanding of particular phenomena (Yin, 2009, Saunders et al., 2012, Amaratunga and Baldry, 2001, Denscombe, 2007, Dubois and Gadde, 2002). Seemingly drawing a relationship between the adopted strategy and the approach selected, Blaikie (2010) observes that the attributes of the case study strategy, especially as it concerns the development of context-dependent understanding, renders it suitable for the abductive approach. Case study strategies are usually categorised along two distinct lines, namely; the number of case studies used (single/multiple) or proportion of the case that reflects the unit of analysis (holistic/ embedded); See Figure 4.2 below.

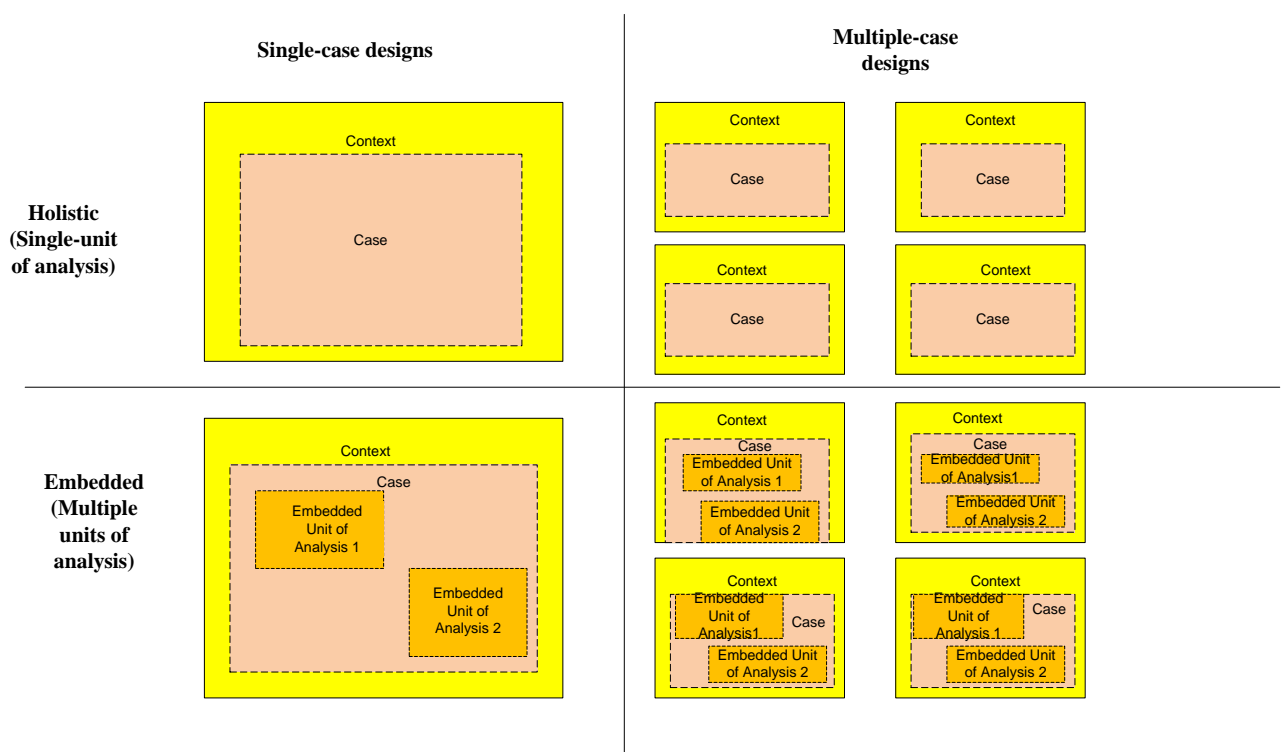


Figure 4.3 Basic Types of Case Study Designs

Source: Yin (2009)

4.7.1.1. Single versus Multiple Case Studies

Yin (2009) identifies the existence of these two forms of case studies. Evidence abounds as concerns the robustness of the multiple case studies strategy when compared to the single case study alternative (Yin, 2009, Dubois and Gadde, 2002, Amaratunga and Baldry, 2001, Eisenhardt and Graebner, 2007). A single case study strategy can be justified from the following angles: when the single case represents the critical case in testing a well-formulated theory; when the single case represents an extreme or unique case; and when the single case is a revelatory one (Yin, 2009). Eisenhardt (1989) highlights the shortcomings of the single case approach when viewed from the theoretical perspective, in the area of generalizations to theory and the biases inherent in information processing stages. Leonard-Barton (1990) opines that the use of a multi-case approach would go a long way in assisting the researcher to overcome the limitations of the single case approach. She maintains that the use of a multiple-case approach encourages observer independence and serves as a boost for external validity.

However, the use of multiple cases has also been criticised as being an attempt by qualitative researchers to use statistical generalization against analytical generalization (Easton, 1995). This criticism has since been countered by Yin (2009) and Dubois and Gadde (2002). The adoption of a multiple case study method encourages and sustains enhanced replication across cases (Eisenhardt, 1989, Eisenhardt and Graebner, 2007, Amaratunga and Baldry, 2001). Yin (1994), in corroborating this view, asserts that multiple-case studies were more capable of providing a stronger foundation for theory building than a single case study. The usage of multiple sources of evidence as the way to ensure construct validity has also been advocated (Yin, 2009). The use of multiple cases to test a range of cross case propositions boosts the external validity and enhances replicability, with both literal and theoretical replications alike.

4.7.1.2. Holistic versus Embedded Case Studies

Yin (2009) furthermore identifies two other classifications of the case study strategy; the holistic and the embedded case study strategies. Whereas in the former, the entire case forms the unit of analysis, the embedded case consists of several units of analysis within the case. These cases are nested within the larger context and treated in isolation. Within the context of this research, the IDS is treated as a holistic case wherein the viable systems theory is used to link up the entire actors on the IDS through an organisational prism. According to Yin (2009), the holistic case study is advantageous when no logical sub-units can be identified

and when the relevant theory underlying the case study is itself of a holistic nature, such as the viable systems theory. He maintained that its drawback lies in the fact that the researcher might conduct the research at an abstract level, hence lacking any clear measures or data. The abductive approach and the concept of systematic combining enabled the researcher to overcome this problem, as it allowed him to use the conceptual model both as a 'tool' and a 'product,' thus preserving the novelty of this research - the systematic conceptualization of the entire local content policy implementation process, an obvious gap as identified in Proctor et al. (2011), through an IDS perspective.

This researcher adopted a multiple case study strategy which served as a robust platform for the realisation of the study's aim, as it provided for effective replication as well as comparisons of the different influences of different contextual factors and individual differences on the viability of the IDS. Theory building from the multiple cases allows for systematic combining, as there is an overlap of the collection of data and its subsequent analysis, a major attribute of abductive approach and systematic combining (Dubois and Gadde, 2002) Multiple case studies allow for effective policy evaluation research (Eisenhardt and Graebner, 2007, Ritchie and Spencer, 2002) and this is central to this research. Furthermore, using the case study strategy allowed for the use of several sources of data, hence proving to be a veritable choice as the researcher was able to collect data from multiple sources through various types of interviews, documents and Computer-Mediated Communication techniques (CMCs) at different stages of the study.

Furthermore, Yin (2009) lists as constituents of a properly designed case study strategy, the presence of: the study's questions, its propositions, if any, its unit(s) of analysis, the logic linking the data to the propositions, and the criteria for interpreting the findings. This will be discussed subsequently.

4.7.1.3. Determining the Unit of Analysis

The identification of the unit of analysis of a study is pivotal to the success of the study (Saunders et al., 2012). It identifies what the researcher wants to study within the case study. In this research, the interorganisational relationships embodied within the IDS forms the unit of analysis of this study. *The IDS consists of a representation of all types of interorganisational relationships existing between various stakeholder organisations during the procurement and subsequent delivery of a particular infrastructure asset.* In a sense, the IDS can be likened to an organisational field (DiMaggio and Powell, 1983).

4.7.1.4. Case Selection Criteria

Under the case study strategy, theoretical sampling is applied in the selection of cases to be used for the study proper. Theoretical sampling differs from quantitative sampling as it is based on the need to select cases that support replication or extension of the existing or developing theory, so as to provide divergent types of examples (Eisenhardt, 1989). Eisenhardt and Graebner (2007) and Amaratunga and Baldry (2001) admit to the fact that the selection of cases for the purpose of case study research has posed a great challenge to attempts to build theory from cases. They advocate the correctness of theoretical sampling; a situation where

“...cases are selected because they are particularly suitable for illuminating and extending relationships and logic among constructs” (27)

They insist that this is appropriate for the development of theory and not its testing. This they maintain is the answer to questions posed on the representative nature of cases for the purposes of analytical generalization. The choice of one particular case above another, Eisenhardt and Graebner state, should be premised on the contribution of that case to the theory development and with little consideration accorded to the case's individual uniqueness. In this particular study, care was taken in the selection of cases to ensure that those selected not only allow for the development of theory through analytic generalisation, but also assist in the testing of the propositions with the findings.

As a result, the researcher selected three cases which were not only situated within two different country contexts, Nigeria and United Kingdom but also within two different economic sectors, namely oil and gas and transportation respectively. The basis for the selection of these cases was to allow for theoretical and replication logic, thus creating an opportunity for the attainment of analytic generalisation through replication (Yin, 2009). The choice of the United Kingdom and the transportation sector as a contrasting case was taken based on the absence of any explicit policies within those contexts prescribing the achievement of socio-economic benefits during project (infrastructure) delivery as well as the differences in market types and regulatory structure existing between the Nigerian Oil and Gas Industry and the United Kingdom's Transportation infrastructure sector. It is expected that such choice would highlight the generic nature of the emergent model (VIDM) as it pertains to the conceptualisation and evaluation of IDSs across country and economic sector contexts.

A detailed description of the cases selected can be found in Chapter 6. However, in this section we will reflect on the criteria used in the selection of cases and how these criteria were modified to allow for literal and theoretical replication and subsequently analytic generalisation.

Figure 4.4 below presents the selection criteria for the cases and how the modification of these criteria affects analytic generalisation, by allowing for theoretical and literal replication.

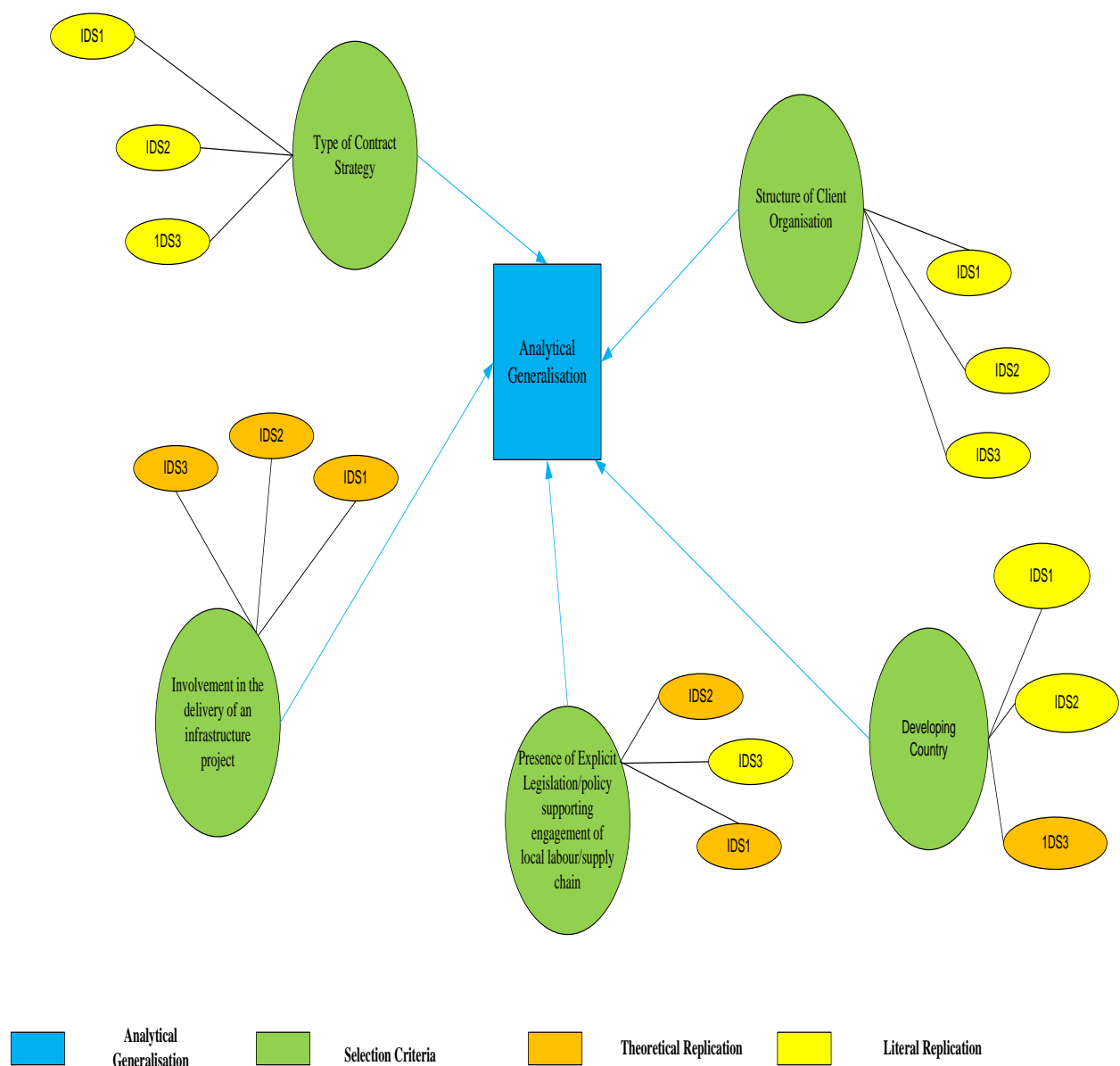


Figure 4.4 Literal and theoretical replication

From Figure 4.4 above, it can be established that adequate consideration was given to enhance the researcher's ability to test propositions and to carry out analytic generalisations. The selection criteria highlighted in Figure 4.4 is discussed below.

a) Involvement in the Delivery of an Infrastructure Project

In a bid to ensure that consistency of context is engendered within the study, the researcher ensured that only participants involved the delivery of particular infrastructure projects were selected. Care was taken to ensure that external parties were not involved, as this would have affected the purpose of the study. IDS1, IDS2 and IDS3 all consisted of parties who had participated in the delivery of the 'FPSO X', 'Pipeline Project' and phase X (a) of the 'LR' infrastructure projects respectively. This meant that the interorganisational interactions can be studied effectively. Also, there was a need to ensure that the projects were just being completed or on-going, to assist in the assemblage of the various participants. Of the three projects, IDS2 and IDS3 were still working on latter stages of their projects, whilst IDS1 had concluded the task of delivering the 'FPSO X' project.

b) Presence of Explicit Legislation/Policy Supporting the Engagement of Local Suppliers/Labour During Project Delivery

Here, the researcher sought to explore the influence of the presence of explicit legislation on the nature of interorganisational interactions within the IDS and how this impacted upon the attainment of the policy outcomes. Both IDS1 and IDS2 were involved in delivering projects which fell under the jurisdiction of one such explicit policy; the NOGCID Act 2010, thus indicating literal replication. However as is the norm with theoretical replication, the IDS3 delivered the phase X (a) of the LR project in an environment which, although it did not have such an explicit policy, did recognise the effective nature of using procurement of such monumental projects to boost the local economy through contributions such as the engagement of the local supply chain.

c) Location of the Project

In selecting the cases, the researcher made a decision to explore the thought of achieving a comparison between the IDS (1 and 2) situated in a developing country (Nigeria) and the IDS (3) situated in the developed country (United Kingdom). The basis for such a comparison stemmed from the generally held notion that implementation failures were more prevalent in developing countries when compared to the developed world.

d) Type of Contract Strategy

Considering the multiplicity of contracting strategies available to clients who are intent on delivering infrastructure, it will be apt to explore the influence of these contracting strategies on the roles and powers of various participants within the respective IDSs, as it concerns the implementation of policy or client directives. All the three cases possessed distinct contracting strategies and as such, allowed the researcher to test the impact of these contracting strategies on the interorganisational relationships.

e) Internal Structure of the Client Organisation

The researcher, through this selection criterion, sought to test the degree of influence of the client's organisation in ensuring effective interorganisational relationships within the IDS and how this influence impacted upon CSFs, such as communication and collaboration within the IDS.

From the above criteria, it can be inferred that the researcher has accommodated various modifications to allow for analytic generalisation of the study's findings.

4.8. Methodological Choice (Research Design)

Research designs are broadly categorised into either quantitative, qualitative or mixed method research designs (Saunders et al., 2012). According to Miles and Huberman (1994) and Bryman (2012), quantitative research entails the issue of quantification as being central to its data collection and analysis procedures. Denscombe (2007) observes that the qualitative category of research design is particularly concerned with the employment of words in the collection of data and its subsequent analysis, rather than numbers (quantification). Mixed methods, on the other hand, entails a combination of methods from the quantitative and qualitative divides (Creswell and Clark, 2007).

These three methods usually inform the choice of methods to be employed in the collection and analysis of data. However, it must be noted that the choice of research methods to be employed in a research activity is dependent on a wider criterion set, rather than just research aims or category of research design (Yin, 2009, Bryman, 2012).

Table 4.4 below highlights the differences between the qualitative and quantitative methodological choices.

Table 4.4 Difference between Qualitative and Quantitative Methods

QUALITATIVE METHODS	QUANTITATIVE METHODS
Lays emphasis on understanding.	Lays emphasis on testing and verification.
Focuses on understanding from interviewees' and respondents' points of view.	Focuses on facts and/or reasons of social events/occurrences.
Interpretation and rational approach.	Logical and critical approach.
Observations and measurements in natural settings.	Consists of controlled measurement.
Subjective insider views and proximity to data.	Objective outsider view and distance from data.
Exploitative orientation.	Hypothetical –deductive; focuses on hypothesis testing.
This approach is process oriented.	The quantitative approach is result oriented.
Assumes a holistic view of the phenomena being studied.	It is particularistic and analytical.
Generalisation by comparison of properties and context of an individual organism.	Generalisation by population membership.

Source: Colin (2002)

4.8.1. Rationale behind the Study's Methodological Choice

Following from the philosophical stance of the study, the choice of qualitative methodological choice holds true for the conduct of this research, owing to its features as described in Table 4.4 above. A bid by the researcher to immerse himself in the worlds of the various participants would obviously amount to an exercise in futility if the researcher makes any attempt to provide these respondents with his own version of reality. Furthermore, it was held that the use of qualitative choice would allow for a deeper understanding of the holistic interactions within the IDS; a central point of this study.

4.8.2. Sources of Data

Qualitative techniques have increasingly been used in extant social policy research to enable a concrete understanding of the inherent complexities associated with the interplay of various behaviours, needs and systems within a policy implementation pathway, as exemplified by an IDS (Ritchie and Spencer, 2002). According to Ritchie and Spencer (2002), qualitative techniques allow for: an identification of the form and nature of what exists about the phenomenon; an examination of the reasons for, or the causes of, what exists; an appraisal of the effectiveness of what exists; and the subsequent development of new theories, plans, policies or actions.

4.8.2.1. Face to Face Interviews – Unstructured, Structured and Semi-structured

Face to face interviews of different kinds were carried out at various intervals of this study. Whereas the unstructured interview allows the researcher to ask similar questions within the realm of the research area to a series of interviewees at different times under different settings, the semi-structured type allows the researcher to ask identical questions to a similar sample size as described above (Bernard and Ryan, 2010). The researcher's judgemental expertise was needed during the conduct of semi-structured interviews as he asked similar questions but in a flexible format, according to the interviewee's expertise or openness. The use of probing questions was also employed by the researcher during these interviews to gain further insight into the world of the interviewees who consisted of actors within the IDS. Unstructured interviews were used during preliminary data collection stages, wherein the researcher sought to assess the suitability and subsequent applicability of the VSM in evaluating the IDS. This enabled the interviewees to give in-depth responses as to the characteristic attributes of the VSM and its provenance and capabilities. The researcher learnt a lot from these unstructured interviews. Similarly, structured interviews were applied in validating the emergent VIDM. Semi-structured interviews were conducted during the evaluation of the IDS.

4.8.2.2. Documents

Documentary evidence was adopted by the researcher for this study. Meyer (2001) mentioned the importance of employing documentary evidence as part of the data collection methods whilst studying organisations. Documents are important in the data collection process as it enables the researcher: to gain an insight into the historical evolution of the phenomena being studied; to provide information which serves as interview guide, thus enabling the researcher to make some time savings; and this also serves as a premise for '*counteracting*' any biases

established during the interviews. The researcher was cautious with the use of documents in a case study research as he understood that the documents were not meant for this particular research study, but for some other specific purpose and targeted some other distinct audience. The reliance on documents in this particular study was mainly for the purposes enunciated earlier by Meyer (2001). Documents reviewed included the policy documents on local content development and project information which were publicly available.

4.8.2.3. Computer-Mediated Communication (CMC) Data Collection Techniques

There appears to have been an increase in the use of the internet in the conduct of contemporary research (Fawcett and Buhle Jr, 1995, Im and Chee, 2006, Onwuegbuzie et al., 2010). The use of these internet based electronic data collection techniques enables several persons residing at various locations globally to participate in such studies, contributing their opinions and exchanging ideas without any limitations. These internet based data collection techniques are classified according to the timeframe left for the participants' interactions (Lakeman, 1997, Im and Chee, 2006). Whereas the asynchronous category allows for participants to join in on any discussion at their convenience without prompting, the synchronous category does not allow for this as it is instant. Examples of the former include online discussion forums/ boards, whereas the latter consists of online interviewing and online chat-rooms. Hisung (2000) was cited in Im and Chee (2006) as stating that asynchronous online forums such as the one used by this researcher as part of the data collection techniques for assessing the suitability of the VSM for evaluating the IDS and its subsequent applicability in a case study, possessed several immense benefits for any researcher. These benefits include: its observable nature; its ease of use; its high rate of accessibility; and its safe nature. Onwuegbuzie et al. (2010) add that the inherent decrease of problems associated with time, location, low costs resulting from transportation and transcription, alongside the space of data interval, have endeared CMC techniques to the research community. Although Lakeman (1997) attributes the inability of several prospective respondents to access and operate computer as a problem for the use of CMCs, he stated that it remained a credible way for collecting data for research.

Furthermore, Rodham and Gavin (2006) posit that there was an insignificant difference between ethical issues in the more traditional data collection techniques when compared to the CMC versions of data collection. They state that when data has been collected from a closed membership online discussion forum, it would be unethical for the researcher to utilize

data generated from such a forum without the consent of the participants, unlike the case in open membership online discussion forums where there is an unrestricted amount of traffic.

This researcher used online discussion forums to get access to systems thinking-oriented groups on LinkedIn and made it clear to the participants that the responses would be used for a research activity. They were assured of utmost confidentiality. The various discussions which were posted on the online forum lasted for seven months. Figure 4.4 below is a screenshot of the various sessions which the researcher led within the VSM group on LinkedIn.

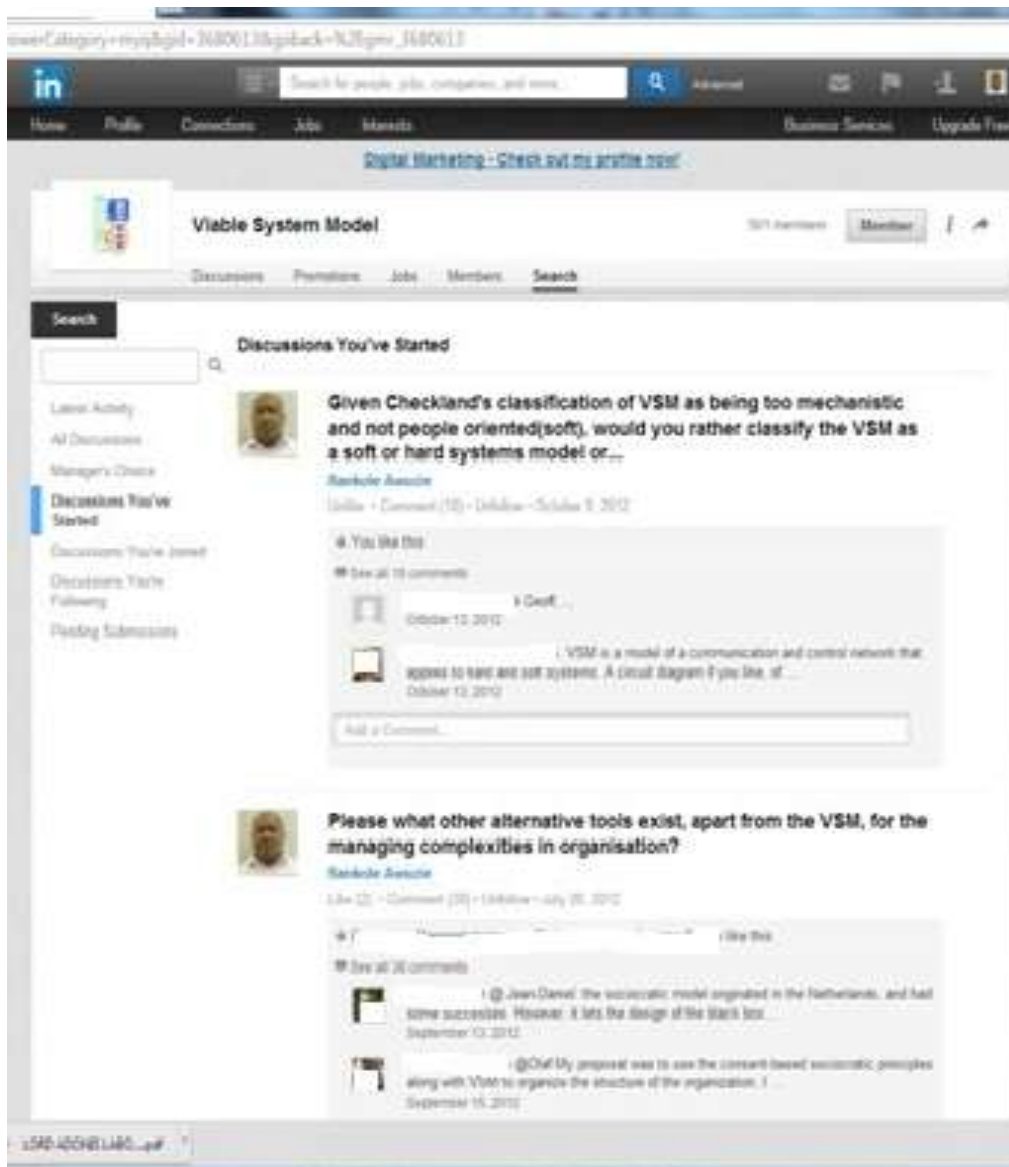


Figure 4.5 Screenshot of LinkedIn (CMC) Online Discussion Forums

4.8.3. Qualitative Analysis of data

These are the methods employed in the conduct of the data collection and subsequent analysis stage of the research process. These techniques are usually grouped according to the type of data which they possess the capability of attracting. The type of data collected determines the technique to be employed in analysing them.

Qualitative Content Analysis (QCA) was adopted for this research. Mayring (2000) defines QCA as an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytical rules and step by step models, without rash quantification. He traces the evolution of the qualitative content analysis to several phases grouped under the following themes: precursors; communication theoretical foundation; interdisciplinary broadening and differentiation; and the phase of qualitative criticism. The evolution of the QCA arose from the apparent need for the preservation of the merits of its quantitative counterpart as developed within communication science and to transfer and further develop them into qualitative-interpretive steps of analysis.

This technique was adopted, given that the data collected so far in this qualitative study consists of narrative data. Taylor-Powell and Renner (2003) describe narrative data as resulting from: open-ended interviews and written comments on questionnaires; testimonials; individual interviews; discussion group or focus group interviews; logs, journals and diaries; observations; documents, reports and news articles; stories; and case studies. This research is based on the use of the case study as a bounded area (IDS), within which semi-structured structured and unstructured interviews were applied, alongside the review of documentary evidence. The QCA was carried out with the aid of the NVivo software. This software is a computer-aided data analysis tool. Snapshots of the NVivo software as used in this study are shown in Figure 4.5.

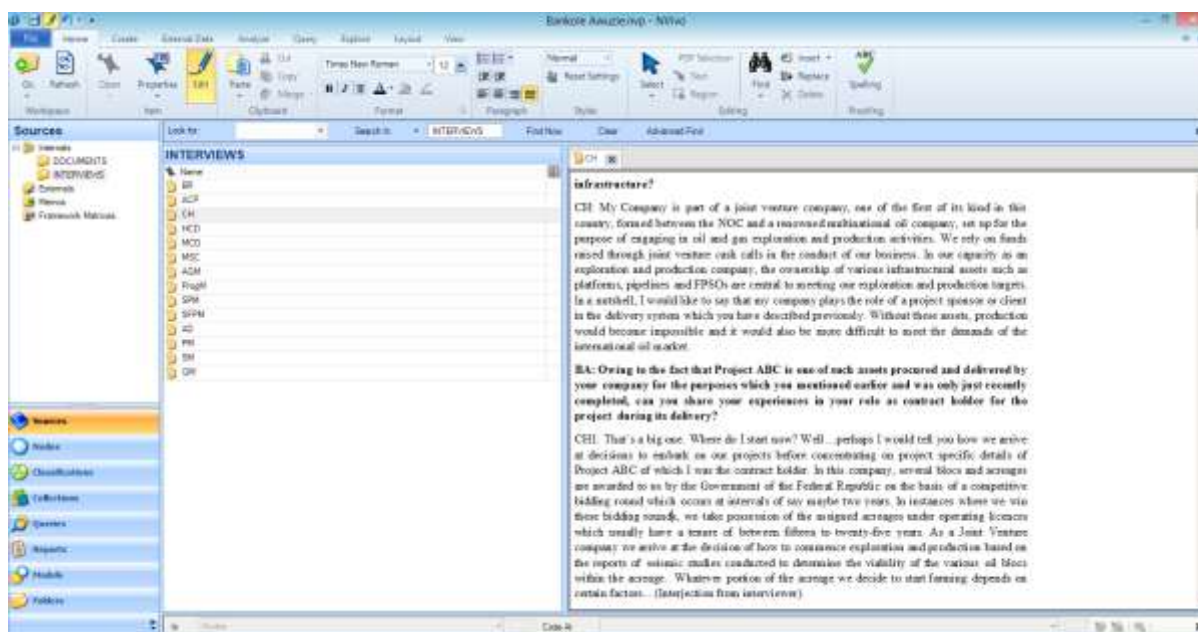


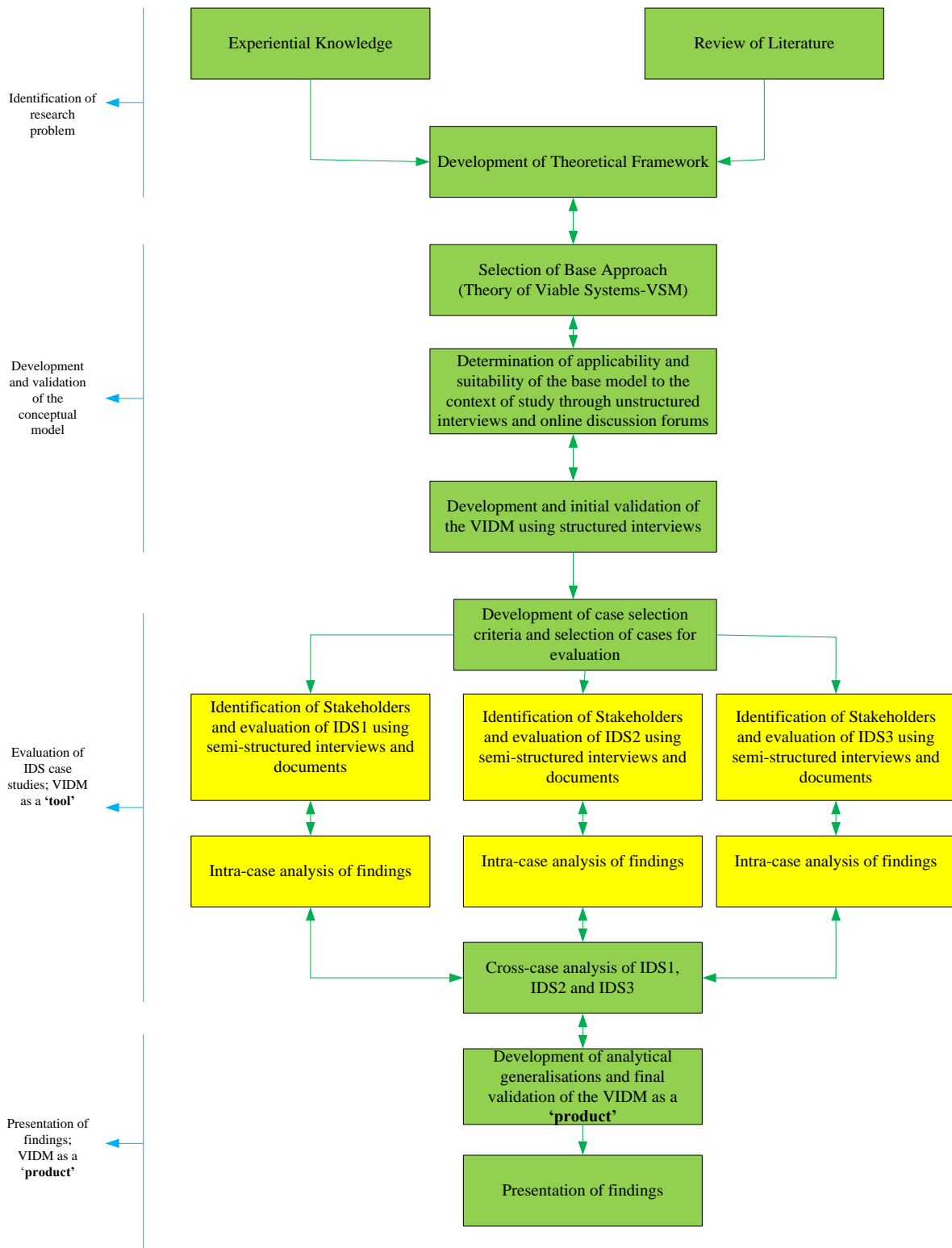
Figure 4.6 Snapshot of the NVivo Software

For the purpose of categorising findings into themes, Taylor-Powell and Renner (2003) identify two types of themes, emergent and preset. Whereas emergent themes are themes which emerge from the data, preset themes are those themes which are predetermined by the researcher. The researcher utilised a mixture of preset and emergent themes to eliminate bias in the coding exercise. Qualitative inclined research like this one allows for the emergence of themes from the data. Furthermore, Kohlbacher (2006) holds that the use of preset themes equates to some kind of triangulation.

Drawing from literature on VSM's diagnostic capabilities, the researcher was able to identify and commence with an initial set of preset themes: structural pathologies; functional pathologies and communication channel oriented pathologies (Ríos, 2012). Data emanating from the interviews and online discussion sessions held during the model development phases were transcribed verbatim and printed off from the discussion forum by the researcher. The researcher then proceeded to read and re-read the texts to gain in-depth knowledge from the perspective of the preset themes adopted. Such familiarisation with the texts enabled for a smooth thematic analysis based on these preset themes. This analysis was carried out manually. On the other hand, interviews conducted within the three cases were recorded with the permission of the interviewees and transcribed verbatim afterwards. Subsequently, the transcripts were uploaded onto the NVivo platform as internal documents. Individual

transcripts were classified according to the interviewee's organisation and project to enable easy conduct of queries. A thematic framework was developed based on the preset themes and this was applied in making sense of the data obtained. The central role of the researcher as the instrument was put to use in this case, as the researcher used his knowledge of the VIDM to code these interview transcripts accordingly.

Having described the methodological framework of the study and the attendant justification of this adopted methodological framework, attention will be channelled to a narrative of the stages of data collection and analysis as shown in Figure 4.4 below.



Research Process

Figure 4.7 Research Process

4.8.4. The VSM as a ‘Tool’ and a ‘Product’

According to Figure 4.4, this study engages in two distinct stages of data collection to satisfy distinct yet interrelated purposes. Whereas the first stage was concerned with ascertaining the applicability and suitability of the VSM as a base model for the development of a model for the evaluation of interorganisational, multi-layered interactions within the IDS, the second phase was more or less concerned with the actual evaluation of these interactions and their impact on implementation success. Deriving from the principle of an emerging case assuming the dimensions of a tool and product; systematic combining (Dubois and Gadde, 2002), the VSM was used as a theoretical construct within the study, serving as a tool and a product in evaluating the IDS. Eisenhardt (1989) advocates for the use of constructs in qualitative case study based research. She states that researchers stand to benefit from an initially defined construct to enable enhanced understanding and to provide a platform for the initial design of theory development research, but warns that researchers indulging in this should refrain from dissipating too much energy on trying to establish the specific relationships between variables and already existing theories (Eisenhardt, 1989). Furthermore, Ali and Birley (1999) identify the merits of using models as constructs as including: assisting qualitative researchers to deal with general themes rather than concentrating on specifics, thus allowing for a diversity of opinions and generating new variables which were not anticipated originally; and the salient fact that the use of models and/or constructs provide a focus for the investigation whilst leaving open avenues for the generation of new inadvertent findings. Hildbrand and Bodhanya (2011) also identify the wonderful opportunities availed by the VSM for managing research perspectives in qualitative based research.

4.8.4.1. Stage One: The ‘Tool’ Concept

In this stage of the data collection process, the researcher carried out a mixture of unstructured interviews, asynchronous online discussion forums (CMCs) and structured interviews. The interviewees were selected through purposive sampling (Patton, 2002) as certain individuals with expert knowledge in systems thinking practice were selected and interviewed. Adopting the asynchronous online discussion forum, the researcher was able to get the views of a wider audience of system thinking practitioners on the applicability and suitability of the VSM to serve as a base model for the evaluation of interorganisational relationships within Temporary Multi-Organisations (IDS).

Having affirmed the applicability of the VSM, the researcher mapped the VSM on the infrastructure delivery process, establishing a holistic and systemic illustration of not only the

various organisations involved in the delivery of infrastructure, but also depicting the multi-layered and interorganisational features of the implementation process from a project perspective. A set of structured interviews which were premised on an illustration of the emergent model - the VIDM - See Appendix E, was conducted. These interviews focused upon four cardinal items namely;

- To ascertain the ability of the VIDM to represent the holistic and systematic relationships within the IDS;
- To explore the VIDM's ability to identify and highlight the various stakeholder organisations involved in the delivery of infrastructure;
- To establish the ease of understanding of the emergent model;
- To establish the ease of the VIDM's application in evaluating delivery systems through an assessment of the communication and collaboration channels within such systems; and
- To understand the views of the various stakeholders as it pertains to the impact of effective communication and collaboration on the attainment of implementation success.

Purposive and snowball sampling technique was applied in the selection of the interviewees. Interviewees were selected based on their involvement in the delivery of infrastructure projects. Attention was also paid towards ensuring that the interviewees selected truly reflected the representation of the various sub-systems within IDS. These subsystems in this context referred to the various organisations carrying out the tasks identified as being necessary for the attainment of viability within the IDS.

The findings from the interviews proved useful in testing certain propositions which the researcher had obtained from the review of literature. These propositions are stated below:

- A viable infrastructure delivery system would lead to effective procurement and the attainment of desirable policy objectives.
- For the IDS to attain and maintain viability there must be excellent communication and collaboration between all parties to the delivery, usually ranging from the policy formulation through to the subcontractors within the delivery environment.

As well as providing the data for testing the abovementioned propositions, the structured interviews enabled the researcher to validate the emergent model's capabilities to be applied as a 'tool' for evaluating the IDS.

As a tool, the VIDM provided the researcher with a platform for the identification of the various stakeholder-organisations involved in infrastructure delivery processes and an understanding of the kind of interactions that go on between these organisations. Also such a platform allowed the researcher to establish the lines of communication between the various parties and the possible areas where such channels could get corrupted, as well as the possible causes of such corruption. These communication channels and interactions were derived from the semi-structured interviews and the review of project and policy documents respectively.

The VIDM as a 'tool' was applied across a group of selected cases (IDSs) to verify and validate its capabilities in evaluating interorganisational relationships within the policy implementation process, particularly as it concerns the generation of socio-economic benefits such as engagement of local suppliers and /or labour through the procurement and delivery of infrastructure. The application of the VIDM across these case studies was carried out through the following steps, namely;

STEP 1 - Identification of the System-in-Focus

Having decided to evaluate the interorganisational relationships within the IDS for viability purposes, the researcher selects a particular subsystem of interest to evaluate. Due to the laws of recursivity, all the subsystems of an overall system must remain viable for such a system to be viable. In this particular study, the implementation subsystem was selected. The implementation subsystem assumed the status of the System-in-Focus (SiF).

STEP 2 - Identification of Purpose of the System-in-Focus

Upon the selection of the SiF, the researcher establishes the purpose of the SiF. According to the Beer (1984), the purpose of a system is what it does. The purpose of the SiF selected in Step 1 -IDS1, IDS2, and IDS3 respectively- pertains not only to the delivery of infrastructure assets, but also the delivery of socio-economic benefits during the project procurement and execution stages. However, it is the latter purpose that this particular study is interested in; therefore the purpose of the selected IDSs is to deliver socio-economic benefits during the procurement and subsequent execution of specific infrastructure assets within the Nigerian Oil and Gas industry and the United Kingdom's transportation sector.

STEP 3- Identification of Actors

Firstly, the VIDM allowed the researcher to identify the various parties constituting the IDS (case studies) for the delivery of particular infrastructure projects. On identification of these stakeholders, the researcher proceeded to establish the roles played by these actors in the delivery of infrastructure within the IDS. Given the complex nature of such systems (IDS)(Van Marrewijk et al., 2008), previous studies have bemoaned the complexities involved in the task of identifying stakeholders, their roles, and the degree of interdependence among these roles. However, the VIDM enabled the researcher to develop a properly linked structure to resolve such imbroglio. The stratified and interlinked nature of the VIDM made this possible. The researcher was then able to look concurrently at all the participants to the delivery process without treating any party in isolation. At this stage, the project and policy regulatory documents were reviewed to establish the roles and responsibilities of each of these stakeholders in the delivery of infrastructure and implementation of policy.

STEP 4 - Identification of the Interrelationships among these Actors and their Respective Roles within the IDS

On the identification of the actor-organisations and their roles within the IDS, the researcher used semi-structured interviews to gain the opinions of representatives of these identified stakeholder organisations on various issues. Although these issues are highlighted in the semi-structured interview guideline in the Appendix, it is necessary to summarise them here and they include:

- Stakeholder opinion about the local content development policy and/or the use of procurement to drive socio-economic benefits;
- Validity of the VIDM
- The roles and responsibilities assumed by these stakeholder organisations in the delivery of the stated infrastructure project (Particularly as it affects the implementation of socio-economic policy initiatives);
- Challenges confronting these organisations in the performance of their assumed roles and responsibilities within the project IDS;
- Success criteria and CSFs for the respective organisations within the IDS.

These questions were asked in such a manner as to encourage the testing of the initial propositions; with its findings. Once more, the interviewees were selected under the same

principle of a purposive snowball sampling technique. This meant that selected interviewees introduced the interviewer to other parties within the IDS (Denscombe, 2007). The data emanating from these intra-cases were analysed using the QCA technique. Preset themes were adopted both from the viable systems theory (pathologies) and from the study's objectives. The interview transcripts were then reviewed constantly to identify incidents which matched these preset themes. The NVivo software was quite helpful in this regard.

STEP 5-Establishing Pathways for Effective Communication, Control and Co-ordination within the IDS

Based on the nature of actual interorganisational relationships discovered during the interview sessions held by the researcher, the researcher develops an IDS model replete with the extant pathways for communication, control and co-ordination as they appear within the selected SiF. This IDS model is subsequently compared to the VIDM (product) which has been established based on the statutory functions of the various organisations within that SiF. Suffice to say that whilst the VIDM concept is used as a tool to understand and highlight the actual interactions between the several organisations involved in the delivery of the infrastructure asset as they occur, it is used as a standard, based on the policy/organisational strategy in question, to evaluate these actual interactions from a viability perspective. Any differences between the actual and the expected levels of interaction are portrayed as the causes of any disjuncture experienced.

4.8.4.2. Stage 2: The 'Product' Concept

Having been used as a theoretical construct to evaluate policy implementation processes from an interorganisational and multi-layered perspective, the VIDM as a **'product'** can be utilised in the evaluation the actual interorganisational interactions within project delivery systems/implementation processes to ensure the alignment of the individual goals of the participating organisations towards the client's strategic goals or policy (purpose of the system) by client's systems advisors during various stages of the implementation /project delivery lifecycle.

4.8.5. Ethical Issues

As is the custom with every research project, ethical considerations are very critical to the success of such projects. Prior to the commencement of this study, particularly the data collection phase, the researcher sought and obtained permission from the University of Salford Research Ethics committee to carry out this research under the tenets of the United

Kingdom Research Integrity Office (UKRIO) guidelines; See Appendix B. As such, this study adhered strictly to the tenets of these guidelines, especially as it concerned anonymity and confidentiality.

4.8.6. Credibility and Trustworthiness Issues

Tackling ethical issues are very important for the success of any research and this one is no exception. In accordance with this, the following standards proposed by Shenton (2004) for the ensuring the credibility and trustworthiness of qualitative research were adopted, namely;

4.8.6.1. Validity and Trustworthiness of Research Findings

Research validity and the degree of trustworthiness appear to be key issues in the conduct of any research. According to Saunders et al. (2012), the validity within the body of research implies that the research findings are actually in conformity with what the researcher actually set out to achieve. It also shows the appropriate nature of the data collection techniques and the research design for answering the research questions. Qualitative inclined research has faced intense criticism from positivists, especially as it concerns its validity (Shenton, 2004). However, whilst refuting the assertion that qualitative research could hardly be assessed for validity, Shenton (2004) stated that whereas quantitative research possessed a structured methodology which could be appraised for validity, qualitative research also had a similar methodology. This methodology is dependent upon the construct by Guba which is showcased in Table 4.5 below.

