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**THE DEVELOPMENT OF A PROCUREMENT STRATEGY  
FOR PRIMARY HEALTH CARE FACILITIES IN NIGERIA**


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A Doctoral Thesis submitted in partial fulfilment of the requirements for the  
award of Doctor of Philosophy of Loughborough University

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## Abstract

The Federal Government of Nigeria (FGN) introduced the Ward Health System (WHS) in 2001 to facilitate the provision of sustainable and integrated Primary Health Care (PHC) services by revitalising the principle of community co-ownership and co-management of PHC facilities. To date, the extent to which the WHS scheme has achieved its objectives remains questionable and a strong case for further re-examination of its structure, process and function, including its overall place in the PHC subsystem has been made. The FGN has also shown considerable interest in attracting the private sector to boost investment and efficiency in the healthcare sector, although it is yet to formulate any strategies towards actualising that desire.

Accordingly, this research aimed at developing a sustainable procurement strategy that will facilitate the achievement of community co-ownership or co-management of PHC facilities in Nigeria, was launched. The research utilised the best practices within the UK Local Improvement Finance Trust (LIFT) procurement strategy for integrated primary and social care facilities to recommend practices that can facilitate the achievement of sustained improvement in the Nigerian context. A variety of qualitative and quantitative research methods were employed including interviews, questionnaire survey and focus groups.

Strategic evaluation of the WHS model was conducted in Nigeria through exploratory interviews. The investigations indicated that the planning and implementation of on-going strategies lack focus, impact and sustainability. Consequently, further exploratory interviews were undertaken in the UK to investigate some key implementation issues on the LIFT schemes that can be used to promote sustained improvements in the Nigerian context. The best practices identified relate to stakeholder identification, analysis, engagement and alignment; definition of processes, roles, responsibilities and accountabilities; periodic reviews throughout the whole-life cycle of each project; and some new project roles and tasks. Accordingly, a procurement strategy based on the Public-Private Partnership (PPP) principle that will be responsive to the peculiar needs of the host community and have adequate accountability structure for sustaining PHC facilities in Nigeria was proposed. This proposal falls in line with the new macro-economic strategy adopted for growth and the health reform agenda of the present

government, which have variously emphasised the expansion of the approach to improving healthcare delivery through increased private sector participation, whenever feasible. It is expected that the active participation of various components of the communities will offer considerable social and economic benefits such as social inclusion, employment and training opportunities for the members of the host communities in addition to the attainment of other fundamental philosophies of PHC provisioning.

In addition, a supplementary questionnaire survey was carried out in Nigeria to investigate the perceptions of Nigerian professionals on the success and risk factors associated with the use of PPPs for infrastructural developments in Nigeria. The results show that seven out of the top ten most important PPP risk factors in Nigeria are endogenous (risk events and consequences of which occur within the system boundaries of the project being considered). The results also show that while the majority of the endogenous risk factors could be assigned to the private sector partner, the public sector should retain political and site acquisition risks, while relationship-based risks should be shared between the private and public sector partners. The three most important PPP success factors in Nigeria were found to be favourable legal framework, well-organised public agency to negotiate on behalf of government and strong private consortium. The comparison of the findings of this study with similar previous study in the UK suggests commonalities in the success factors of PPP projects. On the basis of the results of the exploratory interviews and questionnaire survey, focus groups were held to assess the appropriateness of the proposed procurement strategy in the light of on-going procurement and healthcare reforms and recent legislative developments. On the basis of the positive feedback obtained from the validation, a modified procurement strategy was put forward.

However, the need for developing a comprehensive framework for achieving continuous improvement that will make learning followed-through from planning, design and construction into occupancy, and post occupancy to become a natural part of the process of procuring PHC facilities was highlighted.

## **Dedication**

This thesis is dedicated to the memory of my late beloved father (May God grant him eternal rest, Aameen), my affectionate mother, and my lovely wife and daughter.

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First and foremost, I thank God Almighty for all His favours, mercies and guidance that propelled me successfully through this research. I would like to thank all the people who have supported me in various ways throughout the period of this doctoral research. In particular, I would like to thank my supervisors, Professor Andrew Price and Professor Andrew Dainty, for all the invaluable comments, guidance, inspiration, support and the opportunities for engagements with diverse specialists throughout the challenging and exciting three years. I would also like to thank my Director of Research, Prof. Alistair Gibb; the Research Administrator, Ms Helen Newbold; all the academic, support and technical staff of the Department of Civil and Building Engineering; and the colleagues with whom I had constructive interactions and shared the tough and boring moments together with.

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## List of Abbreviations

AC	Audit Commission
ADB	Activity DataBase
AEDET	Achieving Excellence Design Evaluation Toolkit
AIPDC	Abuja Investment and Property Development Company
ANOVA	Analysis of Variance
ASPECT	A Staff and Patient Environment Calibration Toolkit
ASYCUDA	Automated SYstem for CUstoms DATA
BMPIU	Budget Monitoring and Price Intelligence Unit
BOO	Build Own Operate
BOT	Build Operate Transfer
BTO	Build Transfer Operate
CBN	Central Bank of Nigeria
CFR	Capital Funding Regime
CHC	Community Health Centre
CI	Continuous Improvement
CIC	Continuous Improvement Champions
CIF	Continuous Improvement Facilitator
CIT	Continuous Improvement Team
CM	Construction management
CoP	Community of Practice
CPAR	Country Procurement Assessment Report
CSF	Critical Success Factor
DB	Design and Build
DBB	Design-Bid-Build
DEFRA	Department of Environment, Food and Rural Affairs
DETR	Department of Environment, Transport and Regions
DHC	District Health Committee
DL	Direct Labour
DoH	Department of Health
DTI	Department of Trade and Industry
EIO	Expression of Interest
FEC	Federal Executive Council
FGN	Federal Government of Nigeria
FMOH	Federal Ministry of Health
FT	Foundation Trust
GDP	Gross Domestic Product
GNP	Gross National Product
GP	General Practitioner
GRP	Gateway Review Process
HEDECO	Health Development Company
HERFON	Health Reform Foundation of Nigeria
HMT	Her Majesty Treasury
HRP	Health Reform Partnership
HSRP	Health Sector Reform Programme
ICRC	Infrastructure Concession Regulatory Commission
ICT	Information and Communication Technology
IPT	Integrated Project Team
IST	Integrated Supply Team

JV	Joint Venture
KM	Knowledge Management
KPI	Key Performance Indicators
LA	Local Authority
LDP	Local Development Partnership
LIFT	Local Improvement Finance Trust
LIFTCo.	LIFT Company
LGA	Local Government Authority
LGHD	Local Government Health Department
LJV	Local Joint Venture
MC	Management Contracting
NAO	National Audit Office
NASS	National Assembly
NEAT	NHS Environmental Assessment Toolkit
NEEDS	National Economic Empowerment and Development Strategy
NGO	Non-Governmental Organisation
NHDC	National Health Delivery Commission
NHIS	National Health Insurance Scheme
NHS	National Health Service
NJV	National Joint Venture
NMC	Nigerian Medical Council
NPC	National Planning Commission
NPHCDA	National Primary Health Care Development Agency
OECD	Organisation for Economic Cooperation and Development
P21	ProCure21
PCII	Potential Continuous Improvement Idea
PCIP	Primary Care Improvement Partnership
PCT	Primary Care Trust
PD	Project Director
PDCA	Plan Do Check Act
PfH	Partnerships for Health
PFI	Private Finance Initiative
PHC	Primary Health Care
PM	Project Manager
PMI	Project Management Institute
PPC	Public Procurement Commission
PPP	Public Private Partnership
PPPDV	Public Private Partnership Development Venture
PRIME	Private sector Resource Initiative for the Management of the Estate
PSCP	Principal Supply Chain Partner
PSM	Project Stakeholder Management
PSP	Private Sector Partner
PUK	Partnerships UK
OGC	Office of Government Commerce
RDPT	Resident Due Process Team
RIBA	Royal Institute of British Architects
SD	Standard Deviation
SG	State Government
SHA	Strategic Health Authority
SMOH	State Ministry of Health

SPA	Strategic Partnering Agreement
SPB	Strategic Partnering Board
SPSS	Statistical Package for Social Sciences
SPV	Special Purpose Vehicle
SRO	Senior Responsible Officer
SSDP	Strategic Service Development Plan
UK	United Kingdom
UNCITRAL	United Nation Commission on International Trade Law
UNICEF	United Nations Children's Fund
VfM	Value for Money
VHC	Village Health Committee
WDC	Ward Development Committee
WHS	Ward Health System
WHO	World Health Organisation



# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Chapter introduction**

This chapter introduces the context of the research, commencing with a background to the research - highlighting gaps in knowledge and practice that justifies the need for the research; the research questions; the aims and objectives of the research; and a brief summary of the research methodology adopted. The chapter also presents the structure of the thesis.

### **1.2 Background to the research**

Nigeria is a federation with current population in excess of 140 million people, which is equivalent to about a quarter of Africa's population. The variety of customs, languages, and traditions among Nigeria's 250 ethnic groups gives the country a rich diversity. Nigeria operates a three-tier system of government comprising of a central Federal Government (FG), 36 State Governments (SGs) and 774 Local Government Authorities (LGAs). The administrative mechanism within each of these semi-autonomous tiers comprises three separate but interdependent arms: executive; legislative; and judiciary. Another common term, 'geopolitical zones', divides Nigeria into six parts: North-West; North-Central; North-East; South-West; South-South; and South-East.