Table 4.5 Criteria for Ensuring Validity of Qualitative Research

<i>Quality criterion</i>	<i>Possible provision made by researcher</i>
Credibility	Adoption of appropriate, well recognised research methods Development of early familiarity with culture of participating organisations Random sampling of individuals serving as informants Triangulation via use of different methods, different types of informants and different sites Tactics to help ensure honesty in informants Iterative questioning in data collection dialogues Negative case analysis Debriefing sessions between researcher and superiors Peer scrutiny of project Use of “reflective commentary” Description of background, qualifications and experience of the researcher Member checks of data collected and interpretations/theories formed Thick description of phenomenon under scrutiny Examination of previous research to frame findings
Transferability	Provision of background data to establish context of study and detailed description of phenomenon in question to allow comparisons to be made
Dependability	Employment of “overlapping methods” In-depth methodological description to allow study to be repeated
Confirmability	Triangulation to reduce effect of investigator bias Admission of researcher’s beliefs and assumptions Recognition of shortcomings in study’s methods and their potential effects In-depth methodological description to allow integrity of research results to be scrutinised Use of diagrams to demonstrate “audit trail”

Source: (Shenton, 2004)

Bearing in mind the need to carry out valid and trustworthy research, this researcher made conscientious efforts to adhere the tenets stated in Table 4.5.

a) Credibility (Internal Validity)

Lincoln and Guba (1994) are cited by Shenton (2004) as insisting that the credibility of a research study is essential in portraying the trustworthy nature of the research. The researcher considered the adoption of several research methods, such as the use of semi-structured and unstructured interviews, documents, observations and online discussion forums in the conduct of this research. Upon identification of the research problem, the researcher considered several projects through which the research problem could be explored and evaluated for viability purposes. Consequently, using extant literature and documents, he gained an in-depth insight into the local content policy documents, the operating documents of the implementing agencies and the project documents of the case studies being utilized. Before this, a very rich description and an examination of previous research findings on the local content development, policy implementation and how they relate to the infrastructure delivery processes was carried out, to allow for other investigators to understand the context in which they were being studied. The researcher also employed several types of triangulation

in the study. Patton (2002) identifies four types of triangulation: methodological; data source; investigator; and site triangulation. The use of a cross-section of systems thinking experts, policy makers, oil and gas infrastructure procurement experts and contractors allowed the researcher to collect data from various sources during the assessment of the suitability and applicability of the VSM for evaluating the IDS. This cross-section of interviewees was also utilized during the application of the VIDM in the evaluation activity of the case studies. Several data collection techniques were employed in the collection of data, thus enabling methodological triangulation, whereas the adoption of the third case study during the research design stage was due to the need to allow for theoretical replication. This is akin to site triangulation.

b) Transferability (External Validity)

According to Yin (2009), external validity is concerned with the problem of knowing if the findings from a study can be generalised beyond the immediate case study which is being studied. This researcher ensured that findings could be generalised to the theory and not to a sample of the population as quantitative studies are wont to do. The use of replication in the selection of case studies, both literal and theoretical alike, engendered transferability of the findings to some extent, as is allowable in qualitative based research. The use of a detailed, rich description of the context within which the research is taking place and the local content policy and its implementation pathways, as applicable within the context of the project case study, further ameliorates the concerns raised about transferability. The boundary of the study was also rendered at the commencement of the research study. Shenton (2004) observed that the production of inconsistent results between similar studies does not amount to untrustworthiness of either of the two studies, but rather an illustration of the existence of the multiple realities which abound in qualitative research.

c) Dependability (Reliability)

This aspect of ensuring trustworthiness has to do with the reliability of the research findings. It is akin to the principle of construct validity as espoused by Yin (2009). To ensure this, the researcher commenced with tailoring the research design and its implementation according to the research questions and the phenomenon central to the research. The use of the abduction approach, the case study strategy, a conceptual model and the techniques adopted in the collection of data and its analysis, were all carried out to reflect the need to obtain a lay account of the activities of every organisation involved in the implementation of the local content policy through an IDS perspective. Yin (2009) identifies three principles of data

collection which could enhance construct validity and the reliability of the study when using the case study strategy: the use of multiple sources of evidence; creation of a case study database; and maintaining a chain of evidence. During the course of this research, the researcher made efforts to maintain a case study database which contained all the data which accrued from the data collection phase. Furthermore, the researcher provides a step-by-step account of the data collection and analysis procedures in the succeeding chapters to enable any other investigator to repeat the study.

d) Confirmability

To ensure that the results emanating from the work of the researcher reflects the views of the research participants and not those of the researcher's preferences, this researcher ensured strict adherence to the tenets of triangulation. Triangulation has been described as fit for containing investigator bias within the context of qualitative based research (Shenton, 2004). Patton (2002) identified various ways through which triangulation can be achieved in qualitative research such as this study. In this research study, the researcher sought triangulation through two approaches, namely; data source triangulation and investigator triangulation. In the former, the researcher ensured that besides the selection of representatives of different stakeholder organisations involved within a particular IDS, the same set of semi-structured interviews were administered. This enabled the researcher to obtain the views of the various stakeholder groups on the same subject matter. Pertaining to the latter, the researcher partly relied on preset themes derived by another researcher, (Ríos, 2012) who had carried out similar evaluative/diagnosis-based research using the VSM, in coding his data, see Section 3.9.3.

4.9. Constraints and Limitations

Every research endeavour faces some degree of constraints and limitations and this particular study had its own fair share of constraints and limitations during its execution. Bearing in mind that the composition of the IDS had to be centred on representatives of the stakeholders who participated in the delivery of the particular projects, gaining access to them proved difficult. Earlier on during the course of the study, the researcher had set out to use a minimum of four case studies. The difficulty in gaining access to these IDSs limited his choices, hence resulting in the use of only three case studies. However, the three cases satisfied the tenets of theoretical sampling as stipulated by Eisenhardt (1989), hence supporting the realisation of the study's aim and objectives.

Obtaining the expected number of interviews was also a constraint. This was not helped particularly because of the fact that relationships between the interviewees were centred on the projects, one of which had been commissioned in its totality. In one instance, the IDS3, it took the researcher eighteen months to complete interviews. This delay had to do with the need to secure organisational approvals from the management of the respective organisations.

The nature of the PhD programme makes it imperative that the researcher ensures the completion of the study within a period of three-four years. As such, this makes it difficult for researchers to carry out longitudinal studies within this timeline hence leading to the prevailing adoption of cross-sectional time horizons. This study is one of such which was constrained by time limits. Undoubtedly, the longitudinal timelines would avail the researcher with more time to understudy these interorganisational relationships and perhaps assist in evaluating the impact of time on the nature of these type of relationships during procurement and delivery of infrastructure assets.

Another cause of the impediment in gaining access to the interviewees was the position of potential interviewees in their respective organisations. Owing to the fact that these interviewees were senior managers and chief executives in their respective organisations, it was difficult trying to secure time slots for interviews. Interviewees were also sceptical about discussing their experiences on such projects, as they reasoned that the projects involved were strategic projects which were constantly under public scrutiny. In fact they were hesitant to extend their relationships with other members of the IDS.

Due to these constraints, the researcher's initial plans of securing a minimum of ten interviews per case study faced severe challenges. However, the researcher was able to secure the views of representatives of all the stakeholders within the individual IDS case studies through a juxtaposition of semi-structured interviews and documents, thus satisfying the criteria applied in participant selection for the study. Also, the researcher was able to achieve theoretical saturation from the interviews conducted and also to satisfy the purpose of the study (Baker and Edwards, 2012, Guest et al., 2006), as a convergence of views by various stakeholders on certain issues was observed.

4.10. Chapter Summary and Link

In this chapter, a justification of the adopted methodology upon which the study is premised is carried out. It commenced with a description of the study's methodological framework.

This framework highlighted the linkage of various research elements and how these linkages influenced the choice of the approach adopted by the researcher. Furthermore, the chapter narrated the various steps through which the collection of data and its subsequent analysis was executed. In a nutshell, it provided a platform for the next stages of the research study.

CHAPTER 5. MODEL DEVELOPMENT AND INITIAL VALIDATION

“The soul cannot think without a picture” Aristotle (384BC-322BC)

5.1. Chapter Introduction

Chapter Four presented and justified the selected methodology upon which the research is premised. In that chapter, the significance of the proposed model – the VIDM - to the success of the study was highlighted. As is the case with the development of models and their application, there is an immense need for the researcher to ensure that such a model is valid, fit for purpose for the particular task which it is expected to accomplish. This chapter forms the bedrock for the entire research study, as it reveals the preliminary studies conducted in the development and validation of the proposed model.

A mixture of unstructured interviews and an online discussion forum was adopted in the first part, in an attempt to gain expert opinion from relevant stakeholders on the suitability of the VSM for the purpose to which the researcher intended to put it to use. These expert opinions proved vital for improving on the otherwise generic theoretical VSM, and the subsequent development of the conceptual model.

In the second stage, structured interviews were used alongside other model validation alternatives to validate the proposed model.

In view of the foregoing, this chapter presents a stage by stage account of the model development and validation process. To achieve the goal set, this chapter is divided into the following sections, namely:

- Stages of Model Development
- Data Collection
- Data Analysis
- Initial Validation of the Model

5.2. Stages of Model Development

5.2.1. Models- a definition

The application of models in managerial research could be traced, in part, to views espoused by Wilson (1990), wherein he admitted that the process of inquiry is one which takes the particular intellectual construct (or concept) and asks the question:

“...if we map this construct on to a particular bit of the real world what does it tell us about that bit of the real world?”

According to Wilson (1990), models can be described as the means through which such constructs are developed which are required for an understanding of the real world. He defined a model as...

“...the explicit interpretation of one’s understanding of a situation, or merely of one’s ideas about that situation. It can be expressed in mathematics, symbols or words, but it is essentially a description of entities, processes or attributes and the relationships between them. It may be prescriptive or illustrative, but above all, it must be useful.”
(11).

On their own part, Bernard and Ryan (2010) described models as attempts at the simplification of complex real scenarios.

Although he acknowledged the classification of models by Ackoff (1962) into various forms namely: iconic; analogical; and analytical, Wilson (1990) stressed that these models were only related to physical forms which can only be formulated through quantitative means. In furtherance to this observation, he added a fourth category of models, named the conceptual model, and maintained that this genre of models was deemed apt for qualitative scenarios. These conceptual models are used as: an aid in clarifying thinking about an area of concern; an illustration of a concept; a means of defining structure and logic; and as a prerequisite to design. Despite the distinctions between these models, there seems to be a general consensus that models are developed or adopted for the better understanding of the inherent complexities of the real world (Bernard and Ryan, 2010).

5.2.2. The Role of Models in Representing and Understanding Complexity

Leonard and Beer (1994) insist that whilst making or creating models, model makers should select the features that are important, replicate them, and see how well they work. Commitment and cooperation in an organisation is easy to lose if everyone doesn’t feel

ownership of decisions. At best, huge opportunity costs are easy to incur if participation is limited. It must be stated that no model can be designed to run once and for all. They are revised and redesigned on the basis of what is proven by the tests to be effective. The model should be adjusted to take into account whatever changes are occurring in its environments, whether natural, political, or economic.

Another type of error occurs when using models that cover more than one level of recursion. Assigning a process or a function to a level of recursion above or below its proper one, or not noticing that a single manager has roles at multiple levels that may sometimes be in conflict, are both particularly easy errors to make when diagnosing large organisations. Both the participative and data-oriented models are well suited to reach forward in time to explore the possibilities and consequences of alternative choices.

Models are usually custom designed for a set of circumstances. At other times, the modeller does not have to start from the beginning but can use models already developed and generalized for use in different sorts of study (Leonard and Beer, 1994).

Leonard and Beer (1994) list a number of models dependent upon the systems approach: interactive planning; hiring systems theory; operations research; socio-technical systems; soft systems methodology; systems dynamics; total quality management; and viable systems models. They insist that these models have a theoretical background and a framework of rules or guidelines to use. Because the purposes of the model and its relevant parts are chosen by the modeller, each application of these models retains a flavour of custom design, although following a pattern.

These models have their roots in diverse places namely: Living Systems theory (LST)-Biology; System Dynamics (SD)-control theory and industrial design and both are effective in modelling complex and varied relationships in dynamic systems. Interactive planning and soft systems methodologies are both appropriate for fluid community or organisational situations, which need to make decisions about their basic missions and plans. The Viable Systems Model and the Socio-technical systems approach are both most appropriate when a defined organisation's functions and management is aided by balance with their environments and the development of the appropriate structure and information flows.

On the other hand, El-Hasia (2005) mentioned the contribution of Elmore (1997) on the application of models in understanding policy implementation. He (Elmore) was attributed as

having stated that viewing an implementation process through various organisational models creates room for generating more precise organisational assumptions. It is upon these assumptions that most recommendations for effecting change within an implementation process are premised.

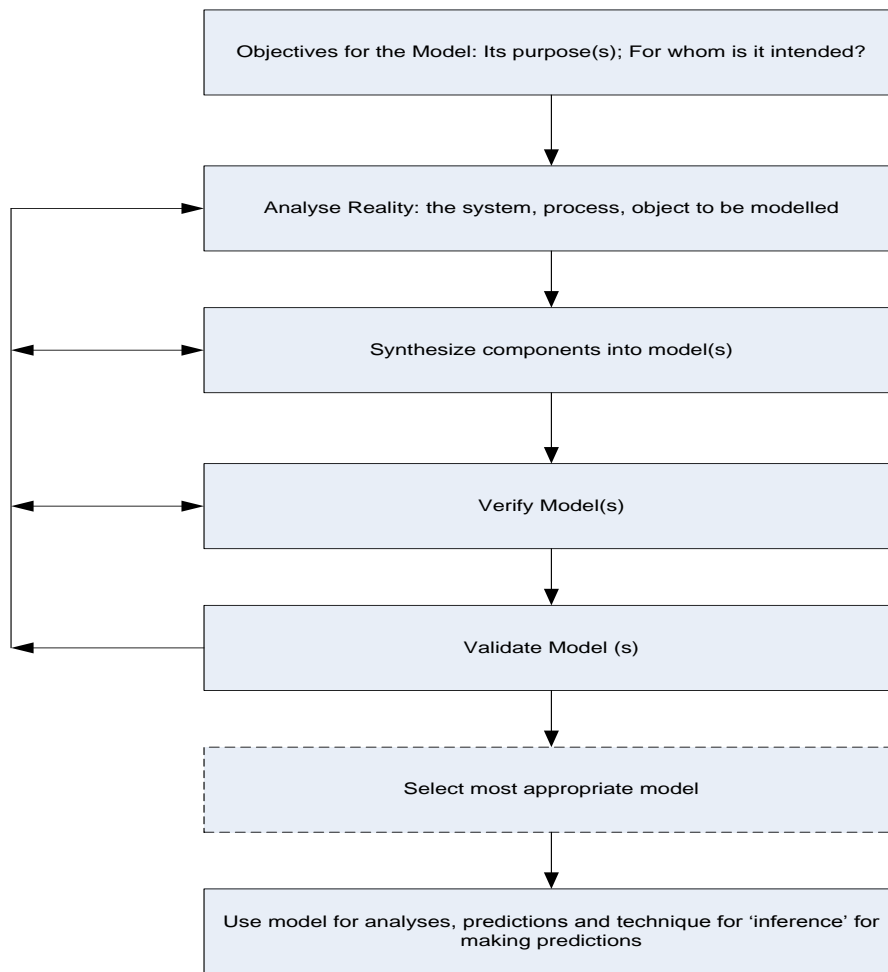
Furthermore, Elmore was credited with the development of four organisational models: the system management model; the bureaucratic process model; the organisational development model; and the conflict and bargaining model (El-Hasia, 2005). Given the description of these models, the VSM/VIDM can be likened to a system management model, as it attempts to view the performance of the implementation process from a holistic view.

It must be noted that these models developed by Elmore were meant to enable an understanding of the policy implementation process from an organisational perspective, whereas the VIDM which this research seeks to develop is focused upon, not only a total comprehension of the policy implementation process from a systems and organisational perspective, but also allows for a systematic evaluation of the implementation process with emphasis on the implementation outcomes and not service outcomes. This evaluation is predicated on the dictates of the viable systems theory, as it applies to the context of the IDS.

5.2.3. Model Development, Verification, and Validation

Bernard and Ryan (2010) identified three critical steps necessary for model development. These steps include; an identification of key constructs to be included in the model; an identification of the relationships between these key constructs and a representation of these relationships; and validation of these relationships to ensure that these relationships are valid for most, if not all of the scenarios being modelled.

However, Fellows and Liu (2009) cited Milhram (1972) as previously having identified five distinct steps for the development of a model. These steps are shown in Figure 5.1 below.



The Modelling Process (developed by Mihram, 1972)

Figure 5.1 Model Development Process

Source: Fellows and Liu (2009)

Both perspectives as portrayed above possess great similarities and all point towards the need for proper validation of the developed model. Since the process of building, testing, displaying and validating models forms a major part of data collection, it becomes pertinent that the model so developed be validated to boost confidence levels in the emergent theory.

Hvala et al. (2005) stressed that the primary aim of a model evaluation exercise should be to ascertain whether the model is good enough for its intended use. They proceeded to highlight the existing dichotomy between model verification and validation as modes of model evaluation. They stated that whereas the latter was concerned with the consistency and accuracy of simulation programs compared with the associated mathematical models,

validation was however concerned with the level of agreement between mathematical descriptions and the real systems under investigation.

However, Hahn (2013) admitted that the term ‘validity’ in the case of models, represents what we think we are representing. She cited Thomas (1997) as having posited that model verification and validation efforts should be concerned with two main aspects, namely: internal and external validity. Whereas internal validity was concerned with the extent to which the relationships between variables or constructs are represented correctly in the model (verification), external validity highlighted the extent to which the model’s outputs agree with an external entity, which may be either a real world system or another validated model (validation).

Although it seems that there is a sharp distinction between the terms of verification and validation of models, Hahn (2013) admitted that the distinction between the two becomes blurred when it comes to the issue of social science based models. The proposed model in this study, the VIDM, can be described in part as a social science model, as it seeks to understand the actual relationships and interactions between the members of a project delivery team in the IDS.

Unfortunately, as important as the model development, verification, and validation process is to data collection and analysis (Bernard and Ryan, 2010), there has been, to date, a lack of consensus regarding the processes and rules of their validation (Déry et al., 1993). Various schools of thought have proffered different ways through which various models can be validated and/or verified.

In her attempt at developing a System Dynamics (SD) model, Yuan (2012) identified a group of tests which SD models should undergo to achieve validation. These tests, she admitted, had been previously identified by Qudrat-Ullah and Seong (2010), and they include:

- **Boundary test:** This shows whether a model contains all the variables that are essential to the research problem;
- **Structure verification:** This is concerned with an assessment of the level of consistency between the model’s structure and the relevant descriptive knowledge of the system being modelled;
- **Dimension consistency:** This test is concerned with determining whether the dimensions of the variables on the right-hand side of each equation are able to be

converted to the dimension of the variable on the left-hand side of the equation within the model; and

- **Extreme conditions:** This tests the ability of the model to exhibit proper behaviour when subjected to extreme conditions.

On the other hand, Hvala et al. (2005) observed that whereas the quality of a model can be judged from the perspective of several attributes, the most salient attributes are: model purposiveness, model falseness, and model plausibility.

- **Model purposiveness:** This attribute is concerned with the ability of the newly developed model to solve the real world problem which it was created to solve. Tests to establish this attribute, they maintained, are generally time-consuming and expensive.
- **Model Plausibility:** The test for a model's plausibility is tied to the judgement of experts on the capabilities of the model in relation to the real world scenarios in which it is to be employed. The opinions of these experts are usually dependent upon two criteria, namely: does the model maintain a logical appearance? If it does, which means it is comparable to what experts know about the real process, then confidence in the model would be greater; and secondly, does the model act in a logical manner? If a model in a different situation reacts in accordance with the expectations of the experts, then again confidence about its validity grows.
- **Model Falseness:** This validation test, according to Hvala et.al (2005), is concerned with a direct comparison of the input output data of the model with that of the real system.

Initially laying the context for the discourse on the model validation and verification processes within the realm of operations research, Landry et al. (1983) identified several approaches frequently employed for the validation of models.

These approaches include: face validation; tracing; internal validation; sensitivity analysis; historical validation; predictive validation; events validation; Turing tests; spectral analysis; experimentation; and convergent validation.

Ruvinsky et al. (2012) however observed that many of these approaches previously highlighted had failed to take into cognisance the distinction between the hard physical system and theory-based models such as the Human Social, Cultural and Behavioural (HSCB) social science models.

They maintained that unlike models of hard science systems, HSCB models cannot be readily or robustly tested through experimentation in the real world, nor fully verified or validated using historical data. To thoroughly verify and validate an HSCB model, a comprehensive understanding of the basic information which such models use to represent the world must be allowed for (Ruvinsky et al., 2012). They proceeded to advocate for the deconstruction of such models into small bits of knowledge, ranging from its social ontology to raw data forms which are referred to as the model's epistemology. This way, the verification and validation of the model's entire epistemology then becomes a product of the verification and validation of the epistemological parts which define the model.

This deconstruction should take into consideration the three facets imperative for the model's development namely: focus; context; and the subsequent operationalisation of the model, thus enabling a decision to be reached as it concerns whether the "*model was built right*" (verification) and whether the "*right model was built*" (validation).

Table 5.1 below highlights the methodology taken in the deconstruction process for verifying and validating theory-based social science models as put forward by Ruvinsky et al. (2012). This methodology takes what they call the focal (focus) verification and validation point of view, in which assessment focuses on how well a model explains the phenomenon for which it was designed.

Table 5.1 Model Verification and Validation Approach for HSCB models

Level	Verification	Validation
Conceptual levels	<ul style="list-style-type: none"> • Abstract: Are components appropriately simple? • Ensemble: Are components posed at an appropriate intermediate level of specificity? • Virtualisation: Are components sufficiently differentiated? 	<ul style="list-style-type: none"> • Theoretical provenance: How substantively persuasive are the theories used? How prevalent is scientific work based on those theories?
Theoretical levels	<ul style="list-style-type: none"> • Unit of Analysis: Are the units of analysis consistent with the units at the conceptual level? • Assumptions: What proportions of assumptions are specified? • Dependent Concepts: Are outcomes of interest clearly specified? • Independent Concepts: Are causes or patterns used to explain variation explained clearly? • Intervening Concepts: How well are mechanisms linking cause and effect specified? 	<ul style="list-style-type: none"> • Persuasiveness of explanation: How persuasive is the strategy for testing and evaluation?
Operational Levels	<ul style="list-style-type: none"> • Methodologies: How appropriate are the methods chosen for evaluating claims? • Fidelity and reliability of Operationalisation: Do the measurements meaningfully reflect the construct being measured? Are the measures repeatable? • Fidelity of Abstraction: To what extent is the general claim warranted based on integration of more specific corroborated claims? • Replication: Can the results of the study be reproduced? 	<ul style="list-style-type: none"> • Testing: How much testing has been done and was the sample selection appropriate? • Substantive findings: Are the theoretical, empirical, and /or policy relevant findings substantively useful?

Source: (Ruvinsky et al., 2012)

In her appraisal of this approach, (Hahn, 2013) opined that its main advantage lay in its ability to address the issue of validity or invalidity of the model's underlying theory directly, performing both verification and validation alike at the model's conceptual and theoretical epistemological levels, in a manner referred to as epistemological hierarchy. The epistemological hierarchy is a means of organizing knowledge of a model so that its verification and validation can be carried out at various levels of the hierarchy (Ruvinsky et al., 2012).

Based on the robustness, rigour, and comprehensive nature of the verification and validation methodology developed by Ruvinsky et al. (2012), this study adopted this approach in evaluating the validity of the VIDM model.

The proposed VIDM model is thus verified and validated from a focal perspective in this chapter. It is expected that this focal perspective would ensure that the model describes the phenomenon which it set out to describe. A positive assessment at this stage would then set the stage for a context-oriented verification and validation of VIDM through its mapping upon real world scenarios - IDS case studies of selected infrastructure projects. The scope of this study does not encompass the operational level of the model, as it seeks to provide a methodology for evaluating inter-organisational interactions between parties within the IDS in a bid to identify the causes of disconnects or possible implementation gaps as it concerns the delivery of policy objectives. Bearing in mind that this research study is one that is scheduled to last for a particular duration, further verification and validation of the VIDM during its operational stage as advocated as the last stage of model verification and validation by Ruvinsky et al. (2012), is not feasible.

In consonance with the tenets of the adopted verification and validation methodology, the process of the VIDM's initial validation commenced in two separate stages using disparate data sets from different sources. Whereas the first stage, which can be likened to the conceptual stage in the epistemological hierarchy, was concerned with issues related to theoretical provenance, the second stage is concerned with issues related to the persuasiveness of the explanation upon which critical propositions are based, as well as the testing of the model among experts to generate expert opinions on its representativeness and usefulness in describing the phenomena which it sets out to do.

5.3. Data collection

As indicated in the previous chapter, and in the introductory segment of this chapter, primary qualitative data was required for the generation of expert opinions on the adoption of the VSM in the evaluation of socio-economic policy implementation cycles, from an infrastructure project delivery system perspective, for viability. The inherent data collection activities at this stage were done in two distinct stages, namely:

- First stage: Unstructured Interviews and an Asynchronous Online Discussion Forum
- Second Stage: Structured Face to Face Interviews.

Separate participant selection criteria were employed in selecting the participants, as the data collected was for separate purposes.

5.3.1. First Stage: Background Details of Interviewees and Discussants

Eleven e-mails were sent across to various systems thinking oriented academics and professionals around the globe, seeking opportunities for interviews. The criteria for the selection of these prospective interviewees have already been described in Section 4.8.4.1. The proposed interviews were intended to provide further confirmation to the suitability of the VSM (the base model for the proposed VIDM) to be adopted for the evaluation of temporary multi-organisations, a group to which the IDS belonged. This confirmation became necessary due to the fact that all instances of the VSM's application which had been documented in extant literature known to the researcher, had only involved conventional organisations and not temporary multi-organisations such as the IDS. Considering the significant difference between organisations and TMOs (Section 3.6.2), a confirmation of the VSM's suitability for the intended task thus becomes imperative.

Five responses were obtained from a total of eleven emails sent out, thus representing a 45.5% response rate. Whereas five responses were obtained, one of the responses declined granting an interview as he professed poor knowledge of the workings of the VSM. This left the interviewer with a list of four interviewees. These persons were contacted by the interviewer through e-mails and telephone calls to confirm the dates and venues respectively for the interviews. Due to the fact that these interviewees were spread across three locations, namely: Salford and Manchester in the United Kingdom, and St. Gallen, in Switzerland respectively, different modes of interviews were applied. Two interviews were conducted over the internet through the use of Skype. Skype is an online telephony system which allows

for interactions on a face-to-face basis by the aid of its video component. This video component enabled the interviewer to overcome the criticism of the telephone modes of interviews as it provided opportunities to search for any non-verbal cues which might be expressed by the interviewees during the interview sessions. Conversations held using Skype can also be recorded with the aid of a software package; Call-Graph. The interviewees at the UK based locations were engaged on a face-to-face basis and the interviews recorded by the interviewer. These unstructured interviews lasted for an average duration of forty (40) minutes each and were subsequently transcribed, verbatim, by the interviewer.

Due to the need for confidentiality, details of the interviewees were coded alphabetically to allow for increased levels of anonymity. The interviewees were academics who had majored in systems thinking and modelling. During the time of the interviews, they were working at the University of Salford, the University of Manchester and the St Gallen University, respectively. Table 5.2 below provides details of these interviewees.

Table 5.2 Profile of Interviewees (Unstructured Interviews)

Contacted Experts	Consenting Experts	Industry	Areas of Expertise/ Job roles	Location	Alphabetical Codes for experts
11	4	Academia	Professor	University of Salford, UK	A1
			Professor	University of Manchester, UK.	A2
			Professor	St. Gallen University, Switzerland;	A3
			Researcher	St. Gallen University, Switzerland	A4

Compiled by Author (2014)

These interviews were conducted between July and August, 2012. In addition to the unstructured interviews, the asynchronous online discussion forum approach was adopted to gain greater access to the global community of systems thinking experts. This online discussion group was hosted on a social networking platform, LinkedIn- a form of CMC (Section 4.8.2.3).

This closed group was only available to persons with an interest in viable systems theory and other forms of systems thinking and modelling alternatives. Its asynchronous nature allowed for the introduction of topical questions at intervals over a particular duration, leading to long term debates and expression of opinions by these experts. This process, which was carried out concurrently with the unstructured interviews, lasted for a longer duration of seven months, between July, 2012 and February, 2013. Within this time, a total of fourteen (14) discussants participated in the discussion forum. Whereas three discussants participating contributed once respectively thus being regarded as passive discussants, eleven others participated actively.

Table 5.3 below provides a vivid description of these active discussants and their background information respectively.

Table 5.3 Profile of Discussants (Online Discussion Forums)

Alphabetical Code	Job Role	Area of Expertise	Years of Experience	Location
E	Senior Project Manager, Management Consultancy	Application of systems approaches to management and organisation	12	Switzerland
F	Owner; Management Consultancy	Development of Target Operating Models utilising VSM.	25	United Kingdom
G	Partner; Management Consultancy	Application of systems approaches to management and organisational design	23	Switzerland
H	Director; Computer Software company	PhD in Systems thinking and Cybernetics	28	United Kingdom
I	Chief Solutions Architect	Cybernetics, Change management,	28	Canada
J	Solutions Manager	Systems integration and a passion for innovation.	19	Switzerland
K	Professional Consultant	Leadership, system design and modelling. Holds a PhD in Systems Modelling	14	Italy
L	Vice-President; Business Solutions	System Dynamics and Thinking; Next-Generation Enterprise development	14	Italy
M	Partner Management Consultancy	Specializes in Organisation analysis and design. Part-time Lecturer	18	United Kingdom
N	Management Cybernetician and Managing editor for systems thinking journal	Management cybernetics, Construction company owner	32	United States of America
O	Financial analyst and policy formulation expert	Policy development, international development, IT. PhD –Systems Modelling	23	Netherlands

Compiled by Author (2014)

Alphabetical codes were also used to confer anonymity on the discussants. These discussants shared an industry experience of an average of 21.5 years. This portrayed them as individuals possessing high degrees of experiential knowledge about the application of the VSM in various aspects of the real world.

5.3.2. Analysis of Data from the First Stage

Before the commencement of the analysis of the data which resulted from the unstructured interviews and the discussion forum, three preset categories were adopted by the researcher. These preset categories, were namely: knowledge of the VSM and its application; an identification of the attributes of the VSM; and the identification of various alternative models for the evaluation of organisational viability within systems. It is expected that these three categories would enable the researcher to partially fulfil the purpose of the chapter; the determination of the suitability of the base model - the VSM and its underlying theory, the theory of viable systems, in evaluating complex temporary multi-organisations.

5.3.2.1. Suitability of the VSM for Understanding Complex Temporary Multi Organisations

a) Knowledge of the VSM and its use

It was established that there was an appreciable level of knowledge of the VSM and its theoretical underpinning, the theory of viable systems, among this group of interviewees and discussants. All interviewees admitted to above average and expert knowledge of the VSM and the modalities for its use within the context of a complex social organisation. It was necessary to establish the level of knowledge held by these interviewees as they were involved with research related to generic systems thinking, unlike the discussants who were members of an online VSM group.

However, when asked about the rate of awareness of the VSM among managers, the discussants and interviewees all concurred with the fact that there was an apparent lack of knowledge outside the systems practice professional forum and academic community about the place of the VSM, cybernetics and management cybernetics in everyday managerial activities in the contemporary organisation. This was not unexpected as it had been previously confirmed by Jackson (1988b) and Espejo (2004) in their respective texts.

The discussants and the interviewees were of the opinion that this lack of knowledge was caused by the deficiency in the dissemination of knowledge concerning the VSM and its diagnostic attributes. M stated that...

“To some extent, particularly in the UK, VSM has suffered from a failure to fight its corner academically, it was slandered by other factions in the systems community as being mono-perspective and based on a command and control paradigm and that charge was never successfully refuted. So in a sense we have not done as well as we needed to either in maintaining our epistemological credentials, or in making VSM accessible to the mainstream market. Lots to do on both fronts...”

When asked his opinion on the limited literature on the application of the VSM within the academic community, unlike other systems thinking approaches such as the Soft Systems Methodology (SSM) and System Dynamics (SD), another interviewee, A1 added...

“...Beer’s writings on it did not make for easy read and comprehension....thus causing most researchers to stay away from exploring it further.....but I think that the guys at St. Gallen are doing a lot to improve the level of awareness within the research community.....”

Appearing to support the fact put forward by A1 on the difficulty in comprehending Beer’s earlier writings on the VSM and viable systems, N affirmed that...

“....My experience is the same as that of H..... In fact, I found myself unable to complete some of the exercises in Diagnosing and that was after extensive study of Brain and Heart and several years of both using the VSM and teaching about it.....”

From these statements, the insufficient information on the VSM and its application among industry experts, policy makers and others can be traced to various factors such as the writings of Beer which were mostly enshrouded in mathematical equations until recently, when he made attempts to change to easily comprehensible language in Beer (1993) and Beer (1984).

Although several researchers have started demystifying the difficult language in which the first versions of the VSM were presented, there is still in existence, a limited supply of real-life applications of the model (Ríos, 2012, Adham et al., 2012, Golinelli et al., 2011).

b) Identification of Attributes of the VSM

Deriving from the earlier extensive review of the extant literature on the VSM and its attributes which portrays its diagnostic tendencies, the researcher sought to establish from the discussants, which of the attributes of the VSM makes it appropriate for evaluating social organisations.

There was unanimity among the discussants as it concerns the ability of the VSM to provide a structure for relationships, both within and between organisations, for the purposes of attaining viability. F acknowledged this attribute of the VSM, and stated that.....

“...VSM accommodates a very wide range of concepts and ideas and deals with multiple perspectives, boundary critique and inter relationships as well as Shannon’s information theory”

Discussant I also identified this characteristic of the VSM...

“What VSM offers is a model of how we might structure an organisation so that its structure is best suited to be viable and complex-adaptive.”

Concurring with the above statement, A2 posited that...

“VSM is a particular framework for structuring thinking about organisations and organisational problems”

These views are in concurrence with the findings drawn from literature. According to Pfiffner (2010), the potential uses of the VSM include: the development of a simple structure with the attendant capability of dealing with increasing levels of complexity; and its ability to enhance integration between the outside and the inside as well as the present and future environments.

Pfiffner (2010) also added that the VSM could play an immense role in integrating structure and process, operation and management into one holistic model. This is a plus for the VSM, as the researcher intends to use the VSM to create a holistic model which integrates the policy-formulation system, the policy implementation system and the project delivery system in one model, replete with the attendant relationships between the constituents of each of these systems. It appears that such a model would enable a comprehensive evaluation of the policy implementation process, thus providing a conceptualization of the implementation

process (system) which Proctor et al. (2011) admitted was lacking, in policy implementation research.

Jackson (1988a) affirmed this significant attribute of the VSM to deal with organisations which possess vertically and horizontally interdependent parts through the creation of autonomy within the subsystems towards the overall objectives of the whole system (organisation).

An interviewee, AI agreed with the useful nature of the VSM in such circumstances as stated in the preceding section. He maintained that...

“Actually the VSM comes in handy when the organisation is one that needs to link up the strategy system with the operations system. Most flaws experienced in organisations arise from the absence of such linkages”

These linkages must not be within the system but also between the system, its sub-systems and the environment, as espoused by F and A2.

F argued that....

“Many academics believe and teach that VSM only deals with inter relationships within the systems of interest. This is not true. Cross boundary relations and understanding emergence are important and are accommodated by VSM. In fact there are several academic papers to this effect.”

Adham et al. (2012) admitted that the VSM was one of the foremost models which placed great emphasis on cohesiveness as a precondition for viability.

Another attribute of the VSM which was identified during the data collection stage by the interviewees and the discussants, was the versatility of the model which renders it context-dependent. Thus it can be adapted to several real-world situations and not just to organisations. This attribute allows the researcher to use it in modelling the IDS.

As if to buttress the flexible nature of the VSM, N declared...

“The other thing that works well is to ask people questions based on the VSM about their own organisations and to diagram their own organisations using the VSM conventions. I think that to the extent that Stafford's Diagnosing works at all, it is because it invites readers to use the VSM to think about their own organisations”

It could be seen from N's statement that the VSM possesses a huge degree of flexibility which can only be seen from the perspectives of the participants in the organisation being diagnosed for viability. One of the discussants, M, added...

“Every time I get asked to tackle a management problem where the traditional approaches fail and I apply the thinking in and around VSM I'm still (after 20 years) shocked at how easy it is to create radically new approaches from this deep well of theory.”

The VSM is not without its shortcomings. Especially within the body of literature, it has been severally derided as being just about structure and does not take into consideration the human angle, unlike the SSM which is known as a soft system. Jackson (1988b) highlighted this dichotomy between soft and hard systems models.

The researcher sought to establish if this dichotomy was a valid one and to ascertain its significance as bedrock for the development of a conceptual model for evaluating social systems such as the IDS (organisations) for viability.

There also appeared to be unanimous consent on the seemingly trivial nature of such a dichotomy among the discussants and the interviewees. They all agreed that the VSM provided a structure within which human relationships could also be assessed.

A2 observed that the VSM was not mutually exclusive to other systems including the SSM and System Dynamics. This confirmed the views espoused by Leonard and Beer (1994) where they stated that the several manifestations of the systems thinking such as the VSM, the SSM and the SD can be used together.

A2 advised that,

“It would be helpful if you can attempt exploring the use of the SD in your system 4 for forecasting the future environment in your proposed conceptual model”

From the foregoing, the supposed dichotomy between soft and hard appears to be merely cosmetic and of no real value as observed by H....

“I would not get too hung up about hard/soft classifications, they are red herrings...the VSM is a model of communication and control network that applies to hard and soft systems”

Another salient attribute of the VSM which renders it capable for the evaluation of complex systems as mentioned by K and O is the model's homeostatic nature. Homeostasis has been described as the tendency of organisms to regulate their internal conditions, such as the chemical composition of their body fluids, in order to maintain good health and functioning, regardless of outside conditions.

K asserted that organisms maintain homeostasis through the effective monitoring of their internal conditions.

“...Viable Systems are systems which possess homeostatic attributes which enables them to understand and regulate their internal conditions and respond appropriately when these conditions deviate from their optimal state....In your case which involves multi-organisations, I dare say that the ability of those organisations which make up the multi-organisation to understand and regulate the relationships existing between them on a certain project and to know when such relationships are not going as well as they should be....can be described as a homeostatic function” (K)

Arising from these views as obtained from the primary data and from extant literature, the researcher concluded that the issue of a soft/hard systems approach was not of value to the evolving model, as it had been proven that whereas there exists a kind of systems dichotomy tethering along the soft and hard continuum, the VSM could not be adjudged as leaning to one side but merely representative of a mixture of both.

c) Alternatives to the VSM for Evaluating Complexity from a Viable Systems Perspective

Whereas Elmore (1997) was cited by El-Hasia (2005) as having initiated the utilisation of a model approach to understanding policy implementation, A2 insisted that the issue of alternatives should be looked at from the perspective of the viable systems theory and understanding organisational complexity, rather than policy implementation. He furthermore suggested that it would be beneficial to narrow it down to the issue of complexity and its impact on organisational viability.

“It depends on what you are actually looking for in your research....I guess that you are asking for a case of apples for apples and in that sense....I would advise that you focus on viability and its diagnosis....its evaluation.....if that is the case, the only alternative would be the LST (Living Systems Model)”

On the other hand, when asked the same question, he maintained that...

“This is a difficult one to answer.....in that most people don’t have the same understanding of complexity as did Beer ...Because of this, my immediate response (to the question on any alternatives to the VSM) would be ‘there are none’”

It is amazing to note that although researchers like Jackson (1988b) and Leonard and Beer (1994) have classified VSM as one of the models for representing real-life situations through a systems thinking prism, Schwaninger (2006b) stated that the VSM was not only a model for gaining a systematic understanding and/or representation of real life scenarios but also a diagnostic model for evaluating viability within complex organisations. It is to this use that the VSM is put within the research study. The conceptual model which is premised upon the VSM and its tenets of viability is used to understand and evaluate the IDS from a viability perspective.

It was observed that all the interviewees and the discussants alike shared similar opinions where it concerned the suitability of the VSM in the evaluation of complex temporary multi-organisations. They also agreed that the flexibility and generic nature of the VSM availed the researcher the opportunity of mapping it upon any real-world project and not just conventional organisations as is usually the case. Based on these, the researcher adopted the VSM to reflect the entire delivery system of a typical infrastructure project. The rationale behind this decision was hinged upon the positive attributes of the VSM as confirmed by the data collected:

- Its flexibility and context-specific nature;
- Its supremacy in allowing for a holistic understanding of complex social organisations and diagnosing the same for viability;
- Its ability to structure an entire system, linking as it were, the strategic levels to the operational levels in a manner that is different from the hierarchical management structure design;
- Its superiority over other alternatives such as the LST, as highlighted in the earlier review of literature; and
- The inherent attribute of homeostasis possessed by every viable system.

Armed with a juxtaposition of these findings and relevant sections of the literature review as they apply to the suitability of the VSM as a credible platform, the study shall proceed to

attempt a validation of the proposed model-the VIDM. It is pertinent to note that this model was derived from the adoption of the VSM to an infrastructure delivery context, reflecting as it were, the various stakeholders to such a delivery activity and the relationships between these stakeholders. The emergent model is based on the proposition that a viable infrastructure delivery system should be able to understand and regulate the relationships between the project's primary stakeholders successfully, thereby guaranteeing successful project outcomes.

5.4. Second Stage: Structured Face-to-Face Interviews

In the second stage of the data collection exercise, structured face-to-face interviews were adopted to ascertain the opinion of another forum of experts in the bid to validate the emergent VIDM. Responses were elicited from a cross segment of stakeholders possessing experience of having been involved in the processes of policy implementation and programme/project delivery in various capacities within the public and private sectors. A total of sixteen e-mails were sent to sixteen identified individuals. These persons were resident in the United Kingdom and Nigeria. Out of this number, ten responses were obtained, all indicated willingness to be interviewed. Table 5.5 below shows the details of the interviewees' profile.

Table 5.4 Profile of Interviewees (Structured Interviews)

Establishment	Role/Job designation	Location	Alphabetical code
MDA (UK)	Head of Department (Projects Delivery)	London, UK	P
Infrastructure Client (UK)	Head of Procurement	Manchester, UK	Q
Contractor	Project Manager	Port-Harcourt, Nigeria	R
Contractor (UK)	Managing Director	Liverpool, UK	S
Infrastructure Client	Programme Director	Manchester, UK	T
IOC/JV Client (Nigeria)	Content Manager	Port-Harcourt, Nigeria	U
NOC Subsidiary (Nigeria)	Programme Director	Abuja, Nigeria	V
MDA Policy Implementing Agency (Nigeria)	Project Evaluation Officer	Yenagoa, Nigeria	W
Contractor	Managing Director	Port-Harcourt, Nigeria	X
Contractor	Procurement Lead	Port-Harcourt, Nigeria	Y

It can be observed, going by the tabular representation of the interviewees as depicted in Table 5.5, that various parties to the project/policy implementation activities ranging from the policy makers to the delivery partners such as contractors were well represented.

These parties were handed down the proposed model's underlying propositions and explanation with a sample of the model as developed.

A structured set of questions was drawn up by the interviewer in his bid to ascertain the opinion of these stakeholders on key validation issues such as: the strength of the underlying propositions and the explanation rendered; the ability of the model to truly represent the constructs that it seeks to do; to validate the outcomes of effective inter-organisational relationships as obtained from literature; and to elicit any other suggestions which might boost the validity of the proposed model. The propositions mentioned below are to be tested using the findings from the structured interviews.

- A viable infrastructure delivery system would lead to effective procurement and the attainment of desirable policy objectives.
- For the IDS to attain and maintain viability there must be excellent communication and collaboration between all parties to the delivery, usually ranging from the policy formulation through to the subcontractors within the delivery environment.

5.4.1. First Draft of the VIDM

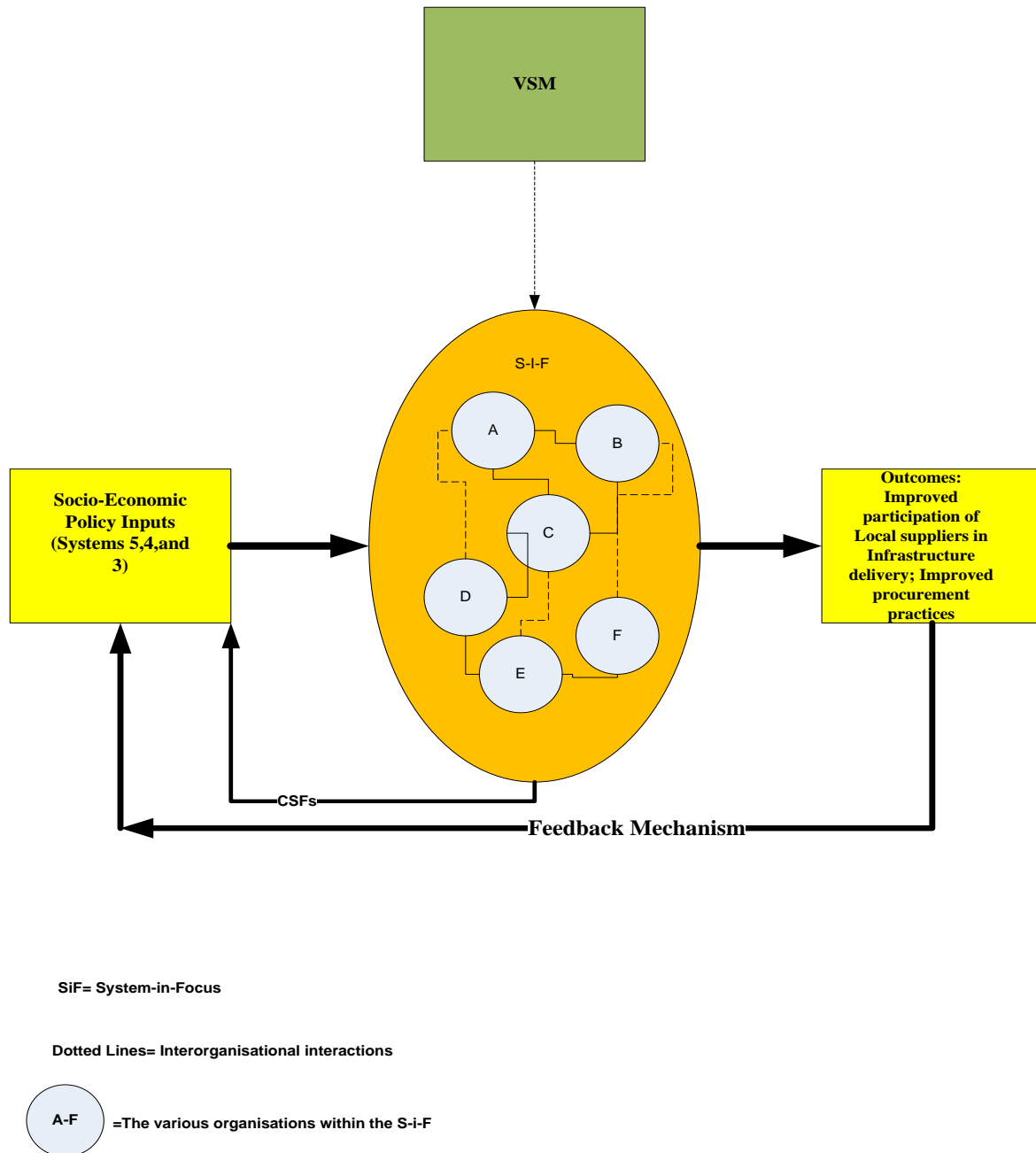


Figure 5.2 Initial Conceptual Model

The first draft of the model evolved from a juxtaposition of the literature and initial propositions. Using a simple input-process-output systems diagram, a relationship between the policy inputs, the process, and expected outcomes was established. Prior to this, the process stage of the basic systems model had always been regarded as a ‘black box’, often neglected but made recourse to in the event that a system fails to achieve these expected outputs. It thus became imperative to open up and assess the quality of inter-organisational relationships which exist within the process phase of the diagram, within the realm of policy implementation through to the delivery of infrastructure. In this regard, the VSM was mapped onto the process stage to identify the various stakeholders and to understand the inherent relationships existing between them. This action gave rise to the second draft of the model as shown in Figure 3 below.

5.4.2. Second Draft of the VIDM

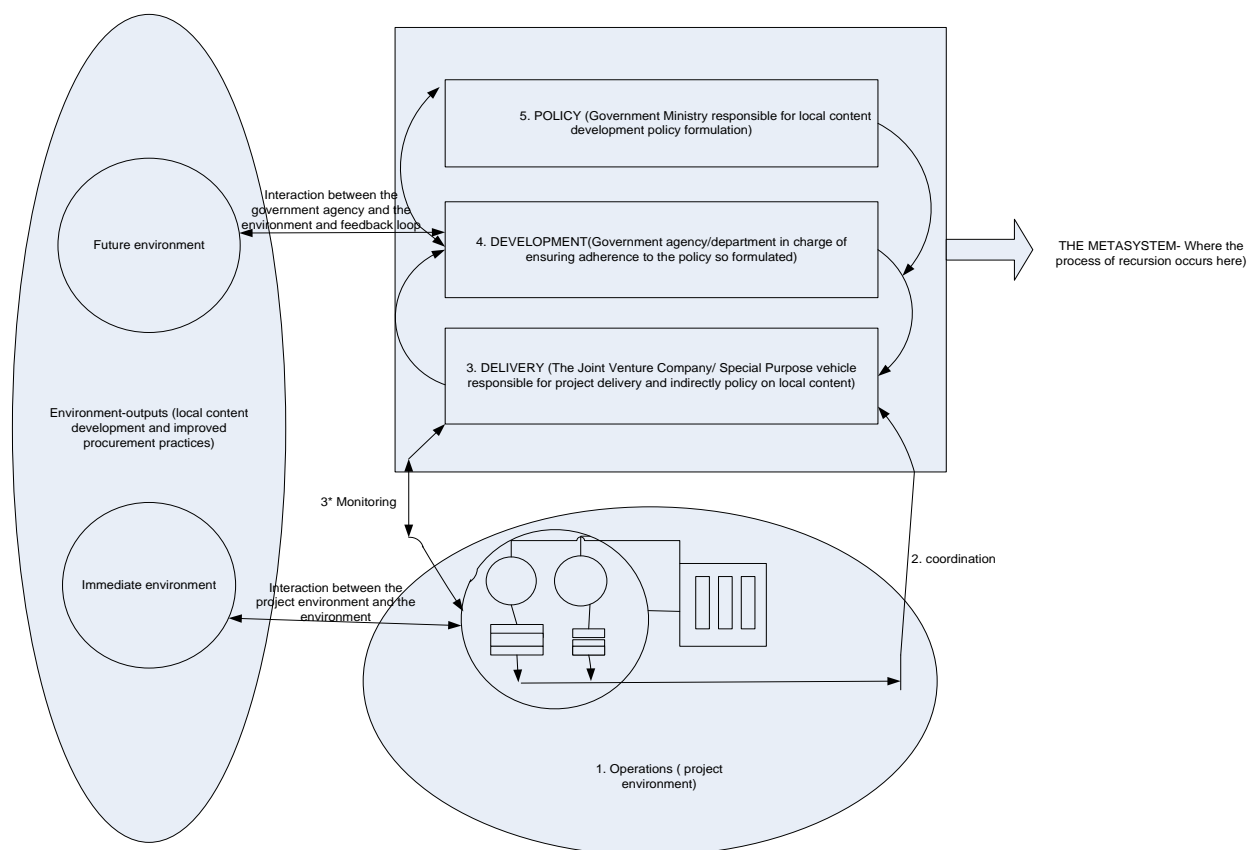


Figure 5.3 Second Draft of Conceptual Model

The second draft model in Figure 3 above was an adaptation of Beer's VSM which was mapped to reflect the nature of relationships between the parties to the procurement system (process phase), otherwise referred to as the IDS.

The purpose of the model is to enable an easy identification of primary project stakeholders within the IDS and to allow for a greater understanding of the complex relationships existing between these stakeholders, when viewed from a project environment. It is expected that this understanding would enable the client to effectively evaluate the viability of the delivery process at periodic intervals. Figure 5.3 shows these stakeholders as being grouped at different levels (subsystems) of the system within the project delivery environment. It also shows the interaction between the delivery system and its external environment. Its external environment is divided into two distinct time zones: the 'here and now', otherwise termed the present environment, and the 'there and after,' herein referred to as the future environment. Whereas the present environment maintains a direct contact with the project environment, the future environment is considered by the system 4 for planning and prediction purposes. Although the present environment is directly affected by the activities associated with project delivery, no attention is accorded to the environment as it clearly falls outside the scope of this research. The systems in the model, besides representing the various parties and their functions, is in tandem with the tenets of the viable systems theory and its model representation, the VSM as designed by Beer (Section 3.5).

This draft model as represented in Figure 5.2 above was presented to the set of interviewees listed in Table 5.5 separately and the set of structured questions highlighted below was asked.

5.4.3. Analysis of Second Stage Interviews

The questions and responses obtained from the interviewees are presented below;

Q1: Does the VIDM depict a systematic view of the relationships which exist between your organisation and other organisations within project delivery systems?

This question was aimed at establishing the ability of the proposed model to highlight a systems view of the entire relationships which exist between different stakeholders to a project delivery exercise throughout the lifecycle of an infrastructure project delivery from a project perspective.

There was a general consensus that the model reflected a simplistic representation of the relationships within the IDS. This was a good starting point for ensuring that the model truly represents what it sets out to represent.

However, W observed that the roles of monitoring and coordination were not exclusively the role of the operator or infrastructure client, but rather one that is shared by all the participating organisations.

According to him...

“I do have a problem with the position of the monitoring and co-ordination components of your model..... my organisation which you have listed as being in the system 4...we have a department that is involved in the monitoring and co-ordination of the Nigerian content implementation within projects according to the development plans submitted to us and I believe that this would be same at all the levels beneath us”.

S added....

“.....Yes I dare say that this diagram shows the simplified version of the sort of relationship which exists between the client and the contractor...I am saying this from experience having been involved with several projects with local councils across England”.

Q2: Does the VIDM properly identify the various stakeholders to an infrastructure delivery activity?

Six out of the nine interviewees representing 66.7% agreed that the VIDM highlighted the various stakeholders to the delivery process, whereas three interviewees representing 33.3% of the interviewee sample size indicated that the use of implementing and development agencies at the system 4 was ambiguous, stating that the model required more clarity as it concerned system 4 and its role. They enquired into the possibility of putting the financiers into the delivery system as well as the planning agencies.

Q3: As a stakeholder to the delivery of infrastructure, would you describe the VIDM as being easy to understand?

Whereas they all maintained that it was simple to understand based on the explanation rendered, some interviewees maintained that it would be more comprehensible if the model is shown in the context of the policy implementation process or the delivery process. They argued that it would be better understood if the model showcased the relationship between the model and the deliverables expected from it.

According to P,

“I would advise that you try to shed more light on where this model falls in within the project delivery continuum.....it would be helpful if it is shown in that context...as it would show what it intends to evaluate and how it intends to carry out such evaluation...yes, that would be quite helpful, as I am sitting here wondering how it is going to carry out what you say it would carry out...”.

Q4: Would you describe the VIDM as easy to use for evaluating interorganisational relationships within delivery systems?

After a thorough explanation by the interviewer, seven interviewees representing 78% of the interviewed sample stated that they couldn't tell if it would be easy to use or not at this stage. They maintained the need for the model to be put into context along the policy implementation curve and also for the dimensions necessary for the evaluation to be expressly stated on the model.

These observations were to be expected, as the initial validation was to establish two fundamental grounds: the appropriate nature of the base model and its underlying theory for the task of evaluating complex social temporary multi-organisations such as that which exists within an IDS and; the correctness of the model as it concerns the simplistic representation of the relationships between various stakeholders within a particular infrastructure delivery system.

Q5: Can effective communication and collaboration between various stakeholders affect the attainment of project/policy implementation success?

Extant studies (Dainty et al., 2006, EIU., 2010, Wanna, 2007, Schwaninger, 2006a, Nudzor, 2012) have all identified the importance of interorganisational communication and collaboration towards the development of viable systems. In accordance with the views already espoused by the aforementioned authors, the researcher posed this question to ascertain the views of the stakeholders who are positioned within the delivery system proper.

All the interviewees concurred with the fact that communication and collaboration were mandatory for successful implementation of projects and policies alike. According to T, This is even more so in the cases where the aspect of socio-economic policy to be delivered is not explicitly defined in the contractual documents. He maintained that...

“Things like engagement of local labour need to be communicated to the supply chain.....it would require extensive collaboration between the entire supply chain and the client to provide these add-ons to the project success criteria already set in the contract documents”

5.4.4. Summary of Findings from the Structured Interviews

The responses gathered from the structured interviews pointed towards the fact that the VIDM as designed truly represented most of the stakeholders who are involved in the implementation of policy from an infrastructure delivery perspective. Furthermore, the VIDM was described as being easy to use and to understand by a majority of the interviewees.

In testing the propositions as it concerns the important nature of interorganisational communication and collaboration within the IDS to the successful implementation of socio-economic policies, such as the engagement of local suppliers (as is the case with local content development policies and effective procurement strategies), the interviewees unanimously agreed that the presence of both features between the participating organisations to the IDS was imperative to the success of that IDS, especially as it concerned the implementation of soft socio-economic policies.

Armed with the views espoused by critical stakeholders thus far, the researcher shall proceed to develop a third draft of the model and to apply the same in the subsequent chapters, to attempt an in-depth evaluation of carefully and purposefully selected IDSs in a bid to further understand the nature of the interorganisational relationships from a viability perspective.

5.4.5. Third draft of the VIDM

Figure 4 below shows the improved version of the VIDM.

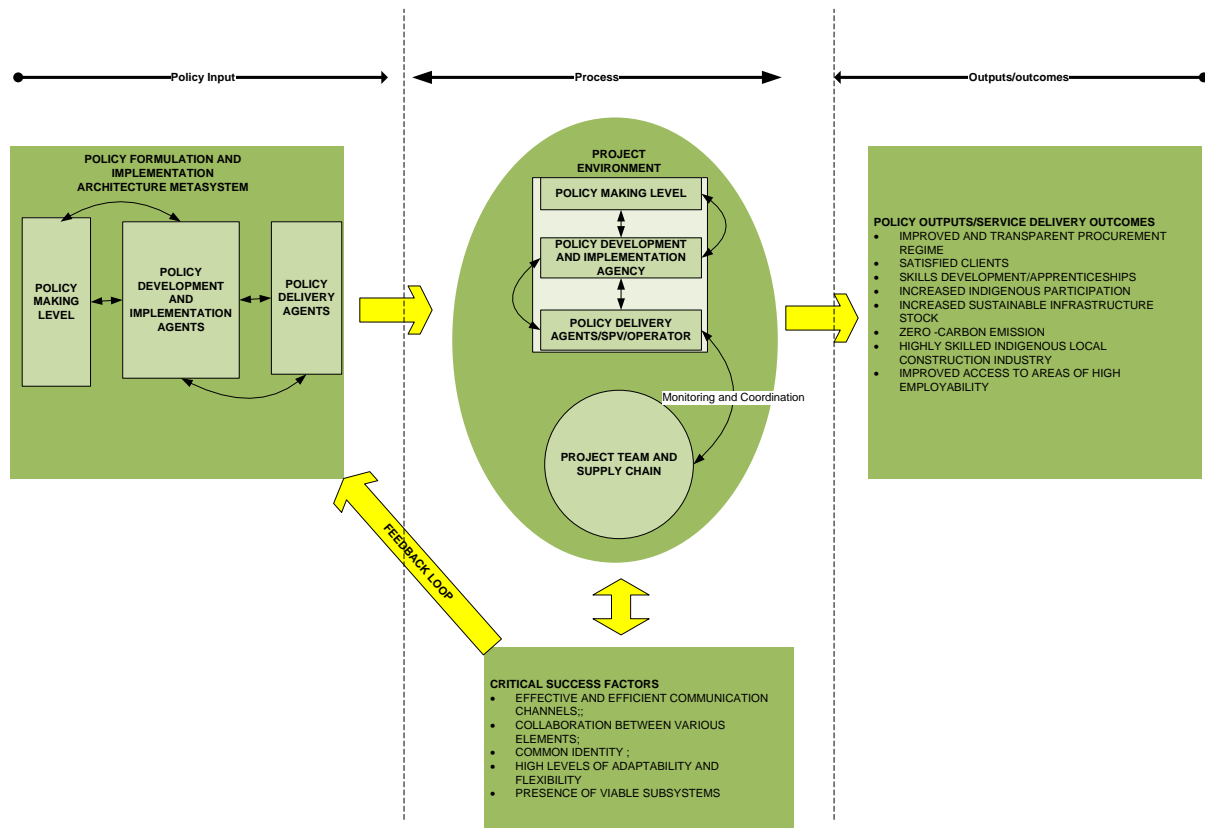


Figure 5.4 Final Draft of the Conceptual Model

In this version of the model, a proper contextualisation was carried out to reflect, in simple systems thinking terms, the position and relevance of the model within the policy implementation and infrastructure delivery process. In line with this positioning, the expected project outputs from policy implementation are identified from literature such as policy documents. These outcomes were identified from extant literature and validated by the interviewees. Subsequent validation and verification of this model was then carried out through case studies and shall be reported in the latter chapters.

5.5. Chapter Summary and Link

In this chapter, the stage for conducting the case studies was set through the initial attempts at model development and validation of the VIDM. Data was collected in two stages for the purpose of conceptual and theoretical validation and verification. The analysed data and the inputs of viable systems practitioners, policy implementation experts, and infrastructure

delivery experts proved beneficial to the validation of the VIDM. The findings of the structured interviews enabled the researcher to validate the VIDM and also to test certain propositions. It is expected that further inputs emerging from the case studies in the subsequent sections would also contribute to the enhanced verification and validation of the VIDM. This is in accordance with the VIDM's position as a *'tool'* and a *'product'* (Section 4.8.3).

CHAPTER 6. INTRA-CASE ANALYSES

6.1. Chapter Introduction

In furtherance to the verification and validation of the VIDM, findings obtained from the evaluation of the various case studies are presented and analysed in this chapter. Based upon the initial validation of the conceptual model which commenced in the previous chapter through a mixture of unstructured interviews, an online discussion forum, and structured interviews, further verification and validation through an evaluation of three distinct infrastructure delivery systems (IDS) as described in Chapter Four was conducted. This chapter catalogued three different case study reports. Most of the propositions of the study will be tested through the case studies selected for that purpose. Findings emanating from these case studies will then be analysed through a cross-case analysis in the subsequent chapter to allow for analytical generalisations.

In this chapter, the presentation format provided below was adopted to allow for clarity and easy comprehension;

- a) Review of the study's propositions
- b) Profile of interviews from policy formulation and implementation agencies
- c) Case One (IDS 1):
 - Description of IDS
 - Details of interviews and interviewees' profiles
 - Intra-case analysis
 - Summary of findings
- d) Case One (IDS 2):
 - Description of IDS
 - Details of interviews and interviewees' profiles
 - Intra-case analysis
 - Summary of findings

e) Case One (IDS 3):

- Description of IDS
- Details of interviews and interviewees' profiles
- Intra-case analysis
- Summary of findings

f) Chapter Summary and Link.

It is expected that at the end of the chapter, a proper understanding of the applicability of the VIDM would ensue and thus allow for the testing of the initial propositions and the generation of new findings (propositions). Also, it would avail the researcher with the opportunity to carry out a final verification and validation of the conceptual model, in accordance with the verification and validation guidelines highlighted in section 5.1.3 and Table 5.1 in the previous chapter.

6.2. A Review of the Study's Propositions

Adopting a systemic perspective, this research sought to develop an understanding of the relationship existing between the various organisations participating within the TMOs responsible for the delivery of infrastructure projects. Also, it sought to evaluate the influence of such relationships on the successful implementation of any underlying socio-economic policy initiatives during the project delivery lifecycle.

To achieve these objectives, there was need for the researcher to generate the propositions (Denscombe, 2007, Yin, 2009). They argued that a study's propositions which are mostly derived from 'how' and 'why' questions, are central to achieving the objectives of the study.

In this particular study, the researcher commenced with an initial set of propositions based on his knowledge of the infrastructure delivery system and the implementation of socio-economic policies in Nigeria. Following from a review of the extant literature within the realms of policy implementation, infrastructure delivery, viable systems theory, and local content initiative (a form of socio-economic policy which forms the crust of this study), these initial propositions were modified. It should be noted that the selection criteria employed in the selection of the respective cases, see Chapter Four, availed the researcher with the

opportunity to allow for both literal and theoretical replications (Yin, 1994) during the cross-case analysis, thus resulting in analytical generalisations.

The propositions to be tested during the course of this particular study include:

- 1) Enhanced local contractor/supplier development and participation in the delivery of infrastructure remains a recognised approach to engendering economic growth within the local economy.
- 2) Effective procurement remains pivotal to the successful implementation of socio-economic policies through infrastructure delivery systems.
- 3) There is an apparent disconnect between policy and implementation within the IDS.
- 4) A viable infrastructure delivery system would lead to effective procurement and the attainment of desirable policy objectives.
- 5) Infrastructure delivery systems can only attain viability if the interorganisational relationships are effectively organised and governed in such a manner that all the participating organisations share a common objective.
- 6) For the IDS to attain and maintain viability; there must be excellent communication and collaboration between all parties to the delivery, usually ranging from the policy formulation through to the subcontractors within the delivery environment.

It is expected that the findings from each of the intra-case analyses will allow for the testing of these propositions, with the exception of propositions 4 and 6 which have already been tested in the previous chapter. Also, proposition 5 will be tested during the cross-case analysis.

6.3. Profile of Interviews from Policy Formulation and Implementation Agencies

To present a comprehensive picture of the entire interorganisational relationships which existed within the abovementioned case studies, it was considered imperative to enlist the views of various policy making and implementation agencies and ministries which had some relationship with the delivery system. In accordance with this aspiration, the researcher identified these organisations within the Nigerian oil and gas industry and interviewed some of their high ranking personnel (management staff), with a view to understanding the roles which their organisations played in the delivery of the case study projects. These interviews,

classified as Statutory and Regulatory Authorities interviews, are incorporated into the findings which emanate from the various case studies respectively. Furthermore, the diagrammatic illustration of each of these case studies as shown in Figure 6.1 will highlight the position of these institutions within the IDS. Table 6.1 below highlights the profiles of these interviewees and the alphabetical codes used for the purpose of ensuring confidentiality.

Table 6.1 Profile of Nigerian Oil and Gas Industry Regulatory Interviewees

Institution			Job Title	Alphabetical Codes
Suppliers' Exchange Platform Agency			General Manager	GM
National Oil Company			Programme Manager, Capital Projects (Upstream)	PM
Federal Ministry			Assistant Director (Project Implementation)	AD
Regulatory Agency for the Oil and Gas Industry			Senior Manager, Technical (Upstream)	SM
Regulatory Agency for Local Content			Assistant General Manager, Compliance Monitoring; Senior Project Manager, Projects Evaluation and Monitoring	AGM SPM

Compiled by Author (2014)

As was indicated earlier, the views of these interviewees will be reflected in the presentation of the case study findings.

The findings from the case studies, IDS1, IDS2, and IDS3 are presented under two distinct themes: Critical Success Factors (CSFs) and Pathologies to Organisational Viability. The findings are reflective of the factors which were identified from the experiences of the participants to the delivery exercise as having either positively or negatively influenced the attainment of organisational viability of each of the IDSs respectively. Whereas the CSFs included: balanced contributions from member organisations, evidence of increased levels of cohesion, effective communication, the presence of the six core functions required for viability, transparency, and trust; the pathologies were comprised of structural,

communication-related, and functional pathologies respectively. The thematic framework which highlights the relationship between these themes and the main concept of organisational viability is represented in Figure 6.2.

6.4. CASE ONE (IDS 1)

6.4.1. Description of IDS1

The IDS 1 is a project delivery system (TMO) responsible for the entire development of a Floating Storage Production and Offloading (FPSO) facility. This FPSO is presently located within one of Nigeria's largest single deepwater oil fields in the country's Niger Delta region. The field upon which it is situated possesses an estimated 550 million barrels of crude oil, thus making it a significant project. The Engineering, Procurement, Construction Management (EPCM) contract for the delivery of the FPSO was awarded in 2008 and delivered in 2011. The cost of the project was given as \$0.8billionUSD. The FPSO, hereafter referred to as 'FPSO X' was designed to handle 200,000 barrels per day, 350 million cubic feet of gas production and an injection of 300,000 barrels of water into the vessel per day. It is also expected to have a life span of 18 years at its present location in Nigeria's Niger Delta region. The FPSO X project was carried out in stages across different countries, including Nigeria.

Since completion and installation, the project has often been referred to as a very good exemplar of development of local content within the Nigerian context, particularly considering it is an achievement of an estimated 200,000 man-hours of Nigerian content engineering and training, 3.3 million man-hours of Nigerian content fabrication and over 10,000 tons of Nigerian content fabrication during the construction phase. Reports have also indicated that several local suppliers benefitted from FPSO X in terms of supply of steel for manifold and suction piles fabrication; rigging equipment, consumables for welding , grating, coating, anodes, piping, and tubing packages. Local suppliers were also contracted to carry out the supplies of chemical storage tanks and screw compressors, gas turbine compressors and generators, sea water injection pumps and switchgear/motor control centres during the period of delivery.

IDS1 consisted of a Joint Venture (JV) company referred to as the 'Operator', an EPCM Lead Contractor, various subcontractors, referred to as 'suppliers' and the representatives from the agencies identified in Table 6.1. The contractual relationship which existed between the client and the supply chain has been highlighted in Chapter 4.

6.4.2. Details of Interviews and Interviewees' Profiles

Interviewees were selected from the various stakeholder organisations identified earlier in Chapter 5 as having been involved in the delivery of IDS1. They were interviewed through semi-structured interviews. These interviews were principally focused on gaining an insight into their experiences during the project delivery process. It should be noted that these experiences were specifically concerned with the implementation of the provisions of the local content legislations, 'Nigerian Content', in Nigeria during the project delivery activity. These interviews were held in a five month period, ranging from November, 2012 to April, 2013 across two major locations in Nigeria; Lagos and Port-Harcourt. The findings from this case study are juxtaposed with documentary evidence relating to the local content legislation and the findings from the interviews with the representatives of the regulatory agencies as indicated earlier where necessary.

Table 6.2 below presents the profile of the interviewees within IDS1 and their job titles as well as their alphabetical codes.

Table 6.2 Profile of IDS1 Interviewees

Sector	Organisation	Job Title	Alphabetical Code
Client (JV Operator)	IOC	Contract Holder	CH
Client (JV Operator)	IOC	Assistant Manager, Contracts and Procurement	ACP
Client (JV Operator)	NOC Subsidiary	Board Representative /Senior Relationship Manager	BR
Client (JV Operator)	IOC	Head, Content Development	HCD
Main Contractor	EPCM	Programme Manager	ProgM
Main Contractor	EPCM	Manager, Content Development	MCD
Sub-Contractor	Supplier (Fabrication)	Project Manager	SFPM
Sub-Contractor	Supplier (Logistics)	Manager, Supply Chain	MSC

Compiled by Author (2014)

Most of these interviewees have since moved on, although still within their parent organisations, with the exception of CH, HCD, SFPM and MSC who have remained in their roles within their respective organisations. With assistance from the other interviewees, it was possible for this researcher to gain access to them for the purpose of this study. At this point

it must be admitted that whereas these parties represented their organisations in the delivery of the FPSO X, an ultimate participant selection criteria, they do not make up for all the organisations that partook in this complex endeavour, particularly the subcontractors. However, it would be apposite to maintain that all the stakeholder groups were ably represented herein. Within IDS1, the suppliers to whom we had access, SPM and MSC, were both domiciled in the country. But whereas the latter is described as representing a Nigerian company according to the requirements of the Nigerian Content Guidelines, which later became the Act in 2010 albeit with minor adjustments, the latter is regarded as a foreign concern, despite the fact that it was based in the country.

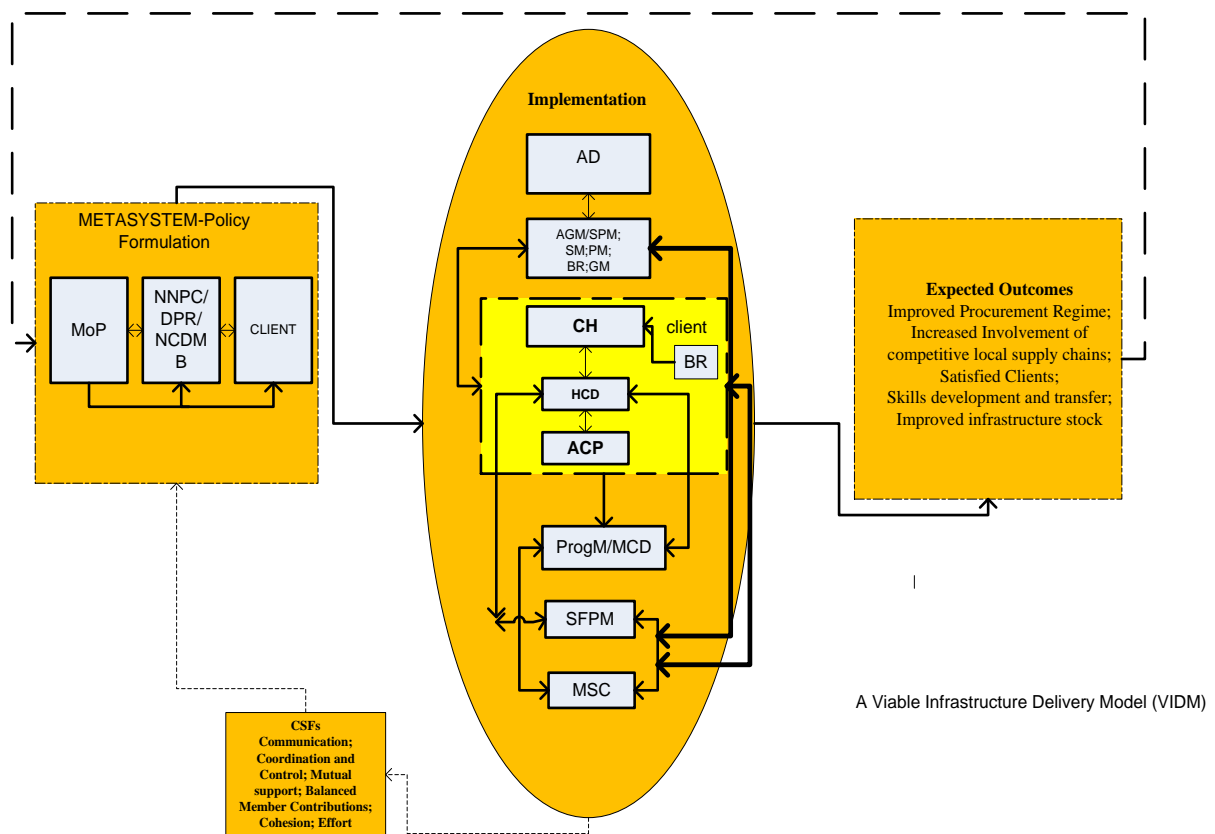


Figure 6.1 Relationships between the Various Interviewees within IDS1

6.4.3. Intra-Case Analysis of the IDS1 Data

The analysis of the data relating to the viability or otherwise of the IDS1 is thoroughly reviewed in this section. The data which was gathered from eight (8) interviews with the stakeholders, highlighted in Table 6.2, and the views of other interviewees from the regulatory agencies, enabled gathering of important information for testing the propositions.

6.4.3.1. Validation of the VIDM

In a bid to further strengthen the validation of the emergent model, the researcher presented the model to the interviewees within IDS1. They were asked to express their thoughts on the model's elements, the relationship between the elements, and the identified CSFs.

All the interviewees agreed with the VIDM's elements and the relationship between these elements as well the CSFs for effective interorganisational relationships and successful implementation. Furthermore, they identified the subsystems where their respective organisations were situated within the VIDM.

6.4.3.2. Relationship between Local Supplier/ Labour Engagement and Economic Growth

The researcher sought to ascertain the opinion of the various organisations within IDS1 as it concerned the relationship between the engagement of local suppliers and labour during the delivery of the FPSO X project.

In response, there appeared to be a general consensus between the various stakeholders on the immense contribution made to the growth of the local economy by the achievement of a high level of local supplier and labour engagement during the project execution phase.

According to MDC, the Operator whilst taking this singular fact into consideration, had sought to ensure the religious implementation of the Nigerian Content Development through the project. Furthermore, he added that the Operator had even created a Niger Delta Content programme within the organisation to give further consideration to suppliers based within the region where the project was situated. The views expressed by the other stakeholders were in conformity with the views espoused by MCD.

6.4.3.3. Effective Procurement and Successful Implementation of Socio-economic Policies

All interviewees from the IDS1 confirmed that effective procurement procedures were imperative for project delivery success. They stated that procurement was a very powerful

tool and needed to be used in a skillful manner to achieve the desired deliverables within the project, among which is the Nigerian/Niger Delta content development.

Stressing the significance of the procurement to the project success, ProgM admitted that the Operator did not toy with the issue of procurement during the delivery stages of the FPSO X project. He stated that the duo of technical and commercial evaluations was carried out during the Pre-Qualification stages. MCD, whilst concurring with ProgM, added that procurement strategy was effectively employed by the Operator to support the inclusion of local suppliers and labourers within the delivery organisation, as the EPCM contractor was compelled to register a subsidiary in the country and encouraged to use the suppliers listed on the Operator's supplier development programme. From the foregoing, it can be stated that the parties to the delivery of the FPSO X project understand the power of effective procurement and its influence on project/policy implementation success.

6.4.3.4. Disconnect Between Policy and Implementation within the IDS

The researcher sought to establish if there was actually, in existence, a disconnection between the policy and policy implementation levels of the IDS1. To do this effectively, the researcher adopted a broad categorisation of success and failure factors, herein defined as CSFs and Pathologies. These factors have been extensively discussed previously in Chapter three. He sought to establish where, if any, these disconnections occurred within the IDS1. The findings from the IDS1 are presented below.

a) Communication-related Pathologies

Evidences were gathered through the interviews, of several scenarios which fostered the growth and prevalence of communication-related pathologies within the IDS1 during the execution of the FPSO X project, capable of undermining the successful implementation of the local content initiative. These instances are reflected in the following subthemes presented below.

Lack of agreement among the parties regarding the definitions of a 'Nigerian' Company and Value-addition activities

From the interviews, it would appear that there was a substantial lack of agreement as it concerned certain definitional terms in the Act. One such disagreement was repeated by a majority of the interviewees, which was the issue of what a Nigerian Company should be defined as. Whereas the Act in Section 106 had defined a Nigerian Company as

“A company formed and registered in Nigeria in accordance with the provisions of the Companies and Allied Matters Act with not less than 51% equity shares by Nigerians”;

ACP opposed such a definition as he maintained that it did not truly reflect the situation on the ground, especially within the project environment.

According to him,

“The section of the Act which describes a Nigerian company in terms of the ownership structure is not proper and needs retooling or should I say rewording. The mere fact that the law seeks to refer to companies in which Nigerians own a minimum equity of fifty-one percent is, in a nutshell, boosting the rent-seeking culture which the Act set out to prevent in the first instance. I believe that rather than the issue of ownership, the crucial issue should be that of location...the company’s location, not merely its administrative headquarters as is being advocated by some state governors, but the areas where it situates its production activities should be used to determine what truly a Nigerian company is.”

In his contribution, HCD whilst agreeing with ACP observed that,

“ during the process of approval of the Nigerian content plan for FPSO X, the staff at the Content Regulatory Agency were not keen on the ownership structure as the questions asked and the documents required did not concentrate much on the issue of the Nigerian company from the perspective of the ownership, rather they wanted to see where the production of the component parts of the FPSO were being carried out...they sought to know why certain components were being sourced from overseas when there was capacity in-country to deliver such components...in fact, they pointed to certain companies in country that had the capacity to provide such components and just checking, although the recommended companies were incorporated in Nigeria, the ownership was majorly foreign as they were mainly subsidiaries of the foreign OEMS (Original Equipment Manufacturers)or their sister companies.”

Regarding the accuracy or otherwise of the definition of a Nigerian company by the Act, MCD posited that,

“The issue of ownership structure is not sufficient enough to retain capital in-country or to provide jobs in-country- two major thrusts of the Nigerian Content Act! We and I believe the Act as well should be more interested in the execution of value-addition activities in-country rather than the bickering over the ownership of the companies. Insofar as the companies are registered in Nigeria, pay their taxes in Nigeria, employ majority of Nigerians, execute their projects or work components in Nigeria, unless where these competencies or infrastructure are lacking, then I do not see any conflict in the actualisation of the Act’s thrusts.”

According to ProgM, in-country value addition should be the major pillar for the creation of backward linkages between the oil and gas industry and other sectors of the Nigerian economy. He stated that,

“The creation of backward linkages between our sector (oil and gas) and other sectors of the economy such as construction is what is needed and that does not have to do with the ownership structure of companies which have been incorporated to do business in the country! What matters is where most of their value addition activities take place. If most of the fabrication for instance takes place in the Niger Delta, most of the youth in that area can enrol to undergo training in that field for onward employment and other companies can also seek to acquire competencies in that field as well, to enable them to take part in activities in the same field.”

CH, whilst supporting the views held by other members of his organisation on this issue, buttressed that stemming capital flight was what was important and not the ownership of the companies.

He maintained that,

“In my candid opinion, I believe that all the hue and cry about the award of projects within the oil and gas industry to ‘Nigerian owned’ companies are misplaced. The issue should be about how to ensure that the project components are delivered in-country to a maximum degree to ensure retention of capital and support employment. Projects in our industry such as the FPSO X are multi-dimensional and are usually procured across several locations due to their magnitude. Take the FPSO X for instance, none of the major

workloads of the project was procured within the Niger Delta region. The majority of the jobs carried out in-country were done in Lagos where the supportive infrastructure is domiciled. Other component work projects were carried out abroad despite the fact that our EPCM contractor is a company registered in the country!”

Whereas it would appear that interviewees, ACP, HCD, MCD and CH are in agreement that Section 106 of the Act should be re-worded to de-emphasize the issue of ownership in the definition of a Nigerian company, interviewees BR, AD, SM and SFPM disagree totally.

BR posited that this issue had been a contentious one during the procurement stages of the FPSO X.

According to BR,

“At the point of scrutinizing the bids brought forward by all the bidders for the delivery of FPSO X, the issue of whether to consider a Nigerian company on the basis of ownership as stated in the Nigerian Content Guidelines of 2005 which later became the Act in 2010, or to use location of value added activities came up for consideration... I strongly supported the use of ownership structures for companies registered in Nigeria. My support was based on the fact that it was feasible for an indigenous company to seek to deliver more of its tasks within the country than outside the country... Companies which are registered in Nigeria but owned by foreign interests end up evading taxes, not employing Nigerians or even not allowing Nigerians to be involved in the higher levels of their organisations. This would not happen in a Nigerian owned company. Don't get me wrong, nobody is saying that some Nigerian owned companies are not phony companies set up to win contracts on the platter of local content and then end up selling the same back to these overseas companies for a fee, but that is a job for the Content regulator agency to do and as such, should not deter the use of the ownership structure in defining a Nigerian company”.

Presenting the views of the indigenous suppliers, SFPM insisted that the use of the ownership structure as contained in the guidelines and subsequently, the Act be sustained.

“I would think that the Act further does justice to the issue of what a Nigerian Company should be. In my organisation we are of the opinion that it should be further strengthened to reflect indigenous companies.”

When the researcher inquired into the difference between Nigerian company as currently defined and indigenous companies as mentioned by SFPM, he stressed that,

“Whereas Nigerian companies are those where Nigerians’ own more than fifty-one percent of the company’s total equity, the indigenous company would be one where Nigerians own a hundred percent of the total equity and execute all their projects within the project’s environment.”

Furthermore, he disputed the views held by ACP, HCD, MCD and CH stating that,

“In project FPSO X, we were recruited along with some other companies from the Operator’s supplier development network. Some of these companies were owned by overseas partners but registered in the country by the CAC (Corporate Affairs Commission). I must tell you that during the various phases of work execution, these companies resorted to employing only their nationals even in areas where the competencies existed in-country and you say that is not capital flight? Unless you agree that we do not have competencies to carry out cleaning...a Nigerian owned company such as ours would not do that...so there is absolute wisdom in that definition and as such it should be retained or improved upon to reflect indigenous companies.”

On the other hand, AGM agrees that there have been disputations as it concerns the interpretations of certain sections of the Act by project participants.

He admitted that;

“One of such challenges lies within the absence of proper interpretations of particular sections of the Act by the various participants involved with the development of a new project. Within the Act in it, because nothing in life is complete, there are certainly areas that need to be addressed. This is particularly so with regards to some definitions within the Act. These definitions as contained within the Act are not explicit in themselves and have led to several misunderstandings between our organisation as the statutorily empowered implementer and other organisations which have one role or the other in the implementation of the Act...”

Whilst identifying with the fact there were indeed problems associated with the definition of a Nigerian Company, AGM stated,

“There is a sort of dichotomy between the description of a Nigerian company and an indigenous company. I do not see any cause for this dichotomy as the Act expressly takes cognizance of the Nigerian company and not an indigenous company. In fact, according to the Act, the Nigerian company is defined as a company wherein the total equity owned by Nigerians stands at 51%. This implies that someone can establish a company and release 49% equity to foreigners and yet be seen as a Nigerian Company. Up till this moment, that is the company that is known to law as a Nigerian and an indigenous company. However, you and I know that an indigenous company can be described as a company wherein Nigerians own 100% equity and which is situated within the country and carries out its activities within the country, thus generating work based opportunities for the people of this country.”

From the foregoing, it can be seen that the law is explicitly clear on what should be defined as a Nigerian Company and as such, there should not be any reason for the apparent lack of agreement between the various stakeholders.

Lack of agreement and understanding regarding what constitutes a proper measurement index for measuring Nigerian Content Development

The lack of an understanding and agreement regarding what should constitute a proper index for the measurement of the local content was discovered from the interview transcripts, despite the fact that Section 11 of the Act set out the minimum levels of Nigerian content required to be attained in various activities, especially as they concern the delivery of projects within the industry. This was considered a communication-related issue as the Act, (Section 70(i)) actually specified that the Regulatory Agency for content development and monitoring should be able to disseminate information regarding these minimum standards and ensure absolute compliance by the parties involved.

This dichotomy was interestingly drawn across organisational lines. Whereas some organisational representatives such as AGM, SPM, HCD and MCD hinted that the measurement index as indicated in Schedule 11 was appropriate, other organisations, particularly the suppliers, advocated for the use of value or worth of work packages allocated

to them as a proportion of the total expenditure involved in the delivery of the infrastructure project.

According to AGM

“There is no unified means of measuring Nigerian content development within projects apart from that which is stated in Section 11 of the Act.... You know that people are looking at there should be a single unified criteria for evaluating different projects and that cannot be because projects differ. The requirements for a civil contract cannot be said to be the same thing as the requirement for a marine contract and the requirements that we would use for a marine contract cannot be said to be the same thing for an EPC contract.... Noting that Nigerian Content has been said to be value-addition in-country, it is the amount of in-country resource that we can use in the procurement and execution of the contract that can be used to measure Nigerian Content and this varies. Sometimes it can be measured in man-hours or as a volume of the total project expenditure spent in-country.”

HCD explained the process which the client organisation had carried out in their bid to gain approval from the Regulatory Authority for local content and argued that the issues highlighted during the approval process should be used in the measurement of local content development during the delivery process;

He maintained that,

“In line with project FPSO X, we had to file documents which showed that we had given considerable consideration to the use of Nigerian manpower in the execution of the projects. We were also required to show that we had adhered, as an organisation, to the requirements of the Act as every law abiding operator should do and also to share with that body, our plans for future trainings, recruitment and other forms of corporate social responsibility. We were also required to show that we had contributed our quota to the development of local content through the employment, training and retraining of our indigenous staff and suppliers and also to provide evidence of engagement of local suppliers within our supply chain. We also have to show how we are to source for the materials to be used in the delivery of the project etc. Only after we had fulfilled these laws did the NCDMB approve for us to

commence the advert for the project and it is on this basis that our contributions to Nigerian content development should be measured.”

MCD and SPM lent support to this assertion in their respective contributions to the issue of creating a unified measurement index for Nigerian content development.

According to MCD,

“we made commitments to the Operator when we bid for the project, in line with the use of local resources where permissible, that is where the use of such would not affect the delivery process... we relied on the use of the schedule as enlisted in the NCD guidelines as it then was, to showcase our targets and how we planned to attain these targets. The schedule recognised different measurement indices for different tasks and we adhered strictly to that provision.”

Corroborating the statement, SPM maintained that,

“Various parties want a uniform index for measuring Nigerian content activities but that in itself contravenes the provision of the Act in that regard. Certain activities within the capital project execution are better measured in terms of man-hours or percentage of work carried out locally whereas some other aspects, particularly those which relate to the purchases of products used in the delivery or even professional services are better measured in terms of volume and worth.”

Arguing against the absence of a unified measurement index, the suppliers maintained that this section of the Act was constantly manipulated by the Operator in collaboration with the EPCM contractor.

Buttressing his opinion on the matter, MSC stated that,

“There should be a uniform index for measurement of the progress made in the development of Nigerian Content and it would make sense for this uniform index to be in terms of the percentage of the overall expenditure which is allocated to indigenous suppliers rather than the use of man-hours.”

He further highlighted the disadvantage in the use of the man-hour and some other indices by the operators and the regulatory authorities when he maintained that,

“As one of the transportation companies who played a major role in transporting manifolds from the dockyards where they were fabricated in Lagos to the creeks of the Niger Delta where they were installed, we were mandated by the EPCM contractor to report our Nigerian content progress in terms of the number of man-hours logged in by Nigerian members of the crew... However, we were underpaid when compared to the amount paid to other shipping companies which were foreign-owned and had a foreign crew doing exactly the same work! Surely this would not work if we were asked to report progress as a percentage of the total logistics contract awarded to Nigerian suppliers.”

SFPM corroborated this claim when he stated,

“The EPCM contractor made it look like they were doing us a favour by enlisting us in the project, when in actual fact we possessed the required competence to carry out the task which we bid for. We were pressured at various times to employ some welders from the EPCM contractor’s country of origin and told to pay them in foreign currency. As a matter of fact, these expatriate welders earned up to three times the amount earned by the Nigerian welder and at the end we were asked to report progress by man-hours put in rather than the percentage of the spend that goes to the indigenous welders out of the total package.”

This problem would not have been a major issue as the law is expressly clear on the need for different means of measuring the progress made in several segments of the oil and gas industry.

Non-participation of crucial member organisations in the project supplier workshops

The various organisations within the IDS1 acknowledged the fact that the supplier development network set up by the Operator for the purposes of encouraging local suppliers was in actual fact, enabling them to win work with the Operator’s contractors such as in the FPSO X project.

In his rendition of this occurrence, SFPM maintained that,

“Within the course of the FPSO X project, the operator occasionally organised supplier workshops to hear about our individual progress as well as hear any complaints which we had to make as it concerned the FPSO X

project. I must say that this is one of the good things about our type of partnership with the operator. It is a good opportunity for feedback and sharing of knowledge about the project”

However, he lamented the absence of the EPCM contractor representatives at most of these project workshops stating,

“Unfortunately, the main contractor was always in the habit of not sending any representative to these workshops for reasons best known to him....so most of the time we, (suppliers) view these workshops as a social exercise of no great value in the absence of the main project driver.”

But ProgM innocuously denied any wrong doing as it concerned attendance at supplier workshops. He mentioned that;

“During the course of the project delivery process, the operator continued to further develop its relationship with the suppliers. Do not forget that one of the conditions upon which we were awarded the contract for the FPSO X project was our readiness and willingness to give preference to the firms on the supplier development network of the operator in the award of the sub-packages and these suppliers were directly contracted by the operator, based on our recommendation. Any issues raised at such workshops by the suppliers were brought to our attention by the operator.”

ACD corroborated this viewpoint when he stated that,

“Our organisation seeks to develop a vast network of suppliers with which it builds a great level of relationships. This allows for effective and seamless integration of these suppliers on projects. We equip our suppliers with the much-needed insight into our company’s vision and goals. This is done through several workshops.... It is expected that the relationships between our suppliers as developed through our workshops and interactive sessions would boost their relationship on the delivery site.”

Going by the description rendered by ACD, it can be stated that the workshops mentioned by SFPM and MSC are not for the EPCM to attend, but rather for the suppliers. This notwithstanding, the onus fell on the Operator to communicate to the suppliers that such meetings with the Operator did not equate to the periodic project meetings which the suppliers acknowledged as having had with representatives of the EPCM contractor.

Prevalence of knowledge silos within and between participating organisations

The inability of various departments within a particular organisation to communicate effectively limits the performance of such an organisation in the discharge of its duties. The implementation of the local content development policy is not an exception. However, the researcher discovered from the respective interviews emanating from the client organisation, the existence of knowledge silos pertaining to the manner through which the organisation implemented the local content policy.

An example of this was traced to several instances wherein CH attempted to shift enquires concerning the implementation of the policy, despite serving as the programme director for the FPSO X.