The ingredients of Nigeria's National Health System are an admixture of her national philosophy (equity and social justice) and primary health care (PHC) approach, as defined

by the World Health Organisation (WHO) (1978). This was reinforced following a resolution by African Health Ministers at Bamako, Mali in 1987 to reform the health sectors through the acceleration and strengthening of PHC in Africa and the subsequent WHO guidelines that laid down the principles and measures to operationalise the initiative. PHC has been described as a philosophy that emphasises the movement of healthcare out of large institutions, such as hospitals, into community-based settings, thereby bringing it closer to the people and making it more responsive to their needs (Baggot, 2004). The concept of PHC as a 'level' in the management of illness can be traced back to the Dawson report (1920), which identified three levels of service: primary care centres, secondary health centres and teaching hospitals. The World Health Organisation (WHO) (1978) also identified PHC as the first level of contact of individuals, the family and community with the national health system. The PHC level has been identified as the appropriate setting to tackle most of the major causes of morbidity and mortality because in many countries, at least 90 per cent of the patient's contact with the healthcare system is at this level (WHO, 1978; Nwakoby, 2004; National Audit Office (NAO), 2005a). At the PHC level, preventive, promotive and community development activities are integrated as the core services (Egwu, 2004).

At the end of 2005, there were 18,492 registered PHC facilities, 2600 secondary healthcare facilities and 221 tertiary healthcare facilities across the country; representing increments of 182%, 278% and 433% respectively over the figures at the end of 2000 (Central Bank of Nigeria (CBN), 2006). Government records also show that the proportion of Nigerian households residing within 10 kilometres of a health centre, clinic or hospital ranges between 67% and 88% across the six geopolitical regions (National Planning Commission (NCP), 2004). The ratio of physicians to the population stood at 1 to 3,333 in Nigeria as at December 2005, (Nigerian Medical Council (NMC), 2005) against the recommended 1 to 10,000 in developing countries (WHO, 1978) or the more recent figure of 20 to 100,000 (African Focus Bulletin, 2007). However, although Nigeria's Gross National Product (GNP) of US\$36 billion represents 41% of West Africa's GNP, the health status indicators of Nigerians are worse than the average for sub-Saharan Africa (Federal Ministry of Health (FMOH), 2004b). The United Nations Children's Fund (UNICEF) (2001) report observed that the poor state of Nigeria's health system is traceable to several factors; organisation, stewardship, infrastructure, financing and service provisioning. These have been compounded by other socio-economic and

political factors in the environment (NCP, 2004). Crisp and Onwukwu (2000) further reported that the absence of a well coordinated healthcare system that gives clear guidance on the structure and process of PHC implementation has hampered the attainment of integrated healthcare delivery in Nigeria.

In addition, the National Primary Health Care Development Agency (NPHCDA) (2004) revealed that the physical existence of health facilities does not necessarily mean that they are functional as most of them are poorly equipped and maintained, and often do not have adequate essential supplies. Chukwuani *et al.* (2006) also revealed sub-optimal operational efficiency, poorly maintained facilities, inadequate skilled staff and poor budgetary allocation in the implementation of PHC in Nigeria. These have resulted in low utilisation and poor service provision. Health Reform Foundation of Nigeria (HERFON) (2007) estimated that healthcare facilities in Nigeria serve only about 5-10% of their potential load. Consumers' health knowledge and awareness of their rights to quality care are low, partnerships between the public and private sectors are mostly non-existent or ineffective and donors and other development partners are poorly coordinated (FMOH, 2004a).

The Federal Government of Nigeria (FGN), through the NPHCDA, introduced the Ward<sup>1</sup> Health System (WHS) in 2001. The initiative is aimed at facilitating the provision of sustainable and integrated PHC services by revitalising the principle of community co-ownership and co-management of PHC facilities. In addition, although the FG has also shown considerable interest in attracting the private sector to boost investment and efficiency in the healthcare sector (NPC, 2004; FMOH, 2004b), it has not formulated appropriate strategies towards actualising that desire (Ibrahim and Price, 2006a). To date, the extent to which the WHS initiative has achieved its objectives remains abysmal and mixed, and a strong case for further re-examination of its structure, process and function, including its overall place in the PHC subsystem has been made by Nwakoby (2004), (Uzochukwu *et al.*, 2003), (Uzochukwu *et al.*, 2004a) and (Uzochukwu *et al.*, 2004b). There has also been an increasing debate for the involvement of communities, private and not-for-profit sectors in the procurement of PHC facilities in a way that will not

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<sup>1</sup> A ward is a geographical constituency with a population of about 20,000 people in groups of villages or urban areas, from which a councillor is elected to represent them at LG level. Each LGA has about 10 wards and there are 774 LGAs in Nigeria.

fundamentally change the welfare nature of healthcare philosophy. Accordingly, there is a research need to *evaluate the planning and implementation of the WHS with a view to recommending a more sustainable procurement strategy that will facilitate the attainment of the goals of the initiative.*

There has been varied responses to the call for the construction industry to look at other sectors and settings for best practices. On one hand, researchers and practitioners have searched for related good practices that have been successfully adopted and implemented in other countries and industries (for example, Anumba *et al.*, 2000; Ngowi, 2000; Fernie *et al.*, 2001; 2002; 2003; Green *et al.*, 2002; 2004; Errasti *et al.*, 2007). The underlying assumption being that borrowing something that has gained acceptance elsewhere, rather than inventing a new solution, is easier to exploit (Towill, 2003). On the other hand, practices originating from other countries, industries or even other construction projects have been rejected on the basis of being inappropriate because the characteristics of construction and of each project are perceived as “unique” both in terms of discontinuities and the fragmentation of the teams into different professional disciplines (Bresnen, 1990; Ahmad and Sein, 1997; Pasquire and Connolly, 2002; Bresnen *et al.*, 2003). While these two contrasting views may not be necessarily mutually exclusive, this research has adopted Lillrank’s (1995) suggestion that good practice adopted elsewhere can be exploited, provided that it is sufficiently adapted to the new situation. Therefore, rather than attempting to ‘re-invent the wheel’, this research will identify and utilise existing internationally recognised best practices<sup>2</sup> in the procurement of PHC facilities or from other sectors whilst highlighting the relevant contextual issues.

Consequently, this research explores the innovative procurement strategy used for providing integrated primary and social care facilities in the UK under the local improvement finance trust (LIFT) initiative. The choice of the LIFT initiative is hinged on its design around the patient and includes amongst other things better partnerships and team-working through joint ventures that bring together the financial power of the private sector, the skills of the construction industry and the vision and service expertise of the local healthcare and social care stakeholders (Partnerships for Health (PfH), 2006). Besides, the initiative has been acclaimed to be moving towards delivering the expected

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<sup>2</sup> ‘Best practices’ are the ways of doing work that have proved to be efficient and effective in providing particular services (Ngowi, 2002).

targets (National Audit Office (NAO), 2005a). Although both LIFT and WHS schemes are “local” by nature and each operates under varying social and economic landscapes thereby creating difficulty in applying lessons learnt elsewhere, it is argued here that construction projects of a particular type are largely similar at micro level in terms of processes and resources. For example, Atkin (1993) analysed 40 office building designs and found the presence of stereotypes, suggesting the adoption of some dominant design options. In addition, Jung and Kang (2007) argued that managerial similarities do exist in the construction processes of a particular kind of facility and within a particular company. Therefore, some of the lessons and knowledge generated during the execution of construction projects can be reused in future phases and other projects of similar nature, after appropriate adaptation.

### **1.3 Research questions**

From the foregoing background and the need identified for this research in Section 1.2 above, the following research questions have been outlined.

1. What are the challenges from the recent trends and developments in the procurement of public construction works in Nigeria and the UK?
2. What are the key contemporary issues in the procurement of PHC facilities in Nigeria and the UK?
3. What are the value-adding activities that host communities can contribute to promote effective co-ownership or co-management of PHC facilities in Nigeria?
4. What lessons can be learnt from practices in more developed countries, particularly the local improvement finance trust (LIFT) initiative in the United Kingdom (UK), that can promote sustained improvements in the procurement of PHC facilities in Nigeria?
5. How can the host communities and private sector be involved to facilitate community co-management of PHC facilities in Nigeria?
6. What are the key issues associated with the involvement of private sectors in the procurement of public facilities in Nigeria?

## **1.4 Aim and objectives of the study**

Following on from the research questions identified in Section 1.3 above, this research aims to learn lessons from UK best practices to *develop a procurement strategy that will facilitate the achievement of community co-ownership or co-management of PHC facilities in Nigeria.*

In order to achieve the above aim, the following objectives were outlined for the research:

1. to review 'construction procurement' concept, practices and developments in Nigeria and the UK;
2. to identify the key contemporary issues related to the procurement of PHC facilities in Nigeria and the UK;
3. to evaluate the planning and implementation of the WHS scheme in Nigeria;
4. to investigate key implementation issues under the LIFT procurement initiative that could be used to promote sustained improvements in the Nigerian context; and
5. to propose a procurement strategy that will facilitate the achievement of community co-ownership or co-management of PHC facilities in Nigeria.

## **1.5 Research methodology**

To achieve the research objectives outlined above, a combination of research methods have been employed. This includes review of literature, interviews, questionnaire surveys and focus discussions. Figure 1.1 shows the overview of the research steps and outcomes and the summary of the research methods that were used at different stages of this research.

This research commenced with a review of literature on relevant topics within the research domain using databases of journals, textbooks and conference papers in addition to internet searches.

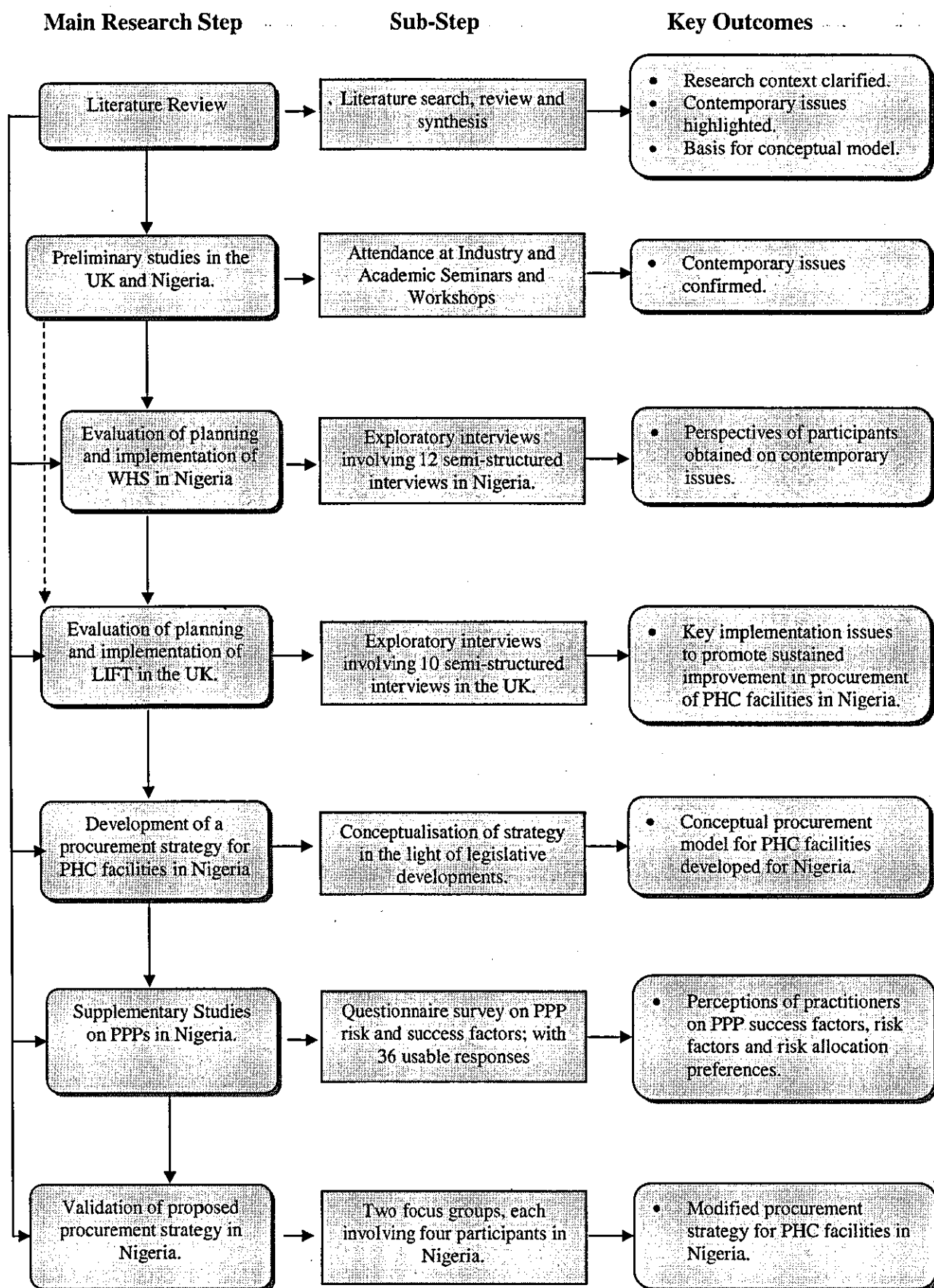


Figure 1.1: Overview of the research steps and outcomes

Preliminary exploratory studies, largely comprising of discussions were conducted at academic and industrial seminars and conferences both in the UK and Nigeria.

Subsequently, the strategic evaluation of the WHS scheme in Nigeria was conducted using semi-structured interviews with the key stakeholders involved in the procurement process. In particular, the evaluation revealed that effective involvement of the private sector to contribute managerial and property management expertise can help resolve the problems of providing and sustaining facilities for primary care services.

Further exploratory studies involving interviews in the UK were conducted to identify some key implementation practices under the LIFT programme that can be transferred to facilitate sustained improvement in the procurement of PHC facilities in Nigeria. The information obtained during the interview sessions along with the supporting documentations were analysed and evaluated.

Consequently, a procurement strategy on the basis of public-private partnership (PPP) for sustaining PHC facilities in Nigeria was proposed. Following this, it became necessary to investigate issues associated with the implementation of public-private partnerships in the provision of public facilities and services in Nigeria (PPPs). This necessitated the supplementary studies undertaken as part of this research, which comprised a questionnaire survey and two focus groups in Nigeria. The results of these studies were subsequently used to modify and validate the conceptual model.

## **1.6 Thesis structure and contents**

The thesis is divided into nine chapters. Figure 1.2 illustrates the layout of the thesis, and the following describes the content of each chapter.

**Chapter 1** introduces the context of the research, commencing with the background to the research - highlighting gaps in knowledge and practice that justifies the need for the research; the research questions; the aims and objectives of the research; and a brief summary of the research methodology adopted.



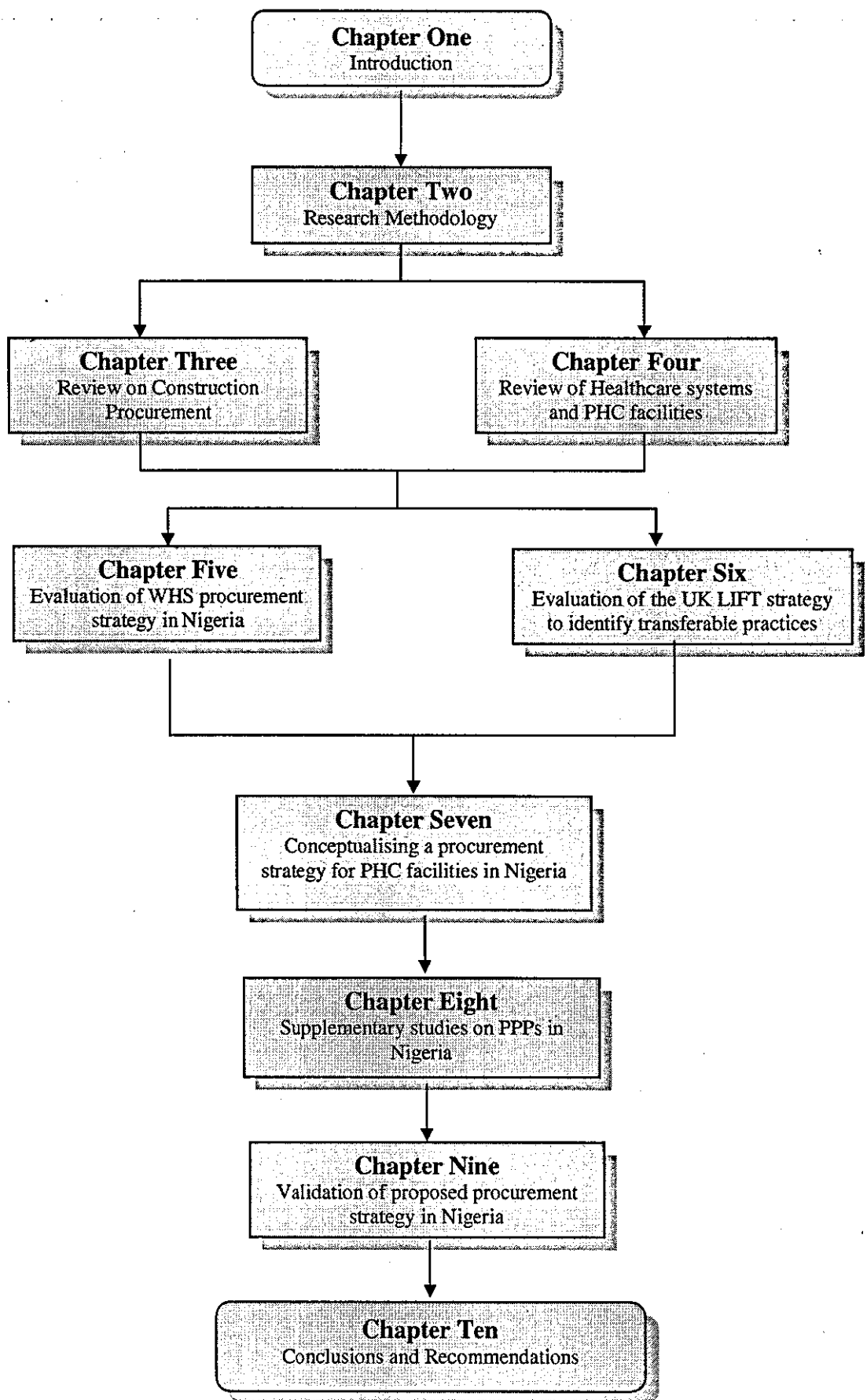


Figure 1.2: Thesis layout

**Chapter 2** presents basic concepts and principles related to research methodology and delineate the strategy adopted for this research to facilitate the achievement of the aim and objectives set for the research in Section 1.4.

**Chapter 3** presents a review of literature on the concept, practices and developments in construction procurement.

**Chapter 4** presents the review of literature on healthcare system and the procurement of PHC facilities in Nigeria and the UK, highlighting the key contemporary issues.

**Chapter 5** presents the results of the evaluation of the planning and implementation of WHS scheme in Nigeria.

**Chapter 6** presents the results of the evaluation into some key implementation issues in LIFT schemes in the UK.

**Chapter 7** presents the proposed procurement strategy for PHC facilities in Nigeria.

**Chapter 8** presents the analysis of the questionnaire survey administered in Nigeria to investigate the perception of practitioners on the risk and success factors as well as their risk allocation preferences of PPP projects in Nigeria.

**Chapter 9** presents the results of the focus discussions and the modified procurement strategy that will facilitate the achievement of community co-ownership of PHC facilities in Nigeria.

**Chapter 10** presents the summary of the key research findings, conclusions and recommendations for further studies.

## **1.7 Chapter summary**

This chapter introduced the context of the research, commencing with the background to the research - highlighting gaps in knowledge and practice that justifies the need for the

research. The chapter also identified the key questions to be addressed in the research; the aims and objectives of the research; and provided a brief summary of the research methodology adopted.

The chapter established that the Nigerian national healthcare philosophy, based on the PHC concept, emphasises the movement of care out of large institutions, such as hospitals, into community-based settings, thereby bringing it closer to the people and making it more responsive to their needs. The WHS initiative established by the FGN in 2001 to facilitate the provision of sustainable and integrated PHC services by revitalising the principle of community co-ownership and co-management of PHC facilities was shown to be implemented unsystematically and have thus become unsustainable. The FGN's inability to formulate appropriate strategies to realise its interest in attracting the private sector to boost investment and efficiency in the healthcare sector was also established. Accordingly, the need to evaluate the planning and implementation of the WHS with a view to recommending a more sustainable procurement strategy that will facilitate the involvement of communities, private and not-for-profit sectors in a way that will not fundamentally change the welfare nature of healthcare philosophy, was justified.