During the interview he reiterated this fact when he stated that,

“Inasmuch as I may be aware of the existence of the law, I wouldn’t say that I am an expert in its provisions. My task revolves around ensuring that the project is delivered as approved by the board. Simple! There is a Nigerian Content department within the company and I understand that they work in unison with the regulatory authority in that regard. It does not fall within my job description to meddle into such affairs.”

When the researcher inquired further into the process of seeking and obtaining approvals within the delivery of project FPSO X, CH maintained,

“There is a Nigerian Content Department in this organisation that has that assigned role of securing such permission...this is the situation as far as I am concerned.”

Furthermore, he sought to undermine the role of the Operator in the implementation of the policy, whilst passing the buck to the EPCM contractor,

“But again, need I remind you that we can only do so much (as regards local content development), as the actual burden of creating value locally and the engagement of local labour rests squarely with the lead contractor and his project manager.”

It would appear that this is in contrast to the opinions expressed by ACD, BR and HCD, who by the way belong to the same client organisation as CH, as well as the opinion stated by ProgM and GM respectively.

On the question of who the successful implementation of the local content development policy was dependent on, ACD maintained that,

“Our organisation seeks to develop a vast network of suppliers with which it builds a great level of relationships. This allows for effective and seamless integration of these suppliers into our various projects. We equip our suppliers with the much-needed insight into our company’s vision and goals. This is done through several workshops.”

Furthermore, ACD described the procedures taken during the Project FPSO X in ensuring that the local content development adherence was sustained by parties such as the EPCM contractor,

“In Project FPSO X, we made sure that the lead contractor bought into our vision as encapsulated in both the Nigerian content development plan for the project as approved by the NCD and our bid tendering and evaluation processes. We made sure that the subcontractors were locally sourced where such competencies were known to exist. 65% of fabrication activities for Project ABC took place in-country and this is a real feat! We also recorded tens of thousands of man-hours from local unskilled and semi-skilled labourers.”

As if to corroborate this statement, BR added that,

“We at this JV have an integral training programme for local suppliers and contractors and we do a lot of community support activities, so we do not have a problem with securing approvals from the NCDMB and we also try where possible to use companies that are registered in Nigeria and carry out their activities in the country. This would ultimately bring about value addition...Most of the subcontractors in the project were sourced from our local suppliers’ development network; a programme that we had set up in 2005 to support the growth of Nigerian content and even Niger Delta content.”

HCD further admitted that it behoved the client organisation to ensure the successful implementation of the Nigerian content policy. Accordingly, he stated that,

“We were also required to show that we had adhered, as an organisation, to the requirements of the Act as every law abiding operator should do and also

to share with that body, our plans for future trainings, recruitment and other forms of corporate social responsibility. We were also required to show that we had contributed our quota to the development of local content through the employment, training and retraining of our indigenous staff and suppliers and also to provide evidence of engagement of local suppliers within our supply chain. We also have to show how we are to source for the materials to be used in the project etc. Only after we had fulfilled these laws did the NCDMB approve for us to commence the advert for the project.”

On the issue of supplier engagement by the EPCM contractor, HCD continued,

“We try to make sure that local contractors, particularly those that are registered under our supplier development network, are actively engaged in the delivery of infrastructure projects.... Anyway following from our resolve as an entity to ensure that we groom our local suppliers to take part in our infrastructure projects as regards E&P, in 2005 we commenced our supplier development programme for indigenous suppliers.... These selected companies are conscripted into our projects by way of our very peculiar contracts and from time to time we try to expose their staff to trainings and re-trainings to make them perform more effectively and efficiently.”

ProgM seemed to admit to the influence of the Operator organisation in the use of local suppliers in the delivery of Project FPSO X, in line with the dictates of the Act when he referred to the fact that,

“One of the conditions upon which we were awarded the contract for the FPSO X project was our readiness and willingness to give preference to the firms on the supplier development network of the operator in the award of the sub-packages and these suppliers were directly contracted by the Operator based on our recommendation.”

Recounting his experience with the FPSO X project as it had to do with the use of local suppliers recruited by the client organisation, GM asserted that,

“Actually it took us less than six months to complete the PQQ as the client (operator) had already done a similar thing in-house and only came to us as a matter of formality.”

The opinions expressed by these interviewees run counter to that expressed by CH and thus signified the fact that knowledge about the implementation of the policy within the Metasystem of IDS1 was not being freely exchanged.

b) Functional Pathologies

Arising from the interviews conducted by the researcher, several subthemes aligned to the prominence of functional pathologies were observed. The subthemes observed are listed in their order of priority and include;

Absence of profound government support and political will

One of the CSFs identified as being imperative for organisational viability was the balanced contribution of member organisations towards the attainment of the same. Therefore, it is expected that the various parties to the delivery process would make attempts to play their roles within the IDS in such a manner that the successful implementation of the policy can be achieved. However, the researcher discovered that this was not the case, as some interviewees blamed the government agencies for not carrying out its own role, as stated in the Act, diligently during the execution of project FPSO X.

Highlighting some of the issues which fell under this subtheme, ACD mentioned that,

“Another problem we have is the lack of absolute cooperation from government agencies saddled with certain oversight functions. There were reports of bribes being asked for by state officials but unfortunately none of such was substantiated. Delays were experienced in the project as a result of the statutory provision in the guideline which states that the operator must seek for ministerial consent before improving upon the expatriate quota needed for the execution of certain tasks.”

Continuing, ACD further elaborated on an occasion where the lack of support from the government agencies actually set the project back about five months;

“Again, securing the ministerial consent was another nightmare as the guideline failed to expressly state how it was meant to be applied for. We applied to the department of the NOC responsible for monitoring Nigerian Content and they told us that it was not within their job scope. We were directed to another agency. Here we were told such permissions must be

sought directly from the ministry. This rigmarole cost us between four-five months with the attendant costs, regrettably.”

AD and PM during their interviews, stated that there was a very clear process for securing expatriate approvals for projects which had been sanctioned by the content development monitoring regulator and that delays were only possible when the operator had not followed the proper route.

According to AD,

“The Honourable Minister reserves the right to grant expatriate quotas to Operators and this is carried out by the minister herself, or through anyone to whom she delegates that authority. In most cases as with the Operators, we do not receive their application on time as they only come through when the content regulator fixes a site office visit and when we do get them, we notice several discrepancies, particularly with the issue of provision for the inclusion of Nigerian engineers to understudy these expatriates as demanded by the law...we also need clarifications as it concerns the availability of the same resource which they would rather import, in-country....All these things take time to verify”.

Narrowing down to his experience on the FPSO X project, PM maintained that,

“when the Operator sent across to us the expatriate quota, we felt that the quota reflected several skills which we had in-country and we told them so but they remained adamant and it took a lot of back and forth consultations between us to get the matter resolved before passing it on to the Minister for ratification....It would make more sense if the Operators participated in the skills gap analysis exercise which is jointly carried out continuously by the industry’s regulator, the NOC and the suppliers’ exchange agency at regular intervals, rather than relying on the one they did in-house.”

There were also complaints about the attitude of the staff from the government regulatory agency by ACD. He felt embittered by this fact and lamented that,

“They come to the site office unsure of what should be their measurement index for assessing the level of content developed during the project. This becomes a problem as they always query whatever figures are reported to

them by the contractors. I believe that they have to gain more knowledge about the task that they are being assigned to carry out.”

Furthermore, CH also identified the lack of support from government agencies as a drawback when he summarised that,

“One of the areas where I guess we experienced difficulties had to do with changes in government regulations. The level of inconsistencies in the communication coming out of government ministries and the regulating agencies was one that was confusing. This was a major source of distraction for us as a company and also as it concerns decision making on the project phase.... But the government should also take the industry into consideration when developing such laws. Right now, we are waiting for the PIB with baited breath. We don’t even know what they will come out with and these somersaults on the part of government do not encourage our efforts at implementing their policies.”

His assertion implies that there is generally a feeling of uncertainty as it concerns government regulations and how they impact upon activities within the industry.

HCD complained about delays in getting the approvals sanctioned by the content development and monitoring regulator, another government agency, as a result of bureaucracy.

According to HCD,

“It took them five weeks of back and forth communication to clear the project and give an ok for us to proceed, whereas the law states five days.”

Reiterating this lack of government support and political will to assist Operators to implement the policy successfully within their projects, HCD continued,

“The government has not really been a willing partner in the development of content. The emphasis on the PIB makes us wait for the PIB, hoping that at least that may buoy government interest in the content development. They need to develop the necessary infrastructure for local entrepreneurship to thrive. They need to ensure lower interest rates for these suppliers, simplify the contracting process especially by reducing the number of bodies conducting PQQs. They need to ensure that they develop the steel industry in-country and

provide a conducive environment for the development of certain parts in-country to service the oil and gas industry.”

The issue of the government’s non-commitment to the actualisation of the policy was also highlighted by the suppliers interviewed.

As a matter of fact, MSC questioned the government’s desire to drive the implementation process when he declared,

“In fact, sometimes if not most times, I doubt government’s sincerity with regards to the implementation of local content policies in the country...When we got wind of the plans to deliver the FPSO X project...one of the benefits of belonging to the supplier development network...we quickly got an American Marine operator who had a decent fleet to go into a joint venture with us, but although the law was clearly in support of forming JVs, the cumbersome registration processes at various governmental agencies scared away our investor...Government should be willing to simplify these processes for us”

In corroboration with the preponderance of several government-induced bottlenecks to the participation of local investors, SFPM lamented the extreme costs associated with participation in several registration exercises,

According to SFPM,

“The numerous PQQs which we underwent as a company, registering with the industry regulator, the suppliers’ exchange, the Corporate Affairs commission, the Operator, all of them government agencies and associates cost us a lot of money and I am sure that it would deter other sincere investors from taking part even if they have the competencies in-house...Even our attempts to partner with a reputable UK oil services company was scuttled by the powers that be at Abuja at some point.”

Surprisingly, whilst narrating the role of his establishment within the industry, GM agreed with the suppliers on what he described as undue government interference in the regulation of the sector. According to him,

“I am not holding forth for the inefficiencies of the Nigerian oil and gas industry system. For instance in Ghana, the oil and gas industry has limited government impact because most of the operators there have Production

Sharing Contracts (PSC). The oil companies do not need any approvals. They only need internal approvals, not external approvals. Here in Nigeria, you have to have NAPIMS approval for every process and then approvals for every process within the oil and gas companies. The emphasis should rather be at the internal processes of NAPIMS and the IOCs.”

As if to lend credence to the views espoused earlier by SFPM, he maintained that for any supplier to participate in the industry, he would need to;

“...have a DPR registration, then you come to the NIPLEX, and of course you must have been registered with the Corporate Affairs Commission (CAC). Then you come to NIPLEX and we require the registration from these agencies as background documents before we register you, then you pass through the NIPLEX processes.”

It would appear that this is not all, as GM stressed that,

“We began a joint audit of these suppliers with the IOCs and NAPIMS. This auditing is what is today referred to as PQQ. We have a consultant called Achilles Information Systems, an international audit system that is also used by all the IOCs to audit suppliers. So Achilles and NAPIMS, IOCs and NIPLEX personnel will jointly go to the premises of the supplier and then audit the contractor to show that the contractor is qualified to offer the peculiar services that he claims he can provide....Reduction in contracting timelines would enable more Nigerian companies to participate in the oil and gas industry.”

However, he observed that achieving the much needed reduction in procurement timelines was dependent upon the government through its numerous agencies and regulations.

He stated that;

“the existence of some other acts such as the Public Procurement Act of 2007 affects the contracting process in the oil and gas industry, as it places onerous responsibility on the contractors and IOCs to undertake certain acts twice or more times thus costing more and extending the time lines. Also, the presence of several governmental bodies makes it difficult to do business smoothly in the sector. Take registration for instance, as a supplier or contractor, you would have to register with CAC, then DPR, then NIPLEX and then in some

cases the IOCs... these registrations require money and time. In fact, as one of my friends stated in the past, the Nigerian oil and gas industry is suffocating under intensive government stranglehold on the industry. Over regulation is killing the industry. See the DPR, NNPC, NAPIMS, FIRS, NCDMB, and MOPR. The government should assist in making the contracting processes in the industry more simple and cost effective, thus enabling newcomers to play effectively on a level playing field.”

Lack of strong and viable industrial infrastructure in-country

Admittedly, all the interviewees were in absolute agreement that the poor state of infrastructure facilities in the country drastically affected their ability to successfully implement the provisions of the Act.

In his submission, SFPM maintained that,

“Over the years, we have developed the necessary competencies in aspects of underwater welding and fabrication, front-end engineering design among other key areas....but unfortunately we have not been able to win jobs on the scale that would really retain a higher percentage of the capital expenditure in the country. That was the case in the FPSO X project, we came together with a foreign company and another fabrication company which operated a dockyard in the country to bid for the EPCM role...we lost out and my contacts tell me that we lost due to the belief of the operators that we were intent on shipping component packages such as hull construction overseas since we did not have a shipyard in-country to perform such a task.”

MSC, a marine operator and logistics contractor to the FPSO X, added that,

“the lack of resilient infrastructure in the country has cost and would continue to cost indigenous contractors lucrative contracts and the government should look into this...most large fabrication jobs are being done in Lagos presently and do need to be conveyed to the installation sites in the Delta region due to the absence of proper dockyards in the region...This leads to the shipping of jobs out of the region to cities such as Lagos, as was the case in the FPSO X.”

HCD admitted this when he averred that local suppliers...

“...lacked the necessary infrastructure to carry out the needed work for the delivery of the FPSO X”

Part of the reasons for this assertion was based on the fact that,

“...the FPSO X could be likened to a vessel. As a Nigerian how many shipyards have you seen in the country which are functional and which can withstand the capacity for vessels of such magnitude!” HCD

Whilst enumerating the challenges to the incorporation of local suppliers into bigger roles in the delivery of projects such as the FPSO X, HCD maintained that ...

“The lack of infrastructure in the country also works against the use of the local suppliers on the project. As a matter of fact, the Nigerian companies which put in a bid for the EPC role in the project actually possessed the capability to perform the task as proposed, but the absence of a proper ship yard worked against their bid as we felt that they would subcontract their role to another foreign company, thus bringing on additional costs and risks.”

ACD agreed with HCD in this regard. According to ACD,

“First, is the problem of resource availability...Within the region and the country in general, the lack of an effective industrial backbone has resulted in the clear lack of skilled manpower in this area.”

Instances of Corrupt practices/lack of transparency in bidding processes

Evidence of corrupt practices during the delivery process was highlighted by most of the interviewees, with each organisational representative levelling accusations against other parties whom they had come into contact with during the delivery period.

Commenting on the nefarious activities of suppliers, HCD highlighted the fact that,

“There was also this incident among the subcontractors where it was alleged by the EPCM that some of them were actually selling off their work packages as a result of lack of finance to carry out the packages.”

Still on the activities of these suppliers, HCD continued,

“I wish to reiterate that the non-willingness of local suppliers to play by the rules is a major challenge. Even though we carried out a clinical technical and commercial evaluation on them and that we selected them from our

supplier development network, yet some of them who scaled through were not cut out for the tasks which they won to perform.”

ACD on dodgy activities of suppliers,

“A certain subcontractor was reported to have sold off his task to another as he did not have the resources to carry out the task. Our lead contractor refused to work with the new subcontractor as he insisted that the new contractor did not have a good record of delivering on time and to quality.”

“Also, unfortunately a lot of political contractors were taken aboard in the early stages of the contract, but were luckily found out by the lead contractor.”

From the foregoing, it would appear that the suppliers are the only ones involved in corrupt practices as stated by HCD and ACD, however during their interviews, the suppliers interviewed independently alleged that some sort of connivance was going on between the organisations at the Metasystem level.

According to MSC,

“The main contractor and the Operator are always in the habit of rigging bid results. That is why they cannot discuss the rationale for selection of successful bidders on various projects. I must say that we were lucky to have won this task since we don’t have an ex-staff of the operator company on our board....the operator and the main contractor always prefer to select suppliers that have ex this and ex that on their boards or even relatives of serving staff of the operator company or the NOC.”

Whereas SFPM maintained that he was not aware of any particular issues of connivance between the other organisations, he maintained that there was a possibility of such because,

“The operator and the main contractors enjoy working with familiar faces on projects and I do believe that there is a possibility that the bids are rigged once in a while to favour those familiar faces who they believe can deliver what they want within the project.... on FPSO X we weren’t selected based on whom we know but based on our competencies which is glaring for all to see.”

Ill-defined organisational identity

Within the realm of system thinking literature, the identity of a system has been described as what the system does or what it has been set up to do. If there is no clear definition of a system's purpose, then there is a high possibility that such a system would not be able to carry out the task for which it was originally set up. Drawing upon this analogy, the researcher set out to establish if the participating organisations possessed a common understanding as it concerned what the identity of the IDS1 was.

Going by the Nigerian Content Act, it was expressly stated that the development of Nigerian Content should remain the topmost management philosophy upon which all activities in the Nigerian oil and gas industry should be based.

Section 1 of the Act stated that,

“Notwithstanding anything to the contrary contained in the Petroleum Act or in any other enactment or law, the provisions of this Act shall apply to all matters pertaining to Nigerian content in respect of all operations or transactions carried out in or connected with the Nigerian oil and gas industry”

Buttressing the point made in Section 1, Section 2 added,

“All regulatory authorities, operators, contractors, subcontractors, alliance partners and other entities involved in any project, operation, activity or transaction in the Nigerian oil and gas industry shall consider Nigerian content as an important element for their overall project development and management philosophy for project execution”

Impliedly, every IDS operating within the Nigerian oil and gas industry should focus on the development of local content through their individual or joint activities. Therefore, this researcher sought to establish if this was the case with the IDS1. Questions were posed during the interview sessions with the respective parties to establish what the identity of the delivery system was, from their own organisational perspective. These questions ranged generally from the key considerations for project selection through to key criteria for measuring project success on the FPSO X project, to the key factors for partners/subcontractors/Contractors' selection exercises.

It was not surprising that the various organisational representatives had a different perspective of what the system's identity was, however, it was unfortunate to note that whereas the representatives from the client organisation and the suppliers; CH, ACD, BR, HCD, ProgM, MCD, SFPM and MSC had made positive comments about local content development, they did not think of it as being central to their delivery exercise in a similar vein to factors which could lead to timely execution of the projects or activities, completion of activities to budget and to the expected quality.

In a response to the question on what the key considerations were for selecting the FPSO X project from among the various alternatives available to the board, CH maintained that,

“Our decisions on what areas of the bloc to commence exploration and production depends on the location of that particular well, that is, we have to consider whether it is onshore or offshore, the amount of investment that needs to be ploughed into the bloc exploration and production, this investment is in terms of both financial and technological inputs. Since we are a Joint Venture, we need to make sure that all partners understand the costs of the new venture and the associated risks in terms of the environment.”

Completely affirming the views espoused earlier by CH, BR added,

“Oh our considerations were based upon the cost of the project, the financing options available to us, the duration of the project and the impact of such duration on the expected profitability of the oil acreage, global status of the international oil market and also a technical evaluation of the capabilities available to deliver the projects...”

On whether the issue of Nigerian content formed a part of the criteria used in the measurement of project success, ACD maintained that;

“For us at the procurement and contracting department, we strive to strike a good bargain for the procurement of our infrastructure, ensuring that we have procured the best team to deliver the project; having the right project delivered at the end of the day according to the initial specifications is also another major plus.”

Commenting further, CH added that,

“As you are aware, what constitutes success is usually dependent upon which angle the assessor is looking at the project from. So there would be different success criteria for different parties. For us as an exploration and production company, our projects are meant to serve that purpose and the maximization of the attendant benefits which accrue from the use of such an asset in boosting our activities. For project FPSO X, I consider the entire project a success in several ramifications. Chief among which is its safety record as measured in man-hours, its functionality and quality are outstanding! The absence of severe disputes was another plus although we had certain misgivings among ourselves due to small misunderstandings here and there; none of them resulted in major setbacks as we were able to resolve them internally. I guess this would be as a result of our long term collaboration. The entire project was indeed a successful one!”

Furthermore, BR buttressed the views which had been expressed previously by ACD and CH, stating that,

“I would say that the success criteria for my company as a partner to the JV are in the development of a facility at the best price, quality and time to enable us to boost production to the optimum.”

When asked by the interviewer, HCD maintained that the project success criteria would best be measured in terms of the quality of the delivered asset and its functionality. When the researcher probed further by the interviewer about the issue of Nigerian content, he quipped,

“Yes that’s also a success criteria...the prevalence of highly competent Nigerian firms winning work in our industry is indeed a success factor for us as the Operator.”

The responses obtained are not only at variance with Sections 1 and 2 of the Act but also with the organisation’s project documents which celebrate the improvements in the use of local resources to deliver the project FPSO X.

In similar fashion, the EPCM contractor representatives and the suppliers ProgM, MCD, SFPM and MSC premised their success criteria upon their ability to win work on the FPSO X, their ability to deliver the same to the satisfaction of the client organisation and their profits made from the project execution.

According to SFPM,

“As an organisation, the conditions for measuring success on the FPSO X project would normally be viewed from three dimensions. First of all, getting the opportunity to participate in the project was a major success factor for us as space on the project was keenly contested for by several suppliers, both foreign and local alike. Secondly, our ability to deliver to the client’s specification was another plus factor for us as that would normally guarantee us more work in the future and finally, we made some good money off the project which was good”

Quite understandably, AGM, SPM and SM maintained that the views held by the Act as it concerns the salient nature of the content development within projects should be recognised by all parties who carry out any sort of projects within the sector.

According to SPM,

“Yes we know we are not there yet as it concerns ensuring that every operator sees local content development as a critical part of their success stories within the various projects which they are involved with. However, for us at this organisation, we would like to measure progress from the level of improvement in the use of local resources and locally situated value added activities performed within projects across the industry.”

SM added that,

“With regards to the way and manner in which the industry functions, our success criteria within the delivery of the infrastructure projects within the sector by operating companies would ordinarily be that the projects that are delivered conform to the best international practices in their procurement and delivery especially as it relates to cost, quality and health and safety issues. Such projects would also be considered as successes if they are established as having conformed to the laws of the land such as the local content development act.”

Again, all the representatives of the client organisation maintained that the local content considerations averagely ranked third on their supplier/contractor selection criteria after consideration for technical and commercial expertise and previous relationships. This response contravened both section 3 (1-3) of the NOGICD Act (2010) which expressly stated

that first consideration be accorded to Nigerian owned companies with the requisite capacity to deliver when procuring for any activity within the oil and gas industry, and section 10 which maintained that,

- (1) *“A plan shall contain provisions intended to ensure that-*
 - a) *First consideration shall be given to services provided from within Nigeria and to goods manufactured in Nigeria; and*
 - b) *Nigerians shall be given first consideration for training and employment in the work programme for which the plan was submitted.*
- (2) *Any collective agreement entered into by the operator, project promoter or other body submitting the plan with any association of employees respecting terms and conditions of employment in the project shall contain provisions consistent with this section.”*

Lack of access to finance by suppliers

This was another critical impediment discovered from the interviews. There was a common consensus among the various parties as it pertained to the issue of funding shortages among local suppliers. The parties interviewed unanimously cited this factor as a major set-back in the successful implementation of the Act, particularly as experienced on the FPSO X project.

Alluding to the reasons for this lack of access to finance on the part of local suppliers, HCD mentioned that,

“...we found out that a majority of the Nigerian owned suppliers are essentially run as one-man businesses and that works against them when it comes to accessing finance from various financial institutions both those here and abroad”

ACD blamed the lack of access to finance as being the reason why most local suppliers win work on the altar of local content and then sell off the work packages to other capable foreign contractors.

According to ACD,

“A certain subcontractor was reported to have sold off his task to another as he did not have the resources to carry out the task.”

ProgM agreed with this assertion and maintained that there was need for the provision of cheaper finance for indigenous players within the sector, stating that,

“Cheaper financing models would enable better local participation in our supply chains. When you consider the ninety day payment cycles within which these suppliers are paid by the Operator for their services and also consider the fact that these suppliers need to borrow such funds from local banks at an average of 25-28%, only then would you begin to understand the impact of costly finance on the survival of these local firms.”

On the FPSO X project, he maintained that,

“The suppliers were lucky as they were paid within the ninety-day window by the Operator. I was not aware of any complaints of non-payment or delayed payment for work which had been certified as complete.”

The suppliers SFPM and MSC on their part lamented the high cost of finance during their interviews, indicating that it ate into their profits thus leaving them with little funds to reinvest into their business.

According to MSC,

“We were operating with a bank facility that was pegged around 22% and this affected our profit margins as well as our re-investible funds. If the government is really serious at encouraging our participation in the industry, they should seek out ways of providing us with cheaper funds.”

Poorly resourced MDAs and Suppliers

Furthermore, there were insinuations from some of the interviewees about the poor resources available to the suppliers and the regulatory authorities to effectively implement the local content policy.

Particularly singling out the suppliers and the Content regulatory authority respectively, HCD declared that,

“However, most of our local suppliers lack the wherewithal to deliver on projects of massive dimensions such as the FPSO X project, hence the need to look elsewhere for contractors.... When I say that they lack the wherewithal, it is not only a function of the lack of skills and qualified personnel but more importantly, the right company structure and access to cheap finance. The company structure is very important as you would not want to award

contracts running into billions of dollars to a sole proprietorship business where the all processes are controlled by one man!”

On the Content regulatory authority staff, he continued,

“I also think that they need to be properly resourced as it was clear that most of their personnel lacked the capacity to do the job of content development measuring and management. So in line with this, it became more difficult in the early days to report and measure content development.”

BR affirmed HCD’s perception of resource availability within the supplier community when he added that,

“The issue brought up was as relating to the inability of most of our registered suppliers to supply the right resources for the delivery of the project in-country.”

In like manner with the earlier cited interviewees, ProgM and CH also shared the opinion that the regulatory authorities and the suppliers should be better resourced for a more creditable performance.

Requirement of performance bonds by suppliers

The issue of performance bonds was also raised by various interviewees in IDS1. However, whereas HCD, MCD and ProgM appreciated the fact that it was a risk mitigation necessity to protect the operator from losses owing to unfinished work on the part of the suppliers and other parties, SFPM and MSC basically felt that it was inimical to the growth of their organisation.

On the need to maintain performance bonds, HCD maintained that

“...we had charged them to deposit performance bonds so this prevented us from paying for the contract twice. We paid the newcomer from the performance bonds deposited by the old non-performing partner.”

Countering the need for such colossal deposits, SFPM stated that,

“The issue of performance bonds is a known occurrence within the industry, but the amount charged is what is painful... despite the fact that we belonged to the operator’s supplier development network, we were still required to

provide a banker's guarantee to the cost of the total package awarded to us. This does not come cheap either!"

c) Structural Pathologies

The interviews revealed various instances, herein categorised as subthemes which pointed towards structural deficiencies within the delivery system, particularly in the manner of relationships between the various organisations. The under listed subthemes are aligned to the structural pathology theme and they include;

Presence of several MDAs performing similar roles at the same levels of recursion (confusion)

From the experiences of the various interviewees as it related to their functions and responsibilities to IDS1 from a content development perspective, it became glaringly obvious that the sector was being over-regulated and this singular factor tended to prolong the procurement pathways, thereby amplifying the cost burdens on the suppliers and the contractors as well as creating unnecessary complexities within the delivery process.

GM agreed that was the case when he stated,

"Also, the presence of several governmental bodies makes it difficult to do business smoothly in the sector. Take registration for instance, as a supplier or contractor, you would have to register with CAC, then DPR, then NIPEX and then in some cases the IOCs."

An exemplar of the kind of confusion which such complexities could cause was identified in the statement made by ACD,

"Securing the ministerial consent was another nightmare as the guideline failed to expressly state how it was meant to be applied for. We applied to the department of the NOC responsible for monitoring Nigerian Content and they told us that it was not within their job scope. We were directed to another MDA. Here we were told such permissions must be sought directly from the ministry."

ProgM, MSC and SFPM conceded that this factor bred much confusion during the delivery of the FPSO X project.

According to ProgM,

“Getting into the Nigerian oil and gas industry was not an easy task at all...especially with the numerous registration procedures. We even got confused at some point. Not being sure of what document to submit to whom and what to retrieve from whom. Our lawyers had a huge job on their hands at that time.”

SFPM looks at it from the cost burden perspective,

“We spent a lot of resources in trying to get registered with the industry regulators when we first came into the industry and I would imagine that it would be much harder these days, given the multiple agencies littered around the industry today. In our time, there weren’t this many and yet we faced a strong battle to get in!”

d) Critical Success Factors identified in IDS1

Owing to the data collected from the interviews, the researcher was able to identify some of the CSFs which had already been highlighted as being crucial to the attainment and sustenance of organisational viability. See Chapter 3 and Figure 6.X for a list of these CSFs. However, within the IDS1, certain CSFs aligned to the various categories highlighted in the abovementioned sections were identified. Instances where these CSFs were identified are highlighted below.

Identification of the presence of structural recursivity in the client and contractor organisation

Structural recursivity is used to connote the ability of the various subsystems making up the viable whole to possess the same features required to achieve and maintain viability. In IDS1, it was observed from the organisational descriptions rendered by PM, SM, AGM, SPM CH, ACD, BR,HCD, ProgM and MCD, that the client, the regulatory and the EPCM organisations all possessed internal structures which reflected the same features of the overall project delivery organisation required for attaining viability within the organisations.

These features are comprised of the presence of a board and managing director (policy), various departments responsible for project development; contracts and procurement (intelligence), a contract holder and the project team/implementation evaluation units in

regulatory agencies (control, monitoring and co-ordination), and supply chain/project officers in regulatory agencies (implementation).

The same cannot be said however about MSC and SFPM, the suppliers interviewed. From their interviews it would be apposite to state that their firms, whilst having a board and a managing director, remained poorly organised without internal structures to support internal governance.

This discovery lent credence to the revelation made previously by HCD when he stated that,

“We found out that a majority of the Nigerian owned suppliers are essentially run as one-man businesses and that works against them when it comes to accessing finance from various financial institutions, both those here and abroad.”

The presence of these features in the organisations participating within IDS1 would lead to improved governance of intra-organisational processes and thus render the respective organisations viable. With this, these organisations can in turn contribute to the viability of the whole (IDS1).

Identification of the presence of the stakeholder organisations performing the functions needed for organisational viability

According to systems viability literature, certain roles are imperative for the attainment of viability within a particular system. As such, in the IDS being evaluated, any identification of the presence of any organisations within the IDS which are imbued with the capabilities to perform these critical functions will be deemed as a CSF. In IDS1, various stakeholders were identified who were mandated to carry out the functions of policy formulation (AD), policy development/intelligence (SM, AGM, and SPM), delivery, control and co-ordination (CH, ACD, BR, and HCD), and implementation (ProgM, MCD, SFPM and MSC) with regards to the actualisation of the goals of the Nigerian content policy through the execution of the FPSO X project.

Effective communication between the Operator, on one hand and the contractor and suppliers on the other hand

Interviewees representing the EPCM contractor and the suppliers, ProgM, MCD, SFPM, and MSC all alluded to the fact that the Operator had made efforts during the delivery stages to ensure that they were kept abreast of issues concerning the development of Nigerian content.

This was done through the execution of several workshops by the Operator to continually monitor contractors and suppliers' development at various stages of their respective projects, among which was the FPSO X project.

Accordingly a client representative, HCD posited that,

“So we were in constant interaction with the EPC as well as all the suppliers and the project office served as an avenue for meeting of various minds, a sort of melting pot. So that is how we procured and delivered the FPSO X project.”

SFPM acknowledged this, stating that,

“We attended periodic workshops at the Operator's instance where we were reminded of the Nigerian content deliverables expected of us and asked to share our progress with other project stakeholders, a sort of interactive session, I guess it was held bi-monthly, I can't remember exactly at this point.”

From the foregoing, several instances have been observed within IDS1 depicting the existence of various sorts of disconnect between the policy formulation and implementation levels of the IDS1. These instances have been presented according to three distinct pathology categories. Although some CSFs were identified with IDS1, the intensity of the disconnection encountered portrays the IDS1 as one which did not attain viability.

6.4.4. Summary and Conclusion of IDS1 Case study

From the description of the IDS1, it can be seen that the researcher took utmost care to reflect the core selection criteria required for the necessary replications and proposition testing. Also, it must be admitted that the analysis of interviews in IDS1 highlighted several issues associated with the core areas of this study. Furthermore, the findings emanating from the interviews allowed for the testing of the propositions which had been mentioned previously in this chapter.

Based on the findings espoused above and in relation to the propositions reiterated previously, the case study report of the IDS1 arrived at the conclusion that IDS1 was not a viable delivery system as a result of the non-alignment of the various stakeholders of the IDS1 towards the attainment of the local content objective. Hence, its inability to achieve successful implementation of the provisions of the NOGICD Act (2010), particularly as it concerned the engagement of local suppliers and labour on infrastructure projects. This

conclusion was arrived at following an analysis of the data emanating from the interviews and a further testing of the aforementioned propositions with these findings.

In summary, it was observed that the various stakeholders within IDS1 concurred on the truly representative nature of the VIDM and its usefulness for evaluating the implementation process. Also, they were united on the positive impact of the engagement of local suppliers on the local economy and also on the ability of parties to use effective procurement to drive successful implementation of the local content development during project execution stages. However, further diagnosis (evaluation of the interorganisational relationships between these stakeholder organisations) revealed that the actions and the inactions of these stakeholders undermined the viability of the IDS1 through the poor communication, the execution of their functions and through the structure of the IDS. These findings were categorised into four broad categories: communication-related pathologies, functional pathologies, structural pathologies and CSFs; and are presented below.

a) Communication-related pathologies

- There was a lack of agreement among the parties to the delivery of the FPSO X project as it concerned the certain definitions and measurement criteria which had been provided for within the NOGCID Act (2010). Worthy of mention are the disagreements within IDS1 as to the proper definition of a ‘Nigerian’ company and the difference between a ‘Nigerian’ company and an indigenous company. Furthermore, there were conflicts within the IDS on the appropriate measurement criteria to apply in measuring the progress made on the development of Nigerian content within the FPSO X project.
- It was also discovered that the regulatory agencies stayed away from the supplier workshops arranged by the Operator, thus not allowing for proper sharing of information on progress made in the attainment of Nigerian content within the project.
- Within the Operator’s organisation, evidence was deduced from the interviews about the prevalence of knowledge silos within the organisation, as various departments’ shared limited information in relation to issues concerning the development of Nigerian content.
- The suppliers felt that they were the target beneficiaries of the Nigerian content policy and complained when they did not win jobs on the basis of ownership status. However, they were quick to employ foreign contractors to deliver the job packages awarded to them.

b) Functional Pathologies

- The absence of government encouragement to organisations within IDS1 to engage local suppliers and/or labour was identified.
- The absence of a strong industrial base in-country encouraged various organisations carrying out tasks on the project FPSO X to ship out jobs to foreign contractors/suppliers.
- Corruption and lack of transparency during the pre-qualification and bidding process was highlighted as a barrier. In furtherance to this, allegations were made about favouritism among certain players, and the outsourcing of awards to foreign contractors by local suppliers.
- There was no clearly defined and/or commonly shared goal with regards to local content development within IDS1.
- Nigerian content was not given prominence in the selection of the EPCM contractor.
- The local suppliers bemoaned the lack of access to cheap funds to enable them to compete for job packages, insisting that the Operator's concentration on cost efficiencies made it difficult to compete favourably against foreign suppliers.
- The statutory government agencies did not possess the requisite resources to engage in proper monitoring of the implementation of the Nigerian content. The framework available to them for monitoring Nigerian content development was only used at the pre-project stages for granting approval to the Operator's Nigerian content plans for the FPSO X project, and an assessment of the post-project reports on the level of progress made during the project. Equally, most of the suppliers lacked the necessary resources to execute projects on the FPSO X project due to a shortage of skilled manpower in-country.
- Supplier organisations lacked effective organisation and management structures.
- Suppliers were asked to provide performance bonds from reputable financial institutions up to a minimum of 125% of the award sum. According to them, this was a tall order for most of them.
- Parties to the IDS deliberately undermined the provisions of the NOGICD Act during the procurement stages, as the Operator specifically sacrificed local supplier engagement for lower prices and familiarity with a contractor.

c) Structural Pathology

- The presence of several agencies performing similar functions led to overregulation and also indicated excessive government interference in the industry's procurement and project delivery activities. The impact of this excessive interference is mostly felt in the procurement sector, as the plethora of pre-qualification exercises conducted by various agencies alongside necessary approvals were mentioned by various parties within the IDS, particularly the Operator, the main contractor and the suppliers, as leading to expensive project delivery regimes. For the suppliers, the numerous pre-qualification exercises posed as barriers to their participation in the delivery of the FPSO X, particularly as they were also exposed to further periodic pre-qualification exercises by the Operator.

d) Critical Success Factors

- Structurally, IDS1 showed evidence of the presence of various organisations responsible for the execution of the six key functions required for organisational viability. However, whereas the presence of these organisations signalled a positive start for the attainment of organisational viability, it did not translate to the actual performance of these tasks in a manner that would portray the IDS1 as a viable organisation.
- There was an effective communication channel between the Operator and the EPCM contractor; and the Operator and the suppliers on the other hand.

6.5. CASE TWO (IDS2)

6.5.1. Description of IDS2

IDS2 was comprised of the TMO responsible for the holistic delivery of a certain section of a major pipeline project, referred to within the study as the ‘pipeline project’, in the Niger Delta region of the country. This pipeline project was conceived as a medium to aid the delivery of natural gas from the oil and gas fields to the industrial estates and gas-fired power plants in the country as part of the Nigerian government’s gas infrastructure master-plan programme. The pipeline project formed part of a thirty-year concession granted by a subsidiary of the National Oil Corporation in Nigeria to a wholly Nigerian owned corporate, to deliver gas to various locations in the country. As part of this concession, the corporate has to develop and maintain a pipeline network to achieve the reticulation (distribution) of natural gas) to prospective clients of the granting authority, hereafter referred to as the ‘Gas Authority’ under what is termed as being part of the Domestic Gas Supply Obligations (DGSO).

The pipeline project which was studied as part of this particular research, is a phase of one of several pipeline projects being delivered by the Nigerian Corporate, referred to as the ‘NigCorp’ subsequently. NigCorp was awarded the contract for the construction of a 180km length pipeline traversing a total of 132 different communities across three states within Nigeria’s Niger Delta region, in July 2010. The contract was awarded under an Engineer, Procure and Construction (EPC) contract to another wholly Nigerian owned EPC contractor. The pipeline project was awarded in July, 2010 with the actual construction commencing in October of the same year. The delivery of the project was carried out in two phases, phases 1 and 2. It should be noted that this study was concerned with Phase 1 of the entire project which was worth an estimated \$270million and which measured approximately 101km in length and traversed 112 communities in two different states. This phase of the project was commissioned in September, 2012. It involved the laying of a 42” diameter pipeline over the abovementioned distance. The IDS2 for the phase 1 was comprised of several Nigerian suppliers, the lead contractor, and regulatory authorities.

6.5.2. Details of Interviews and Interviewees' Profiles

Following the same approach used in the identification of interviewees adopted in IDS1 above, the researcher was able to successfully select interviewees from all the stakeholder organisations who were involved in the delivery of the 'pipeline project' within what shall be referred to as IDS2. The use of semi-structured interviews as well as document reviews were applied in a bid to obtain the required data from the sample size selected. These interviews were once more centred upon the personal and organisational experiences of these interviewees as it pertained to the implementation of the Nigerian content Act during the various phases of project delivery in which they were involved as representatives of their respective organisations. These interviews were held over a five month period, ranging from November, 2012 to April, 2013, across three major locations in Nigeria; Lagos, Calabar and Abuja. The findings from this case study are juxtaposed with documentary evidence relating to the local content legislation and the findings from the interviews with the representatives of the regulatory agencies, just as was done in IDS1.

Table 6.3 highlights the organisational backgrounds and job roles of the various interviewees, alongside their alphabetical codes.

Table 6.3 Profile of IDS2 Interviewees

Sector	Organisation	Job Title	Alphabetical Code
Client (Public Sector Partner)	Gas Authority	Manager, Supplies	MGS
Client (Private Sector Partner)	NigCorp	Programme Director (Network Improvement)	PDN
Client (Private Sector Partner)	NigCorp	Project Manager (Client)	PMC
Main Contractor	EPC	Managing Director	MMC
Main Contractor	EPC	Assistant General Manager, Nigerian Content	AGMC
Sub-Contractor	Supplier (Burrowing)	Project Manager	PMS
Sub-Contractor	Supplier (Rig and Dredging Services)	Administrative Head, Projects	HPS

Compiled by Author (2014)

These interviewees were active participants within IDS2 and thereby provided insightful information into the relationships between the organisations as it concerned the implementation of the Nigerian content during the delivery of the pipeline project. Owing to the fact that the second phase of the project is still on-going at the moment, all the interviewees are also involved in the delivery of phase 2 which is a continuation of phase 1, thus making it easier for them to relate to the issues being studied.

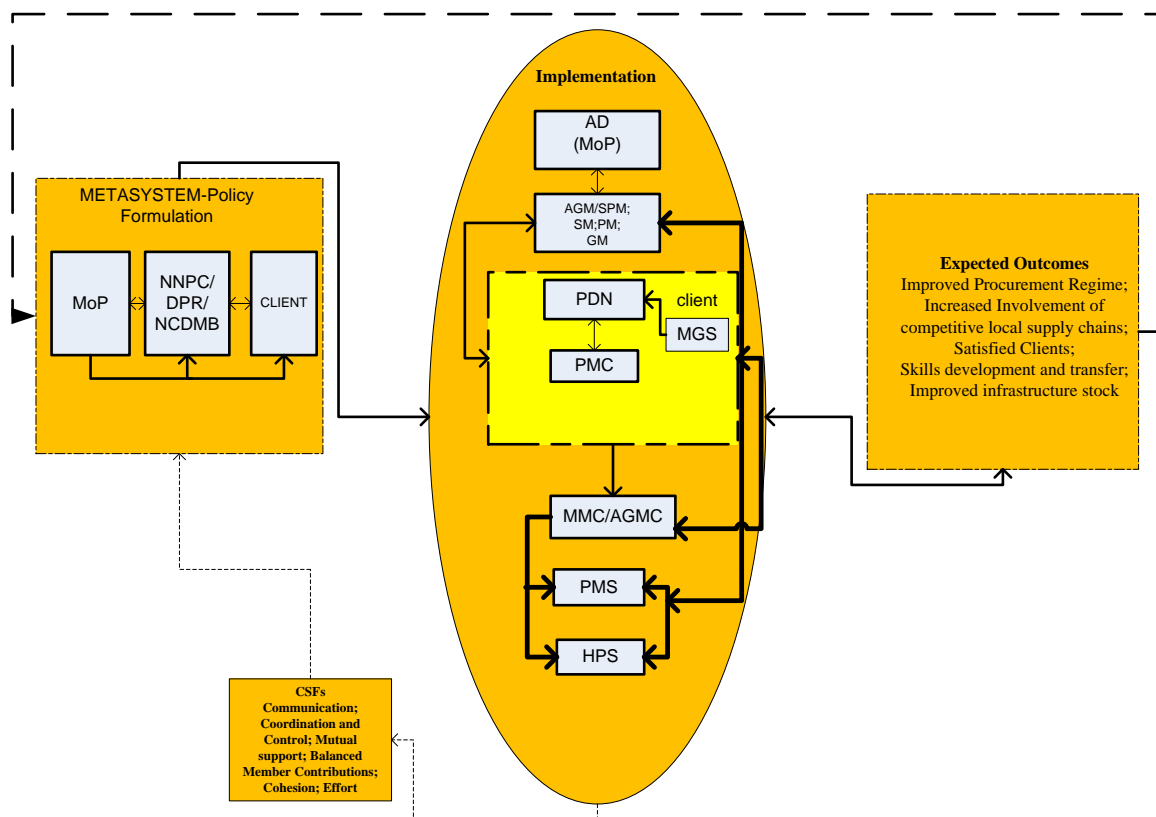


Figure 6.2 Relationships between the Various Interviewees within IDS2

6.5.3. Intra-Case Analysis of the IDS2 Data

Data emanating from the seven interview sessions with the stakeholders listed in Table 6.3 and the six interviews sourced from the sessions with the regulatory officials conducted by the researcher were analysed in this section. The analysis of the data was carried out in line with the objectives of the data collection exercise and by extension, the overall study.

6.5.3.1. Validation of the VIDM

The opinions of the various interviewees in IDS2 on the validity or otherwise of the VIDM was sought by the researcher. As was the case interviewees in IDS1, previously, the

interviewees all concurred to the truly representative nature of the various elements of the model as well as the CSFs for effective interorganisational relationships and successful implementation of socio-economic policy initiatives.

6.5.3.2. Relationship between Local Supplier/ Labour Engagement and Economic Growth

The researcher sought to obtain the views of the various stakeholders to the delivery of the pipeline project on the relationship between local supplier and labourer engagement and enhanced retention of infrastructure investment within the local economy.

All the interviewees agreed that the use of local suppliers and local labourers during the project execution stages possessed the capability of contributing immensely to the growth of the local economy. They opined that besides the retention of capital within the local economy, the engagement of such suppliers from within the local economy would reduce the restiveness and hostility faced by NigCorp and similar companies in those communities during the execution of projects in the Niger Delta region.

According to PMC, there was need for the engagement of these suppliers and labourers as they possessed native knowledge which every project manager can utilise to his advantage or ignore at his peril. Even the suppliers themselves, PMS and HPS agreed that the use of local labour where such skills were found, was central to the successful execution of their work packages, as this factor reduced the level of hostility and sabotage which they are otherwise faced with.

6.5.3.3. Effective Procurement and Successful Implementation of Socio-economic Policies

In a similar vein, the interviewees agreed on the positive influence of effective procurement strategies in achieving successful implementation of socio-economic policies. They insisted that the manner in which a project is procured affects the attainment of success or otherwise of such a project.

According to MGS, the choice of partnering NigCorp in the development of a gas distribution network from a retinue of foreign owned-alternatives was due to their desire to achieve the objectives of the local content development initiative. However, he agreed that NigCorp also possessed the required expertise, hence the award of the concession to the organisation.

On another level, MMC admitted the strong contribution of procurement to the successful implementation of the local content development policy. He attributed his organisation's ability to win work from NigCorp in part to NigCorp's desire to fulfil the tenets of the local content development act and maintained that the client organisation has also encouraged him to recruit local labour to carry out subcontracts within the pipeline project.