## **CHAPTER TWO**

### **RESEARCH METHODOLOGY**

#### **2.1 Chapter introduction**

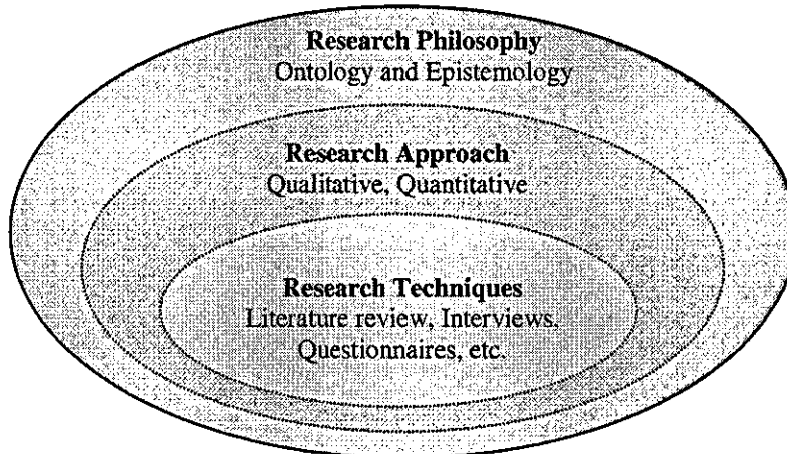
This chapter presents the basic concepts and principles related to research methodology and outlines the strategy adopted for this research to facilitate the achievement of the aim and objectives set for the research in Section 1.4.

#### **2.2 Concepts of ‘research’ and ‘research methodology’**

Research has been described as a “*systematic and organised effort to investigate a problem that requires a solution*” (Neuman, 2006). Fellows and Liu (2003) defined research methodology as “*the principles and procedures of the logical thought process which are applied to a specific investigation*”. According to Remenyi *et al.* (1998), the primary drivers for choosing an appropriate research methodology are: the topic to be researched, the specific research questions and the resources available. However, whatever the method chosen, good research must be rigorous, systematic, integrated and focussed (Peters and Howard, 2001).

Because of the complexity of the key underlying concepts of this research, which are shaped by specific organisational and sectoral contexts as well as the perspectives, beliefs and motivations of the individuals, diverse groups and countries involved, a ‘nested’ approach has been adopted for the design and development of the research methodology for this study. This approach, which comprises three interrelated themes (philosophy,

approach and technique), had been adopted for similar studies such as the development of generic process protocol for construction (Kagioglou *et al.*, 2000) and the design and implementation of product development process models in construction companies (Pzortzopoulos, 2004). Within this approach, illustrated in Figure 2.1, the researcher is in the first instance guided to understand the philosophical stance of the study, which enables the definition of the background assumptions of the research approach, and subsequently leading to the selection of appropriate research techniques.



**Figure 2.1: Nested approach of research methodology**

### **2.3 Research philosophy**

The word *philosophy* is derived from the Greek word, *the love of wisdom* (Cavalier, 1990). According to Ruona (2000), philosophy involves thinking about questions, making interpretations, trying out ideas and thinking of possible arguments for and against them and wondering how concepts really work. It also offers a framework of thinking, helps develop capacities of thinking and improves the alignment between what we think and what we do (Paul, 1993; Honderich, 1995). According to Easterby-Smith *et al.* (2003), the three main importance of understanding the philosophical issues of a research are that: it can help to clarify research designs; knowledge of philosophy can help the researcher to recognise which design will work and which will not; and knowledge of philosophy can help the researcher to identify and even to create designs that may be outside the researchers past experience.

There a number of considerations that could underpin the philosophical position of any research. Several views exist on these positions and the debate within the research community continues as to which position best represents an appropriate research design and approach. The two main philosophical schools of thought in social research, and by extension most construction management research, are *ontological* and *epistemological* considerations (Bryman, 2004). These have been discussed in Sections 2.3.1 and 2.3.2 and followed by an outline of the philosophical stance adopted for this research in Section 2.3.3.

### 2.3.1 Ontological consideration

Ontology involves the logical investigation of the different ways in which the different types of things are thought to exist, and the nature of the various kinds of existence. Fitzgerald and Howcroft (1998) highlighted the two broad ontological positions as: *realist* and *relativist* positions.

At the ontological level, while the *realist* position views the external world as comprising hard and tangible structures that pre-exist independent of an individual's ability to acquire knowledge about them, the *relativist* position holds to the multiple existences of realities as subjective constructions of the mind (Fitzgerald and Howcroft, 1998). Consequently, while the *realist* position is practical and not concerned with abstract or idealistic view of life, the *relativist* position perceives reality as being directed by socially transmitted terms and varies according to language and culture such that concepts such as right or wrong, goodness and badness, or truth and falsehood could differ from culture to culture and situation to situation (Fitzgerald and Howcroft, 1998).

### 2.3.2 Epistemological consideration

Epistemological issues deal with question of knowledge acceptability in a discipline and are concerned with the "how we know" and the methods through which knowledge are acquired (Bryman, 2004). Epistemological positions have been broadly grouped as: *positivist* or *interpretivist* (Love *et al.*, 2002; Bryman, 2004).

The *positivist* epistemological position advocates the application of the natural sciences method to the study of social reality and beyond, on the belief that the world conforms to fixed laws of causes and effects, and complex issues can be tackled using simplified or fundamental approach (Bryman, 2004). This position emphasises objectivity, measurement and repeatability (Fitzgerald and Howcroft, 1998). Therefore, while it is possible for a researcher to be objective from a detached position of the research situation, a neutral observation of reality is expected to be taken by the researcher without bias.

Contrary to the positivist position, the *interpretivist* epistemological position is critical of the application of scientific model to social study. It advocates the absence of a universal truth and places more emphasis on the realism of context (Fitzgerald and Howcroft, 1998). Therefore, because understanding and interpretation are from the researcher's perspective and point of reference, an uncommitted neutral position is impossible when taking the interpretivist position in research. Because the researcher becomes immersed in the research situation, his/her values become the driving force in the interpretation of findings (Bryman, 2004).

However, critiques of both inquiry paradigms have been reported within construction management research. On one hand, Seymour *et al.* (1997) criticised the use of *positivist* approaches in the field of built environment research because of the need for greater proximity between a researcher and real life problems. In relation to organisational research, Susman and Evered (1978) also stated that "by limiting its method to what it claims is value-free, logical and empirical, the *positivist* model of science when applied to organisations produces a knowledge that may only inadvertently serve and sometimes undermine the values of organisational members". On the other hand, the *interpretivist* approach has been queried by the argument that it is not possible to create generalisable theory as two individuals observing the same phenomenon could reach different conclusions because of their preconceived notions and background beliefs (Harriss, 1998). Table 2.1 summarises the characteristics of the philosophical considerations.

**Table 2.1      Summary of philosophical considerations**

<b>Ontological considerations</b>	
<b>Realist</b> <ul style="list-style-type: none"><li>• External world comprises pre-existing hard and tangible structures.</li><li>• Structures exist independent of individual's ability to acquire knowledge.</li></ul>	<b>Relativist</b> <ul style="list-style-type: none"><li>• Existence of multiple realities as subjective construction of the mind.</li><li>• Perception of reality is directed by varying socially transmitted terms.</li></ul>
<b>Epistemological considerations</b>	
<b>Positivist</b> <ul style="list-style-type: none"><li>• Application of natural science methods to the study of social reality and beyond.</li><li>• World conforms to the laws of causation and complex issues can be reduced through reductionism</li></ul>	<b>Interpretivist</b> <ul style="list-style-type: none"><li>• Absence of universal truth and emphasis on realism of context.</li><li>• Understanding and interpretation come from researcher's own frame of reference.</li></ul>

*Sources: Bryman (2004) and Fitzgerald and Howcroft (1998)*

### **2.3.3 Philosophical position of this research**

Although the perceptions on the issues that are addressed in this research differ between and within the different organisational groupings (from both construction and healthcare industries), this research has adopted a *realist* ontological position. This is because there is considerable evidence of successful cross-sectoral and cross-country transfer of good practices, with appropriate contextualisation. Therefore, the various methodologies utilised in other industries can be investigated and adapted in practical, rather than abstract, fashion in other sectors and countries.

Although construction projects are largely similar at micro level in terms of processes and resources, epistemologically, this research believes that the organisational contexts under consideration, such as WHS and LIFT, are by nature "local" and operate under varying social and economic landscapes. Besides, the positions and perceptions of the different stakeholders that participated in this inductive research would reflect both their individual frames of mind and the values of the sector they are representing. Therefore, an *interpretivist* epistemological position has been adopted for this research.



## 2.4 Research approach

Research approach has also been referred to, in literature, as research method (Yin, 2003) or research strategy (Jankowicz, 2000). A research approach is a way of describing how a researcher goes about doing the research, unfolding a particular style and employing different methods. According to Yin (2003), the choice of an appropriate research approach should be determined on the basis of:

- the nature of the enquiry and the type of questions being posed;
- the extent of the investigator's control over the actual behavioural events; and
- the degree of focus on contemporary events.

The research approach is also concerned with the types of evidence to be collected and the sources of such evidence, as well as the process of interpretation used to obtain satisfactory answers to questions being posed (Easterby-Smith *et al.*, 2002). The commonest research approaches used in business and management research are classified as *qualitative* and *quantitative* (Cooper and Emory, 1995; Hussey and Hussey, 1997; Baumard and Ibert, 2001) and a mixture of both (commonly referred to as triangulation). Although qualitative and quantitative approaches differ in many respects, they can complement each other (Neuman, 2006), and are discussed below.

### 2.4.1 Qualitative research

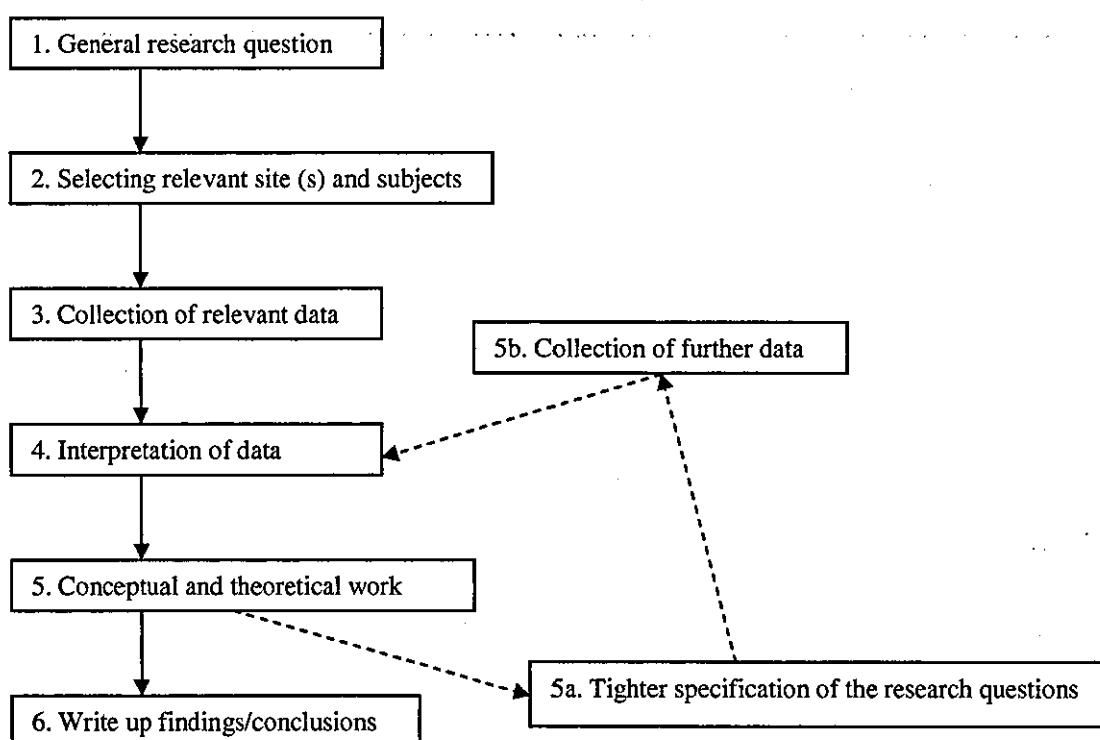
Qualitative research approaches were originally developed in the social sciences to enable researchers to study social and cultural phenomena. Creswell (1998) defined qualitative research as "*an inquiry process of understanding based on distinct methodological traditions of inquiry that explores a social or human experience*". Qualitative research follows an inductive approach in relation to theory and emphasises *words* rather than *quantification* in the collection and analysis of data (Bryman and Bell, 2007). It is subjective in nature and is exploratory as well as attitudinal (Frechtling and Sharp, 1997). Qualitative researchers often rely on interpretive or critical social science and follow a non-linear research path (Neuman, 2006) and operate under the assumption that reality is not easily divisible into discrete, measurable variables (Creswell, 1998). Qualitative data,

with its emphasis on peoples' 'lived experience', are fundamentally suited for locating the meanings people place on events, processes and structure of their lives in terms of perceptions, assumptions, prejudgments and presupposition (Amaratunga *et al.*, 2002). The language of the approach is, therefore, cases and contexts, and does not seek to turn data into quantities but rather it helps to analyse interaction, statements and transcripts with the intention of identifying patterns, links, beliefs and trends. Kaplan and Maxwell (1994) contend that the goal of understanding a phenomenon from the point of view of the participants and its particular social and institutional context is largely lost when textual data are quantified. A small number of, usually, non-representative cases but focussed samples are used and respondents are selected to fill a given requirement (Sherif, 2002). Accordingly, Bryman (2004) argued that a qualitative research approach may be adopted when:

- there is no existing research data on the topic and the most appropriate unit of measurement is not certain; and
- the concepts to be researched are assessed on a nominal scale, with no clear demarcation and involve exploring behaviour or attitudes.

According to Bryman (2004), the main steps involved in qualitative research are non-linear and the research questions are often driven by theoretical issues which in turn drive the data collection and analysis, and are represented in Figure 2.2 below. However, qualitative research has not escaped criticisms from the research community. The main criticisms and limitations of qualitative research strategy identified by Bryman and Bell (2007) are discussed in the following points.

- *Limited generalisation capability.* The sample sizes and sampling methods used in qualitative research reduces their capability in generalising the research results.
- *Subjectivity.* The strength of deeper understanding provided by qualitative strategy is in itself a weakness as it limits the confidence in the results.
- *Difficulty of replication.* Another weakness of qualitative strategy is their limitation in terms of replication by other researchers. For example, what one researcher might focus on might not be the focus of another researcher.
- *Lack of transparency.* The process of collecting and analysing qualitative data is sometimes difficult to establish and can lack clarity.



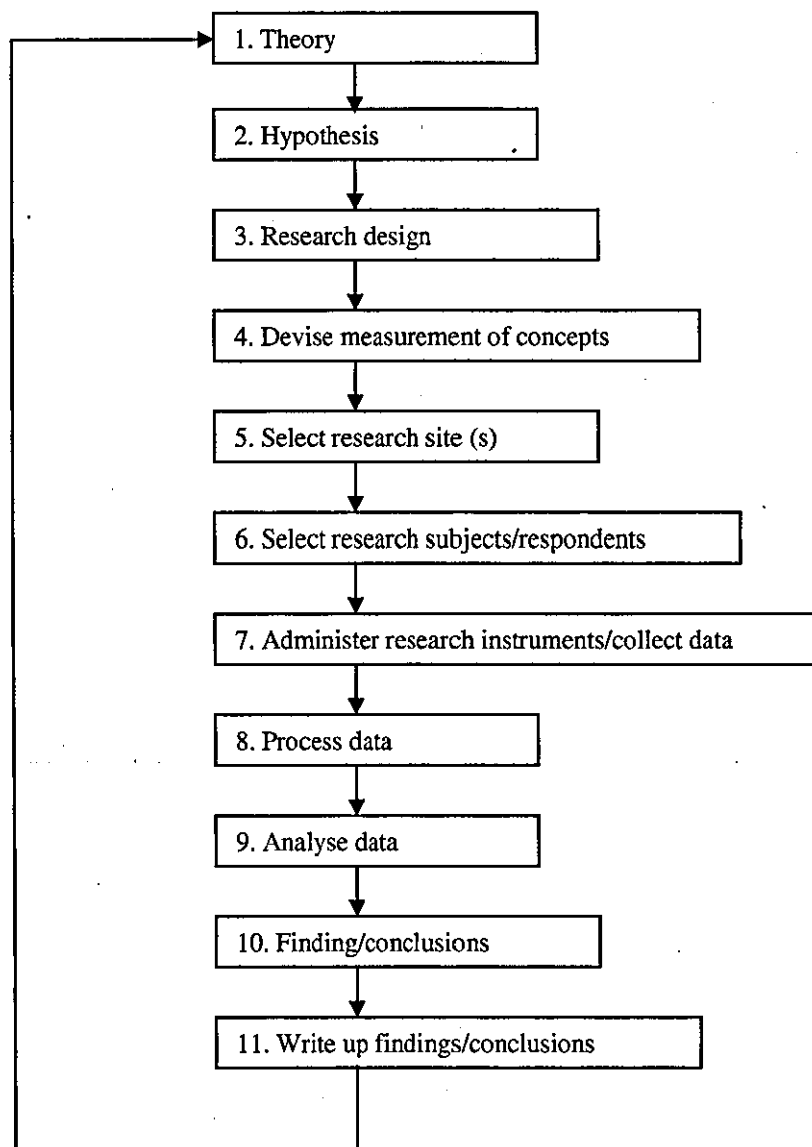
**Figure 2.2 Outline of qualitative process**  
 Source: Bryman (2004)

## 2.4.2 Quantitative research

Quantitative research methods were originally developed in the natural sciences to study natural phenomena. Fellows and Liu (2003) defined quantitative research as “*an investigation that is related to positivism and seeks to gather factual data and to study relationships between facts and how such facts and relationships accord with theories and findings of previously executed research*”. According to Naoum (2002), quantitative research follows a deductive approach in relation to theory and is concerned with the design, measurement and sampling. It follows the practices and norms of natural scientific model and views social reality as an external, objective reality. The approach employs the use of mathematical and statistical techniques to identify facts and causal relationships. Quantitative research is, therefore, objective in nature and based on testing a hypothesis or theory that is composed of variables (Fitzgerald and Howcroft, 1998). Naoum (2002) highlighted that quantitative research approach is selected for:

- finding facts about a concept, a question or an attribute; and
- collecting factual evidence and study the relationships between facts in order to test a particular theory or hypothesis.

However, in addition to facts, there is considerable evidence of its use to assess perceptions about a concept or an attribute. Bryman (2004) outlined the main steps in quantitative research as presented in Figure 2.3, and emphasised that they represent an ideal account of how research should progress. He, however, argued that although research is rarely linear as depicted in the Figure, it provides a good indication of the interconnections between the main aspects in quantitative research.



**Figure 2.3 Quantitative research process**  
*Source: Bryman (2004)*

Although extensively used, quantitative research has also received some criticisms from the research community. Bryman (2004) outlined the following criticisms of quantitative research:

- failure to distinguish between people and social institutions from the natural world;
- artificial measurement process and a sense of precision and accuracy not proceeding from the true or claimed source;
- reliance on instruments and procedures that hinders the connection between research and everyday life; and
- creation of a static view of social life that is independent of people's life in analysing the relationships between variables.