6.5.3.4. Disconnect between Policy and Implementation within the IDS

In accordance with the researcher's desire to test the propositions which have arisen from literature and experiential knowledge, the researcher inquired into the activities of the various organisations and their relationships with other organisations. This provided the researcher with the opportunity to understand the nature of interorganisational relationships which existed within the IDS2 and to establish how such relationships impacted upon the successful implementation of the local content act within the delivery stages. This approach enabled the researcher to establish the presence or otherwise of a disconnection(s) between the policy formulation and implementation of the policy from the project perspective. Findings accruing from these interviews were presented according to two main categories; Pathologies and CSFs, where the former are the failure factors highlighting the probable instances of disconnection within the IDS, and the latter represents critical success factors identified during the interviews by the interviewer. Furthermore, the pathologies are divided into three aspects, namely; communication-related pathologies; functional pathologies; and structural pathologies. The CSFs are in accordance with the success factors highlighted in Chapter three.

a) Communication-related Pathologies

Instances relating to the communication-related pathologies were discovered from the transcribed interviews and as such were categorised under the label, as indicated earlier in the tree node diagram above. Such instances are reflected in the following subthemes presented below.

Lack of agreement and understanding regarding what constituted a proper measurement index for measuring Nigerian content development within the pipeline project

Although the position of the Act on the various measurement indices for measuring different work packages within a project are clearly specified in Section 11 of the Act, the viewpoints expressed by the parties indicated a lack of agreement between the various organisations on what the actual measurement indices should be within the pipeline project.

MMC, AGMC and PMC complained about the lack of appropriate measurement reporting standards for their Nigerian content development achievements during the delivery of the project. They insisted that the MDA's officials lacked the skills to comprehend properly the measurement indices contained in the Act.

According to PMC,

“There were instances where officials from the government agency had disapproved of our style of reporting Nigerian content development within the project which was according to the index provided by the Act.”

On the other hand, SPM maintained that having been a party to some implementation monitoring meetings with the EPC and NigCorp, he was taken aback by the bid of the EPC, a Nigerian company, to exploit the absence of a standardised measurement framework to under report the volume of its supplier outgoings which were spent on local suppliers.

He stated that,

“Whilst the law is clear on the deliverables expected of the projects being carried out in the oil and gas industry, vis-à-vis the development of Nigerian content, we have often been confronted with the problems of deciding how to measure these deliverables being reported to us by the operators...whereas the operator has reported a huge increment in the number of local-man hours used, the massive disparity between the expenses made to cover the wages of the local resource and the one made to hire expatriates and machinery for tasks on the project from overseas companies called for serious concern.”

It was also discovered that NigCorp did not stipulate any targets for the contractor during the PQQ and bid evaluation stages. According to PDN and MGS, after having selected the contractor based on price and competence, the contractor was mandated to use local suppliers wherever necessary in accordance with the requirements of the Act.

It must be noted that whereas there are targets set by the Act for various activities, the NCDMB stipulates that operators such as NigCorp should ensure that they set targets for their contractors in line with the targets as approved for them in their Nigerian Content Plan.

This was better put by SPM in his attempt to describe the process, when he stated that,

“Our role at the regulatory authority includes the vetting of the local content plan of the operator for any project which he intends to execute....The

approved plan shall remain a benchmark for assessing progress made by the contractors as reported by the Operator.”

Lack of an effective platform for sharing information between the various organisations

Sharing of information between parties to the IDS remains very crucial to the attainment of project success. However, in IDS2 evidence abounds which point to the lack of an effective platform for sharing project based information between the parties to the IDS, especially as it concerned what the local content requirements were and how they were to be measured by the client organisation.

According to PMS,

“everything about this industry is always covered in secrecy...we did not know about the Nigerian content development targets approved for the client by the regulatory authority...if we had prior knowledge of that and the areas that they were to take place within the project, we would have gone into partnerships with other local firms with such capabilities to fill up those spaces...but no, they kept the same away from us all through the project.”

The view espoused by PMS was also shared by HPS.

However, AGMC declared that the client made the same known to them during the tendering stage...

“After the PQQ stage, we were informed by the project sponsor about the need to make certain provisions towards the recruitment of local suppliers in the delivery of the pipeline project... we were not given a set target to achieve by the project sponsor.”

This position was further affirmed to by MMC when he stated that,

“The project sponsor also informed us of its unwavering commitment to the development of local suppliers and there was a general consensus on the need to match the targets set by the NCD department of the NNPC, in line with the approved Content Development plan for the project.”

Also, the project sponsor’s dedication to the development of a viable indigenous supply chain was never in doubt during the delivery of the project, as can be deduced from the statement made by PDN wherein he mentioned that,

“It is our goal to achieve the necessary competencies for all facets of our operations in-country, to stem the tide of capital flight and to ensure that our local suppliers are competitive enough to win work globally. We foresee a situation where there would be an export of Nigerian suppliers to the global oil and gas service market in the nearest future.”

From the foregoing, it can be seen that although there was effective communication between the project sponsor and the EPC contractor, this was not replicated in the relationship between the EPC and the suppliers and/or the suppliers and the project sponsors.

It was discovered that this communication gap arose as a result of the fact that the evaluation criteria utilised in the selection of the suppliers of core functions was premised upon competence, whereas that used in sourcing for non-core functions such as site security were based on local content. This much was made known by AGMC during her interview. She stated that,

“Given the location of the pipeline project, the numerous hinterland areas which it covered, it was difficult for us to fulfil the requirements of the project sponsor in the area of employing suppliers from those communities as there were virtually none in most of the areas. We pick a few non skilled and semi-skilled labourers here and there from these communities, set up a registry in every community and then encouraged our preferred bidders to use them in carrying out non-core activities such as security and trench digging where possible.”

Problems associated with misinterpretation of various sections of the Act.

It was established that several sections of the Act were being misinterpreted by the parties to the delivery exercise. This fact was highlighted in PDN’s statement wherein he alluded to the occurrence of this phenomenon.

When asked about the challenges to the successful implementation of the Act during the execution of the pipeline project, he mentioned among other factors,

“....the issue of poor interpretation of certain sections of the Act”

Giving more insight into his statement, he described a particular scenario where representatives of the regulatory authority were at a loss as it concerned the definition of a Nigerian company for the purposes of the Act.

“During this stage, arguments and counter-arguments ensued as to who can be referred to as a Nigerian company.”

Appearing to counter this assertion, SPM maintained that,

“The issue of what constitutes a Nigerian company has been settled by the Act, but some operators do not want to hear that at all. They seek to argue along the lines of value-addition and not on the lines of ownership as dictated by the law.”

When prompted further by the researcher on the difference between the two aspects, he clarified his position stating,

“Most of the foreign owned companies situated in-country always find a way around our processes to employ their nationals to carry out tasks which Nigerians are properly skilled to do and this is against the principle content development.”

b) Functional Pathologies

Based upon the interviews conducted by the researcher, subthemes aligned to the prominence of functional pathologies were discovered during a review of the interview transcripts. These subthemes are listed in their order of priority and include;

Absence of profound governmental support and political will

The actualisation of successful implementation of local content within a particular project often requires balanced contributions from all participating organisations. Government and its agencies are often seen as enablers who provide the necessary environment for the actualisation of such policy objectives. In IDS2, the lack of government support was acknowledged by PDN, PMC, MMC, PMS and HPS respectively.

Whereas PDN and PMC viewed the absence of incentives as an impediment to their drive towards the actualisation of their organisational targets on local content development, MMC, PMS, and HPS decried the multiplication of bureaucratic bottlenecks imposed upon them by several government policies, especially as it concerned procurement processes.

According to PMC,

“In other climes, Operators get certain incentives to cover for the losses they may sustain by their absorption of local suppliers or the extra costs which the

local understudies are paid, but that is not the case in this country, we don't get anything from government in this regard, rather we are haemorrhaging from excessive taxation and regulation.”

In his attempt to describe the lack of government support to the local supplier development, PMS agreed, stating that,

“.....but unfavourable government policies have continued to deter our foreign partners from engaging in any serious business with us...At several fora we have lamented the huge costs of entry into the gas industry in this country and asked for strong government interventions in the area of low-interest finance and simplification of the Pre-Qualification process among others but they just turned a blind eye to our pleas, preferring to support the big multinationals instead.”

Lack of strong and viable industrial infrastructure in-country

The interviewees unanimously agreed that the absence of infrastructure in-country contributed to the high cost of delivering projects in the nation's oil and gas industry.

According to PDN,

“Government should be able to provide the basic infrastructure or accord the operators some tax relief or incentives to enable them to deliver this basic infrastructure required to smoothen operations within the industry...when this is done, we can channel the resources we use in providing these services for ourselves to assist in the development of local suppliers, as well as local labour.”

In support of this assertion, MMC added that during the delivery period for the pipeline project, they expended considerable resources on logistics,

“Most of the components which were imported from overseas were transported to the project site from the ports in Lagos. Considering the state of our roads, hauling such goods cost us a lot in terms of time and finance...The cost of running, providing power to our various camp sites was also excruciating!”

In his acknowledgement of this deficit, SPM stated that,

“At our organisation, we strive to ensure that we develop a linkage between the industry and local manufacturing, insurance, banking and others... for instance in some of the projects that we approve, we negotiate for the delivery of some sort of infrastructure or development of a kind of manufacturing concern on the back of a project, although this depends on the volume of the project”

Ill-defined Organisational Identity

For the IDS to deliver on its scheduled mandate there must be a proper definition of the mandate within the system.

However, judging from the viewpoints expressed by the various parties through their representatives as it concerned certain issues, it can be deduced that the identity of the delivery organisation (IDS) was not properly defined with regards to the development of Nigerian content.

Evidence of this abounds in the fact that whereas the NigCorp representatives interviewed made no pretence about the fact that they were bent on developing the local capabilities through the projects which they executed on behalf of the Gas Regulator, the suppliers stated that the EPC contractor did not reflect this mandate during the pre-selection and selection processes for contractors.

When the researcher asked about what the success criteria for the pipeline project was, PDN declared that,

“For us at NigCorp, it makes the right business sense to use local suppliers, since we are also responsible for managing the delivered asset eventually...the success criteria can be measured on several facets, mainly the functionality of the delivered project and the amount of our capital expenditure which is retained in-country.”

Buttressing this declaration by PDN, MMC whilst describing the project sponsor organisation, stated that NigCorp was,

“....a serious integrated oil and gas concern in the country which is indigenously owned and which has a vision of developing a competitive local

supply chain which can meet global standards and compete on the international EPC market.”

Commenting further with regards to the pipeline project, MMC maintained that,

“Notwithstanding the fact that NigCorp used competitive tendering to select their EPC contractor, they made it clear that we had to deliver on local content targets as contained in the Act and report back to them but we were not given any guidelines for measuring progress, apart from using local labour from the local areas and local suppliers where the required competencies existed.”

This was an anomaly as the project sponsor is mandated by the Act to set up a system for measuring and reporting to the regulatory authority at intervals during the execution of an approved project, based on the approved deliverables as contained in the Nigerian content plan for the project.

Accordingly, PMS highlighted the fact that the EPC contractor was also not as interested in Content development as he was with price and quality. He maintained that,

“In the contract for the package which we bought from our partner, there was no mention of any Nigerian content deliverables mentioned. There was also no mention of the measurement standards for progress made within the project, it seemed as if getting Nigerian owned companies as contractors and subcontractors was all there was to it, as they didn’t care whether our fabricators were from overseas or what volume of our expenditure was going to local resources...all that mattered was price and quality specifications.”

Instances of Corrupt practices

It was also observed through the interviews that several incidents of untoward behaviour on the part of the contractors and the suppliers were noticed during the delivery stages of the pipeline project.

PDN, during his interview, gave an example of an incidence which happened when they were conducting the technical and commercial evaluations of companies which had already been registered by NIPEX and DPR. He stated that,

“During the due diligence and bid verification exercises, we visited one of the offices put forward by one of the companies and it turned out to be a filling

station situated in Port-Harcourt. These are the kind of contractors to be worried about as they are just into the contract for the money. They win bids and run away to sell the same to more experienced parties, thus increasing the levels of risk.”

Speaking in similar terms, PMC indicated that,

“There were also reported incidents of rent-seeking behaviour where some of the subcontractors turned against the contractor and made away with some items on site.”

AGMC on her part, also pointed towards the fact that some suppliers dropped names in their bids to win work. She stressed that,

“Some other companies produced letters from the presidency and other high places to obtain contracts but mind you, the presidency does not fund us.”

From the above, it would seem that the NigCorp and the EPC contractors were immune from these accusations of corrupt practices. However such beliefs were punctured by the series of counter accusations made by PMS.

When the researcher inquired into the challenges which the suppliers faced in the execution of the project, PMS stated that corruption was one of the most significant issues which they faced as members of the IDS2.

According to him, some suppliers who did not possess the capabilities to carry out the works they were bidding for were selected because,

“... A certain director at the Ministry had some interest in this successful company”

Furthermore, he alleged that companies won jobs based on,

“...the use of connections and the Nigerian factor by most local companies to win work”

Lack of transparency in bidding processes

There were indications that the bidding processes during which the suppliers were selected by the EPC contractor were neither transparent nor credible.

Highlighting this issue, HPS lamented that,

“I do believe that it would help the industry and particularly the indigenous companies when and if the client and contracting authorities allow for competitors to know what the weighting criteria by which they are judged, be known to them prior to the various evaluation exercises.”

He maintained that this lack of transparency has led to continued instances of capital flight as,

“Capital flight has continued as the representatives of these foreign companies win most of the contracts and recruit expatriates to do the jobs or even lease equipment from OEMs abroad without going through us.”

Lack of access to finance by suppliers

This theme has remained the most prevalent among various interviewees. All the interviewees unanimously agreed that the ability of the local contractors and suppliers to gain entry into the oil and gas industry in Nigeria as it is presently structured, has continued to be threatened by their apparent lack of access to cheap funds.

MMC indicated that,

“Various local subcontracting concerns complained of financial difficulties during the project delivery process.”

Late payment of suppliers

The poor access to finance by local suppliers was further compounded by the seeming inability of the EPC to make available payments for works certified as having been executed, weeks and months after the expiration of the agreed upon 90 days window.

HPS gave an indication of this occurrence when he mentioned that,

“Although the contract expressly stated that we would be paid within 90 days as it was a PSD contract but My Brother!, there was an instance where we were not paid for 112 days which was beyond the time span provided for in the project contract.”

Alluding to the adverse impact which these delays had on local suppliers, PMS added that,

“The financial regime within the project did not support the local investor, as the payment dates were far flung and any small local investor would go under in debt so they should have sorted that aspect out initially.”

However, according to the PDN, payments to the EPC contractor were quite timely, as indicated in the contract documents,

“The issue of finance was very crucial for us. We understand the need for prompt payment after certification of work done by our EPC contractor and we released payment once approval was obtained.....This usually lasts about 45 days at the maximum after work done has been certified.”

This insinuation points to the fact that the EPC contractor unnecessarily delayed payment to the suppliers, even for an extra 45 to 60 days.

Poorly resourced MDAs and indigenous suppliers

There were indications from some of the interviewees, particularly both PDN, PMS about the non-preparedness of the NCDMB to carry out its role of monitoring the implementation of the Act.

According to PDN

“It was evident that the agency was still new and they cost us a lot of time 18 weeks to be precise to come out with an approval of our content development plan instead of the prescribed 10-15 days...however, I must reiterate that the NDCMB as an organisation needs to properly shape up to its responsibilities.”

Corroborating PDN’s assertion, HPS decried the lack of effective monitoring of the project by the regulatory authority. He stated that,

“During the project, we didn’t come into contact with the staff of the authority at any time. We just submitted our quarterly reports on progress made to the EPC. The authority should try to have a representative on the project to monitor the activities capable of leading to local value addition...In the absence of this monitoring function, several suppliers who used expatriate staff have not bothered to provide them with Nigerian understudies as dictated by the law.”

Requirement of performance bonds by suppliers

It was discovered that the EPC contractor demanded for and received performance bonds for 100% of the award costs from suppliers. According to PDN and PMC, these bonds were put up to deter non-performing suppliers from bidding for work packages on the contract.

According to PMC,

“Performance guarantees from prospective suppliers were used as an instrument to weed off unserious bids.”

However the suppliers lamented the fact that they were being exploited. They maintained that the high cost of underwriting such performance bonds by the local financial market was astronomically high and put off even the most competent of suppliers in most cases.

PMS stated that,

“Such things (performance bonds) served as a disincentive to willing and capable local contractors. How can you be asked for a bond when it takes them a minimum of ninety days to pay you for services rendered?”

c) Structural Pathologies

Certain experiences obtained through a review of the interviews were categorised under various subthemes which were in alignment with the broader structural pathology category. The under listed subthemes aligned to the structural pathology theme include;

Presence of several MDAs performing similar roles at the same levels of recursion (confusion)

Within IDS2, the presence of several government agencies carrying out similar tasks was discovered at subsystem 4. All interviewees situated within subsystems 3, 2, and 1 of the IDS namely: PDN, MMC, AGMC, PMS and HPS, agreed that this proved a major hindrance to the effective organisation of the project delivery exercise in line with the expected outcomes.

According to PDN

“We were taken aback when we were asked to submit our plans for the development of Nigerian and Niger Delta content respectively within Project X in accordance with the dictates of the law, to MDA 3 as we had done so two years before the coming on stream of the MDA to MDA 1...This was a major setback, especially in financial terms..”

This apparent confusion was also observed in the area of application for expatriate quotas. The Nigerian Content Development Act (2010) had stated that the minister’s consent must be obtained before the increment of expatriate quota by companies involved in the sector.

MMC acknowledged this problem when he stated that...

“We ended up spending three months trying to ascertain which MDA, out of the several, was responsible for this as they were all under the Minister, applying and getting our application turned down”.

During his interview, GM agreed that the industry was over regulated. He cited this overregulation as being responsible for the high costs of contracting which had almost succeeded in putting prospective investors at bay, as such entities would rather invest in areas where there was lesser government intervention in the industry.

Lack of effective interorganisational interface between NigCorp and suppliers

This subtheme is used to describe instances where interorganisational interfaces between certain organisations either did not exist or were not effectively managed where such existed.

For instance, PDN recanted that

“I had no direct contract with the subcontractors as a matter of fact, we dealt directly with the EPC contractor, who in turn dealt with the supply chain. We did not want to interfere at all. But I believe that they were at best professional and delivered on the jobs assigned to them.”

This implied that the NigCorp did not have any mechanism in place for interacting with the suppliers through whom their organisational aspiration of being a major champion of local content development could be actualised.

Ultimately, this lack of communication across certain interorganisational boundaries led to some reservations by the suppliers who complained about the attitude of NigCorp and the EPC.

PMS lamented the absence of incentives from either of the parties for their role in using and training local non-skilled personnel during the pipeline project, stating that,

“No incentives were added for the use of local fabricators or use of locally sourced materials.”

On the other hand, the suppliers disclosed the non-supportive nature of the Content regulatory authority; a position they opined was as a result of their lack of resources.

Whereas section 70 (h) mandates the Content regulatory authority to,

“...assist local contractors and Nigerian companies to develop their capabilities and capacities to further the attainment of the goal of developing Nigerian content...”

The suppliers maintained that they did not receive any such assistance during the pipeline project from the Content regulatory authority.

d) Identification of Critical Success Factors

The researcher was able to identify various salient instances which relate to the already developed CSFs for organisational viability. These instances were observed within the body of the transcripts upon an intrinsic review carried out by the researcher to that effect. The CSFs identified within IDS2 include the following listed below.

Identification of the organisations required for the development of a viable whole

To attain the purpose of the system (IDS2), it is pertinent that certain functions must exist within the SIF which represents the IDS. The presence of the organisations performing these underlined functions within an organisation/system is a major determinant of viability within such a system/organisation. So for the purpose of local content development within the IDS2, certain organisations have been identified as being statutorily mandated to carry out the functions of policy, development, delivery, coordination, monitoring and implementation.

Commitment of the NigCorp as a champion for local content development

Organisational viability relies on the ability of the system to properly define its purpose and to work hard to achieve it. Participating organisations to the IDS should be able to perform their assigned roles effectively, in such a manner that the tasks of self-regulation and self-governance become seamlessly interwoven within such systems. Within the SIF which IDS2 connoted, it was discovered that NigCorp who doubled as the client organisation, acted in such a manner, given its relationship with the EPC and the regulatory agencies.

Representatives of NigCorp; MGS, PDN and PMC, left no one in doubt that they were truly committed to the attainment of the system’s purpose within the IDS2.

When asked about the success criteria for the pipeline project, PDN replied stating that,

“I would say that it would be an increment in the volume of value addition activities carried out by indigenous firms within the pipeline project. Simple!”

If we have more Nigerian owned companies carrying out their activities in-country and we are able to purchase our pipes from a pipe mill situated in-country, then we would have greatly achieved successful implementation of the Act.”

Evidence of constant communication between NigCorp, the EPC and regulatory authorities

Effective communication between the various parties was also identified, particularly between the Metasystem of the IDS2 and the EPC contractor.

Highlighting the regular nature of this interorganisational communication, MMC mentioned that,

“Afterwards, we set up a project office in Calabar and met quite frequently, on bi-monthly intervals, with assessment teams from the NGC, the DPR and NigCorp. We also held weekly meetings with the suppliers.”

Incentivisation of the EPC with future work flow

Furthermore, it is obvious that various organisations require incentives and penalties to enable them to execute their jobs properly. In line with the aspirations of the NigCorp as it concerned content development, they provided the EPC with a continuous flow of work to enable him to carry out trainings for skills development and also to develop a local supply chain. This serves as an incentive, as it provides a high degree of certainty for the EPC contractor within a long-term horizon.

PDN buttressed this fact when he pointed out that,

“This indigenously owned EPC contractor was procured on the basis of internationally acceptable tendering conditions without any preference at all and I must say that we were impressed with the continuous tide of accomplishments recorded by our EPC contractor within this period, from the first project which they executed for us in Lagos through to the pipeline project and presently we are in the process of engaging them for further work, in line with our mandate to deliver natural gas to commercial and industrial consumers throughout the country under the Gas master plan.”

Whilst acknowledging the impact of this incentive, MMC stated that,

“We have leveraged upon the continuous flow of work from clients such as the NNPC, SPDC and NGC to continue to drive continuous improvement in skills and processes. During this time, we have also moved from an entity driven by one man being myself, to one that is properly structured internally to provide the best services comparable to any such entity throughout the world”.

From the above findings as presented, the IDS2 can seemingly be described as one that has failed to attain and maintain overall organisational viability. Expecting successful implementation of the local content development initiative through such IDS would amount to a pipe dream, as the organisation, notwithstanding the presence of certain success factors identified, does not share a common organisational identity.

6.5.4. Summary of findings from IDS2

In accordance with the significance of replication logic in achieving analytic generalisation in qualitative case study research (Yin, 1994), a slight adjustment of the case selection criteria was carried out by the researcher in the selection of IDS2. See Chapter Four. This modification was done to allow for literal and theoretical replication of the findings, hence ensuring a robust cross-case analysis in Chapter five.

To summarise, the validity of the VIDM was further strengthened through the interviews with organisational representatives in IDS2 as was done in IDS1 previously. The study's propositions were also tested within the IDS2 case study and it was established that the organisations within the IDS understood the impact of local supplier engagement on the local economy. They also understood the significance of the effective procurement strategies to the achievement of project success. But in a manner similar to the findings from the IDS1, it was observed that the interorganisational relationships existing within the IDS2 were ones that lacked effective communication and collaboration between all levels of the system; major ingredients for attaining organisational viability. Evidence was observed from the findings which pointed towards the apparent disconnection between various levels of the IDS2, as represented by the representatives of the respective organisations.

In a similar fashion to the approach adopted in the presentation of IDS1's case summary, such evidences of disconnections were presented under the broad categories of pathologies and CSFs and they include;

a) Communication-related Pathologies

- The lack of a consensus among the participating organisations to the IDS2 about what constituted appropriate criteria for measuring the progress made with regards to Nigerian content development was evident from the findings.
- An absence of an information sharing platform between the member organisations with regards to the development of Nigerian content within the pipeline project was discovered.
- Various sections of the Act were misinterpreted by various members of IDS2, particularly as it concerns definitions and the need for understudies within the project, hence leading to conflicting viewpoints on the same issues.

b) Functional Pathologies

- The lack of government support through incentivisation programmes for the participating organisations was mentioned by the representatives of the operator, main contractor, and supplier organisations.
- The absence of an industrial platform in-country for manufacturing was highlighted as a significant undoing of the government.
- It was discovered that the various organisations within IDS2 possessed different goals which contrasted significantly with the provisions of the NOGICD Act. The views of the members of IDS2 and their actions were varied, particularly on issues concerning project selection decisions, appropriate criteria for measuring project success, and composition of the key deliverables of the Nigerian content within the pipeline project.
- Allegations and counter-allegations of corrupt practices among member organisations were discovered. These were complimented by some instances of non-transparent practices which were witnessed by some participants during the procurement stages.
- Although *NigCorp* gave due consideration to the provisions of the NOGICD Act during the evaluation of bids for the EPC contractor, the EPC contractor, a wholly indigenous concern, did not apply the same yardstick during the procurement of suppliers.
- Suppliers continuously identified their inability to access affordable finance from financial institutions in-country as a very significant impediment towards their participation in the delivery of oil and gas infrastructure, especially in the pipeline project.

- Also, it was discovered that the contractor deliberately delayed payments to the suppliers for work done for upwards of 112 days in a certain case, hence causing suppliers' profits to be eroded by high interest rates.
- It was observed that the statutory agency responsible for monitoring the development of Nigerian Content lacked a workable framework for carrying out project based evaluations and monitoring activities.
- The lack of local skilled resources led local suppliers to utilise foreign resources, thus negating the principles of capital retention in-country upon which the NOGICD Act was premised.
- Suppliers were required to present performance bonds from finance houses to guarantee their performance on the pipeline project. This, according to the suppliers, bred distrust between the contractor and the suppliers within IDS2.

c) Structural Pathologies

- In IDS2's subsystem 4, the presence of several agencies carrying out similar tasks was identified as an organisational problem which negated the successful implementation of the NOGICD Act in the pipeline project.
- The presence of these agencies led to numerous pre-qualification exercises which inadvertently led to high procurement costs and high delivery costs.
- There was no interorganisational interface between the NigCorp and the suppliers within IDS2, thus preventing effective communication of NigCorp's Nigerian content plans to the suppliers.

d) Critical Success Factors

- The various systems required for the attainment of organisational viability were identified within IDS2. However, this singular fact does not connote viability, as the actual actions and inactions of the organisations whilst performing these functions wields a major influence on the ability of the IDS to attain and maintain viability.
- NigCorp, the client organisation, was committed to championing the development of Nigerian Content during the delivery of its projects, such as the pipeline project.
- Effective and constant communication was evident between NigCorp, EPC and the regulatory authorities, constituents of the pipeline project's Metasystem, concerning the steps taken to engage local suppliers and/or labour during the delivery of the pipeline project. However, the same cannot be said of the communication between NigCorp and the suppliers.

- NigCorp guaranteed the EPC contractor a steady flow of work packages to enable them to develop skills/suppliers locally; a sort of incentive for Nigerian content development.

6.6. CASE THREE (IDS3)

6.6.1. Description of IDS3

IDS3 serves as a representation of all the participating organisations to the TMO responsible for the delivery of a light rail project, referred hereafter as the 'LR project'. This LR project is situated in one of the major cities in the North West region of England. Although the delivery of the LR project is being executed in phases, with the first phase dating back to 1988 when approval was secured from government for its development, and 1992 when it was commissioned. Subsequent phases have been delivered since then and the entire length of the LR project which has been delivered to date measures an estimated 48.5 miles, with 77 stops. It is expected that upon completion of the second leg of the third phase of the LR project in 2016/2017, the entire project length would be within the region of 59 miles and 93 stops. Also, the LR project when completed, will transverse at least seven of the ten boroughs of this major city.

This study is primarily concerned with the first leg of the third phase of the LR project, dubbed phase X (a). Construction work on Phase X (a) commenced immediately after government approvals, and funding were secured in 2008. It was fully commissioned in December 2012, running several months behind schedule. The project was let on a DCM (Design, Construct and Maintain) contract basis by the Client Authority; a sub-regional transport authority, hereafter referred to as TranServ. The DCM contract was won by a consortium which was comprised of a leading UK based construction company, a rail infrastructure provider and a signals company. This consortium as described shall be referred to as the CRS. In its role as the DCM contractor, CRS employed the services of various suppliers, otherwise referred to as sub-contractors, to execute sections of the phase X (a). Phase X (a) involved the construction of new lines between various town centres within the sub-regional area in the North West and the construction of a depot.

The project was funded in part by central government, a regional development agency and also contributions from the various councils within the sub-region. These contributors can be described as key stakeholders to the delivery of the LR project. According to the sub-regional development strategy document, it was indicated that the LR project of which phase X (a)

forms an integral part, was meant to provide certain socio-economic benefits to the region, particularly as it concerned the reduction in the degree of worklessness in the sub-region. Furthermore, various policies from central government have tended to show the government's determination to use procurement of such capital projects to implement certain socio-economic policies, such as apprenticeships and patronage of local Small and Medium Scale Enterprises (SME).

In line with these policy commitments elucidated above, the project team for the LR project indicated their intention to deliver on the following; the attainment of a base measure of carbon footprint using original specifications and design guidelines; to ensure, with the cooperation of local agencies, that a minimum of 5% of the entire labour pool are sourced from the economically inactive resource pool; and finally, to open up the supply chain to local sub-regional suppliers.

Having been delivered, it is the intention of this researcher to gain an understanding into how the interorganisational relationships (IDS3) within the phase X (a) of the LR project impacted upon the attainment of viability within the IDS and the success or otherwise of the policy implementation process during the project delivery stages.

6.6.2. Details of Interviews and Interviewees' profiles

Using the VIDM, the researcher identified the various participating organisations within IDS3. Upon the identification of these organisations, interviews were sought with representatives of these parties as was the case in the previous IDS studied. Interviews were conducted over a one year period, spanning from April, 2013 to April, 2014. Owing to the busy schedule of the interviewees, securing an interview proved a herculean task. However, documents such as the sub-regional development strategy document, alongside other policy documents originating from central government were used to supplement the interviews.

A total of four interviews were conducted and the profile of the four interviewees are shown in Table 6.4

Table 6.4 Profile of IDS3 Interviewees

Sector	Organisation	Job Designation	Alphabetical code
Client	TranServ	Head of Procurement	HoP
Client	TranServ	Programme Director	PDT
Contractor	CRS	Programme Director	PDCM
Supplier	Sub-contractor	Managing Director	SSC

The experiences of these interviews were sought to further deepen the researcher's understanding of the kind of interorganisational relationship which existed between their respective organisations. Such understanding availed the researcher with the opportunity to evaluate these interorganisational relationships from an overall organisational viability perspective. Questions asked were not dissimilar from the set of questions asked in the previous cases of IDS1 and IDS2. Owing to the inability of the researcher to gain access to the representatives of government regulatory agencies, particularly in the transportation sector of the economy, both within the national and sub-regional contexts, the interviews were substituted by the use of the policy and operational documents emanating from such quarters.

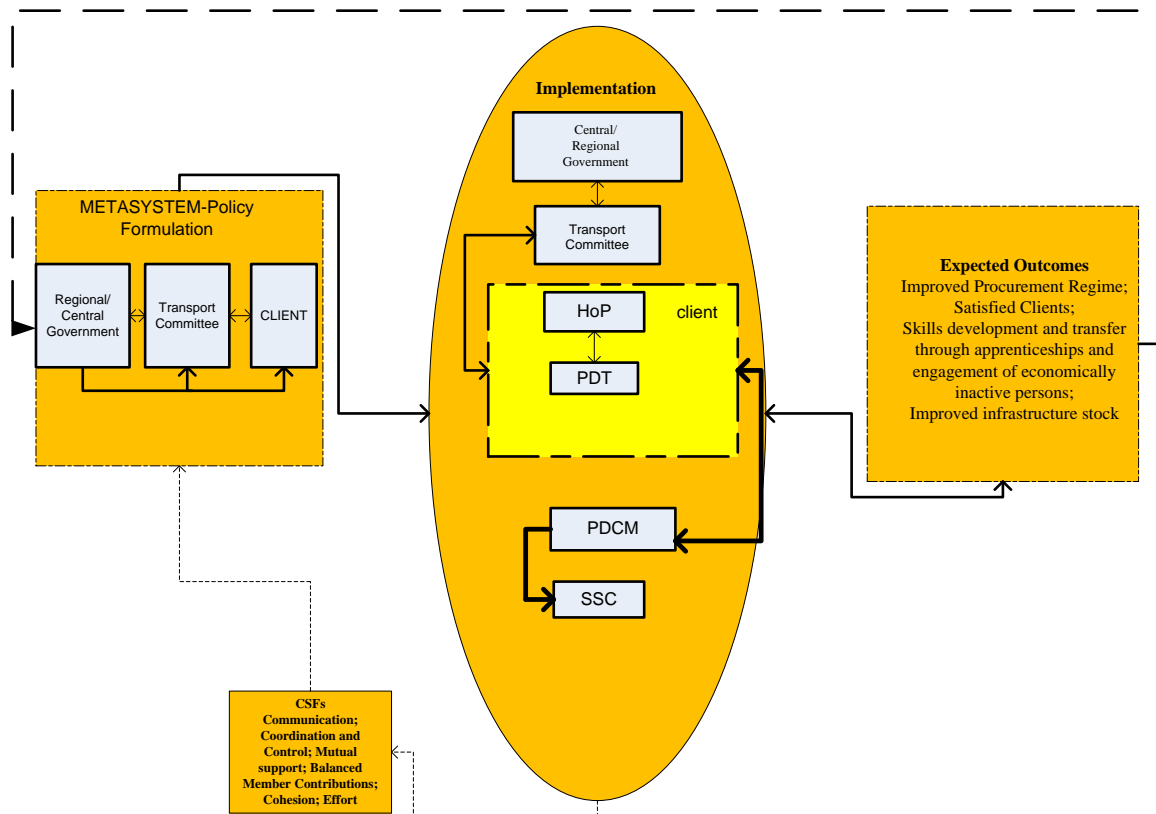


Figure 6.3 Relationships between the Various Interviewees within IDS3

6.6.3. Intra-case analysis

Data was extracted from the interview sessions held with the representatives of the participating organisations to the IDS3. This data was analysed in such a manner that it was able to contribute to the testing of the propositions of the study. The NVivo software was applied to highlight the relationship between these subthemes, themes and organisational viability as identified within the IDS.

6.6.3.1. Validation of the VIDM

Upon the presentation of the VIDM to the interviewees within IDS3, all interviewees indicated an acceptance of the principles behind the model. They also agreed with the various elements, the relationships between these elements, and the CSFs.

6.6.3.2. Relationship between Local Supplier/ Labour Engagement and Economic Growth

In accordance with the trend set in the previously analysed case studies, the researcher asked the interviewees in IDS3 about their respective viewpoints on the relationship between local supplier engagement and economic growth. However, whereas all the interviewees concurred

that there was a strong correlation between the engagement of local suppliers and/or labourers, one of the interviewees, PDT insisted that the relationship was not as imperative when compared to the impact of the end product (a successfully completed LR project) and as such, he argued that whereas the engagement of local suppliers portends a good omen for the local economy, it should be not be rated over and above the other facets which would lead to successful project completion, such as competent suppliers not minding where they are situated. According to him,

“The most important thing for us at TranServ is finishing on time. Nothing else is more important. Consider the socio-economic contributions of the completed project. Remember that it was designed in such a way that it moves people from the areas of worklessness to the city centre, where there are an abundance of jobs...we shouldn’t miss that point as it is also a socio-economic benefit, benefiting as it were, the local economy.”

It was however heartwarming to note that there were no viewpoints espoused by the interviewees opposing the positive impact of engaging local suppliers on the growth of the local economy. The only difference encountered was on the level of the contribution to economic growth, as argued by PDT. In fact, PDCM insisted that not only did the engagement of local suppliers boost the local economy; it also made great business sense, a fact echoed by SSC. PDCM attributed the engagement of local suppliers who were capable of delivering the assigned packages to specification, as part of his organisation’s approach to corporate social responsibility.

6.6.3.3. Effective Procurement and Successful Implementation of Socio-economic Policies

All the parties interviewed pointed towards the strength of procurement in driving project success. They unanimously agreed that effective procurement was a sine qua non for the attainment of the project/policy implementation process. According to PDCM, effective procurement meant the process of selecting and using of the right people with the right skills mix for the right job to generate success. He admitted that procurement remained a veritable tool for driving the achievement of organisational objectives.

Following from the views of the interviewees in IDS3, it would appear that they understand the impact of effective procurement in achieving successful project/policy delivery.

6.6.3.4. Disconnect between Policy and Implementation within the IDS

In his bid to explore the relationships between the various organisations to the delivery of the LR project from the socio-economic policy implementation perspective, the researcher enjoined, through interviews, the various interviewees to describe their roles in the delivery of the LR project and the nature of their relationships with the other organisations during the process. It was expected that this would avail the researcher the opportunity to discover the occurrences which portend some sort of disconnection between the policy objectives and the implementation within the project delivery environment. The findings emanating from these interviews are categorised under failure (pathologies) and success (CSFs) factors. The pathologies were furthermore divided into three sections; communication-related, functional, and structural. These pathologies have been discussed elsewhere in this study; See Chapter three.

a) Communication Related Pathologies

Poorly defined measurement guidelines

The absence of a properly defined index for measuring the percentage of socio-economic benefits delivered, particularly as it pertained to economically inactive persons and the number of local suppliers engaged during the project, was identified from the interviews. This pathology was further buttressed by the absence of any contractual obligation between the client organisation, TranServ and the Contractor, CRS over the delivery of these benefits during the project.

Describing the process for award of the DCM contract, PDCM maintained that,

“To be honest, in this instance, it is more about what we think is right for our business rather than having to do it for planning or policy perspectives because there were no drop down requirements in terms of how to develop local supply chains, none whatsoever coming from the client or the government.”

Furthermore, HoP added that although they discussed issues relating to the facilitation of local employment during the project delivery stages, at the procurement stages, they did not set any targets for the winning bidder to meet.

According to HoP,

“...with the LR programme, in the procurement exercise, we did actually have a section which we evaluated how a contractor encourages local employment, how will they ensure that they bring in local suppliers. I don’t think at the time, as it was procured quite a while ago, we didn’t actually have any targets, but we did say: how do they encourage them and one of the evaluation questions was covering that section. So it’s about the one who did a better explanation got a higher ranking within the section.”

The absence of targets for the contractor meant that the contractor could not be held liable for not delivering such benefits to the required targets, and the measurement of such benefits where delivered, are merely at the discretion of the contractor.

PDCM admitted this much when he stated that,

“As we submitted documentation we were required to do but we said we would do x local labour and y in terms of other supplier development and it did feed into that assessment. I think the politicians were expecting it to be nailed to the contract in terms of ‘you will do this’ as opposed to ‘you will endeavour to’ and they weren’t entirely happy with our approach. So after we won the contract, say six months later, they came around asking, so what you done in terms of using local labour, what have you done in terms of training people. We told them that we were pretty much in line with what we said we’d endeavour to do.”

This seemingly buttressed the fact that the delivery of such benefits was dependent upon the contractor’s buy-in into such objectives and not mandated by TranServ.

With regards to the measurement of the benefits delivered, PDCM continued,

“We created our own KPIs; like how many local labourers should we have? Forty, fifty or perhaps none at all within a forty mile radius.....we decided where we were and what was best to be done. It was an internal monitoring arrangement for the CSRs (Corporate Social Responsibility) back to the contractor organisation but not to the client side..... I think that we came up with 75% would be within an area of forty miles, in terms of local labour on the basis that we fill that up with the right people with the right skills as opposed to it being of right.”

Problems relating to the definition of the boundary of the local area

The interviewees observed the contentious nature of the PDCM and admitted the difficulty in choosing where the boundaries of the local area should start and where it should stop. He observed that,

“It’s quite interesting though to have this debate for very many years. On a certain PFI contract in which I was involved with, local people were saying why are you not employing local people and we then provided information about the locals employed and they were wrestling with us saying North Wales is local or is Anglesey local. So you see that actually the more you bore it down to local local, the more difficult it becomes to actually generate the capabilities required to deliver the project that we were talking about. You see the farther you move it out, the more variety of workforce you would have and also the difference in cost.”

Poor understanding among participating organisations

HoP hinted that there actually was an issue of poor understanding of the various stakeholder demands as enshrined in several policies available to TranServ, and maintained that providing the best interpretations to these policies proved to be one of their greatest challenges.

According to him,

“...the majority of challenges we tend to face within procurement cycles are around managing stakeholder requirements because very often they are not always clear. So although you may have high level policies up here, understanding what those policies actually mean at the deliverable level can be quite unclear.”

Providing an instance of such misunderstanding, he stated that,

“So for example, people will say; we want to have apprenticeships, ok then we will give you one apprentice, is that enough? Nope we want more than that. It’s about balancing these stakeholder requirements and getting them clear and also helping stakeholders understand that additional requirements cost money.”

Thus it becomes apparent that the goals set by the sub-regional development strategy documents and the bid document for financial assistance provided by the sub-regional administration to central government's department for transport (DfT), may not have been properly interpreted by TranServ, as the objectives somewhat differed.

Apart from discussing the impact of the LR project on: the transition to more productive jobs within the sub-region, pure agglomeration, and house prices; proponents from the region for further government funding of phase X (a) had stressed that the project would create more jobs within the region through the provision of skills development exercises for the locals (apprenticeships). However, this aspect could not be mandated by TranServ as it was inimical to the EU procurement guidelines which govern the award of such contracts.

b) Functional Pathologies

Ill-defined organisational identity

From the interviews carried out by the researcher, it was discovered that the identity of the organisation as it pertained to the delivery of socio-economic benefits was not clear within the client organisations, as represented by PDT and HoP.

From a TranServ perspective, PDT and HoP presented two different perspectives as it concerned the delivery of socio-economic benefits.

Whereas HoP admitted to the fact that the issue of encouraging the engagement of local suppliers formed part of their socio-economic deliverables, PDT insisted that it was not an issue for TranServ, but rather stressed the positive impact of the completed LR project on employment opportunities within the sub-region as being critical.

According to HoP,

“We did actually have a section which we evaluated how a contractor encourages local employment, how will they ensure that they bring in local suppliers....The other ones that we tend to now have in the SSD (Strategic Sourcing Document) is a separate section which covers the environmental sustainability and diversity elements, asking the question: is there anything in this procurement exercise that covers these things and are important to this exercise.”

PDT opined that,

“...but the employment target is really when it (The LR project) has been completed. So basically it’s the regional regeneration opportunity that is where the primary employment factor is.”

On the issue of contractor selection, HoP indicated that the prospective contractor’s proposed manner of engaging with the local suppliers, as well as his commitment to sustainability issues, were considered during the pre-qualification and bid consideration stages, although targets were not set in the instance of the LR project. In what appeared to be a contrasting viewpoint, PDT stated that the ability of the prospective contractors to engage local suppliers and provision of apprenticeship positions did not play a primary role in the selection of the contractor.

Positing that due consideration was accorded, during the pre-qualification stages and the bid consideration stages, to the contractor’s ability to engage with the local suppliers, HoP stated that,

“So again for example with the LR programme in the procurement exercise, we did actually have a section which we evaluated how a contractor encourages local employment, how will they ensure that they bring in local suppliers.... but we did say: how do they encourage them and one of the evaluation questions was covering that section. So it’s about the one who did a better explanation got a higher ranking within the section.”

Buttressing his own viewpoint about the procurement stages, PDT stated that,

“The criteria really comes back to what concrete experience have you got of delivering light rail infrastructure and you would appreciate that there are several peculiar problems involved in the delivery of a light rail infrastructure system....The three things which we would look at in simple terms are experience, expertise, and dedication, because the working relationship.... We need to employ you, knowing that you want to do the job as well. All these get embodied in the contract.”

However, PDCM stressed that although issues pertaining to the engagement of the local supply chain or the provision of apprenticeship positions were raised by TranServ during the procurement stages, they were not bound to it and only engaged local suppliers where they

felt it made good business sense and where the skills were readily available within the local area, or as a contribution the organisation's Corporate Social Responsibility (CSR).

He maintained that,

"We did it because we felt that it was the right thing to do and from an organisational point of view, such is in line with our CSR agenda, and also in terms of where we position ourselves for the future in terms of making sure that the project is sustainable in terms of employing people, to make sure that their contributions contribute to the overall sustainability of the project and we have got new business coming through..... if you kind of look at it from a realistic perspective, you would find out that it is cheaper to employ local people with the right skills than it is to transfer somebody from wherever because that would be more expensive. In a competitive environment, it is better for us to do that. So there are multiple reasons why we chose to employ local people, first from a social point of view and then from a cost-effective point of view as well. It forms part of our organisational business case."

Furthermore, PDCM stressed that,

"...because the reality is that the contract (LR project) is due to be handed over in June 11 2030, after that we would be handing over the project to the client organisation and it would be sensible to have local people around to maintain and run the facility, as against having to get people from Paris and elsewhere to do same."

Lack of skills in the local area

The lack of skills within the sub-region was highlighted by PDCM as a major impediment to the engagement of the local labour or local suppliers, in the delivery processes of the LR project.

He maintained that,

"One of the problems was discovered through the interview process. When we interviewed them, we found out that they did not know a thing about construction and this was a misnomer as they wouldn't have it probably, having been economically inactive for most of their lives. It's almost like an impossible thing as they need to be, probably from the colleges or something"

but they just haven't got the level of competence that we think we need or maybe we got it wrong, I don't know, but the reality is that we haven't been able to take on many of them."

He stressed that it was the responsibility of the government to put in place modalities which would enable the production of a properly skilled labour force within the local areas, from which the contractors can choose, to satisfy their labour needs. He also stated that providing more clarity about the nature of projects to be carried out in the long term as well as providing a guaranteed pipeline of future work, would allow for effective evaluation of the skills gap within the local area and thus allow for the prioritisation of their subsequent development.

According to PDCM,

"And I think that if you were to let a contract for say two months, you would never get the labour to do the two month activity but because its six years, that enables people to kind of develop. If you look at the...when they started doing anything like this, they developed a skill locally over a period of time. This was perhaps possible because the contract was let for over a period of time, whereas perhaps if it was a two month project, you have to end up getting a specialist from somewhere else. So that is another facet that is important to consider in setting up programmes for developing local expertise."

Furthermore, PDCM identified the communication gaps between the major infrastructure providers and regulators in the UK, stressing that such gaps were responsible for the lack of strategic infrastructure delivery plans and hence, the inability of the contractors to determine what skills would be needed in the future to deliver such projects and to participate in their development.