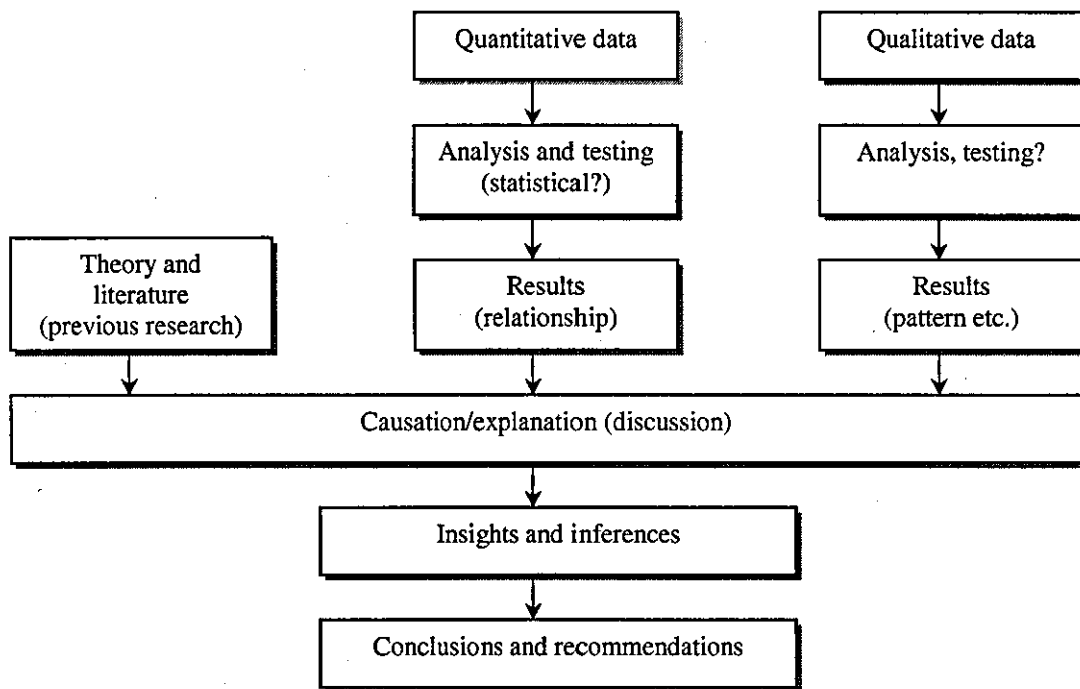
Other main criticisms and limitations of quantitative research outlined by Bryman and Bell (2007) are discussed in the following points.

- *Sampling limitation.* A sample by its nature cannot be identical to its population, and thus poses a limitation in terms of generalising results and research outcomes.
- *Non-response limitation.* The rate of non-response can affect how well the sample represents its population, and thus affects possible generalisation of results.
- *Data collection errors.* Some limitations and errors are associated with how data is collected, for example, ambiguous questions or differences in responses arising from different data collection methods.
- *Data processing errors.* The large amount of data in quantitative analysis can lead to data processing errors.

### 2.4.3 Triangulation

Triangulation refers to the combination of approaches in the study of the same phenomenon (Amaratunga *et al.*, 2002). Love *et al.* (2002) argued that triangulation is a means of representation based on the logic in moving closer to obtain a truer picture by making multiple measurements, using multiple methods, or at multiple levels of analysis. Typically, the triangulation process involves corroborating evidence from different sources to shed light on a theme or perspectives (Creswell, 1998). As triangulated studies employ two or more research techniques, qualitative and quantitative approaches may be employed to reduce and eliminate the disadvantages of each individual approach whilst

gaining the advantages of each, and of the combination, as illustrated in Figure 2.4 (Fellows and Liu, 2003).



**Figure 2.4: Triangulation of quantitative and qualitative data**  
 Source: Fellows and Liu (2003)

According to Easterby-Smith *et al.* (2002), there are four distinct categories of triangulation involving viz:

- *theoretical triangulation* involving borrowing of models from one discipline and using them to explain situations in another discipline;
- *data triangulation* is where data is collected over different time frame or from different sources;
- *investigator triangulation* is where different people collect data on the same situation, and the results are then compared; and
- *methodological triangulation* using both quantitative as well as qualitative methods of data collection such as questionnaire, interviews, telephone survey, and field study.

Love *et al.* (1998) highlighted two main advantages of combining qualitative and quantitative research approaches. Firstly, it increases the capability to transmit the

knowledge in a tangible form. Secondly, convergent findings can provide greater researcher confidence in the reliability and/or validity of results, whereas divergence can lead to greater definition and theoretical elaboration as the researcher attempt to put together the many pieces of a complex puzzle into a coherent picture. Moreover, triangulation methods may lead to a better understanding of the phenomena under investigation, when additional information may be revealed that would otherwise remain undiscovered via a single methodological approach (Abdullah, 2003).

However, Yin (2003) observed that there may be problems in implementing triangulation methods in any research. First, the collection of data from multiple sources can be more expensive than if data were collected from only a single source. Second, each investigator needs to know how to carry out the full variety of data collection techniques. If any research technique is used improperly, the opportunity to address a broader array of issues or to establish converging lines of inquiry may be lost. Table 2.2 summarises the differences between quantitative and qualitative research approaches on the basis of a number of characteristics.

#### **2.4.4 Research approach adopted for this research**

Because of the diversity and complexity of the contexts and subjects of this research, a combination of quantitative and qualitative methodological approaches has been adopted. The qualitative approach was used for the exploratory aspects of the research and tended to attempt to deduce answers to the 'how?' and 'why?' questions. The key challenge was in the determination of the essential variables, and these were identified from literature and clarified through preliminary discussions with relevant stakeholders at academic and industrial seminars. Consequently, further in-depth investigations were also made through interviews with diverse participants in order to understand their social and cultural contexts within the procurement process. Having identified the essential variables, the quantitative approach was used to answer the 'how much?' and 'how many?' questions, where necessary.

**Table 2.2 Differences between quantitative and qualitative research approaches**

Characteristics	Qualitative research	Quantitative research
Purpose	<ul style="list-style-type: none"> <li>To describe and explain</li> <li>To explore and interpret</li> <li>To build theory</li> </ul>	<ul style="list-style-type: none"> <li>To explain and predict</li> <li>To confirm and validate</li> <li>To test theory</li> </ul>
Objective	<ul style="list-style-type: none"> <li>Study issues in-depth and detail and seeks to gain insight and understand people's perceptions</li> </ul>	<ul style="list-style-type: none"> <li>Gather factual data and study relationships between facts and relationships in accordance with theory</li> </ul>
Theory	<ul style="list-style-type: none"> <li>Theory can be causal or non-causal and is often inductive – concerned with development of theory from specific instances</li> </ul>	<ul style="list-style-type: none"> <li>Theory is largely causal and is deductive - associated with verification of theory and hypothesis testing</li> </ul>
Process	<ul style="list-style-type: none"> <li>Holistic</li> <li>Unknown variables</li> <li>Flexible guidelines</li> <li>Emergent design</li> <li>Context-bound</li> <li>Personal view</li> </ul>	<ul style="list-style-type: none"> <li>Focused</li> <li>Known variables</li> <li>Established guidelines</li> <li>Statistic design</li> <li>Context free</li> <li>Detached view</li> </ul>
Research Procedures	<ul style="list-style-type: none"> <li>Research procedures are particular, and replication is very rare</li> </ul>	<ul style="list-style-type: none"> <li>Procedures are standard, and replication is frequent</li> </ul>
Data Collection	<ul style="list-style-type: none"> <li>Informative, small sample</li> <li>Observations, interviews, documents</li> </ul>	<ul style="list-style-type: none"> <li>Representative, large sample</li> <li>Standardized instruments – questionnaires, laboratory experiments, etc.</li> </ul>
Data characteristics	<ul style="list-style-type: none"> <li>Soft data, descriptive, less structures, analysed using non-statistical methods</li> </ul>	<ul style="list-style-type: none"> <li>Hard data, structured, large sample size, analysed using statistical methods</li> </ul>
Data Analysis	<ul style="list-style-type: none"> <li>Analysis proceeds by extracting themes or generalisations from evidence and organising data to present a coherent, consistent picture.</li> </ul>	<ul style="list-style-type: none"> <li>Analysis proceeds by using statistics, tables, or charts and discussing how they show relates to hypothesis</li> </ul>
Reporting Findings	<ul style="list-style-type: none"> <li>Words</li> <li>Narratives, individual quotes</li> <li>Personal voices, literary style</li> </ul>	<ul style="list-style-type: none"> <li>Numbers</li> <li>Statistics, aggregated data</li> <li>Formal voice, scientific style</li> </ul>
Outcome	<ul style="list-style-type: none"> <li>Exploratory and/or investigate and findings are contextual</li> </ul>	<ul style="list-style-type: none"> <li>Conclusive findings used to recommend a course of action</li> </ul>
Strengths	<ul style="list-style-type: none"> <li>Data gathering methods seen as natural than artificial</li> <li>Ability to look at change process over time</li> <li>Ability to understand people's meaning</li> <li>Contribute to theory generation</li> </ul>	<ul style="list-style-type: none"> <li>Provide wide coverage of the range of situations</li> <li>Fast and economical</li> <li>Where statistics are aggregated from large samples, they may be considerable relevance to policy decisions</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>Data collection can be tedious and require more resources</li> <li>Analysis and interpretation of data may be more difficult</li> <li>Harder to control the pace, progress and end-points of research process</li> </ul>	<ul style="list-style-type: none"> <li>Tend to be rather inflexible and artificial</li> <li>Not very effective in understanding process</li> <li>Not very helpful in generating theories</li> </ul>

*Sources: Leedy and Ormrod (2001); Amaratunga et al. (2002); Abdullah (2003) and Neuman (2006).*



The actions taken in this research to minimise the impact of the shortcomings identified for the research approaches are discussed in the following points.