According to PDCM,

"I think that one of the problems in the UK is the fact that the HA does not talk to the rail agency, don't talk to the water agency, not from a strategic point of view, so I think that we are losing an opportunity in this lack of information sharing at the strategic level. I think that we should try and join up major projects such that you end up thinking about continuity, even at the simplest level."

c) Structural Pathologies

Whereas the researcher identified the organisations required to perform the critical functions upon which organisational viability within IDS3 is based, there was no evidence of effective communication and control channels between them, particularly the tripartite of policy, client and contractor organisations. This could be traced to the absence of any statutory legislation at that time, which compelled contractors to deliver and report socio-economic benefits to the local community.

This is particularly the case with the LR project, wherein PDCM declared that,

“But it’s not instructed here and I don’t know why it’s not mandated in here. I think that it might be going against the EU procurement law. That is why several clients are a little bit reluctant to be particularly prescriptive.”

This lack of prescription made it impossible for the researcher to determine a statutory framework for the engagement of local labour and/or local suppliers during the delivery of infrastructure projects.

However, this lack of stringent prescription from TranServ was described as a good step by PDCM.

He argued that,

“The problem is with dictating something. You don’t necessarily understand the consequences, take for instance if the client dictates and said a hundred percent of local people should be employed within the city boundaries for the scheme on purpose, consider the cost implication of that, as you have to move people in, you have to get them homes and in terms of the work life balance which is very essential, I am not sure that it is the right thing to do.”

d) Critical Success Factors

Various CSFs were identified during the course of the interviews with the representatives of the key organisations within IDS3. Chief among these CSFs include;

Guarantee for continuity of work to the contractor

According to PDCM, guaranteeing a high degree of certainty about future work to a contractor would surely serve as an incentive for the contractor to undertake local supplier development or engagement as the case may be.

He stated that,

“I think that developing such capabilities is much more complex than just saying employ and train ten blokes on the back of your contract. I am sure that the council here has thought that ‘oh, well’ we are going to be the anchors and we have got a load of work over the next ten years and we are going to keep going out to that resource pool. It doesn’t really matter who uses the resources from that local resource pool, be it Balfour Beatty or Lang O’ Rourke, as long as those persons are mobile and can be moved from point to point. The council develops a training institute and then encourages contractors to recruit from there instead of staying at an arms-length to dictate to the contractor about what to do with regards to local capability development.”

This point was buttressed by PDT, albeit from a risk management and cost perspective.

According to PDT,

“One of the reasons why we chose CRS is due to their previous experiences working for the client. Given that we had enjoyed a robust relationship with them in the previous projects, and this relationship was also extended to phase X (a) and beyond...In phase X (b) we went through advance works with the contractor, you know in advance of the full contract to essentially develop the conceptual design to a point where it can be priced with more certainty.”

Contractor buy-in into local labour and supply chain engagement

The interviews revealed that the success or otherwise of the engagement of local labour or local suppliers was premised on the degree of contractor buy-in into the initiative, in the absence of any binding or prescriptive legislation.

PDCM revealed this when he admitted that,

“So in terms of what’s feeding down here, there were no requirements to do any of them. So I guess that the question would then be, why did we do it? Why did we seek to empower at least 5% of economically inactive persons within the region and support the use of local suppliers? We did it because we felt that it was the right thing to do and from an organisational point of view, such

is in line with our CSR... To be honest, in this instance, it is more about what we think is right for our business.”

Collaboration of the entire supply chain

Evidence of the collaboration and balanced member contribution was identified from the interviews, especially as they related to the client, contractor and the supply chain, towards the attainment of the contractor's CSR.

Buttressing the relational rather than contractual approach through which they encouraged the suppliers to use local resources to deliver their work packages, PDCM maintained that,

“On the LR project, we didn't step it down in that manner as it was never a contractual requirement. We just encouraged them to do that, as it was a matter of what we thought was right from a business perspective rather than an attempt to comply with a contractual stipulation....So I would assume that our subcontractors would have to share this among themselves, based on certain considerations, such as health and safety and things like that. They are also to set up some training for this purpose, so in a nutshell, it is not difficult to step down to different subcontractors.”

On the other hand, it was acknowledged by HoP, that a relational approach was also adopted in encouraging the contractor to deliver on issues such as the engagement of local suppliers, instead of contractual measures.

“...we did actually have a section which we evaluated how a contractor encourages local employment, how will they ensure that they bring in local suppliers. I don't think at the time, as it was procured quite a while ago, we didn't actually have any targets, but we did say: how do they encourage them and one of the evaluation questions was covering that section. So it's about the one who did a better explanation, got a higher ranking within the section”.

PDCM applauded this approach, stating that it allowed the supply chain to be innovative in the manner through which they embark on delivering such deliverables.

According to him,

“This encourages a lot of people to just play games and try to justify whatever it is because it is difficult. But if you create something that is reasonable, that is a sort of smart objective, then that is fine. If it becomes difficult, you don't

act as a client, you don't really achieve what you want to do in reality, just because of these benefits."

6.6.4. Summary of Findings from IDS3

As stated in Section 4.7.1.4, the selection criteria applied in the selection of the IDS3 was modified to allow for theoretical replication; a necessary requirement for the attainment of analytic generalisation. The findings which emanated from the interviews were applied in testing the study's propositions, which have been previously mentioned.

From the propositions tested, the findings from the IDS3 revealed that the various stakeholders agreed that there was in fact, an actual positive impact resulting from the engagement of the local suppliers during infrastructure delivery, on the growth of the local economy. However, there was a slight disagreement between some stakeholders about the magnitude of such contribution when compared to the contribution made by the final asset, to economic growth.

It was also observed that all the stakeholders understood the power of effective procurement in achieving project success. It was also observed that IDS3 did not meet the requisite criteria for organisational viability. From the interviews, several instances of probable disconnection between the policy and the implementation process were discovered. These instances were subsequently highlighted in the cases.

In line with the trend adopted in the presentation of the summary of the previously reviewed cases, IDS1 and IDS2, a summary of the findings from IDS3 will be presented in the same format as was previously used in the preceding cases.

a) Communication-related Pathologies

- In the absence of a statutorily backed client requirement for the delivery of various socio-economic benefits during the procurement and eventual delivery of the LR project, representatives of TranServ and the CRS within the IDS were unsure of appropriate measurement criteria for measuring progress made in the engagement of local suppliers/labour. Definition of the term '*local*' was deemed a contentious one, particularly with regards to the delineation of the boundary areas.
- There were challenges to the interpretations of various government socio-economic policies by TranServ. This contributed to poor understanding within the entire IDS3.

b) Functional Pathologies

- There were conflicting views within TranServ about at what stages of the LR project delivery cycle; the socio-economic benefits should be delivered in.
- The desire of the CRS to engage local suppliers/labour was hindered by the lack of skilled persons within the local area.
- Lack of consensus on the contribution of the project to implementing the extant socio-economic policies, as it pertains to engagement of local suppliers and economically inactive persons within the project area, between the parties to the IDS was identified.

c) Structural Pathologies

- Although the researcher identified the organisations required to perform the critical functions upon which organisational viability within the IDS is based, there was no evidence that effective communication and control channels between the tripartite of policy, client and contractor organisations were not present.

d) Critical Success Factors

- Guaranteeing a higher degree of certainty about future work to a contractor serves as an incentive for the contractor to undertake local supplier development or engagement. This was the case in the LR project, as CRS had been guaranteed the work on the LR project up to 2016 and beyond.
- The contractor's unwavering commitment to the engagement of local suppliers/economically inactive persons within a 40 mile radius during the delivery of Phase X (a) of the LR project indicated a considerable measure of contractor buy-in.
- The effective collaboration between the between TranServ, CRS and the suppliers during phase X (a) of the LR project was critical to the engagement of economically inactive persons within the project location.
- CRS was the champion for the delivery of socio-economic benefits and reflected this in their procurement of suppliers. This was not due to the directives from TranServ but because it made good business sense for CRS and was centred on the organisation's corporate social responsibility.

6.7. Summary of Findings from Cases

Findings from the three intra-case analyses show it is apparent that IDS1, IDS2, and IDS3 did not fulfil the criteria stipulated for attaining organisational viability. However, the following findings were observed from the cases studies, namely;

- a) The engagement of local suppliers on infrastructure delivery projects possessed the capability of boosting the local economy.
- b) Effective procurement could be used as a lever to drive the implementation of socio-economic policies during the delivery phases of an infrastructure project; particularly as it pertains to the engagement and/or development of local suppliers and labourers.
- c) There is a severe disconnect between policy and implementation within the IDS.
- d) This disconnect can be attributed to several factors, ranging from the lack of effective communication and collaboration between the various participating organisations to the IDS and the poor organisational structures which seemingly make communication, collaboration, monitoring, control and feedback within the delivery system difficult, if not impossible. Instances of areas where these disconnections have occurred on the various case studies are highlighted in Table 6.5 below.

Table 6.5 A Summary of the Findings from the Cases

Pathologies and CSFs	Categories	IDS 1	IDS2	IDS3
Pathologies	Communication-related Pathologies	Lack of agreement between members of about definitions, interpretations and measurement criteria.	Lack of consensus between parties to IDS2 about the appropriate criteria for measuring content development.	Uncertainty about the appropriate measurement criteria for measuring progress made in the engagement of local suppliers/labour.
		Poor information sharing during supplier workshops.	No established platform for information exchange within the IDS.	X
		Prevalence of knowledge silos within the Operator organisation.	X	X
		Suppliers wrongfully thought they were just beneficiaries of the successful implementation of the act rather than parties to the successful implementation.	Misinterpretation of the sections of the Act, particularly definitions.	Challenges to interpretation of the extant socio-economic policies in the country; Conflicting views within TranServ about what stages of the LR project delivery cycle the socio-economic benefits should be delivered in.
		Absence of government encouragement (lack of incentives).	Lack of government support.	X
	Functional Pathologies	Absence of industrial base in-country.	Absence of industrial base in-country.	X
		Ill-defined organisational identity for IDS1.	Ill-defined organisational identity for IDS2.	X
		Corruption and lack of transparency in the key processes.	Allegations of corrupt practices among members of the delivery system.	X
		Nigerian content ranked least in the selection of EPCM contractor by the Operator as cost effectiveness was more important than the engagement of local suppliers/labour.	The EPC contractor did not favour Nigerian content development in the award of contracts.	CRS considered only competence and cost effectiveness in the selection of suppliers or engagement of local labour.

Critical Success Factors		Lack of access to cheap funds by suppliers.	Lack of access to affordable finance for the suppliers.	X
		X	Late payment of suppliers.	X
		Lack of resource capabilities to actively monitor progress of content development.	Lack of effective apparatus for monitoring progress of content development.	X
		Lack of skilled manpower.	Absence of skilled manpower locally (In-country).	Lack of skilled persons in the local area
		Poorly structured and managed supplier organisations.	Poorly structured and managed supplier organisations.	X
		Requirement of performance bonds from suppliers by the Operator.	Requirement of performance bonds from suppliers.	X
	Structural Pathologies	Presence of several agencies within System 4 performing the same functions contributed to unnecessarily complex processes.	Presence of several agencies within System 4 performing the same functions contributed to unnecessarily complex processes.	X
		X	No interorganisational interface between NigCorp and the suppliers within IDS2.	No interorganisational interface between TranServ and the suppliers in the IDS3.
	Presence of the six functions within the IDS1	The presence of several organisations responsible for carrying out the requisite functions on which organisational viability is premised.	The presence of several organisations responsible for carrying out the requisite functions on which organisational viability is premised.	X
	Presence of a champion	Operator acted as a Champion within IDS1.	NigCorp was devoted to the development of content within the pipeline project.	CRS was the champion for the delivery of socio-economic benefits and reflected this in their procurement of suppliers.
Effective Communication	Evidence of effective communication between the Operator and the EPCM contractor; and the Operator and the suppliers.	Effective and constant communication was evident between NigCorp, EPC and the regulatory authorities, constituents of the pipeline project's Metasystem.	Good communication between the CRS and TranServ on one hand and CRS and suppliers was evident.	
Collaboration	The development of the supplier development programme by the Operator ensured better collaboration between the Operator and the suppliers.	<i>NigCorp</i> guaranteed the EPC contractor with a steady flow of work packages to enable them to develop skills/suppliers locally; a sort of	Guaranteeing a higher degree of certainty about future work to a contractor serves as an incentive for the contractor to undertake local supplier development or	

		incentive for development.	Nigerian content	engagement.
	X		X	The contractor's unwavering commitment to the engagement of local suppliers/ economically inactive persons within a 40 mile radius during the delivery of Phase X (a) of the LR project indicated a considerable measure of contractor buy-in.
	X		X	The effective collaboration between TranServ, CRS and the suppliers during phase X (a) of the LR project was critical to the engagement of economically inactive persons within the project location.

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6.8. Chapter Summary and Link

In this chapter, an intra-case data analysis of the three IDS case studies was presented in reference to the study's propositions. The presentation of the individual IDS case reports followed a particular pattern, commencing with a brief description of the project, the components of the IDS and the background of the respective interviewees. This was followed by an analysis of the interviews along pre-set categories, as described in the Chapter four, and a summary of the findings identified within each of the IDS cases. Furthermore, this chapter contributed to the verification and validation of the VIDM. The findings generated from the intra-case analysis will be used in the cross-case analysis in the subsequent chapter.

CHAPTER 7. CROSS-CASES ANALYSIS

7.1. Chapter Introduction

In the previous chapter, the intra-case analysis of three different case studies selected for the purposes of model validation and subsequent testing of the propositions, was carried out. These analyses were reported through separate case study reports. In this chapter, a cross-case analysis of the findings gathered from the individual cases is carried out to enable replication for the purposes of analytic generalisation, as described earlier in Chapter four. Replication logic appears to make up for perceived weakness of the case study research strategy, highlighted by Flyvberg (2006), as it pertains to generalisability of findings. In that sense, it has been severally described as being central to the attainment of external validity in case study research (Yin, 1994, Eisenhardt, 1989, Eisenhardt and Graebner, 2007). These authors, in their respective studies on the application of case study research to the development of new theory, had mentioned the advantageous nature of the multiple case study research strategy in the successful conduct of theoretical and literal replication to attain analytic generalisation. In this study, these principles espoused by these revered scholars were applied to the case selection process, see Chapter four, hence availing the researcher with opportunity to not only identify emerging patterns from the findings of the individual cases through a cross-case analysis, but also to carry out both the theoretical and literal replication alike through these cases.

The presentation of this chapter will adopt the following outline, namely;

- Summary of findings from the intra-cases
- Cross-Case Analysis
- Analytic generalisations
- Chapter Summary.

7.2. Summary of Findings from the Intra-cases

The cross-case analysis will be reliant upon the findings from the intra-case analysis. Owing to the need for the researcher to achieve analytic generalisation through literal and theoretical replication, hitherto exhibited by the selection criteria for the case studies, there is an

imperative need for the researcher to explore for patterns across the cases for the development/modification of theory. The findings from the intra-cases which would be serving as propositions (Yin, 1994) to be tested in the cross-case analysis include the following, namely;

- a) The engagement of local suppliers during the delivery of infrastructure projects is instrumental to the growth of the local economy.
- b) Effective procurement could be used as a lever to drive the implementation of socio-economic policies during the delivery phases of an infrastructure project; particularly as it pertains to the engagement and/or development of local suppliers.
- c) There is a severe disconnect between policy and implementation within the IDS.
- d) This disconnect can be attributed to several factors, ranging from the lack of effective communication and collaboration between the various participating organisations to the IDS and the poor organisational structures which seemingly make communication and collaboration difficult, if not impossible.
- e) The manner in which an infrastructure project is organised and governed affects the nature of interorganisational relationships within the IDS and subsequently, the implementation of various social economic policies through such projects.

Whilst the researcher will attempt to briefly discuss the first three propositions separately, from a cross-case perspective, the remainder shall be analysed from a single perspective, as it shall seek to explore the differences and similarities between the three cases in accordance with the selection criteria. It is expected that this cross-case analysis would allow for analytic generalisation. Therefore, the three propositions would be grouped together to allow the researcher to trace the relationship between the nature of pathologies and CSFs observed and the individual organisational and governance attributes of the various IDSs.

The resultant proposition from the juxtaposition of the two propositions is stated below;

- 1) The mode of organisation and governance of an infrastructure delivery system directly influences the nature of interorganisational relationships between the various stakeholders, hence significantly affecting organisational viability.

It is expected that at the end of the cross-case analysis, analytic generalisations will be drawn across the respective IDSs, thus resulting in a validation of the study's findings and other findings discussed.

7.3. Cross-Case Analysis

7.3.1. Proposition One

The engagement of local suppliers during the delivery of infrastructure projects is instrumental to the growth of the local economy.

IDS1

The FPSO X project delivered through IDS1 was one of such projects mandated by law; in this case the Nigerian Content Guideline (NCD) which later metamorphosed into the Nigerian Oil and Gas Industry Content Development Act (NOGICD Act) of 2010, to ensure that the development of local content levels was central to its project execution philosophy. The presence of this legislation therefore made it imperative that member organisations within IDS1 reflect the requirements of the NCD Guideline (NOGICD Act, 2010) in all the key processes involved in the delivery of Project FPSO X. Central to this mandate for local content development was the engagement of local suppliers and labourers during the delivery process. The NOGICD Act stipulated that local (Nigerian) suppliers be granted consideration first, before any other supplier, during tendering and bid evaluation activities on any project.

Within IDS1, it was observed that there was a high level of awareness about the local content development legislation by participating organisations. The push for the engagement of local suppliers and/or labour was also noticeable within IDS1, particularly on the side of the Operator. Seemingly buoyed by their interest in the development of the local supply chain, the Operator in IDS1 set up a supplier development programme through which it sought to transfer competencies to the local suppliers to enable them win work on the Operator's projects. The FPSO X was one of such projects.

IDS2

The pipeline project belonged to the same category as IDS1 in this regard. For IDS2, its project delivery system was also bound by the legislation on content development and reflected its provisos in the delivery of the project. The client, NigCorp, described itself as a truly Nigerian energy chain which had the desire to contribute back to the society by actively engaging local suppliers and labour in the delivery of their projects. The organisation agrees

with the fact that patronising local suppliers was in the best interests of the local economy and supported the NOGICD Act (2010). Hence, the provisos of the Act guided all the key processes in the delivery of the pipeline project. These key processes usually commenced with securing approval from the Content Development Regulatory Authority (CRDA).

IDS3

In IDS3, which is the United Kingdom theoretical replication case study, it was expected that the drive for the engagement of local suppliers through procurement might be weaker due to the absence of strong regulation unlike in the previous two cases. Findings from IDS3 indicated that whereas there were extant socio-economic policies which highlighted the need for the delivery of some sort of socio-economic benefits to the host environment for the LR project, these policies were at best implicit and not explicit. Furthermore, the policies were unenforceable, thus making the client (TranServ) encourage the contractor (CRS) to seek out innovative approaches to engage the local supply chain. Unlike in the previous cases of IDS1 and IDS2, wherein the engagement of the local supplier/labour was prescribed by law, IDS3 was not under any compulsion to do so. Rather, PDCM maintained that the engagement of local suppliers and labourers during the delivery of the LR project was borne out of the CRS's CSR policy. He mentioned that whereas the client, TranServ, has encouraged them to innovate ways of engaging the local supply chain, the organisation understood the business sense of engaging local resources when compared along the lines of cost effectiveness and efficiency.

Analysis

The engagement of local suppliers and labour during the procurement and eventual delivery of infrastructure has been advocated as a means of boosting the strength of the local economy (Hawkins et al., 2006, Hassen, 2000, Wells and Hawkins, 2008b, Warner et al., 2004, Watermeyer, 2003, Warner, 2011, Esteves et al., 2010). They all point to the distinct advantages of such engagement, particularly as it concerns the impact of such engagement on the economy of the local area where the project is situated. They insist that the use of local supply chains often leads to a higher retention of infrastructure investment in the region where such an asset is being constructed. Furthermore, some of the advocates state that such retention could lead regions to develop much sought after competencies which will boost competitiveness in those areas (Esteves et al., 2010, Wells and Hawkins, 2008b, Esteves et al., 2012), allowing firms in those areas to compete effectively in the global market.

In recent times, such advocacies appear to have gained momentum as most resource-rich, low-income countries and the developed countries have sought to modify their procurement strategies to allow for the integration of local supply chains into the project delivery system. According to Wells and Hawkins (2008b), extending such patronage to the local suppliers will ultimately lead to the generation of income locally, thus making a major contribution to the growth of the local economy. Contributing to the discourse, Esteves et al. (2009) illustrated the systemic manner in which such engagements could positively affect the growth of the local economy. They stated that buying goods and services from a local supplier often times leads to further economic activities within the local area and attracts new investments as the suppliers procure sub-contractors for inputs. The employees recruited by the local suppliers spend their wages within the local economy and the suppliers develop competencies which would make them become even more competitive and able to diversify to attract new investment (Esteves et al., 2009). They argue that the percentage of goods procured from a particular geographic location, and the sustainability of such purchases over a long period, directly influenced the degree to which the local economy can grow.

However, notwithstanding the feverish pitch which the advocacy for the engagement of the local supply chain has assumed in recent times, Warner (2011) insists the engagement of the local supply chain does not always result in the growth of the local economy. He reasons that the engagement of the local supply chain should be done on a competitive basis for the full benefits to be reaped by the local community or society. He observes that many societies were running the risk of sacrificing merit for mediocrity through the engagement of incompetent suppliers under the guise of protectionism. Such approaches, he explained, would not deliver the desirable contribution to economic growth and instead cost the economy a lot as a result of uncompleted projects, huge delays and extremely over budget assets. It should be noted that whilst some countries have sought to develop explicit policies (LCDPs) supporting the engagement of local suppliers, other countries, due to their international commitments to broader trade organisations or platforms, have sought to engage in subtle, less explicit approaches towards ensuring the engagement of the local suppliers or labour. Nigeria belongs to the former, whereas the United Kingdom belongs to the latter set of countries, where there is no explicit policy prescribing the engagement of local suppliers and/or labourers.

IDS1 and IDS2 are situated in Nigeria, whereas IDS3 is situated in the United Kingdom. From the evidence available to the researcher, there appears to be a general consensus among

the various stakeholders interviewed across the three individual case studies and viewpoints expressed by various scholars in the literature, about the salience of engaging competent local supply chains in the delivery of infrastructure, particularly from the perspective of its contribution to the growth of the local economy.

7.3.2. Proposition Two

Effective procurement could be used as a lever to drive the implementation of socio-economic policies during the delivery phases of an infrastructure project.

IDS1 and IDS2

During the delivery of the FPSO X and the pipeline project, respectively, effort was made by various parties to the respective IDSs particularly the Operator/NigCorp and the EPCI/EPCM contractor, to ensure that the procurement strategy adopted was sympathetic to the guidelines issued by the NOGICD Act (2010) and its precursor, the NCD guidelines. Besides its insistence in Section 2, that the development of local content be considered as a central element to every project development within the industry, the law furthermore mandated that Nigerian indigenous suppliers be given exclusive consideration before others in the procurement of any project in the industry, insofar as they are able to demonstrate the desired competencies in the particular area where such expertise is required (Sections 3.1; 12). Evidence accruing from the two Nigerian case studies indicated that the various organisations within IDS1 and IDS2 made attempts to skew their procurement strategy towards satisfying the NOGICD Act. All the interviewees within these IDSs agreed that effective procurement was indeed pivotal to the implementation of socio-economic policies, such as the engagement of local suppliers during the procurement and eventual delivery of an infrastructure asset. According to MCD, various procurement strategies are continuously adopted by the Operator to achieve its organisational goals which are often in conformity with the laws of the country. An exemplar of such laws being the NOGICD Act (2010) and the Niger Delta Content programme as well as the supplier development programme.

IDS3

In what may appear as a sharp contrast to the previously reviewed case studies, IDS1 and IDS2 respectively, the IDS3 was not constrained by any policy guidelines or client directives to deliver any socio-economic benefits during the project delivery phase. In fact, as was stated in the previous chapter, PDT had reiterated his belief that whatever socio-economic benefit to be delivered by the project to the local economy would result from the completed

project. He indicated his unwillingness to trade off cost effectiveness, timely completion and quality, all of which are hallmarks of a competent supply chain, for the engagement of local suppliers. On the other hand, PDCM stated that whereas the client, TranServ, did not enforce or prescribe the engagement of local suppliers or even proffer any measurement criteria for such engagement, there was a mutual agreement between TranServ and CRS during the procurement stages, for the engagement of local suppliers or labour during the delivery phase of the project. Continuing, he insisted that the procurement can prove to be a veritable tool in the hands of any organisation in the attainment of its organisational objectives, the engagement of local suppliers and economically inactive persons being one of them.

Analysis

Procurement has indeed lent itself as a tool for achieving organisational objectives. From a socio-economic policy perspective, various countries and organisations have had cause to realign their procurement strategies or approaches towards the attainment of their organisational or national goals. Evidence abounds in the body of literature which point towards instances where procurement has been applied to the attainment of various societal objectives; see Section 2.2.3. Furthermore, in one of its briefing notes, the Overseas Development Initiative (ODI) recognised the inherent capability of in-country procurement to act as a local economic development, making huge socio-economic benefits in areas such as employment generation, skills development and strengthening, local supplier and local enterprise development, technology transfer and finally, local infrastructure provision (ODI, 2010).

Reviewing the earlier discussions on the place of procurement in the delivery of socio-economic benefits to the wider society during the execution of infrastructure projects, there is abundant evidence pointing to the increasing use of procurement to drive the attainment of organisational and national objectives. However, as it pertains to the current study and the use of procurement to drive the engagement of local suppliers, findings from the cross-case analysis are in conformity with relevant extant literature as it portends that procurement remains a significant tool for driving socio-economic benefits, such as the engagement of the local supply chain among other organisational benefits. All interviewees agreed that procurement is a useful medium for achieving client requirements.

7.3.3. Proposition Three

There is a disconnect between policy and implementation within the IDS

IDS1 and IDS2

IDS1 and IDS2 were involved in the delivery of two projects, the FPSO X and the pipeline projects respectively. These projects were procured under the legislation on Nigerian Content Development (NOGICD Act), hence the need for the various participating organisations to adhere to the guidelines dictated by the Act in the procurement and delivery of their infrastructure projects. It was expected that various stakeholder organisations participating in IDS 1 and 2 would carry out their respective roles in such a manner that the objectives of the Act would be met, particularly as it concerns the development and engagement of local suppliers during the project execution stages. However, it was discovered from the findings of the intra-cases that there were several instances of disconnect within the IDS between the policy objectives and the actions and inactions of the various organisations. These instances were catalogued under three pathology categories; communication-related; functional; and structural pathologies. The presence of such pathologies as occasioned by different inherent factors, point to disconnections between policy level and policy implementation strategies within the respective IDSs.

IDS3

On the other hand, there was no explicit legislation at the time the Phase X (a) of the LR project was being procured. Although there was no explicit policy, unlike the case in the Nigerian situation, there was a plethora of implicit policies which sought to advocate for the use of procurement to drive local and regional growth. However, most of these implicit policies were contained as conditions attached to the various funds approved for the delivery of the LR project and other projects. Such conditions, due to their implicit nature, are usually hard to decipher and to implement. As a result, several parties to the delivery exercise are often confused or unaware of such policies, and the client organisations, as in the case of the LR project, find it difficult to enforce them due to European Union (EU) procurement legislations such as the European Union (EU) procurement guidelines, which make it illegal for them to do so. In the LR project, phase X (a), the client encouraged the contractor to engage local suppliers and labourers wherever it was feasible to do so, as well as to absorb economically inactive persons within the area into the project during the execution. Evidence accruing from the IDS3 case study portrayed a certain degree of disconnect in the

relationships between the various stakeholders in the implementation process as it concerned the engagement of local suppliers during the project.

Analysis

Having previously described the implementation process as an interorganisational effort which occurs across a multi-layered platform (Rütten and Gelius, 2011, Hill and Hupe, 2003, Najam, 1995); see section 2.1.5, it becomes imperative that the inherent key processes and the interorganisational relationships are evaluated on a continuing basis (Wanna, 2007). Although various studies have realised this salient need for investigating the Nigerian Content Development policy implementation process, most of these studies have failed to take into cognisance its multi-layered and systemic nature, isolating the views of certain stakeholders and focusing on others (Vaaland et al., 2012, Ozighbo, 2008, Jegede et al., 2012, Ihua, 2010). Other studies such as Balouga (2012) and Ovadia (2013), opine that some sort of disconnection was existent within the implementation chain. In a separate study, Nudzor (2012) established that there was in fact a disconnect in the implementation of the Free Compulsory Universal Basic Education policy in Ghana and traced this disconnect to the personnel at the operation level, the school teachers and administrators who did not understand the import of the policy and how it affected their actions. Similarly, the 2010 EIU report discovered that implementation of policy by various organisations was based more on a reactive approach, hence making the same pass off as being under-resourced (EIU., 2010).

Across the three cases studied, IDS1, 2 and 3 respectively, it was discovered that disconnections occurred within the implementation process as detailed in Table 6.5.

7.3.4. Proposition Four

The mode of organisation and governance of an infrastructure delivery system directly influences the nature of interorganisational relationships existing between the various stakeholders, hence significantly affecting the organisational viability

Communication and collaboration have been described as key ingredients for attaining and maintaining organisational viability (Espejo, 2003, Espejo and Gill, 1997, Hoverstadt and Bowling, 2002, Adetola et al., 2011). More so as the presence of effective communication channels between the parties to a delivery exercise have the potential to reduce conflicts and misunderstanding among parties about the system's purpose (Hoverstadt, 2008, Hoverstadt and Bowling, 2002). Owing to the fact that policy implementation has been described as a multi-disciplinary endeavour involving various organisations supposedly striving towards the

attainment of a particular objective, communication and collaboration between these organisations (interorganisational) becomes imperative for successful implementation (Hoegl and Gemuenden, 2001). According to Beer (1984) and Hoverstadt and Bowling (2002), identification of the key processes, communication and information flows, remain central to the attainment of viability in any organisation. Effective communication and control mechanisms have also been identified by Pinto and Slevin (1987) as being critical to the success of project implementation.

From a socio-economic policy implementation perspective, it would be apt to infer that effective communication and collaboration between the various organisations participating within the three delivery system case studies would lead to organisational viability, thus enhancing the chances for successful implementation. Successful implementation, in this study, is described as the ability of the delivery systems to satisfy the provisions of the NOGICD Act (2010) in the case of IDS1 and IDS2, as it concerns the engagement of local suppliers and/or labour in the execution of key work packages within the project. Within IDS3, whereas there is a plethora of implicit policies advocating for the engagement of the local suppliers and/or labour, none is as explicit as the NOGICD Act 2010 which governs the respective projects within which IDS1 and IDS2 are situated.

Having buttressed the salient impact of sound collaboration and communication and in furtherance to the discovery as it pertains to the non-viable nature of the respective cases studied, this study will evaluate the influence of the mode of organisation and governance structure adopted in the cases, on effective interorganisational collaboration and communication within the cases. Such analysis becomes imperative, given the established fact that the modes of organisation and governance have been blamed for the failure of many implementation processes (Sabatier, 1991b, Ali, 2006). To carry out such analysis, the various attributes of the cases resulting from the modification of the respective cases for replication purposes shall be used to draw patterns from the findings in Chapter six as highlighted in Table 6.5. These attributes include the following, namely: the contracting strategy; presence of an explicit policy; the role of the lead contractor; and internal structure of the client organisation. It is expected that such analysis would lead to analytic generalisations.

7.3.4.1. Impact of contracting strategy

IDS1

The FPSO X project was delivered through the EPCM; therefore IDS1 was bound by the tenets of this contracting strategy. Under this type of contracting arrangement, the client owner of the infrastructure asset retains the responsibility for the majority of the project risks, whereas the contractor bears a significantly less proportion of such risks. However, the contractor undertakes to manage the project on behalf of the client. In IDS1, the client; Operator, recruited the EPCM contractor as well as the suppliers. The client bore responsibility for the payment of the various parties and maintained a regular interface with the contractor and the suppliers, separately or jointly as the case may be.

IDS2

On the other hand, the EPC approach was adopted and used in the delivery of the pipeline project. Expectedly, relationships within IDS2 were governed by the dictates of the EPC mode of contracts. In EPC contracts, the client selects the contractor, who in-turn selects the entire supply chain. The contractor assumes sole responsibility upon the award of the contract, hence control over activities relating to the engineering, procurement and construction. Under such contracts, the contractor is mandated to deliver a finished facility to the client for an agreed upon price and at a definite date, alongside other specifications as prescribed by the client. He has to deal with the owner and also with the suppliers and consultants during project delivery. The owner's responsibility ends with the award of the contract, whilst the contractor's responsibility commences.

IDS3

The LR project was procured and delivered through the DCM contracting strategy. Central to this contracting strategy is the combination of ownership interests between the purchaser and the contractor which has been cited as being frequently used in the delivery of similar long standing infrastructure across the globe (Rochester, 2005). Such an approach is dependent upon prediction over a significant time, spanning the operation and maintenance costs. The DCM has been lauded as possessing the ability to deter the contractor from delivering at lowest cost as he (the contractor) has an ongoing obligation. This form of contract also has a long term orientation during which the contractor is engaged over the entire agreed upon duration, thus allowing him to continually innovate.

Analysis

The manner in which a project is organised and governed has a major influence on its ability to attain organisational viability (Hoverstadt and Bowling, 2002). In the present study, the attainment of organisational viability is largely dependent upon interorganisational communication and collaboration to ensure effective and efficient self-regulation and self-governance of the overall IDS, to achieve the aim of such IDS. Based on the definition of organisations rendered by Carroll and Burton (2012), see 3.5.2, the need for effective communication and collaboration cannot be overemphasised within delivery systems. However, they observe that the manner in which an organisation is designed possesses the inherent capability to undermine the ability of the system's component parts to communicate and collaborate effectively.

In the same vein, Stoker (1998) observes the importance of effective organisational governance structures in ensuring organisational viability, whereas Olsen et al. (2005a) maintain the prevalence of various types of governance approaches adopted in oil and gas industry procurement. They stress that the choice of what governance approach is to be adopted for any particular project should be dependent on what the client organisation wants to achieve from the procurement and delivery of the project. Concurring with this view, Esteves et al. (2011) and Schramm et al. (2010) admit to the major influence wielded by the governance approach adopted by the client in achieving his objective. These assertions from various scholars inform the need for the study to assess the impact of the various contracting strategies on effective communication and collaboration, as reported in the findings in the previous chapter.

The findings from the intra-case studies point towards the fact that the type of contracting strategy affects interorganisational relationships within the respective IDSs, particularly as it relates to the degree of communication and collaboration between the various parties and the successful implementation of the various guidelines. For instance, within the IDS1 there were no complaints by the suppliers about late payment for jobs done, whereas in IDS2, the suppliers interviewed maintained that their payments were delayed by the contractor over a long period of time. Prompt payment of suppliers is a recognised way of supporting and encouraging local suppliers to participate in the delivery of projects. Although both client organisations in IDS1 and IDS2 indicated their desire to implement the provisions of the NOGICD Act as it pertains to local supplier development and engagement on fair terms, the contractual strategy adopted affected the manner in which such payments were made. In the

IDS1, using the EPCM approach, the client engaged the suppliers directly and was responsible for making the payments for completed tasks. The approach also allowed them to recruit suppliers from their supplier development network, thus ensuring the extension of patronage to the local suppliers. On the other hand, despite the position of NigCorp as a champion of local content development, the adoption of the EPC contract strategy within IDS2 led to the absence of an interface between the client, NigCorp, and the suppliers, as the lead contractor assumed responsibility for such interactions. Communication between the suppliers and the client has to go through the contractor, thus making it difficult for the client to effectively monitor the progress made by the contractor in adhering to the tenets of the NOGICD Act within the project environment. In this regard, given the nature of the lead contractor, an EPCM contract would have been more useful to NigCorp.

For IDS3, a DCM contract was adopted. According to PDCM, the kind of contract strategy adopted made it imperative for CRS to engage local suppliers wherever possible. He maintained that due to the long term nature of the contract, the development of local suppliers during the delivery stage became more of a business initiative; as such an initiative would lead to a reduction in maintenance costs. Such considerations were not adhered to in IDS1 and 2 which were one-off projects. Although NigCorp has proposed to engage the EPM contractor over the long term, findings from the interviews indicate that the EPM contractor did not extend this feature to the suppliers.

The evidence of the direct relationship between the type of contracting strategy used in the procurement and delivery of infrastructure and the viability of the IDS is in conformity with the views expressed in literature by Esteves et al. (2009), Schramm et al. (2010), Tawiah and Russell (2005) and the DIISRTE report (D.I.I.S.R.T.E, 2012). According to the DIISRTE report, the gradual migration towards the EPCM contracting strategy amongst others in Australia has negatively impacted upon the engagement of local suppliers in several capital projects across the country. In their contribution, Schramm et al. (2010) maintain that clients should be careful in adopting a particular contract strategy, insisting as it were, that clients should be sure of what they want to achieve and which contract strategy would support them to achieve such objectives before selecting an appropriate strategy. Esteves et al. (2009) admit that in most cases, the contract strategies adopted by mining and extractive companies in Australia debar local SMEs from participating in the delivery of major projects.

Following from the accruing evidence from the cross-case analysis and the literature, it appears that the kind of contracting strategy adopted by a client affects the ability of the delivery organisation to attain and maintain viability.

7.3.4.2. The presence of an explicit prescriptive policy

IDS1 and 2

IDS 1 and 2 are required by the NOGICD Act to ensure that all their project execution and associated activities revolve around the provisions of the Act. The delivery of the FPSO X and pipeline projects serve as typical exemplars of this requirement and therefore fall under the regulatory guidelines provided by the Act.

IDS3

In the absence of any explicit policy in the mould of the NOGICD Act, the project owner and the other funding partners have various requirements which concern the delivery of socio-economic benefits during the LR project execution, albeit implicit. An example of such funding partners is the central government which seeks to push for increased patronage for SMEs in the country as a way of creating more jobs. Other policies being currently implemented by the central government which touch upon the delivery of projects such as the LR include the creation of apprenticeship positions in the project area, the Sustainable Communities Act (2007), the Localism Act (2011) and most recently, the Social Value Act (2013). However, this study seeks to concern itself only with the manner in which the contractor and the client considered these implicit policies during the procurement and delivery exercise, especially as it pertains to the engagement/development of local suppliers and apprenticeships.

Analysis

Varied opinions have been noticed within the body of literature about the efficacy of government's and/or client's guidelines in the attainment of successful socio-economic implementation outcomes, particularly as they concern the focus of this study; the engagement of local suppliers and/or labour within the oil and gas industry in Nigeria. Whereas some researchers (Heum et al., 2011, Nwaokoro, 2009, Warner, 2011) have disputed the efficacy of government local content (socio-economic benefit) policies, others insist that such policies are imperative for effective development and engagement of suppliers (Balouga, 2012, Adewuyi and Oyejide, 2012). Although Wells and Hawkins (2008b) acknowledge the importance of such legislations, they bemoan the fact that in most cases,

they were being poorly implemented. However, Klueh et al. (2009) insist that the efficacy of such policies was dependent upon the approach taken in enforcing its implementation. They state that such policies across the globe have ranged from;

“a very cautious yet very participatory approach taken by Norway....to the Australian model in which the government specifically stated in its regulations that no local content policy was in place, at least in the industry’s early development years” (pg 1131).

Those against the use of explicit, prescriptive policies to govern the relationships between IDS organisations towards the attainment of local supplier development, argue that rather than compel such organisations to do so, the government should allow market forces to dictate it (Klueh et al., 2009, Warner, 2011). Others like Nwaokoro (2009), advocate for the use of contracts in industry to drive such supplier engagement, rather than the prescriptive approach. They argue that instead of such prescriptive policies, governments should provide the opportunity for local suppliers to develop competencies through the provision of the requisite industrial background in-country (Obi, 2008, Heum et al., 2011, Klueh et al., 2009).

Furthermore, an independent report cited in the DIISRTE report examined the policies and processes used in Canada, Russia, Nigeria, Norway and the UK. The report indicated that the use of prescriptive policies had not led to significantly higher levels of local content development when compared to those achieved in Western Australia under the Australian Industry Participation (AIP) National Framework. Rather, the report found that a stronger influence on local content outcomes was the degree of political encouragement exerted to ensure project proponents focus on this issue, rather than compelling them to do so (D.I.I.S.R.T.E, 2012). Countries that are mandating levels of local content development may risk being investigated by the World Trade Organisation (WTO), as other nations can dispute the legality of the measures. Whilst many countries are exploring ways to increase local industry participation, mandating local content development has often resulted in a detrimental impact on industry (D.I.I.S.R.T.E, 2012, Warner, 2011).

Having laid the foundation for the discourse on the influence of such policies on successful engagement of local suppliers, this section will proceed to examine the effect of such explicit prescriptive policies on interorganisational relationships within the IDS from the perspective of the cases studied. Whilst selecting the cases for the study, care was taken to select a unique case which did not have any such prescriptions informed by an extant policy. Accordingly,

IDS3 was selected for the purpose of achieving this theoretical replication (Yin, 1994). IDS1 and IDS2 were governed by a government policy; the NOGICD Act 2010, whereas IDS3 lacked the presence of such an explicit and prescriptive policy.

Findings from IDS2 indicated that the contractor was only keen to satisfy the provisions of the NOGICD Act on paper, but did not feel that it made for a good business case for them to absorb or develop local suppliers in reality, as this was sacrificed for cost effectiveness. This was reflected in their approach towards the engagement of local suppliers or labour as highlighted in their supplier selection criteria. Whereas NigCorp was clear on the need to develop and engage local suppliers during the project, making it one of the conditions for awarding the project delivery to the EPC contractor, most of the EPC contractor's actions served as disincentives for local supplier participation. Such actions identified during the intra-case analysis included the delay in payment to suppliers and the requirement of performance bonds. Even within IDS1, the demand for performance bonds meant that the Operator did not trust the competence of its suppliers, despite recruiting them to their supplier development network. On the part of the suppliers, some of the actions attributed to them and observed by the researcher pointed towards their disinterest in striving to become competitive. They were saddled with the rent-seeking culture as it was discovered that some local suppliers sold on their work packages after winning the same, to foreign-owned organisations.

Furthermore, it appears that the prescription of the extent of local content development to be executed on particular tasks by the policy, without taking into consideration the availability of the resources required for such tasks in-country, led to shoddy and underhand behaviours by the respective stakeholders. Such demeanours come to the fore when the misinterpretation and arguments about the proper measurement criteria between the various participants are taken into consideration. Parties to the implementation were observed trying to interpret several sections in a manner that would benefit their organisational objectives and not that of the overall IDS.

Also, the presence of an explicit policy created enormous bureaucracy, which in turn posed as a barrier to local supplier participation and led to high transaction costs in the industry, as various processes had to be carried out more than once, as a result of two or more public sector organisations carrying out identical or similar tasks. The effect of such overregulation and/or excessive government interference in the industry was bemoaned by various interviewees in IDS1 and 2 respectively. For instance, the suppliers lamented the fact that

they had to go through a series of pre-qualification exercises held by different statutory agencies, thus resulting in high transaction costs. In the same vein, representatives from the Operator lamented the time consuming nature of most of the processes mandated by the policy.

On the other hand, within the IDS3, the lead contractor understood the engagement of local suppliers/labour from a business case perspective and used the ‘deal-making’ strategy as an added value proposition (ODI, 2010) to win the award of the LR project from TranServ. For CRS, although the client did not prescribe the engagement of local suppliers and labourers during the delivery of the phase X (a) as part of the conditions for the award during procurement, CRS saw such engagement as a strategic value proposition from both a business case and CSR perspective. According to PDCM, when asked why they were keen on engaging local suppliers,

“...there were no requirements to do any of them. So I guess that the question would then be, why did we do it? Why did we seek to empower at least 5% of economically inactive persons within the region and support the use of local suppliers? We did it because we felt that it was the right thing to do and from an organisational point of view, such is in line with our CSR (Corporate Social Responsibility) agenda and also in terms of where we position ourselves for the future in terms of making sure that the project is sustainable in terms of employing people, to make sure that their contributions contribute to the overall sustainability of the project and we have got new business coming through.”

Furthermore he agrees that dictating the engagement of local suppliers was wrong as such issues should be left to the powers of the market forces, as the cost implications and other consequences of such actions could make projects unrealisable. Also prescribing the desired levels of local supplier and/or labour engagement within projects often creates room for;

“...a lot of people to just play games and try to justify whatever it is because it is difficult. But if you create something that is reasonable, that is a sort of smart objective, then that is fine.”

From these cases and the reviewed literature on local content development policies, it becomes instructive to note that problems with the implementation of socio-economic policies arise from their prescriptive nature, especially when the parties to the implementation

of the policy do not agree with the contributions of such prescribed targets to their overall strategic business organisational objectives.

7.3.4.3. Role of the lead contractor in driving policy implementation

IDS1

Within IDS1, the lead contractor's powers over the rest of the delivery system constituents were derived essentially from the client organisation, as they were merely representatives of the client, managing the interface between the client and the suppliers on the project sites (environment). The client organisation in IDS1 wielded more of the power and also bore more of the project risks and was responsible for the selection of suppliers, with the lead contractor playing an advisory role during the process.

IDS2

Within the pipeline project IDS2, the contractor with the adopted contracting strategy, is responsible for the selection of the entire project's participants. This list of participants includes the entire supply chain. He also assumes a single point responsibility for delivering the project, according to the client's specifications. Impliedly, the contractor in the IDS2 wields extensive powers and as such is expected to play an influential role in the implementation of the provisions of the Act, unlike the contractor in IDS1, who is engaged by the client to assist in the coordination and control of the entire supply chain at the instance of the client.

IDS3

In furtherance to the adoption of the DCM contracting strategy, the contractor is responsible for the engagement of the entire supply chain and for bringing the project to fruition. He also assumes responsibility for the maintenance of the project until the end of a pre-defined duration, after which it is handed back to the client organisation. In this case, it can be stated that the contractor also possesses extensive powers with regards to the implementation of any agreed upon socio-economic benefits during the delivery stages of the project.

Analysis

Studies have pointed to the salient role of the lead contractor in the implementation of socio-economic policies and other client requirements (ODI, 2010, Warner et al., 2004, Watermeyer, 2003, Wells and Hawkins, 2008b, IPIECA, 2011). The following reasons were adduced by the ODI report as being responsible for this assertion, namely;

- a) Contractors have earned a reputation for being responsible for most of the employment and recruitment during project execution, operations and maintenance; averaging 95% of such employment during the construction phase;
- b) They manage the day-to-day activities on site during the project delivery phase and therefore are in daily contact with the host communities and suppliers;
- c) Contractors possess good records of meeting local content requirements through collaboration, with a trusted in-country supplier base, and also, expertise in deploying competency development systems and supplier support programmes;
- d) They are renowned specialists in managing projects and in designing and delivering engineering solutions; both very relevant competencies for the development of local economic infrastructure and the strengthening of technical and management capabilities and other aspects of human capital development (ODI, 2010).