#### *Qualitative approach*

- *Limited generalisation capability.* Within this research, though the samples for the interviews were relatively small because of in-depth nature of the investigations, but very experienced subjects were involved to obtain quality, diverse and reliable perspectives.
- *Subjectivity.* In order to minimise the subjectivity in the data collection and analysis for this research, a structured form for the interviews was used, although with additional probing to explore or clarify issues further, and the interviews were recorded and documented.
- *Difficulty of replication.* To overcome this weakness, structure was introduced in the interview process.
- *Lack of transparency.* To minimise this limitation, the interviews were recorded, the verbatim transcriptions were corrected by the interviewees and the summary of analysis sent to them afterwards for comments, observations and feedback.

#### *Quantitative approach*

- *Sampling limitation.* Although a small sample generally precludes some types of statistical tests of significance, the effective response rate of 24% is not unusual for this type of survey; for example similar questionnaire surveys in the UK by Li *et al.* (2005a) received a response rate 12% while Soetanto *et al.* (2004) received a response rate of 18.9%. Nevertheless, this sample is still statistically valid as it yields a 7% standard error against the 10% maximum allowable error (Kish, 1995).
- *Non-response limitation.* A variety of precautions were taken in the administration of the questionnaires such as hand delivery, telephone reminders and physical visits to retrieve back in order to maximise the response rate, and these resulted in a response rate of 24%.

- *Data collection errors.* To minimise such errors, a small pilot study was conducted and the questionnaire was reviewed accordingly before the main survey was administered.
- *Data processing errors.* The data were coded and the data entry and results were double-checked throughout the data processing and analysis to minimise this source of errors and limitations.

## **2.5 Research techniques**

Research techniques are the methods used for data collection and analysis (Fellows and Liu, 2003). They enable the researcher to connect the empirical data to the initial research questions and the conclusions of the study in a logical sequence (Yin, 2003; Bryman, 2004). The various data collection and analyses techniques are respectively discussed in Sections 2.5.1 and 2.5.2 for qualitative and quantitative approaches. The techniques used in this research are discussed in Section 2.5.3.

### **2.5.1 Data collection techniques**

Data collection is concerned with systematic and logical collection of data required to provide answers to the research questions. Yin (2003) recommended the use of multiple sources of data collection to complement one another. This is because each data source has strengths and weaknesses, and no single source has a complete advantage over the rest (Fellows and Liu, 2003).

#### ***Qualitative data collection techniques***

According to Patton (2002), qualitative researchers collect three kinds of data; *interviews*, *direct observations*, and *written documents*; and these yield quotations, descriptions and excerpts which are either unstructured or semi-structured.

Interviews have been defined as the “*methods of collecting data through face-to-face or voice-to-voice interactive dialogue in order to discover the opinions or feelings of people*”

on a certain subject" (Hussey and Hussey, 1997). In general, there are three forms of interviews commonly used in business research: structured; semi-structured; and unstructured (Fellows and Liu, 2003; Hussey and Hussey, 1997). *Structured* interviews are by definition very specific and include defined questions and limited probing. They are, thus, similar to a questionnaire conducted in person. In *unstructured* interviews, questions can differ among the interviews, the interviewer might not have questions prepared and can probe freely. In the middle of the above two extremes are the *semi-structured* interviews in which the interviewer has prepared some questions or a frame for the dialogue and is also free to probe when necessary.

Direct observation involves the use of techniques such as participant observation and fieldwork and depends on the notes taken as a result of the researcher experiencing the research subjects (Fellows and Liu, 2003).

Written documents may include review of unpublished or published documents and may be from primary (gathered directly from people or an organisation) or secondary (previously published) sources (Hussey and Hussey, 1997). These may come in the form of reports, standards, guidelines, memos, letters, email messages, faxes, and articles from journal, conferences, text books or newspaper sources. This process is commonly referred to as archival research or literature review, and is concerned with reviewing established theories, findings from other research and particular applications of theory (Fellows and Liu, 2003). It provides a description and critical analysis of the current state of knowledge in a given subject area or organisation (Jankowicz, 2000). It also justifies any new research through a coherent critique of what has occurred before and demonstrates why the current research is both timely and important (Gill and Johnson, 2002).

In general, qualitative data are soft, rich and deep and determine what things exist rather than how many there are, and thus the credibility of results depends on the skill, competence and the rigour of the researcher (Patton, 2002).

### *Quantitative data collection techniques*

Frechtling and Sharp (1997) characterised the common data collection techniques used in quantitative research as 'hard' and 'reliable', that emphasises on quantification (Fitzgerald

and Howcroft, 1998). The samples collected are often large and representative, and this means that quantitative research results can be generalised to larger population within acceptable error limits (Bryman, 2004). Quantitative or “hard” measures are also required for evaluation and can be replicated using sophisticated statistical techniques (Fitzgerald and Howcroft, 1998). The validity of results depends on the careful choice of measuring instrument and how accurately it measures targets (Patton, 2002). The techniques for collecting quantitative data in natural sciences include *questionnaire survey*, *laboratory experiments*, *formal methods* (e.g. econometrics) and *numerical methods* such as mathematical modelling, but questionnaire survey technique is the most applicable to this research and hence described below.

A questionnaire is “*a prepared set of questions in which respondents record their answers in an administered survey*” (Sekaran, 2003). Important considerations when conducting questionnaire survey include sample size, statistical significance, validity and reliability (Fellows and Liu, 2003). Also, because it is often not possible to survey an entire population for practical and cost reasons, a sub-set or sample of the population is usually considered (Brewerton and Millward, 2001). The appropriateness of sample size is generally not a straightforward decision and can sometimes be very complex. Different methods can be used to estimate the sample size, based on the statistical power required to report significance or non-significance accurately. For research based in the construction industry, Mbugua (2000) had outlined a rule-of-thumb dictating a minimum of 30 responses as being adequate. The above considerations are relevant where the study population is infinitely large. However, where the study population is known, the rough formula provided by Easterby-Smith *et al.* (2002) for calculating sample size ( $n$ ) in terms of the maximum error ( $E$ ) required, as shown in equation (1) will be used:

$$n = \frac{2500}{E^2} \quad \dots \dots \dots (1)$$

As with all quantitative research, the validity and reliability of the survey instrument are key considerations in survey research. Validity refers to “*the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration*” (Babbie, 1990), and reliability is “a matter of whether a particular technique, applied repeatedly to the same object, would yield the same result each time” (Babbie, 2001).

## 2.5.2 Data analysis techniques

Data analysis is concerned with understanding and interpretation of the data collected in a systematic and logical manner to yield reliable conclusions.

### *Qualitative data analysis techniques*

#### *Grounded theory technique*

This is a qualitative methodology which attempts to discover regularities through the categorisation of elements and exploration of their connections (Tesch, 1990). Grounded theory method has become popular in social research, partly because it enables processes to be explored systematically and because it does not necessarily require large sample sizes (McKenzie *et al.*, 1998). It is particularly suited to the study of local interactions and meanings, as related to the social context in which they actually occur (Pidgeon, 1986), and is also considered appropriate when there is no existing theory or where existing theory is too remote or abstract to give guidance (MacPherson *et al.*, 1993) or where the research seeks to develop concepts to explain the reality of what is happening (Johansen, 1996). This method differs from most empirical research, as the researcher develops theories to explain his/her own observations, which are grounded in the data collected. Under the method, data collection, analysis and theory stand in a reciprocal relationship with each other (Strauss and Corbin, 1990). As a result, the researcher does not impose or test theory developed elsewhere to another setting of the phenomena under investigation, but inductively derives theory from the phenomenon that it represents. They become 'grounded' via a systematic procedure of relating the theory back to the original data. Accordingly, Glaser and Strauss (1967) outlined the benefits of a well-constructed grounded theory to include:

- it should be faithful to everyday reality and induced from diverse data;
- it should make sense both to those who are studying and those who are practising in the area;
- it should be abstract enough to be applicable to a variety of contexts related to that phenomenon; and
- it should provide control with regards to action towards the phenomenon.

The main data collection methods for grounded theory analysis are interviews, observations, documents, historical records, videotapes, and anything else of potential relevance to the research question (Leedy and Ormrod, 2001).

### *Constant comparative analysis*

This technique was originally developed for use in the grounded theory methodology; the basic difference being the constant comparative analysis method is exploratory in nature and does not extend to the establishment of a theory from the data collected (Tesch, 1990). The constant comparative strategy involves taking one piece of data (one interview, one statement, one theme) and comparing it with all others that may be similar or different in order to develop conceptualisations of the possible relations between various pieces of data (Thorne, 2000). For example, by comparing the accounts of two different people who had a similar experience, a researcher might pose analytical questions like: why is this different from that? and how are these two related?

In many qualitative studies whose purpose is to generate knowledge about common patterns and themes within human experience, this process continues with the comparison of each new interview or account until all have been compared with each other (Emmit and Gorse, 2003).

### *Ethnographic method*

Ethnographic methods originated from anthropology's tradition of interpreting the processes and products of cultural behaviour such as beliefs, kinship patterns and ways of living (Alasuutari, 1999). According to Creswell (1998), ethnographic technique involves the "*description and interpretation of a cultural or social group or system, through the researcher's examination of the group's observable and learned patterns of behaviours, customs, and ways of life*". It involves the researcher studying the group within its natural setting for a relatively long period of time and data collection methods include site-based fieldwork and participant observation. The focus of investigation is on everyday behaviours (e.g. interactions, language, rituals, etc.) of the people in the group, with an intent to identify cultural norms, beliefs, social structures and other cultural patterns (Leedy and Ormrod, 2001), and this distinguishes it from the other qualitative methods.

The key strength of this method is that it gives detailed view of the entire cultural scene by pulling together all aspects learned about the group and revealing its complexity. The disadvantages of the ethnographic research are that it has limited generalisability to other topics or domains and it takes much longer than most other kinds of research.

### *Phenomenological technique*

Leedy and Ormrod (2001) defined phenomenological technique as “*one that attempts to understand people’s perceptions, perspectives and understandings of a particular situation*”. According to Creswell (2003), whereas a biography reports the life of a single individual, a phenomenological study describes the meaning of the lived experiences for several individuals about a concept or the phenomenon. The goal of a phenomenological study is to understand better the essential, invariant structure (or essence) of the experience, recognising that a single unifying meaning of the experience exists (Creswell, 2003). The key data collection method is in-depth unstructured interviews and typical purposeful sampling of 5 to 25 individuals, and the analysis gives priority to people’s accounts of intentionality and subjective meanings (Leedy and Ormrod, 2001).