Furthermore, an ICAI report buttresses the important nature of contractors in delivering aid packages across the globe on behalf of the Department of International Development (DFID) (I.C.A.I, 2013). From these assertions, it becomes imperative for this study to assess the roles played by the various contractors across IDS1, 2, and 3 from the policy implementation perspective.

In IDS1, the contractor was merely managing the project and the supply chain on behalf of the Operator and as such made no contributions in the recruitment of the suppliers or labourers during the procurement stages. Although they were engaged earlier on in the project and participated in the procurement phase of the FPSO X project, particularly as it pertained to the recruitment of the suppliers, the Operator retained the final say, in which suppliers were recruited from their supplier development network programme. However in the case of IDS2, the contract strategy adopted, provided the EPC contractor with the powers to recruit suppliers and to also pay them. In that case, NigCorp's supposed commitment to the development of local capacity was to be driven by the EPC contractor and as such, dependent on the contractor. In IDS3, the CRS, acting in the capacity of a DCM contractor found it expedient, without prescription from the client despite the numerous implicit policies stipulating the same nationally, to opt for the engagement of local suppliers from a business sense and CRS perspective. Probably this may be traced to the long-term nature of the contract which cedes the management of the completed asset to the DCM contractor. Using local suppliers in the long term would prove to be cost-effective; this much was revealed by PDCM and SSC.

Arguably, the contractor's degree of influence upon the implementation process during the delivery process is largely dependent upon the kind of contracting strategy adopted by the client organisation. It would seem that this realisation had led to the clamour by various scholars for client organisations to modify their procurement strategies if they are really desirous of achieving capacity development among local suppliers (Schramm et al., 2010, Warner, 2011, Esteves et al., 2009). Advising clients on the selection of appropriate contracting strategies, Schramm et al. (2010) states that clients should ensure that the strategies chosen reflect the risk allocation and objective and purpose which they want to achieve.

7.3.4.4. Impact of the client organisation's internal structure on successful implementation

IDS1

Within IDS1, the internal structure of the client organisation, otherwise referred to as the Operator, is a complex one. Taking cognisance of its JV nature, the Operator comprises of an IOC and the investment arm of the NOC. However, whereas the NOC subsidiary partakes in the project selection process as well as funding contributions to the delivery process, they are not involved in the governance and organisation of such projects. This role is left for the staff of the IOC. Therefore, the level of involvement of the NOC's subsidiary in the implementation of the Nigerian Content is at best considered subliminal when compared to the powers of the IOC.

IDS2

In IDS2, the client organisation, NigCorp is an independent monolithic entity. Although it is operating a concession granted by the NGC over a particular duration, the NGC does not influence the manner in which its internal organisation is organised and governed. NigCorp's role within the concession is to ensure the development and delivery of the requisite pipeline infrastructure through which the NGC supplies gas to its numerous customers, for a percentage of the transaction cost.

IDS3

Within the IDS3, TranServ is an independent organisation responsible for the provision of transportation services in the region. It is funded by the public through a mandatory fee levied on residents of the region. However, for most of its procurement and project delivery programmes, TranServ usually outsources the programme/project management activities to a

consultant. This was the case in the LR project. As a result of this, the procurement and programme delivery segments of the LR project delivery were carried out across two cycles, namely; the project procurement cycle and the programme management cycle. Whereas the first cycle is managed by in-house personnel, the latter is managed by external consultants on behalf of the organisation.

Analysis

The role of construction clients in bringing about the much sought after leadership within the various construction industry practices was brought to the fore by the Latham and Egan reports. However, the Egan report has been acknowledged as being more forthcoming on the influential nature of the construction client in driving the performance of the industry (Agapiou and Dainty, 2003). Furthermore, Chapter 4 of the Accelerating Change report (Strategic Forum for Construction, 2002), makes a case for client leadership within projects. The report states that this leadership should be provided through the issuing of fully transparent project requirements, with creation of the appropriate environment for the supply side to achieve these requirements in the most effective manner. Various instances abound in the project management literature where clients have been shown to have exhibited untoward leadership skills to achieve set objectives. Examples of this can be found in Dorée et al. (2011) and Briscoe et al. (2004). Whereas the former highlights how a client (Dutch rail) had been able to lead the project procurement process in such a manner as to enable the efficient and effective implementation of the sustainability agenda of the Dutch government, the latter portrays clients as the main drivers of supply chain integration; a key ingredient for performance improvement in project delivery. Going by these submissions, it appears that the client organisation has a major role to play in the success of socio-economic policy implementation processes through the procurement and delivery of infrastructure projects.

However, de Blois et al. (2011) observes that various attributes of the client organisation can affect the kind of leadership which it delivers in its relationship with other stakeholders in the project delivery process, otherwise referred to as TMOs. They maintain that certain attributes of the client organisation possess the capability to influence the structures and mechanisms of coordination and communication within such TMOs. One of such attributes identified was the nature of the internal structure of the client organisation. In accordance with this observation, this study seeks to analyse the impact of the various internal structures of the client organisation on the implementation process across the three cases selected.

In IDS1, it was evident that the Operator demonstrated strong leadership towards the implementation of the socio-economic benefits, even if there were doubts as to whether they agreed wholly with the provisions of the policy. The choice of the contract strategy and the institution of a supplier development programme by the client clearly point to the ability of the client to show leadership in driving for the engagement of local supply chains, the complexity of the client organisation notwithstanding. All the parties to the JV showed an interest in the implementation of the policy.

In IDS2, although the client, NigCorp, expressed interest in the engagement of local suppliers as a core organisational objective, evidence gathered from the intra-case analysis pointed to the absence of effective leadership on the part of the client organisation. The absence of an interface with the suppliers; part beneficiaries of the policy, was unfortunate as it stifled effective communication and collaboration within the IDS.

Within IDS3, the client organisation lacked a proper understanding of its role in encouraging local suppliers into the delivery system, leaving the task of engaging the supply chain to the DCM contractor. Although the client developed the procurement strategy for the LR project using in-house staff, it outsourced its programme management responsibility to an external consultant. This was tantamount to outsourcing client leadership during the actual project delivery to an external consultant. Going by the insistence of the programme director, PDT, that the project's socio-economic benefit contribution was only capable of being delivered during the operational stage of the project through the provision of transportation to persons in areas of high worklessness to access work-filled areas and the admittance by HoP that they did not insist on the engagement of local suppliers during the procurement stage for fear of contravening EU laws, such lack of leadership can be described as glaring.

Upon reflection on the kind of internal structures possessed by the client organisation, it appears that effective client leadership is essential to achieving successful implementation and that the nature of a client's internal organisation does not possess the capability of negating the attainment of the organisation's overall objectives, if proper mechanisms and structures of communication between various intra-organisational sub-units are utilised.

7.4. Emergent Findings

7.4.1. Problems relating to cognition

According to Ali (2006), issues relating to cognition has not been availed enough recognition in the investigation of the possible causes of implementation failures within the body of

literature. Concurring with this view, Spillane et al. (2002) and Nudzor (2012) observe that a vast percentage of implementation failures occur as a result of the manner in which the various participants to the implementation exercise understand, interpret and act out certain provisions of the policy being implemented. They maintain that the success of whatever policy was being implemented was largely dependent upon the ability of these participants to properly interpret and act out these relevant sections. In this study, exemplars of such instances were observed and are discussed in the subsequent sections, namely:

a) Problems relating to the lack of consensus within the IDS on the appropriate criteria for the measurement and reporting of progress made in the engagement within the project.

Findings from IDS1 and IDS2 pointed to a lack of consensus between the contracting parties to the delivery of the FPSO X and pipeline projects about the appropriate measurement criteria for assessing progress made in local development within the project delivery stages. For instance, within IDS1, there was a dichotomy between organisational representatives, who felt that the measurement criteria stated in a schedule of the NOGICD Act should be used as the appropriate criteria for measurement, and other representatives who opined that the a uniform measurement criteria should be used. For this latter group, the uniform measurement criteria should be one that is based on the value of the work packages given to Nigerian owned suppliers. Although the NOGICD Act (2010) in its Schedule 11, which is summary of Sections: 3(2), 11(1), (2), (3) and (4), 34 and 70(d), contains a list of key areas and activities involving investments from the operator and other industry stakeholders and the Nigerian content development targets expected from these activities, it fails to specify and communicate a particular methodology or set of methodologies for calculating the progress made within various projects towards the attainment of these stated targets. This has contributed immensely to disagreements between the parties in IDS1 and IDS2. Also, it was observed that the majority of the stakeholders, particularly the representatives of the client, the contractor and the suppliers in IDS1 and IDS2, disagreed with the provisions of the NOGICD Act (2010) in this regard. Surprisingly, such lack of consensus between parties to the delivery of the infrastructure projects as represented by IDS1 and IDS2 on the appropriate mechanism for calculating progress made with regards to local content development despite the provisions of the Act, have been described by extant studies as commonplace in the contemporary drive to boost local content in resource-rich countries.

Warner (2011) observes that measuring and reporting the development of local content was indeed central to successful implementation of such policies. However, he acknowledged as a usual phenomenon, the variations between the mandatory requirements for measurement and reporting often dictated and pursued by the state regulators and the voluntary metrics, and reporting standards of the companies involved within the oil and gas industry in countries such as Nigeria, where the FPSO X and pipeline project are situated. He stated that these variations were usually borne out of the fact that organisations and implementing authorities possessed varied perspectives on what local content development entailed and the confusion caused by the prevalence of several metrics for measuring progress in local content development (Warner, 2011). Contributing to the measurement criteria debate and in agreement with the findings in IDS1 and IDS2, Ovadia (2013) reiterates the inadequate nature of the provisions made in Schedule 11 of the Act for the measurement of local content development targets. In his review of the content development progress in the Nigerian oil and gas industry, he observed that the issue of measurement of Nigerian content development was becoming a monumental issue which, if not properly addressed, possessed the capability of undermining the efforts of the various organisations involved in the industry, as well as that of the implementing agency. Accordingly, Ovadia (2013) affirms the inability of the content development regulatory authority to develop a methodology for calculating the percentage of local content in any given activity. Such a methodology, he argues, will enable the prevailing levels of local content development to be determined within the respective activities, in comparison to the targets set by the Act. He cites Darling's report as having lamented the fact that most policies in contemporary times were usually bereft of monitoring and evaluation packages, thus resulting in the lack of critical provisions on: benchmarking data, measureable criteria, defined penalties, or independent well-functioning agencies of authority. Luckily, the NOGICD Act provides for many of these facets, but the content development regulatory agency's inability to develop and communicate an appropriate methodology for measuring the advancements towards the prescribed targets has hindered successful implementation. Ovadia (2013) states that once such a widely acceptable methodology is developed and communicated to all parties, it would lead to enhanced buy-ins by the various contracting organisations.

The lack of clarity about the appropriate criteria for measuring the engagement of local suppliers and local labour in the LR project was evident in the findings gathered from the IDS3 interviewees. Whilst acknowledging the existence of several socio-economic policies in

the United Kingdom which are aimed at encouraging infrastructure and construction industry clients to attain economic development in their local regions, a cardinal point in arriving at their investment decisions, none of these policies is as prescriptive as the Nigerian NOGICD Act under which the projects undertaken by IDS1 and IDS2 were delivered. As such, it behoved clients to encourage the supply chain, usually led by the main contractor, to develop innovative ways of engaging local suppliers and labour, and reporting of the same. The job of measuring the extent to which the local suppliers and labourers are engaged is left to the contractor in this regard, as such issues were treated as secondary requirements (Arrowsmith, 2010) during the pre-qualification and tendering stages of the project. However, one of the interviewees in IDS3, PDCM, stated that whereas the client had no doubts or reservations regarding the methodology adopted by the contractor in measuring and reporting the level of progress made in the engagement of local labour and suppliers during the LR phase X (a), the politicians (policy makers) usually disagreed with the approaches and demanded the use of a different approach. He added that this disagreement over approaches often stemmed from the desire of these politicians to satisfy their constituents as the proffered approaches were always unrealistic, owing to the lack of knowledge about the delivery process and the procurement guidelines governing such projects.

According to Weaver (2010), such disagreements between the policy makers (politicians, in this case) and the delivery organisation can be blamed on what he termed as ‘organisational coordination issues’. These issues are resultant of the increasing need of agencies, contractors, clients and politicians alike to protect their jobs, constituencies and organisational goals. Evidence drawn from three cases investigated, point towards the varied perspectives between the members of the respective IDSs on the appropriate methodology for calculating the performance, as it pertains to the level of local supplier and/or labour engagement during the project delivery cycles. It is apparent that such disagreements are as a result of poor communication between the parties to the IDSs.

b) Problems relating to the interpretation of the provisions of the policy guidelines by participants to the IDS

In furtherance to the dichotomy of views on what should constitute appropriate criteria for the measurement of socio-economic deliverables as it pertains to the engagement of local suppliers and labourers, the investigation into the three cases revealed that various parties involved in the delivery of the infrastructure projects in IDS1 and IDS2 possessed varying interpretations of the provisions of the NOGICD Act. Dominant among the several instances

of such varied interpretations identified from the IDS 1 and IDS2 case studies was the interpretation of the term ‘Nigerian Company’. Whereas the Act defined a Nigerian company as a “company formed and registered in Nigeria in accordance with the provision of the Company and Allied Matters Act, with not less than 51% equity shares being owned by Nigerians; it also declared that the term ‘Nigerian Content’ be used in qualifying the quantum of composite value added to or created in the Nigerian economy, by a systematic development of capacity and capabilities through the deliberate utilisation of Nigerian human and material resources and services in the Nigerian oil and gas industry. Most interviewees within IDS1 and IDS2 and the regulatory agencies sought to interpret these provisions to suit their organisational goals. Interviewees pointed to the futility of awarding work packages to Nigerian owned companies who would turn around to contract foreign-based companies to carry out such tasks on their behalf, and opined that they would rather award work packages to foreign based companies who would carry out such tasks in-country. In IDS1, suppliers believed that they were the sole beneficiaries of the local content development policy and expected jobs to be awarded to them on the basis of their ownership structure, rather than on competence. This was totally against the principles espoused by the Act. In IDS2, suppliers won jobs that they could not do and sold them to other suppliers who could execute such projects. This further proved the fact that they misunderstood the policy’s provisions with recourse to procurement of work. As if to buttress such occurrences within the Nigerian oil and gas industry and the challenges posed by such acts by the Nigerian owned entities, Balouga (2012) alleged that a great percentage of the work packages handed down to Nigerian owned companies ended up being delivered by foreign firms.

Ovadia (2013) supports the assertion of the Operator’s representatives in the IDS1, and argues that the local content policy as obtainable under the Nigerian context, was one that was based on domiciliation of value-adding activities within the country and not the enterprise approach which was enshrined in the legislation. Unfortunately, representatives of the regulatory authorities interviewed were divided on the issue. Lending his voice to this argument, Warner (2011) agrees that the definition of local suppliers was one which has remained contentious within most local content policy implementation cycles. Tordo et al. (2013) and Wells and Hawkins (2008b) agree that several interpretations can be applied by different parties for describing local suppliers. However, they admitted that there were two broad classifications along which several interpretations of local suppliers fell into; the enterprise and the value added approach. These approaches are shown in the Table 7.1 below.

Table 7.1 Definition of Local Suppliers According to Two Broad Approaches

Source	Enterprise approach	Value added approach
World Bank: qualification for domestic preference in procurement of works	Percentage of local ownership of the firm	
World Bank: definition of 'local' in rules for procurement of consultants' services	Place where the firm is registered	
South Africa: Construction Industry Development Board rules for contractors tendering for works	Place where the firm is registered and where it pays taxes, rent and service charges	
Trinidad & Tobago: policy for local content in procurement of works	Place where the firm is registered and local ownership	
AfDB: qualification for domestic preference in procurement of works	Place the firm is: registered and undertakes most of its activities; the majority of board members & key personnel are nationals, and shares held by nationals and profits and other benefits accrue to nationals	
AfDB: qualification of domestic preference in procurement of goods		At least 20% of ex-factory price is local value-added
World Bank: qualification for domestic preference in procurement of goods		At least 30% of ex works price (before tax) to include local labour and materials
India: preferences in purchase of goods		Raw materials produced or goods manufactured in India from raw materials produced in India
United States: local content requirements for goods in the 'Buy America' Act of 1933		Raw and semi-processed materials produced in the US; manufactured goods with 50% local content

Source: Wells and Hawkins (2008b)

From the table above, it can be seen that the definition rendered by the NOGICD Act supports the enterprise approach in general and the description accorded to the term by the African Development Bank (AfDB) in particular.

Whereas IDS3 was not bound by any legislation to develop and engage local suppliers, it was also discovered that defining a local area and who was a local supplier, still proved a contentious issue for the various stakeholders. HoP, PDCM and SSC all had different views as to what could be described as a local area. Whereas SSC states that he was a local supplier within a 100 mile radius of the project, PDCM describes local as those suppliers within a 40mile radius of the project area. However, for the PDCM as with other stakeholders in IDS3, the issue was the competence of the suppliers and not where they were situated.

However, such contentious issues are not new to the body of implementation research. According to Weaver (2010), interpretation issues accounted for a sizeable portion of why several policies underperform. He attributed such issues to instances where certain provisions of the extant policy have not been explicit enough to make for easy discernment, as is the case with certain definitions in the NOGICD Act. Findings from IDS1, 2 and 3 have shown that the various stakeholders do not share a common understanding about the expected benefits to be delivered from the projects being executed and even when they do, the problem of how to appropriately measure the attainment of these benefits constitutes a big barrier. This discovery is in alignment with the features of TMOs as stated in Section 3.5.2.

7.4.2. Problems relating to lack of industrial infrastructure in-country

In IDS 1 and 2, reference was made by the representatives of the respective organisations interviewed, to the lack of the requisite infrastructure in the country for the production of various components needed for the actual delivery of the infrastructure asset. Instances of this abound in the absence of a steel piping mill, a high profile dockyard for the manufacture of topside modules, and a vibrant steel industry. Other types of infrastructure deficit highlighted during the interviews included the lack of effective transportation facilities to engender smooth logistics and ease of access to the project areas, and the absence of constant electricity in the country. All parties, with the exception of the government agency representatives, all acknowledge that the absence of critical infrastructure in-country poses a severe hindrance to the effective implementation of the local content act as it made it more difficult for the Nigerian suppliers and contractors alike to compete favourably with overseas firms.

This fact has been reiterated previously within the body of the extant literature focusing on the challenges facing the effective implementation of the policy in Nigeria. According to Omenikolo and Amadi (2010), the absence of critical infrastructure in-country was a very influential factor which was capable of derailing the effective implementation of the NOGICD Act. Seemingly concurring with them, Ozighbo (2008) maintains that the provision of basic infrastructure within the country would contribute immensely to the ability of the local suppliers to compete favourably against foreign-owned companies for work within the oil and gas industry in Nigeria. In one of their reports on local content development, Heum et al. (2011) attribute the successful implementation of the local content development policy in Norway to that country's industrialised nature prior to the advent of its oil and gas industry. They maintain that the absence of such industrial backgrounds in other countries such as Nigeria have been responsible for the seeming failure of the local content development policy in those countries. It would appear that the Content Regulatory Authority in Nigeria understands the need for the development of an in-country infrastructural backbone to support the development of local competencies and capabilities, hence their insistence that Operators include in their Nigerian Content Development Plans, any plans to provide infrastructure on the back of particular projects. This fact was revealed by AGM during the interview sessions. Undoubtedly, the provision of adequate infrastructure in-country would assist local suppliers to compete favourably with their foreign owned counterparts.

7.4.3. Poorly resourced government agencies and lack of government support

Evidence adduced from IDS1 and IDS2 point to the poorly resourced nature of the various MDAs involved in the implementation of the policy within the Nigerian context. This discovery was further buttressed by Omenikolo and Amadi (2010) and Ovadia (2013) in their individual assessments of the implementation of the NOGCID Act. According to Ovadia (2013) the Content Development Regulatory Agency was grossly understaffed and did not have the required resources to execute the assigned functions. Continuing, he observes that the IOCs have had to provide staff for the institution to enable it function properly. Omenikolo and Amadi (2010) advise that the government should endeavour to allocate the much needed resources to the Content Development Agency, instead of allowing them to be provided for by the IOCs whose activities they are meant to regulate.

This lack of government support has also been glaring in the number of various Ministries, Departments and Agencies (MDAs) noticed within the IDS carrying out similar tasks of pre-qualification, evaluations and registration of suppliers and contractors alike. In IDS1 and 2, it

was observed that the presence of various agencies which were backed by government support, performing similar activities within the system encouraged the prevalence of bureaucratic red-tape, which made the procurement and delivery of infrastructure within the industry both costly and time consuming. The costly nature of these PQQs and other ancillary activities, posed as barriers to the entry of local suppliers and contractors into the IOC supply chain. It also served as a disincentive for the IOCs/operators to allow for the integration of local suppliers into their global supply chains. The inability of government to provide incentives such as tax holidays for Operators and contractors to engage local suppliers were also observed. According to Vaaland et al. (2012), the absence of strong government commitment to the development of local supplier's competences and capabilities within the Nigerian oil and gas industry has negated the level of their engagement by the operators. Government legislations and policies as expected, play a major role in encouraging the engagement of the local suppliers in the delivery of infrastructure assets, however such policies are also capable of derailing the attainment of the expected deliverables, due to weak institutional capacity to enforce such legislations effectively and efficiently (Warner, 2011). Findings from the IDS1 and IDS2 indicate the prevalence of a weak institutional base for the effective regulation of the local content development. Instances of such abound in the narratives rendered by members of the respective IDSs, which tended to point towards the lack of effective monitoring, coordination and regulation of the policy implementation processes by the agencies saddled with such responsibility.

7.4.4. Problems relating to the lack of skills in the project neighbourhoods

The lack of skills within the project environment was a problem which was highlighted by various interviewees across the three respective case studies. According to PDCM, if the needed skills were situated in close proximity to the project environment, it would make good business sense to engage them, rather than recruiting from a distant location. This finding aligns with the views expressed by several reports and articles which bemoan the absence and/or declining nature of infrastructure skills in both the developed and developing countries alike (PWC, 2013, IPIECA, 2011). Also, in Nigeria, skill shortages have been continually blamed for the poor integration of the local supply chain into the delivery of infrastructure projects across various sectors (Gidado, 2010, Balouga, 2012). From the cases studied, it is therefore instructive to note that there is a need for improved investment in the development of the much needed skills in developing and developed countries, to support the major infrastructure projects being planned for these countries. Buttressing the impact of the non-

availability of skills on successful implementation of the local content development policies in the Nigerian context, Balouga (2012) bemoaned the fact that about 70% of the contracts awarded to Nigerian suppliers ended up being executed by foreigners overseas, thus defeating the sole purpose of the policy.

7.4.5. Poor transparency and accountability within the delivery systems

In IDS 1 and 2 respectively, findings from the interviews pointed towards the prevalence of corrupt practices between certain organisations participating within the different IDSs. Apparently, there was also an indication of the lack of transparency during the procurement exercise within the IDSs evaluated in Nigeria, as there was no certainty of what the weighting criteria there were for the award of work packages to the eventual suppliers and contractors who won such packages. This lack of transparency is in alignment with the observations made by (Omenikolo and Amadi, 2010, Ovadia, 2013, Ozighbo, 2008, Balouga, 2012), in their respective studies on the implementation of the local content policy in Nigeria. Other studies such as Ndulu et al. (2007) have attributed the inability of the African continent to attain growth, to the predominance of corrupt practices in the continent. Such corrupt practices are even more prevalent in the oil and gas industry in Nigeria (Balouga, 2012, Obioma, 2012). In Australia, issues concerning transparent processes during accreditation and tendering processes were highlighted as significant for the effective engagement of local suppliers in the AIP framework (D.I.I.S.R.T.E, 2012). This portrays transparency as a very significant factor in the successful implementation of socio-economic factors.

7.5. Analytic Generalisations

Proponents of the case study research strategy have advocated the use of analytic generalisations to generalise findings from case study research. Surely, this approach is essential for theory development or modification (Eisenhardt, 1989, Meyer, 2001). In this study, the researcher relies on analytical generalisations to generalise the findings from the multiple case studies investigated. It is expected this would help in engendering the validity of the research.

Findings generated from the cross-case analysis from the interviews held with various participants in the respective IDSs evaluated were applied in the development/modification of theory through analytic generalisations. These analytic generalisations were based on the patterns observed/ discovered in findings from the various case studies, as well as across the

multiple case studies. Also, these analytic generalisations are aligned with the various propositions upon which the cross-case analysis was premised.

The following analytic generalisations were deduced from the findings of this research, namely:

7.5.1. Analytic Generalisation A- The significance of the contracting strategy in driving implementation success

Various schools of thought have identified clients and main contractors alike as being instrumental to the attainment of successful socio-economic policy outcomes during infrastructure procurement and subsequent delivery. A degree of implementation success has been attributed to the client's ability to show leadership within the overall delivery system. However, in the cases reviewed, **it was observed that the client's ability to show the desired level of leadership needed to drive implementation success was largely dependent upon the contract strategy adopted.** This discovery was based on the evidence adduced from the powers of the client in the three different IDSs. In IDS1, the client adopted the EPCM contracting strategy which enabled it to contract directly with the suppliers and the main contractor. Such avenues would allow the client to evaluate the local suppliers for possible skill gaps and encourage them to build up competencies in areas where shortages are identified, to make them more competitive over the longer term. The scenario encountered in IDS1 differs from the experiences observed in IDS2 and IDS3, wherein the EPC and the DCM contracts were adopted. Under such strategies, the majority of the risks as they pertained to project delivery were vested upon the main contractor, unlike in IDS1 where the client bore the ultimate project risks. In the two cases (IDS2 and IDS3), the ability of the client to show the desired leadership was impinged on by the lack of an interface between the client organisation and the majority of the target beneficiaries; the local suppliers and contractors.

In a similar vein, it was discovered that the **ability of the main contractor to influence the implementation process was also largely dependent on the kind of contracting strategy adopted by the contracting organisation.** Whereas the main contractor in IDS1 lacked the powers to engage local suppliers and to utilise local resources based on their own whims, the main contractors in IDS2 and IDS3 were afforded such powers by the contracting strategy adopted the client. The use of the EPC and DCM contract strategies respectively shifted the bulk of the implementation, as well as project risks, to the main contractor.

7.5.2. Analytic Generalisation B- Issues relating to cognition are pivotal to the attainment of successful implementation outcomes.

The alignment of individual organisational goals with the overall organisational goals has been identified as being central to the success of any policy implementation exercise, particularly as it relates to socio-economic policies which are usually not enshrined in project delivery contracts. For such alignments to take place, the various parties to the implementation exercise should be able to understand and adequately interpret what is required of them within the context of such policy deliverables, whether explicit or implicit in nature. Scholars have previously traced policy implementation failures to the poor understanding and interpretation of policy, maintaining that such interpretations influence their actions, hence inadvertently negating successful implementation.

Findings from the cross-case analysis of the three IDSs, besides affirming the proposition that the manner in which organisations understand several aspects of policy influenced their approach towards executing assigned tasks, discovered that **organisational representatives within the delivery system tend to understand certain policy objectives and/or deliverables from the perspectives of their respective organisations and often times, these respective organisational perspectives were driven by time, cost and quality.** Several instances of this could be drawn from the three case studies evaluated. In IDS1 and IDS2, it was observed that despite the presence of an explicit policy on local content development which prescribed key approaches to the attainment of policy objectives, especially as it concerned the definition of Nigerian Content (the definition of a local supplier and the appropriate criteria for measuring content development), stakeholders were shown to be at variance concerning their own understanding of these salient components of the policy. This variance in understanding among the project stakeholders indicated the non-alignment of their organisational goals with the overall project/policy goals.

Furthermore, it was discovered that organisations were willing to engage local suppliers and /or labour only if such engagement proves to be cost-effective, even in the absence of any legislations prescribing the same.

Notwithstanding the absence of any explicit policy within IDS3, the development of an understanding of the plethora of the implicit socio-economic policies within the United Kingdom was overlooked by the client organisation, which was interested in deliverables relating to cost, timely delivery and quality of the LR system. This was indicated by the lack of certainty within the client organisation about what kind of socio-economic benefits they

were expected to deliver through the project and when such deliverables were expected to be delivered. However, the main contractor apparently sensed the cost-effectiveness of engaging local suppliers in their supply chain wherever possible, even though they were unaware of any of the implicit policies or requirements from the client organisation requesting them to do so.

7.6. Chapter Summary

In similar fashion to the previous chapter, this chapter reported, discussed and analysed the various factors undermining the ability of the respective IDSs to attain and maintain organisational viability, albeit on a cross-case basis. Besides availing the researcher with the opportunity to test some of the study's propositions, the chapter allowed the researcher to critically examine the viewpoints of the various interviewees across the three cases for any emerging patterns which could be attributed to the distinct characteristics of each of these individual cases. During this analysis, various causes of implementation disconnect were identified and discussed extensively, giving adequate consideration to the differences in the mode of organisation and governance of the selected cases. Upon conclusion of these detailed analyses and discussion, analytical generalisations were developed to relate the findings of the analysis to the principal elements of the study and the propositions which were tested at various points during the study.

CHAPTER 8. CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS

8.1. Chapter Introduction

This study was anchored upon three distinct pillars, namely: development of the research problem area (Chapter 2); the development of a theoretical lens for evaluating implementation outcomes within infrastructure delivery systems leading to the development of the conceptual model-the VIDM (Chapter 3 and 5); and the use of the VIDM to evaluate various case studies from the perspective of organisational viability (Chapter 6 and 7). In this chapter, the aim and objectives of the study and the propositions tested during the course of the study are presented and summarily discussed along with the implications of the study's findings as generated through the testing of propositions and analytic generalisations on the various stakeholders involved in the policy implementation processes, particularly those similar to the contexts explored in this study.

For the sake of clarity, this paper will be structured into three separate sections, namely;

- Conclusion;
- Recommendations; and
- Implications.

8.2. Conclusion

This study was premised on the desire of the researcher to ascertain the continued causes of increasing poverty and unemployment rates in Nigeria, despite the wealth earned from its famed natural resources. It discovered that several studies which relate to policy implementation analysis have not only failed to carry out an actual conceptualisation of the implementation process during their analysis, concentrating instead on the policy outcomes delivered, but have also failed to assess the implementation process which they tended to treat as a black box. Also, such studies appear to have failed to take into consideration the interorganisational and multi-layered nature of the implementation process. These deficiencies have seemingly resulted in inaccurate policy implementation analysis, hence engendering the prevalence of implementation deficits, globally. To tackle the identified

shortcomings of the implementation analysis literature, this study sought to develop a model which would assist in the conceptualisation of the inherent interorganisational and multi-layered relationships from a systemic perspective and to apply the emergent model in the evaluation of the policy implementation process in Nigeria using the infrastructure delivery case studies. It is expected that such analysis would lead to a better understanding of the policy implementation process and therefore provide answers to the causes for poor policy outcomes in countries like Nigeria. Towards achieving this goal, the researcher structured this study into three distinct parts, namely;

- The development of the research problem area;
- The development of the conceptual model for evaluating the implementation process; and
- The use of the emergent model to evaluate the implementation process through case studies.

This structure is in sync with the objectives of the study, thus enabling the various sections to assist in the attainment of each of the objectives and ultimately lead to the achievement of the study’s aim. Table 8.1 below highlights the relationships between the study’s objectives and the structure.

Table 8.1 Relationship between the Study’s Objectives and Thesis Structure

Objectives	Sections of the Study
To determine what constitutes a viable IDS from a policy implementation perspective	The development of the research’s problem area; and conceptual model for evaluating the implementation process.
To assess the capabilities of the Viable Systems Model for evaluating temporary multi-organisational structures such as the IDS for viability	The development of the conceptual model for evaluating the implementation process.
To develop and validate a Viable Infrastructure Delivery System Model (VIDM)	

Objectives	Sections of the Study
To develop an understanding of the existing organisational structures and governance modes and the attendant interrelationships between stakeholders within the IDS	The use of the emergent model to evaluate the implementation process through case studies.
To identify success and failure factors affecting the attainment of viability within such systems using the VIDM.	
To proffer recommendations on how to attain and maintain organisational viability.	

Compiled by Author (2014)

8.3. Reflections on the study’s objectives and propositions

From Table 8.1 above, the significance of the study’s objectives towards the attainment of the aim of the study can be easily deciphered. Owing to their significance, a precise reflection on the various objectives shall ensue in this section.

8.3.1. Determination of what constitutes a viable Infrastructure Delivery System (IDS) from a policy implementation perspective.

Taking into consideration the plethora of scholarly publications within the realm of implementation research and the absence of systemic, holistic evaluation of the implementation process within the literature known to the researcher, this study set out, through literature to identify the key attributes to successful implementation from a systems and cybernetic perspective. However, prior to this, the study reviewed the extant literature highlighting the ascendancy in the use of procurement (public in some cases) to drive government policies and organisational strategies. Various scholars have advocated for the use of government’s purchasing power to drive effective implementation of some of its socio-economic policies through the procurement of public goods such as infrastructure assets. The LCDPs are exemplars of these socio-economic policies geared towards the promotion of economic growth within local economies through the use of local resources in the delivery of the public goods and services such as infrastructure assets.

Selecting the implementation of the Nigerian version of LCDP as an exemplar, the study attempted a review of the findings emanating from various studies conducted on this version.

It was discovered that the findings of these studies pointed to mixed perceptions and results. Although some of the studies pointed towards the successful nature of the policy in Nigeria's oil and gas industry, others lamented the failure of the policy, pointing to the glaring high levels of unemployment and poverty in the country as indicators of the unsuccessful nature of the policy. In fact, besides blaming attendant corruption, lack of transparency, and lack of skills in the oil and gas industry as cause of the poor implementation of the NOGICD Act, none of these scholars made any attempt to evaluate the mode of organisation and governance within project delivery systems within the industry to establish what the real problems were. In what might appear as a drop in the ocean with respect to this observation, Balouga (2012) maintains that there was a disconnection along the implementation process. According to him, such disconnects ought to be investigated as they probably gave rise to the poor implementation experienced within the industry. Furthermore, it was observed that the respective studies failed to take the interorganisational and multi-layered nature of the implementation process into perspective. This singular factor led to the isolation of certain stakeholders in the analysis of the implementation process. There was a tendency to ignore the delivery environments of various infrastructure projects within the oil and gas industry was observed from the literature reviewed. This tendency can be traced to the observation by Proctor et al. (2011) wherein they state that the implementation analysts were concerned with analysing policy outcomes at the end of the implementation cycle rather than analysing the implementation process proper. They reiterate that implementation failure would definitely lead to poor policy outcomes hence the need to evaluate implementation processes as such an evaluation would enable timely interventions during the policy implementation cycle.

Following from these observations and discoveries and understanding the imperative need for the use of a holistic and systemic methodology to conceptualise and evaluate interorganisational relationships and their influence on the implementation cycle, the study decidedly sought after a model which had the capabilities to allow for such conceptualization from within the systems thinking literature. This led to the theory of Viable Systems. The viable systems theory was premised upon a juxtaposition of systems thinking and cybernetics. Theoretically, this model provided the necessary methodology with which a proper analysis of the implementation of the NOGICD Act was to be subsequently executed from a project delivery perspective. Furthermore, the use of this theory provided the basis for the evaluation of these relationships as it stipulates the basic requirements which a system/organisation must meet to remain viable (CSFs for organisational viability). In

accordance with these CSFs, the researcher explored the implementation processes across the various case studies from the organisational viability viewpoint.

Arising from the above discourse, it was established that a viable IDS constituted of a delivery system which had all the traits of a viable system (presence of five recursive subsystems, each possessing the attributes of the whole) possessing effective communication and collaboration between these subsystems in such a manner that the overall system was able to indulge in self-regulation hence being able to remain ultra-stable and deliver to the client's or policy requirements.

8.3.2. An assessment of the capabilities of the Viable Systems Model for evaluating temporary multi-organisational structures such as the IDS for viability

Prior to the present study, various systems thinking literature have pointed to the viable systems theory as embodied in the VSM as an indispensable tool for understanding and diagnosing organisations and processes within organisations from a viability perspective. Scholars have lauded the provenance of the VSM in this regard; however, none of the scholars, known to this researcher have made any attempts to explore its applicability to the implementation of policies through infrastructure delivery systems. It is worthy of note that the IDS is treated as a TMO in this study as it has all the features of the TMO, particularly, its temporary nature. The study carried out by Adham et al. (2012) as it concerns the implementation of the National Biotechnology Policy in Malaysia appears to be the closest scholars have come to applying the VSM to policy implementation. In their study, in apparent recognition of the inherently complex nature of the policy implementation cycle, they apply the VSM in an attempt to unravel these complexities through an identification of the various stakeholders involved in the implementation and their assigned roles and responsibilities. This study takes this application further beyond the identification of stakeholders and through their actual interactions during the implementation of the policy through infrastructure delivery.

To ascertain the applicability of the VSM to serve the intended purposes of the study; the conceptualisation and evaluation of interorganisational relationships within the IDS-a TMO, the researcher embarked upon a series of opinion gathering exercise from experts in systems thinking. The viewpoints obtained from such sources led to the development of an emergent VIDM model based on the principles of the VSM, but however situated within the context of the IDS and policy implementation environments respectively.

8.3.3. The development and validation of a Viable Infrastructure Delivery System Model (VIDM)

As is usually the case with model development, there is the need for the model's usability to be determined by the stakeholders for whom it is meant. Such determination makes renders the model practically applicable as intended by the researcher and is often carried out by a selection of stakeholders. The emergent model in this study was not considered an exception. In a bid to effectively verify and validate the VIDM, various steps were taken by the researcher. These steps were categorised under three separate yet interlinked levels, namely; conceptual, theoretical and operational levels; See Table 5.1.

The various steps involved in the validation process of the VIDM as carried out in the course of this study are summarily discussed, subsequently. It must be stated that whereas Table deals with the aspects of model verification and validation, this particular study is only concerned with the validation of the VIDM.

8.3.3.1. Conceptual Level:

The conceptual level of the validation process deals with the degree to which the emergent model's theoretical underpinning has been subjected to tests bordering on provenance. Also, the conceptual level involves the prevalence of other scientific works which has been based on this underlying theory.

The underlying theory in this particular study was the viable systems theory. This theory has enjoyed a high degree of provenance among various system thinkers alike. Also, it has been applied, through the VSM, in several scholarly works in the past four decades especially as it concerns the execution of organisational diagnosis and/or redesign; see section. As such, it is not a new theoretical lens but one that has been tested severally by numerous scholars both in the past and in the present times.

8.3.3.2. Theoretical Level:

In this level of validation, the degree of persuasiveness of the strategy being recommended through the emergent model is for testing. This implied that the VIDM's suitability and applicability for conceptualising interorganisational relationships and evaluating the impact of their interactions during the delivery process on the success or otherwise of the implementation process.

To determine this, the researcher relied upon the use of unstructured interviews, an asynchronous online discussion forum and a set of structured interviews to ascertain the feasibility of using the emergent model to describe and evaluate the IDS. Whereas the first

two sources of data dwelt on systems practitioners and academics hence being more inclined towards ascertaining the degree of provenance, theoretically, the second data source comprised of the industry practitioners. This second group concurred with the usefulness and representativeness of the emergent VIDM model in diagnosing the interorganisational relationships within their respective IDSs. They also confirmed the various stakeholders involved in the delivery activity thus enabling quicker identification of the stakeholders on the various IDSs evaluated. Establishing that the VIDM was indeed apt for such tasks emboldened the researcher to embark on the last phase of the validation cycle which was the operationalisation of the VIDM.

8.3.3.3. Operational Level:

This level of the validation cycle is concerned with the testing phase of the emergent model. It seeks to establish that the model has been effectively tested using the right sample size and that an appropriate methodology had been applied in such a testing activity. Furthermore, it seeks to verify whether the theoretical, empirical and/or policy oriented findings are substantively useful.

In this particular study, the VIDM was further validated through three distinct case studies. In selecting these case studies, considerations were given to the need to achieve replication and to engender analytic generalisation. In other words, the choice of three case studies and the selection criteria applied during the selection of the cases implied that the right sample size was adopted. Furthermore, within the cases, attempts were made to ensure that all the stakeholders involved in the procurement and delivery of the infrastructure asset were duly represented. These stakeholders were asked to identify their positions on the VIDM. They were also asked to validate the model's underlying premise and CSFs identified.

Concerning the theoretical and empirical findings, it can be inferred that based on the use of the VIDM within the respective IDSs, certain analytic generalisations were made, propositions successfully tested and the applicability of the VIDM in the context of TMOs proven.

In summary, the VIDM was successfully validated through the cases and across the various levels of the validation cycle.

8.3.4. To develop an understanding of the existing organisational structures and governance modes and the attendant interrelationships between stakeholders within the IDS

Based on the validation of the VIDM as an appropriate tool for the carrying out the conceptualisation and evaluation of the implementation process, the model was put to use with the aim of understanding the existing organisational structures and governance modes as well as the interorganisational relationships within the IDS selected. Such an understanding was obtained through the mapping of the VIDM on the IDS of the respective projects. This mapping exercise enabled the identification of the stakeholder organisations and their respective roles and responsibilities. This was subsequently followed by semi-structured interviews conducted by the researcher with various representatives of the stakeholder organisations serving as interviewees. These interviews provided the researcher with the needed information which was used in achieving this particular objective.

8.3.5. Identification of the success and failure factors affecting the attainment of viability within such systems using the VIDM.

The potency of the diagnosis or evaluation exercise lies in the ability of the model to enable the identification of success and failure factors within the IDSs evaluated. As a central proposition applied when diagnosing organisations and/or systems for viability, the viability principles maintain the need for the organisation/system to possess sub-systems performing the five basic functions required for viability and an enhanced flow of information (communication) from the policy sub-system through all the subsystems to the implementation subsystem. Furthermore, there should be effective collaboration between these subsystems during the delivery of the task. For these subsystems to contribute to the viability of the overall organisation/system, they should also possess the features required for viability, individually that is. This is referred to as the principle of recursivity.

In the case of the VIDM, the evaluation exercise was carried out at the implementation level of the overall system wherein that subsystem assumed the status of a System-In-Focus (SIF). The interorganisational relationships evaluated were those which were present within this SIF. Here, the SIF connotes the infrastructure delivery environment whereas the IDS involve a representation of all the parties involved in the delivery of the infrastructure within the SIF. In this particular study, this proposition implied that the CSF for the organisational viability within the implementation level (SIF) would consist of the presence of stakeholder organisations performing those five basic functions along with a proper communication

channel for passing policy/client requirements or strategy through the various subsystems which are embedded within the SIF. Another CSF for organisational viability in this case will be the presence of effective collaboration between the various stakeholder organisations carrying out these functions within the SIF.

Based on the premise espoused above, conducting such interorganisational multi-layered relationship evaluations will involve the identification of these CSFs within the IDS and where they are not identifiable, failure factors (pathologies) would be sought. This was carefully done through the three case studies selected for this purpose in this study. Besides the identification of the various subsystems required for viability, several pathologies were discovered which were capable of leading to implementation failures/ deficit. These findings were further used in the testing of the study's propositions thus leading to the development of analytic generalisations and recommendations on how to achieve successful implementation.

It was discovered that all the stakeholders to the IDS were inclined towards the attainment of cost-effective procurement and delivery of infrastructure assets for their production operations. This drive for cost-effectiveness was responsible for the manner in which they interpreted and carried out their roles within the IDS as it pertained to the engagement of local suppliers/labour. Given the availability of competent and skilled resource within the project environment proven as internationally competitive and capable, clients and contractors alike, it was gathered, do not need extra legislation to compel them to engage such genre of persons or organisations within their respective IDSs.

8.3.6. To proffer recommendations on how to attain and maintain organisational viability within Infrastructure Delivery Systems in Nigeria's Oil and Gas Industry

As is usually the norm in similar studies, this study concludes by proffering some recommendations on how to get delivery systems to achieve strategy/policy implementation success from a viable systems perspective. It also proffers recommendations to stakeholders who are interested in applying the VIDM product as a tool within their respective SIFs with a view to diagnosing them for viability or perhaps redesigning them to attain viability. These recommendations would follow in the subsequent sections of the chapter.

8.4. Recommendations

Based on the testing of the study's propositions through the findings from the intra-case and cross-case analysis, the study considers the following recommendations necessary for various stakeholders within the IDS if the desire to achieve organisational viability is to be met.

8.4.1. The need for the adoption of multi-layered, interorganisational, and systemic approaches to implementation analysis

The process of policy/strategy implementation has been described as an interorganisational and multi-layered activity which involves various stakeholders interacting across several layers with the sole aim of achieving the expressed policy outcomes. These sorts of interactions add up to the inherent complexity of the implementation process. Although several studies have indicated intent carry out a review the policy and/or strategy implementation processes within the body of management, policy, and implementation research, the inability of most of these studies to reflect the inherent peculiarities of the implementation process has made it difficult if not impossible for the proper evaluation of the implementation process for several policies. Such inadequate evaluative exercises have contributed to the paucity of data as it concerns the various instances and allegations of implementation deficit, particularly in developing countries. As a matter of fact, the absence of an appropriate methodology has led various scholars into the assessment and /or evaluation of the policy outcomes; using same as a measure of implementation success or failure. Such approach has been replete in the assessment of several policy implementation exercises in contemporary times. This approach has been described as inappropriate by scholars as it does not take the views of the actual participants within the implementation cycle into consideration and in situations where it is considered, parties are selected and treated in isolation from other participants. This is not proper as implementation is an interorganisational endeavour and any assessment of its success or failure should be executed from an interorganisational systemic perspective. However, whereas these scholars have advocated for an evaluation of the implementation process and the interactions which occur during it, no study known to the researcher has attempted to conceptualise and evaluate these interactions from the stakeholders. Policy makers and implementing agencies across the globe have continued to evaluate policy outcomes instead of the implementation process. This is especially the case in Africa and most of the developing world, where huge funds committed to project/policy implementation has been wasted without achieving the expected

outcomes. This is worsened by the fact that inability of the project/policy implementation cycle to deliver the expected outcomes is only observed at the end of the implementation cycle when all the funds would have been spent.

This study has tried to make up for this deficiency with the development of a model which can be used by various stakeholders to conceptualise and evaluate their internal processes and interactions as well as their external interactions with other stakeholders within the implementation cycle. This would enable the organisations to understand the roles which they are expected to play in the attainment of successful implementation. The VIDM proves to be a valuable tool in the hands of a systems advisor as it avails him/her with a platform to evaluate the implementation of policy/strategy from a systemic and holistic perspective on an on-going manner in a manner similar with the AGILE system in IT programming systems. Furthermore, it is worthy to note that such a perspective allows for a scrutiny of the organisational and governance mechanisms adopted in the delivery of the policy outcomes through projects delivery and an assessment of the impact of these mechanisms on successful implementation.

8.4.2. The need for effective communication and collaboration between parties during policy implementation

The contribution of effective interorganisational communication and collaboration towards the attainment of implementation success cannot be overlooked. Similarly within the IDS, effective communication and collaboration between the various stakeholders has been identified as a CSF for organisational viability.

Although clients, particularly government clients, have always reiterated their commitment towards ensuring dissemination of information through appropriate communication channels on the expected deliverables of any policy or strategy to other stakeholders involved in implementation and the roles of these stakeholders in such processes, evidence adduced from the case studies indicate that these communication channels are in most cases, ineffective. This ineffectiveness gives rise to varied understandings of the strategy or policy by the different stakeholders thus leading to the exhibition of non-collaborative stances by the various parties towards others.

From the intra-case reports and the cross-case report, the existence of communication gaps within the various IDSs investigated was obvious. Furthermore, it was discovered that these gaps proved antithetical to successful collaboration between the various stakeholders as

previously indicated. The absence of/or prevalence of ineffective communication channels within such systems is associated with the lack of a properly defined organisational identity; a recipe for implementation failure. Stakeholders are only interested in the realisation of their individual organisational objectives which may be in conflict with the goals of the overall delivery system. This situation is usually witnessed in TMOs such as the IDSs evaluated and have been documented accordingly in organisational research literature; however it appears that no widely accepted and adopted methodologies have been proffered for assessing or evaluating the degree of interorganisational communication and collaboration within the delivery system and the impact of poor communication and collaboration on implementation success.

In its contribution, this study applied the VIDM towards achieving this feat relying on the tenets of the viable systems theory. It is expected that various scholars, policy makers and implementers alike should apply the tenets of the viable systems theory towards ensuring that various parties to the implementation process share the same goals and aspiration by evaluating the interactions on a continuing basis during the implementation cycle.

8.4.3. The need for the adoption of the appropriate organisational structures and governance mechanisms;

Although the manner through which implementation processes are organised and governed have been serially described as fundamental to their rate of success or failure, it appears that various studies on the project/policy failures have seemingly avoided the investigation of the relationship existing between the kinds of organisational and governance mechanism adopted in the delivery of a project/policy/strategy. Rather, they have concentrated on recommending various kinds of organisational structures and governance mechanisms as best fits for varying circumstances whilst some other scholars have explicitly referred to the need for contingency-based organisational structures and governance mechanisms to support successful implementation.

In this study, the application of the VIDM within the selected cases allowed for an exploration of the impact of various organisational structures and governance mechanisms on seamless and effective interorganisational, multi-layered communication and collaboration. It was discovered that whereas some kinds of organisational structures and governance mechanisms enabled for the proper knowledge flows, others impeded same within delivery

systems hence leading to varying objectives. It was also observed that the nature of such structures affected the powers wielded by the client and/or the contractor within the IDS.

Furthermore the manner in which the delivery of oil and gas infrastructure is organised and governed in Nigeria posed a threat to the entry of small and medium scale suppliers as a result of the excessive regulation of the industry and process by various government agencies.

Based on these observations, this study recommends that clients properly assess their needs and business objectives and decide on how much influence they want to wield on the delivery of these objectives through their projects. This would enable them to reassess their capabilities and the alternative organisational structures and governance mechanisms available to them. The VIDM can serve as an essential tool for this purpose.

8.4.4. The need for the further clarity on the existing legislation on local content development in Nigeria and redefinition of key areas of the legislation

In the aftermath of the intra-case and cross-case analyses, respectively, one of the salient issues identified had to do with the lack of consensus among various stakeholders over definitional issues and the appropriate criteria for measuring the progress made in the implementation of the policy within the various projects.

Undoubtedly, enhanced clarity within the extant legislation about some of these issues would contribute to resolving this lack of agreement. However, it was discovered that such issues were also prevalent in situations where there were no extant explicit legislation promoting the engagement of local suppliers and/or labourers.

For instance, the definition of ‘local area or local supplier’ is one of such points where there appears to be a high level of disagreement between various stakeholders. Various literature on local content development and similar policies have lamented this lack of agreement between stakeholders about these contentious issues about definition, however, they have been unable to produce a widely accepted definition of the term ‘local’ or ‘local supplier’. Rather they argue that such issues are content dependent. This study agrees with this assertion and posits that whatever criteria are adopted for such definitions should be expressly stated and communicated to the entire stakeholders within the IDS.

However, the study discovered that the definition of the term ‘local supplier’ was capable of undermining the delivery of successful policy outcomes from the IDS, particularly as it concerned the boosting the growth of the local economy. Whereas the Nigerian definition of the term local supplier as contained in the NOGCID Act, classified as the enterprise

approach, emphasises ownership as a yardstick for determining local suppliers, evidence obtained from the cases studied revealed that such yardstick engendered rent-seeking and agency behaviour on the part of Nigerian suppliers as some of them sought for jobs, only to ship them overseas for actualisation. Ultimately, not carrying out the actual task in-country denies the local economy the capability to retain capital and also to employ the increasing number of unemployed youth in the country. But if the value-added approach is considered the main yardstick for defining local suppliers, this would lead to the execution of these tasks in-country and thus widen the linkages between various sectors of the economy and the oil and gas industry hence leading to improved capital retention, extra income through taxation and provision of jobs in-country.

The implementing agency in Nigeria should also try to ensure that there is a uniform yardstick for measuring implementation progress on a project-by-project basis as this would enable them to keep track of the contributions made by individual projects to successful implementation of the policy. Care should be taken to ensure that this yardstick is acceptable to all stakeholders.

8.4.5. The need for government to ensure enhanced transparency in the procurement process and the provision of adequate infrastructure

Problems relating to lack of transparency, corruption and lack of accountability have been identified by several studies as causes of implementation deficits, particularly in developing countries. The absence of infrastructure and other ancillary amenities has also been acknowledged as posing as challenges to successful implementation of the local content development policies in Nigeria. The success of the implementation of similar policies in certain countries has been traced to the presence of the requisite infrastructure and an industrial backbone within such countries.

Based on the evaluation of the cases in this study, it was observed that a large degree of these anomalies lay at the doorstep of the government. The mixed role of government as client and regulator within IDS1 and 2 serves as an enabler for corruption and the attendant lack of transparency within the IDS. It was observed that the complexity within the process was caused by the excessive regulation of the industry thus leading to high costs. The need to avert these high costs leads stakeholders to devise means of short-circuiting the procurement and delivery process resulting in non-transparent acts.

This study recommends that the role of government in the Nigerian Oil and Gas industry be streamlined to the performance of regulatory functions alone. Even at that, there should be a streamlining of the number of agencies through which the government dispenses its regulatory functions. It was also observed that such excessive regulations could pose as barriers to the entry of the local suppliers as a result of the immense costs required for PQQs and ITTS across the delivery chain. This would encourage the operators to introduce innovative ways of competitively engaging the local suppliers within their multinational supply chains to ensure cost-effectiveness in project delivery.

In the same vein, the Nigerian government needs to reassess its contribution in the provision of incentives to budding industrialists to develop industries to support the oil and gas industry and other sectors of the economy. Promulgating legislation alone does not lead to effective implementation as the necessary ingredients for successful implementation are supposed to be provided. Such ingredients include the presence of the right infrastructure and a vibrant industrial base in-country. Having observed that clients across the world are mostly driven by cost considerations in their procurement and delivery of infrastructure assets, the absence of the industrial facilities and other ancillary infrastructure like good transportation systems, epileptic power supply, dockyards, and jetties contribute to the uncompetitive stance of the local suppliers. If government moves to ensure that these facilities are provided in-country, it would attract industrialists to the country and ultimately allow the local suppliers to compete favourably with the foreign ones for tasks on the basis of cost and productivity.

8.4.6. The need for improved partnerships between the various organisations towards ensuring skill acquisition in-country

Extant studies have pointed towards the lack of skills as a major challenge not only to project delivery success but also to the ability of major stakeholders to engage local suppliers and skilled labour within the delivery process. The lack of skilled project management expertise in Africa for instance has been blamed for the increasing rates of project failures in the continent.

In the cases understudied in this study, the lack of skilled personnel and competent suppliers was also cited by various contractors and clients as posing a daunting challenge to their desire to engage local suppliers. However, it was observed that none of the stakeholders interviewed accepted responsibility for fostering skill acquisition programmes in their areas of operation independently. Rather, they asked that government pick up the gauntlet and seek support

from the industry stakeholders as it relates to employment of the trainees of such institutes set up by government. On the hand, government is continuously seeking the support of the industry to partner it in the provision of educational and technical training facilities in-country.

This posture indicates a blame culture which does not help the issue. To resolve this imbroglio, the stakeholders within the IDS have to put efforts together to support the development of training facilities and provide assurances towards the engagement of trainees as apprentices on their numerous projects. It is not a task that is to be left alone for government.

Admittedly, whereas certain organisations have committed to such training through the CSR portfolios, the uptake remains low as most organisations continually seek to distinguish their CSR activities from their core business or any closely related area, preferring to see it as a charitable undertaking meant for supporting destitute persons and other community related endeavour.

8.5. Implications

Owing to the varied opinions expressed by several stakeholders within the extant literature about the success or failure of the implementation of the Nigerian Content Development Guideline (NCD) adopted in 2005 and the subsequent NOGICD Act (2010) in the Nigerian Oil and Gas industry, this study set off to investigate the policy implementation process from a project delivery perspective. Upon an in-depth review of previous investigations into the implementation of the policy, it was discovered that such investigations did not consider the interorganisational, multi-layered nature of the implementation process. This deficit was further aggravated by the absence of a clear conceptualisation of the interorganisational, multi-layer relationships which exist within the implementation process. Relying on the extant theories of viable systems and TMOs, this study developed a model for conceptualising and evaluating these relationships from a viable systems perspective. Subsequently, the emergent model, the VIDM, was used in evaluating the success or otherwise of the extant policies from a systems viability dimension.

Consequently, it was observed that the application of the VIDM on three distinctive infrastructure delivery systems in Nigeria and the United Kingdom, respectively, held some implications for practice and for future research.

8.5.1. Implications for Research

As has increasingly become the norm in contemporary research, this study holds certain implications for the research community and the conduct of future research. Such implications which are often premised on any or a combination of the study's findings, methodology or limitations usually provide a platform for the conduct of future research or the validation of the current study's findings. Consequently, this particular study holds the following implications mentioned below. Unless stated otherwise, these implications particularly 1 and 2 remain applicable to the delivery of socio-economic benefits through procurement and delivery of infrastructure across various economic sectors besides the oil and gas industry which forms the thrust of this study.

- 1) The emergent model, the VIDM, provides the platform for the continued evaluation of interorganisational relationships within the project delivery systems and/or policy implementation cycles from an organisational/systems viability perspective; particularly as it enables the conceptualization of these relationships and provides the facets with which they can be evaluated. In furtherance to this, the VIDM will also enable researchers to identify and evaluate the impact of other salient attributes on the success or otherwise of these interorganisational relationships in particular and implementation success in general.
- 2) Based on the methodology adopted in the study, it is expected that future studies will rely on the present study to develop frameworks for organising and governing project delivery systems towards the attainment of viability on behalf of client organisations and other organisations from an organisational/systems viability perspective.
- 3) Due to the time constraints associated with this PhD-based study, the researcher carried out the evaluation using the VIDM within a cross-sectional time horizon. Although this time horizon provided the researcher with ample evidence required to understudy the interorganisational and multi-layered relationships between the several parties to a policy implementation (infrastructure delivery) exercise from a viability perspective within the SIF, it led to the neglect of the effect of time on these relationships and their ability to maintain viability over the entire project delivery process. Undoubtedly, the longitudinal time horizon will prove most suitable for achieving this purpose and as such, it is expected that future studies would consider the conduct of the similar studies over a longer time horizon to assess the effect of time on interorganisational relationships across the entire implementation period.

- 4) Although the emergent model depicts the interorganisational relationships within the IDS, and adopts the implementation subsystem as an SiF accordingly, the principle of recursivity possessed by the VSM affords scholars and members of the research community to narrow the focus of their attempts at conceptualisation and evaluation of particular subsystems within the overall delivery system to particular subsystems or combination of two or more subsystems whilst acknowledging the position of the selected subsystems within the overall system. Similarly, owing to recursivity, researchers can evaluate intraorganisational relationships existing between an organisation's departments from an organisational viability perspective to understand that particular organisation's readiness to contribute to the overall viability of the parent delivery system. It would also avail the researchers the opportunity to identify any attributes of that particular organisation which negates its ability to attain and maintain viability. This is borne out of the principle that the viability of the overall IDS is dependent upon the viability of its individual subsystems.
- 5) As part of its findings, it was observed that the type of contract strategy adopted by the client organisation contributes to its ability to achieve her strategic objectives as it pertains to the delivery of socio-economic benefits. However, the study stops short of evaluating the plethora of contracting strategies available to the contemporary client. It is proposed that any research in this regard would be of immense benefit to infrastructure client organisations as it would enable them choose from the various strategies available to her based on its strategic drivers. In furtherance to this objective, researchers should also explore the usefulness of contract management approaches such as unbundling to achievement of socio-economic benefits in infrastructure delivery processes.

8.5.2. Implications for Practice

The justification for this study, the emergent model and the subsequent findings emanating from the study are wholly embedded within the context of practice (policy implementation). Expectedly, the study does possess certain implications for practice. Such implications include the following, namely;

- 1) The emergent model, the VIDM and its attendant methodology, can be applied by systems advisors, portfolio, programme and project managers alike representing either government or private sector clients, in monitoring, controlling and coordinating the extant interorganisational relationships within various implementation cycles on a

continuous basis throughout the lifespan of such cycle. This is against the current practice whereby the policy outcomes are used as a benchmark for measuring and/or evaluating the successful nature or otherwise of the implementation process.

- 2) Policy makers and implementing agencies should rely upon the tenets of organisational viability when formulating new policies and developing policy implementation procedures/strategies to ensure successful implementation. It is expected that such dependence would lead to enhanced buy-ins from the various stakeholder organisations which will play significant roles during the implementation process.

8.6 Researcher's Personal Reflections

Taking a retrospective look at the research process and approach adopted in this study, the researcher acknowledges the salient nature of the approach adopted in reducing personal bias. Agreed, the researcher makes no pretense about his desire for a shift in the present predicament of the Nigerian nation and his in-depth understanding of the workings of the Oil and Gas industry in the country, prior to the commencement of this study. Whilst the interpretative and value-laden nature of this study allows for such baggage on the part of the researcher, the researcher is expected to carry out the research in such a manner that his values does not affect the validity of the study's findings. As such, the researcher resorted to adopting a non-judgmental mien during data collection, allowing the interviewees to share their experiences during project delivery. The theoretical construct (systems viability) adopted was used in making sense of the data so obtained, thus disallowing any interference from the researcher's bias. Also, the researcher ensured that CSFs necessary for the attainment of viability which were identified within the case studies were properly highlighted to showcase areas where these IDSs were actually performing properly alongside areas where pathologies were observed.

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APPENDIX A List of Publications

Journal Publications

- Awuzie, B. & McDermott, P. (Forthcoming) A Conceptual Model for Evaluating Infrastructure-Based Temporary Multi-Organisations. *Built Environment Project and Asset Management Journal*, Vol. X, Issue XX (Accepted for publication on the 8th of July, 2014)
- Awuzie, B. & McDermott, P.(2013) Understanding Complexity within Energy Infrastructure Delivery Systems in Developing Countries: Adopting a Viable Systems Approach. *Journal of Construction Project Management and Innovation* Vol, 3, 543-559.
- Awuzie, B, McDermott, P & Akujuru, V.A (2014) The Place of the Real Estate Management Profession in Emerging Infrastructure-based Public-Private Partnerships in Africa. *Journal of the Nigerian Institution of Estate Surveyors and Valuers*, Vol. 39, No. 1, 7-17

Conference Papers

- Awuzie, B. & McDermott, P. (2014) Evaluating the Impact of National Culture on Viability Within Infrastructure Delivery Systems, *Beyond Boundaries, Engineering Project Organisation Society (EPOS) Conference 29-31st July, 2014*, Winter Park, Colorado.
- Awuzie, B. & McDermott, P. (2014) A Systems Approach to Assessing Organisational Viability- An Oil and Gas Project Based Organisation Case Study. In Amaratunga, D, Haigh, R, Ruddock, L., Keraminiyage, K., Kulatunga, U. & Pathirage, C. (eds) *International Conference on Construction in a Changing World*. Heritance Kandalama, 4th -7th May, 2014. (Selected for Publication by Emerald's Built Environment Project and Asset Management Journal)
- Awuzie, B., McDermott, P. and Akujuru, V.A (2013) The Place of the Real Estate Management Profession in Emerging Infrastructure Based Public-Private Partnerships in Africa; *The 13th Annual Real Estate Development Conference*. Kigali, Rwanda. 23rd-26th October, 2013.
- Awuzie, B. & McDermott, P. (2013) JVs and Partnerships: Towards Organising for Viable Infrastructure Delivery in Developing Countries. In: Akintoye, A., Liyanage, C. L. & Goulding, J. (eds.) *International Conference on PPP Body of Knowledge*. Preston, Central Lancashire: University of Central Lancashire.
- Awuzie, B. & McDermott, P. (2013) Understanding Complexity within Energy Infrastructure Delivery Systems in Developing Countries: Adopting a Viable Systems Approach. In: Thwala, W. D. & Aigbavboa, C. (eds.) *International Conference for Infrastructure Development in Africa*. Johannesburg: University of Johannesburg and CIDB.(Best Paper Award)
- Zuofa, T., Ochieng, E.G. & Awuzie, B.O. (2012) Stakeholder Perception of Risks and Risk Factors in Infrastructural Projects: The Case of The Niger Delta In: Laryea, S., Leiringer, R. and Hughes, W. (Eds) *West Africa Built Environment Research (WABER) Conference*, 19-21 July 2011, Accra, Ghana, 1465-1476
- Awuzie, B. O., & McDermott, P. (2012) Using a Systems Viability Approach to Investigate the Social and Economic Impact of Energy Infrastructure Investments on Local Construction Supply Chain Development-A Case of Nigeria's Niger Delta Region *Global Collaboration- Proceedings of the Engineering Project Organisation Society (EPOS) Conference, 10th-12th July, 2012*, Rheden, The Netherlands

Appendix

Awuzie, B. O., & McDermott, P. (2012) Developing Viable Means of Delivering Infrastructure in Nigeria. *Delivering Value to the Community-Proceedings of the Cape Town 2012 Joint CIB W070, W092 & TG72 International Conference*, Graduate School of Business, V&A Waterfront, Cape Town, South Africa. 284-293

APPENDIX B Ethical Approval Letter

Academic Audit and Governance Committee
College of Science and Technology Research Ethics Panel
(CST)

University of
Salford
MANCHESTER

To: Bankole Awuzie, Prof Peter Mc Dermott
cc: Prof Mike Kagioglou, Head of School of SOBE
From: Nathalie Audren Howarth, College Research Support Officer
Date: 21st August 2012

MEMORANDUM

Subject: Approval of your Project by CST
Project Title: A Systems Viability Model for Oil and Gas Infrastructure Delivery in Nigeria
REP Reference: CST 12/24

Following your responses to the Panel's queries, based on the information you provided, I can confirm that they have no objections on ethical grounds to your project.

If there are any changes to the project and/or its methodology, please inform the Panel as soon as possible.

Regards,



Nathalie Audren Howarth
College Research Support Officer

For enquiries please contact:
College of Science and Technology
College Research Support Officer
The University of Salford
Maxwell building, (7th floor, room 721)
Telephone: 0161 295 5278
Email: n.audren@salford.ac.uk

APPENDIX C Participant Invitation Letter



Dear X

My name is Bankole Awuzie. I am a PhD student at the School of Built Environment, the University of Salford, Greater Manchester, in the United Kingdom. I am currently involved in an investigation into the implementation of socio-economic policies through Infrastructure Delivery Systems (IDSs) in the Nigerian Oil and Gas industry.

As a result, I will be attempting to conceptualise the interorganisational relationships evident within these IDSs and evaluating them, using the tenets of systems/organisational viability as espoused by the Viable Systems Model (VSM). In the study, the IDSs are viewed as a reflection of Temporary Multi-Organisations (TMOs).

I have observed that the systems thinking literature as it pertains to the VSM is replete with examples of the VSM's application to organisations and organisational departments for diagnosing viability. However, there has been no mention of the use of the VSM in the diagnosis of TMOs. In line with this observation, and due to your expertise in the area of viable systems, I would be grateful if you can grant me an opportunity to discuss the suitability or otherwise of the VSM's attributes for the proposed application to such kinds of organisations as represented by my IDS. To this end, I am seeking an appointment to interview you. This interview should ordinarily last for less than an hour and would be about sharing your experiences as it concerns the application of the VSM and your thoughts as it concerns its use within TMOs.

I wish to assure you that findings from this interview will remain confidential as your staff would remain anonymous unless otherwise stated. This shall remain so in both the research report and any future publication. You are also within your rights to withdraw from the research process without any reasons as this is a voluntary activity.

If you have any questions, please don't hesitate to contact me through email at b.o.awuzie@edu.salford.ac.uk or my supervisor: Prof. Peter McDermott at p.mcdermott@salford.ac.uk.

Yours sincerely

Bankole Awuzie

School of Built Environment,
University of Salford,
Salford,
M5 4WT, Greater Manchester, UK

Prof. Peter McDermott

School of Built Environment,
University of Salford,
Salford, Greater Manchester,
M5 4WT, Greater Manchester, UK

APPENDIX D Organisation Invitation letter



Dear Sir/Madam,

Invitation to participate in interviews: *A Systems Viability Model for Oil and Gas Infrastructure Delivery in Nigeria*

I am a PhD student at the School of Built Environment, the University of Salford, Greater Manchester, in the United Kingdom. As part of the programme requirements, I am undertaking an investigation which is geared at the development of a holistic understanding of the inherent processes involved in the delivery of new infrastructure in the country's oil and gas industry. The research principally attempts to understand the impact, if any, of the various contractual interrelationships between stakeholders to an infrastructure delivery process on the attainment of socio-economic benefits such as the development of local content particularly as it concerns enabling indigenous supplier development. It is hoped that creating a vivid understanding would enable decision makers gain a comprehensive view of these interactions and hence lead to the development of adequate means of ensuring that the delivery processes deliver on the local content development objects of the Federal government. This research project is sponsored by the Federal Government of Nigeria through its agency, Petroleum Technology Development Fund (PTDF) as part of its programme to seek ways to exploit the oil and gas industry to boost the local economy.

I am approaching your organisation given your recent participation in the delivery of xxx infrastructure projects as a Regulator/Implementer/Client/Lead Contractor/Sub-Contractor. I require your assistance to approach any members of within your organisation and your supply chain who have participated in the project planning, tender evaluation, bidding and the actual construction phases of any of these infrastructure projects to participate in the scheduled interviews. Your anticipated participation would contribute immensely towards the timely completion of my PhD and also avail your organisation with new knowledge beneficial to your future transactions. The data collection method to be adopted would be the semi-structured which are expected to last for a maximum duration of one hour. I shall also be requesting for documents which relate to the entire execution of the project.

I wish to assure you that any data so obtained from your organisation and within your organisation's supply chain shall remain confidential as the identity of your organisation and staff would remain anonymous. This shall remain so both in the research report and any future publication. You are also within your rights to withdraw from the research process without any reasons as this is a voluntary activity. If you have any questions, please don't hesitate to contact me via email at b.o.awuzie@edu.salford.ac.uk or my supervisor: Professor Peter McDermott at p.mcdermott@salford.ac.uk.

Yours sincerely

Awuzie Bankole, O.

School of Built Environment,

University of Salford

Salford, M5 4WT, Greater Manchester, UK

Prof. Peter McDermott,

School of Built Environment,

University of Salford

Salford, M5 4WT, Greater Manchester, UK

APPENDIX E Research Information Sheet



You are hereby invited to take part in this research. Before you decide, or not, to participate, please read the following information to help your decision. This information sheet contains brief information about the research. If you have any questions about this research please contact the researcher at the address below. Thank you for reading this.

About the research

Title:

Student/researcher: Awuzie Bankole O.

Email address: b.o.awuzie@edu.salford.ac.uk

School: School of the Built Environment (SoBE)

The University of Salford

Supervisor: Prof. Peter McDermott

Course of Study: Doctoral (PhD)

Funding: This research is funded by the Petroleum Technology Development Fund (PTDF)

Purpose of the Study

The study focuses on understanding the relationship between the effectiveness of an infrastructure delivery system and the development of local content especially within the local construction industry. This study seeks to use the systems viability approach in understanding the viability or otherwise of the oil and gas infrastructure delivery process within the context of socio-economic policy implementation in Nigeria.

Why was I selected as a participant?

You have been selected as one of the participants in this research because your organisation has been recently involved in the process of delivering infrastructure for the oil and gas infrastructure in Nigeria.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and will be asked to sign a consent form.

Furthermore, **if you decide to be involved now, but at a later stage decide to withdraw, you may do so, without giving a reason. Any data or information that you have to the researcher will be immediately discarded or destroyed after your withdrawal.**

If you refuse to take part at all, it will not affect your job or any circumstances affecting your employment. However, your experience in reconstruction is valuable and will greatly contribute to this research and ultimately will provide better implementation of socio-economic policies within the Nigerian Oil and Gas industry.

What will happen to me if I want to take part?

I will send an invitation based upon an agreed upon time for the conduct of a semi structured/structured interview with you as the interviewee. This session which would usually last for between thirty minutes to one hour at the most shall focus on your experiences as a stakeholder in the infrastructure delivery process within

Appendix

the oil and gas industry; particularly as it concerns the implementation of socio-economic policies during the procurement and delivery of such infrastructure.

Will my details and information in this research be kept confidential?

All information collected from the questionnaires and interviews will be kept strictly confidential. You will be identified by a 'research code' (e.g. SV001) and false name. Any information about your details will be removed from reports and publications. This research follows the UK Research Integrity Office (UKRIO) code of ethics.

What are my options?

- To participate or not.
- During interview you can ask me to stop at any time and resume later (or not) as you wish.
- You can refuse to answer any question during the interview.
- You can ask me not to publish any information you have provided in the report and publication.

Thank you for taking part in this research. For further enquiries please contact:

Bankole Awuzie
School of the Built Environment,
University of Salford,
United Kingdom.
Email: b.o.awuzie@edu.salford.ac.uk
Tel: +44 (0) 7940089236

Prof. Peter McDermott,
School of the Built Environment
The University of Salford
M5 5WT
United Kingdom.
p.mcdermott@salford.ac.uk
+44(0)1612954808

APPENDIX F Research Participant Consent Form

Title of Research: A Systems Viability Model for Oil and Gas Infrastructure Delivery in Nigeria

Name of Researcher: Awuzie Bankole, O.

Name of Supervisor: Prof. Peter McDermott

	Please do tick where appropriate		
	YES	NO	N/A
I confirm that I have read and understood the information sheet for the aforementioned study and understand what my contributions will be.			
I confirm also that I have been given the opportunity to ask questions as it concerns the research process and other ancillary matters which might arise as a result of the process			
I hereby do agree to participate in the interview or focus group sessions organised for the sole purpose of generating data for this study.			
I agree to the interview or focus group sessions to be recorded by the interviewer			
I also do agree to the use of anonymised quotes and codes to protect my identity and promote confidentiality especially in future publications emanating from the data provided.			
I do understand that my participation is strictly voluntary and as such I reserve the rights to withdraw at any point of the research process without giving any reasons to anybody whosoever with regards to what might have prompted my withdrawal.			
I do hereby AGREE to participate in this research study.			

Name of Participant:..... Signature:Date:

Bankole Awuzie
School of the Built Environment,
University of Salford,
United Kingdom.
Email: b.o.awuzie@edu.salford.ac.uk
Tel: +44 (0) 7940089236

Prof. Peter McDermott
School of the Built Environment,
University of Salford,
United Kingdom.
Email: p.mcdermott@salford.ac.uk
Tel: +44(0)1612954808

APPENDIX G Case Study Protocol**Introduction to the Case Study and Purpose of the Protocol****Introduction**

The development and subsequent utilisation of a case study protocol has been identified as being imperative for increasing the reliability of any case study-based research and its findings thereof (Yin, 2009). Besides this need for reliability which cannot be undermined by the case study researcher, the protocol acts as a guidance tool to the researcher as it guides the researcher through the agreed upon processes designed to enable the collection of and subsequent analysis of data from the selected case.

Overview of the study

The lack of consensus among various investigators into the efficacy or otherwise of policy implementation cycles in developing countries, particularly as it concerns policies pertaining to the achievement of socio-economic benefits for the citizenry of such countries is increasingly worrisome and pathetic. The implementation of the NOGICD Act (2010) within the Nigerian Oil and Gas industry is one of such socio-economic oriented policies. Whilst some investigators have posted results indicating successful implementation of the policy and its forerunner, the Nigerian Content Directive (NCD) guidelines (2005), the current high unemployment and poverty rates highlighted by others are considered as an indication of poor implementation.

However, within a broader context, there appears to be a consensus about the prevalence of the poorly implemented policies in Nigeria, Africa and the entirety of the developing world. Several scholars have attributed the absence of commensurate socio-economic development in such countries to poorly implemented policies, citing the presence of some sort of disjuncture within the implementation cycle as a major constraint affecting better outcomes. The bid to identify the cause of these disjuncture and where they occur during implementation has suffered a setback owing to two main reasons, namely; the seeming failure of investigators to take into consideration, the interorganisational and multi-layered nature of the implementation process, and the absence of a proper conceptualisation and evaluation of the implementation process as epitomised by these multi-layered, interorganisational relationships. Rather the actual outcomes at the end of the implementation cycle are evaluated against some set of KPIs associated with the expected outcomes. Obviously, this leads to a waste of scarce resources in the event of poor implementation as the projects/programmes/portfolios would have all been completed without achieving the desired socio-economic goals.

Arising from the foregoing, this study decidedly embarked on the development of a model which can be applied in conceptualising and evaluating the interorganisational relationships within the implementation cycle as they exist within a project delivery system (IDS) through a systems/organisational viability theoretical lens. The emergent model, the VIDM, was the applied in conceptualising and evaluating the interorganisational relationships across three project delivery systems relying solely on the tenets of the VSM theory. The findings are used to test the study's propositions.

The study was situated within the theoretical prism of Temporary Multi-Organisations (TMOs) and Systems/Organisational Viability (VSM).

Data Collection and Analysis Procedures

In accordance with this study's aim and objectives, collection of data would occur on two distinct phases; 1 and 2 respectively. Whereas the former was concerned with determining the suitability and subsequent applicability to the attributes of the VSM to TMOs (as represented by the IDS), the latter involved the use of the VIDM in evaluating the interorganisational relationships within several (three) implementation vehicles (IDSs).

Phase 1

Data Collection Process: In this phase, data would be collected at two levels for two different yet interconnected purposes. At the first level, a mixture of unstructured interviews and an asynchronous online discussion forum will be executed. It is expected that these data collection approaches would enable the researcher to reach out to the wider VSM expert audience across the globe. The research question for which answers would be sort at this level pertains to the suitability of the VSM's tenets for evaluating TMOs as represented by the IDS.

The VIDM will be developed based on the opinions of these interviewees and discussants on the suitability and applicability of the VSM's tenets among the plethora of other systems thinking models.

The second level of phase 1 involves the validation of the VIDM model to ensure that it is truly representative of the elements which it intends to represent. For this purpose, the researcher applies structured interviews among a select group of policy makers and regulators, infrastructure clients, contractors and subcontractors alike. The diagram of the model, its purpose and its methodology would be sent to the interviewees before the interviews proper to allow them read through and acquaint themselves with the VIDM.

These questions allowed for the initial validation of the VIDM and its subsequent application of the model to select case studies.

Phase 2

This phase of data collection consists of case studies which incorporate a mixture of semi-structured interviews and a review of available policy and project documents. During this phase, the focus of the data collection is centred on the conceptualisation and evaluation of the interorganisational relationships within the implementation cycle through a systems viability theoretical lens. Such conceptualisation and evaluation would be done through the mapping of the various organisations on the VIDM based on their roles and/or responsibilities. The identity of the overall system is determined from the overall policy guidelines as it concerns socio-economic benefits such as the engagement of local Small and Medium suppliers during the delivery of the selected projects. Representatives of the various organisations involved within the IDS are asked about their roles in the delivery of the project. It is expected that a review of their roles would lead the identification of the much sought after implementation gaps (disjuncture). CSFs and Failure factors are derived from the viable systems literature. They would be asked other questions which would not only ensure further validation of the model but also allow for the testing of other propositions of the study. Triangulation is achieved through multi-source triangulation as various parties are asked the same questions.

Data Analysis

The qualitative data arising from the various phases are analysed qualitatively by Qualitative Content Analysis (QCA). In coding the emergent data, the researcher will rely on the use of pre-set themes and emergent themes where necessary. In phase 1, the researcher will apply codes according to themes such as suitability of the VSM and alternatives of the VSM.

In phase 2, the researcher will apply the themes used for categorising identified gaps in organisational analysis whenever the VSM is applied. These themes consist of three broad genres namely; communication-related, functional, and structural pathologies alike. The researcher will scan through the transcripts to seek out areas where the activities revealed by the representatives of the various organisations were in conflict with the tenets of the policy document or project document as it concerns the achievement of socio-economic policy objectives during the procurement and eventual delivery of the infrastructure project. After transcribing the interview sessions, the investigator uploaded the transcripts into the NVivo software is used to collect the data and to allow for clear analysis of the data. The transcripts are read thoroughly and the views of the interviewees are copied and placed under corresponding themes. This is done on a case by case basis and on a cross-case basis subsequently.

Participant Selection Criteria:

Purposive snowball sampling technique is used in the selection of the interviewees and the discussants in the two phases of the study. Academics and professionals who were well versed with the VSM and its attributes were selected for the study. Concerning validation of the model, various stakeholders in the delivery of infrastructure within and outside the oil and gas industry were selected. Participants include: contract holders, project managers, programme directors, heads of procurement, Nigerian Content directors and personnel, civil servants (programme directors and managers), and representatives of the suppliers.

Case Selection Criteria:

The cases, IDS1, IDS2, and IDS3 comprised of the various parties responsible for the delivery of particular infrastructure assets. They were selected in such a manner that they reflected a clear representation of the entire classes of project/policy implementation stakeholders involved in the delivery of the respective projects. Therefore, only organisations and representatives thereof who are involved in the various projects were selected. The cases are selected in such a manner that they allow for both theoretical and literal replication as well as analytic generalisation of the study's findings as well as the validation of the VIDM.

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APPENDIX H Model Validation Interview Guideline



Introduction

Poor implementation of socio-economic policies, particularly in developing world, has been blamed for the slow pace of economic development as well as the living conditions in such countries. The failure of several socio-economic oriented policies to bring succour to the populace in these countries has been mainly attributed to poor implementation of these policies. One of the most prevalent reasons given for poor implementation appears to be the presence of a disjuncture within the policy implementation cycle. Attempts by various scholars to identify the causes of such disjuncture appear to have been hindered by the absence of a proper platform for the evaluation of the implementation cycle itself, instead of the outcomes as has become the norm. Undoubtedly, understanding the nature of interorganisational relationships from a systemic perspective within the implementation cycle would enable investigators to appreciate the impact of such relationships on successful implementation and also encourage the identification of the cause of such disjuncture. Using the implementation of the Nigerian Oil and Gas Industry Content Development (NOGICD Act, 2010) during the procurement and delivery of oil and gas infrastructure projects in Nigeria as an exemplar; this study seeks to develop such a platform, the VIDM. The VIDM not only conceptualises the various organisations involved in the delivery of the infrastructure asset but also provides the basis for the subsequent evaluation of the interorganisational relationships based on the principles of systems/organisational viability.

Description of Model

The VIDM is a model which is premised on the tenets inherent with its base model, the VSM and the theory of viable systems. Its intended usage lies within the realm of the evaluation of strategy or policy implementation through the conceptualisation of the interorganisational relationships which exist during the project delivery. Subsequently, this conceptualisation allows for an understanding of how the activities of these organisations within the implementation cycle impact upon the attainment of successful implementation, hence allowing for changes to be made when errors are identified during the implementation lifecycle and not at the end as has been the norm.

The VIDM relies on the premise that successful implementation of socio-economic policy initiatives during the procurement and subsequent delivery of an infrastructure asset is dependent upon the ability of the delivery system to attain and maintain organisational viability. Organisational viability has been described as a situation where various organisations involved in the delivery of a particular organisational task communicate, collaborate and exercise control over and between them achieving as it were, homeostasis or ultra-stability (the tendency towards a relatively stable equilibrium between interdependent elements), hence allowing such a system to regulate itself without interference from external forces, whilst maintaining the collaboration needed to deliver the purpose of the system.

Certain criteria are imperative for the attainment of this state of viability within project delivery systems. These criteria consist of the following, namely:

- a) Presence of the five management functions within the organisation, usually described as Systems 1-5;

- b) Presence of structural recursion
- c) Identification of a common identity (The purpose of the system);
- d) Effective communication between parties;
- e) Cohesion (alignment of individual and collective interests)/Collaboration;
- f) Adaptation and flexibility; and
- g) Balanced contributions from component systems.

The presence of subsystems 1-5 in the VIDM connotes the presence of the organisations responsible for the performance of the management functions required for the attainment of overall viability. Besides being present within the delivery system, these organisations should be able to share a common organisational identity; the purpose of the system.

Model Validation

A draft of the VIDM is provided below in Figure 1. Kindly go through the diagram and answer the questions below.

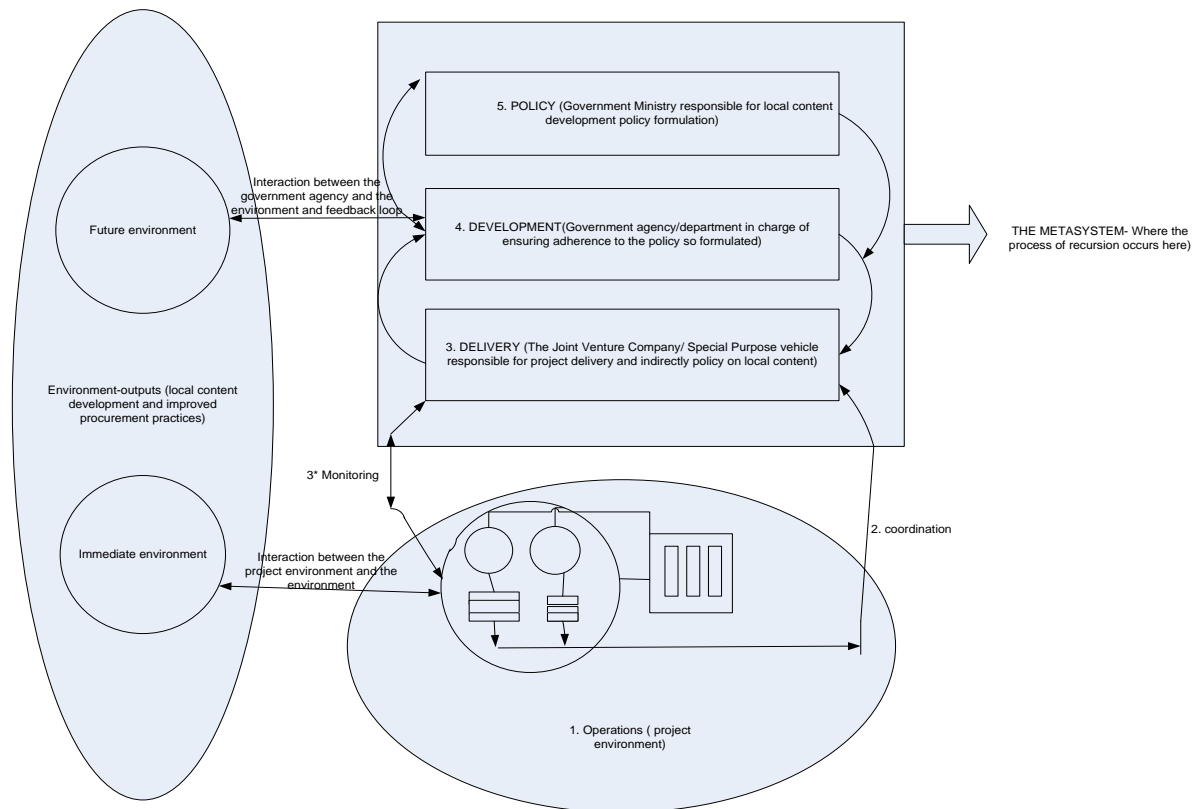


Figure 1. Draft of the VIDM

Validation Questions

- 1) Does the VIDM depict a systematic view of the relationships which exist between your organisation and other organisations within project delivery systems?
- 2) Does the VIDM properly identify the various stakeholders to an infrastructure delivery activity?

Appendix

- 3) As a stakeholder to the delivery of infrastructure, would you describe the VIDM as being easy to understand?
- 4) Would you describe the VIDM as easy to use for evaluating interorganisational relationships within delivery systems?
- 5) Can effective communication and collaboration between various stakeholders affect the attainment of project/policy implementation success?

APPENDIX I Semi-Structured Interview Guideline

A Systems Viability Model for Oil and Gas Infrastructure Delivery in Nigeria

Name of Organisation:

Name of Interviewee:

Position held:

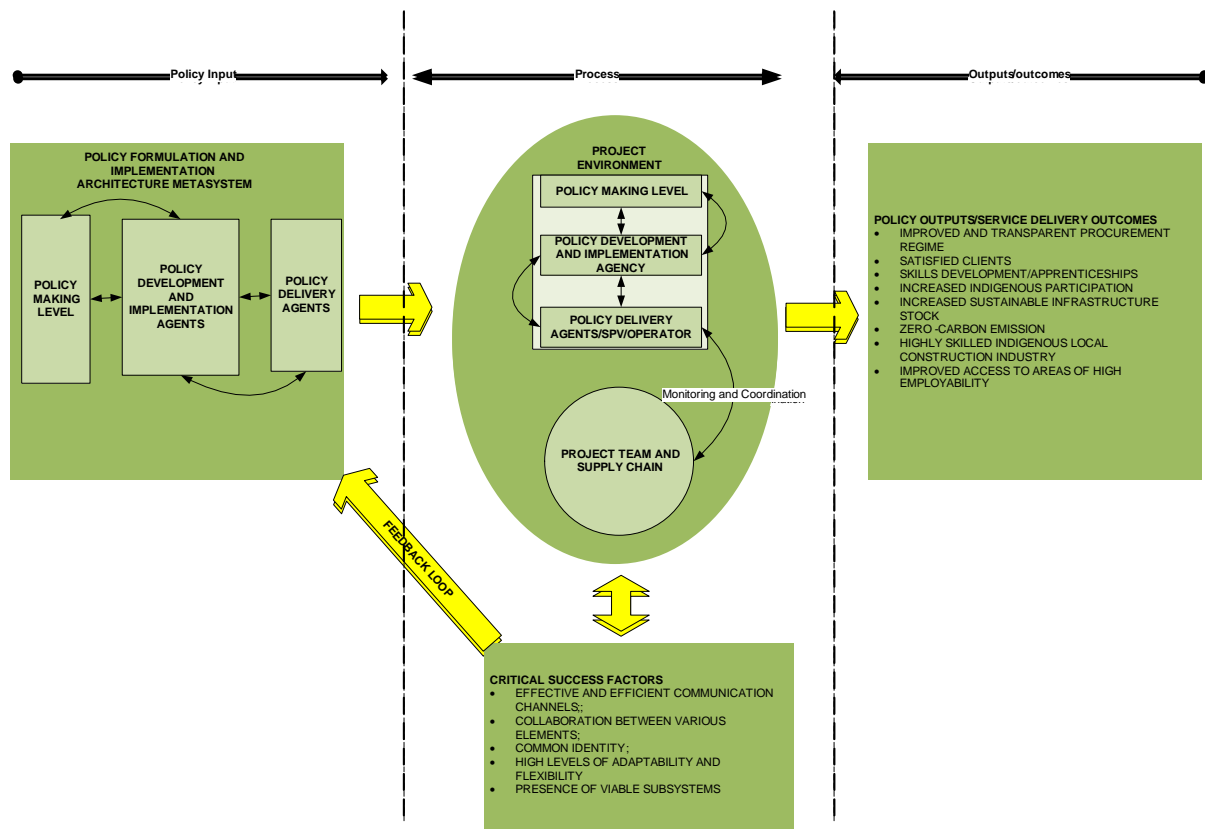
Date of Interview:

Start time:

End time:

Total interview time:

The VIDM



General Information and validity of the VIDM

- 1) Does the Viable Infrastructure Delivery Systems Model (VIDM) serve as a true representation of the various organisations and interorganisational relationships present within Infrastructure Delivery Systems (IDS)?
- 2) Do you agree with the principles associated with the VIDM from an evaluation perspective?

Appendix

- 3) Are the various CSFs identified therein imperative for successful interorganisational relationships which exist within the IDS? Kindly give reasons for your answer.
- 4) Going by your experience in the delivery of the XXX project, which subsystem does your organisation represent?

The roles and responsibilities assumed by these stakeholder organisations in the delivery of the stated infrastructure project (Particularly as it affects the implementation of socio-economic policy initiatives)

- 5) Briefly describe your organisation as it concerns its role in the delivery of XXX project.
- 6) Can you mention the various criterion used by your organisation for measuring project success during the delivery of XXX project?
- 7) What factors were considered in selecting the various stakeholders (suppliers/contractors/clients) responsible for the delivery of XXX project?
- 8) Can you rank the factors mentioned in (7) according to priority?
- 9) Were you aware of the existence of any socio-economic policy initiative(s) during the period that XXX project was being delivered? If yes, which ones?

Stakeholder opinion about the local content development policy and/or the use of procurement to drive socio-economic benefits

- 10) What are your thoughts on the existence of such socio-economic policy initiatives?
- 11) Do you agree that these policy initiatives can be and should be driven through strategic procurement and subsequent delivery of infrastructure projects such as XXX project?
- 12) If yes, what contributions did your organisation, in its position as (regulator, implementer, client, contractor, and sub-contractor) make to towards the implementation of these socio-economic policies during the delivery of this project?
- 13) What challenges impeded your organisation's capability to contribute to the successful implementation of these socio-economic policy initiatives during the procurement and subsequent delivery of the XXX project?
- 14) Can you describe how these challenges affected your organisation and its relationships with other stakeholders as it pertained to the successful implementation of the identified policy initiative?
- 15) How can these challenges be resolved to make for successful implementation?