### *Conversation analysis*

This method is concerned with the contextual sensitivity of language with a focus on interaction and social action (Emmit and Gorse, 2003). Investigations using conversation analysis can only be pursued through intensive qualitative analysis of interaction events. Transcripts or audio recordings of interaction are required to provide the detailed data necessary for conversation analysis. The analysis attempts to understand the relationship between different events.

### *Discourse analysis*

This is a slightly broader term than conversation analysis. It involves the scrutiny of transcripts of discussions and statements. The content and the linguistic context are considered when establishing meaning and intention of the interaction (Emmit and Gorse, 2003).

### *Semiological analysis*

This form of qualitative analysis assumes that there is a relationship between the appearance and structure of the text and interaction and meaning that it produces within a specific context or culture (Emmit and Gorse, 2003).

### *Quantitative data analysis techniques*

Analysis of quantitative data have been categorised by Emmit and Gorse (2003) into two broad types:

#### *Statistical analysis*

This involves analysis of collected quantitative data with the aid of either descriptive or inferential statistics. Descriptive statistics simply segregate and aggregate the data and use various methods to present the data graphically (e.g. histograms, pie charts, etc.). Inferential statistics use various formulae to determine the probability of something occurring, or to identify the strength of the relationship between two or more variables (e.g. correlation, regression, etc.).

#### *Content analysis*

This technique seeks to classify communication acts into categories that have common features. This type of analysis can provide the researcher with a qualitative picture of the respondents' concerns, ideas, attitudes and feelings.

### **2.5.3 Data collection and analysis techniques used in this research**

The techniques that have been used for data collection and analysis in this research are described below.



## *Literature review*

Literature review was conducted both at the outset and throughout the research process. The preliminary stages of this research involved the review of literature on relevant topics within the research domain such as: construction procurement concept, principles and application; healthcare systems and primary health care premises' procurement in Nigeria and the UK. The review essentially served three main roles:

- i. it provided a good foundation for this research by throwing light on all relevant issues;
- ii. it made the contemporary issues more clearly while highlighting the gaps in knowledge and practice; and
- iii. it acted as a basis for the formulation of the proposed conceptual procurement model.

The search for relevant literature was carried out through the Loughborough University Library Catalogue (OPAC), Loughborough University Metalib (an integrated search engine that facilitates searching across different databases and electronic journals) and internet search engines such as Google Scholar and Dogpile.

## *Interviews*

The *semi-structured* type of interview was used in preference to structured or unstructured interviews for this research to enable the researcher probe for further insights and clarification while maintaining some structure in the views collected.

The evaluation of the WHS in Nigeria was aimed at investigating the perception of the stakeholders on the planning and implementation of the Ward Health System (WHS) scheme, with the view to proposing a more sustainable procurement strategy that will facilitate the agenda of community co-ownership of the completed facilities. More specifically, the interviews focussed on assessing the achievement of the government targets in the on-going procurement reform in terms of maximising competition, according fair treatment to suppliers and contractors bidding for and awarded public projects and enhancing transparency and objectivity in the procurement process as

enshrined in the UNCITRAL Model Law on the Procurement of Goods, Construction and Services. The interviewees included twelve people, ten of whom are involved with four organisations working on WHS schemes. The interviews were all conducted as individual sessions and each lasted an average of 90 minutes. Notes were taken on a pro-forma designed to capture relevant information from the interviews, and the interviews were analysed using the constant comparative technique.

The evaluation of the NHS LIFT schemes was aimed at investigating some key implementation issues on the LIFT schemes to fulfil dual purposes: identifying good practices that can be transferred to Nigeria to facilitate sustained improvements in the procurement of PHC facilities; and to highlight the key requirements for achieving continuous improvement in LIFT schemes. The specific issues evaluated included: the drivers and enablers of the LIFT schemes; the mechanisms for establishing/capturing stakeholders' requirements; definition of project management processes; procedures for defining and assigning roles and responsibilities; the processes of alignment of the project participants; the practices related to continuous improvement and assessment of performance. The interviewees included ten people from six organisations working on three LIFT schemes. The interviews were either conducted as individual sessions or in groups of two and each lasted an average of one hour per interviewee. The interviews were all recorded, transcribed and analysed using the constant comparative analysis technique.

### *Questionnaire survey*

The questionnaire survey in Nigeria specifically investigated the success factors, risk factors and allocation of risks in PPP projects in Nigeria. The design of the questionnaire followed Easterby-Smith *et al.*'s (2002) recommended format that include: starting with factual questions, then asking more opinionated questions; including instruction on how to answer questions; and varying the types of questions, while keeping similar types grouped together. The complete questionnaire comprised three sections: questions about respondents' individual and organisational background and experience; questions about PPP success factors; and questions about risks and risk allocation in PPP projects. The perceived relative importance of the identified risk and success factors were explored by means of Likert rating scale questions in the survey instrument. The use of Likert scale is

common in both general construction management research and in PPP studies such as Wang *et al.* (1999), Soetanto *et al.* (2004) and Li *et al.* (2005b).

As there is no any database of organisations involved in PPP projects in Nigeria (probably because the procurement method is still at evolutionary stages), the questionnaire survey was administered amongst professionals working in both private and public sectors in Nigeria (relying on leads provided by the known leading promoters of PPPs in Nigeria and past contacts of the researcher). This non-probability sampling method adopted (called "convenience sampling") is suitable when the selected group of individuals is ready and available (Fink, 2003), but may contain some errors due to bias in the sample selection process. Following an initial pilot study of five people, the questionnaires were distributed to 150 professionals (including consultants, contractors, clients and academics) involved in construction in Nigeria. In order to ensure a common understanding, the introductory section of the questionnaire provided the working definition adopted for PPP and the aim of the research.

Statistical analyses were undertaken using the Statistical Package for Social Sciences (SPSS) for Windows, version 12.0 (SPSS, 2003). The analyses undertaken included: reliability tests using Cronbach's alpha, descriptive statistics and one-way analysis of variance (ANOVA).

The Cronbach's alpha measures how well a set of items (or variables) measures a single unidimensional latent construct. When data have a multidimensional structure, Cronbach's alpha will usually be low. Technically speaking, Cronbach's alpha is not a statistical test; it is a coefficient of reliability (or consistency). The ranking of the risk and success factors of PPP in Nigeria were based on arithmetic mean value scores. A lower value indicates a lower level of importance. For interpretation purposes, the mean score of 0 indicates "no importance", 1 "little importance", 2 "some importance", 3 "moderately important", 4 "important" and 5 "very important". Although the use of arithmetic means suggests treating Likert scale-based data at an interval level of measurement, the mean scores should not be deemed as "quantities" to show how much more important each factor is than the other, but as "indicators" to establish a rank order of importance for the factor (Idrus and Newman, 2002).

In addition, the standard deviation (SD) of the responses was calculated to measure the variability or dispersal of the responses and how clustered the response values are around the means for each risk or success factor. Higher SD is often interpreted as higher disparity.

One-way analysis of variance (ANOVA) were also performed to test whether the mean values on each risk and success factor were equal for each of the following groups:

- a. those working for public sector and private sector; and
- b. those that have been involved in PPP projects as partners and those whose involvement has been of only an advisory nature.

Finally, the '*F* statistics' (based on *F*-ratio or value) were also calculated to tests the null hypothesis that all groups have the same mean. While '*F* significant' indicates the probability of rejecting the null hypothesis of no difference between the mean values between the groups, a probability value (significance level) below 0.05 suggests a high degree of difference of opinion between groups on that factor.

### *Focus Groups in Nigeria*

Following on from the results of the interviews and questionnaire survey in Nigeria, two focus group discussions were conducted in Nigeria, each involved four participants and facilitated by the researcher. The focus groups were aimed at validating the proposed procurement strategy in Nigeria. From social and historical perspectives, validation has often been often demonstrated through the acceptance of the expert community (Pidd, 2003). The discussions centred on the applicability of the proposed conceptual model for sustainable procurement of PHC facilities in Nigeria in the light of on-going government reform agenda, recent legislative developments in Nigeria and the results of the questionnaire survey. The format of each workshop involved a short presentation on the background to the research, the proposed procurement model and highlights of the recent legislative developments related to the research, and then followed by discussions on the applicability and practicality of the proposed model for facilitating sustainable procurement of PHC facilities in Nigeria. The results of the discussions were

subsequently analysed using the constant comparative technique and served as the basis for modifying the conceptual model.

The research methods used to address the research objectives and questions are summarised in Table 2.3 below.

**Table 2.3 Summary of research methods used**

Objectives	Research questions	Research methods				
		Literature review	Preliminary interviews	Exploratory interviews	Questionnaire survey	Focus groups
To review the concept, practices and developments in construction procurement in Nigeria and the UK	What are the challenges from the recent trends and developments in the procurement of public construction works in Nigeria and the UK?	P	S			
To identify the key contemporary issues related to the procurement of PHC facilities in Nigeria and the UK	What are the key contemporary issues in the procurement of PHC facilities in Nigeria and the UK?	P	S			
To evaluate the planning and implementation of the WHS scheme in Nigeria	What are the value-adding activities that host communities can contribute to promote effective co-ownership or co-management of PHC facilities in Nigeria?	S	S	P		
To investigate some key implementation issues under the LIFT procurement initiative that can be used to promote sustained improvement in the Nigerian context	What lessons can be learnt from practices in more developed countries, particularly the local improvement finance trust (LIFT) initiative in the United Kingdom (UK), that can promote sustained improvements in the procurement of PHC facilities in Nigeria?	S	S	P		
To propose a procurement model that will facilitate the achievement of community co-ownership or co-management of PHC facilities in Nigeria	How can the host communities and private sector be involved to facilitate community co-management of PHC facilities?	S	S	P		S
	What are the key issues associated with the involvement of private sectors in the procurement of public facilities in Nigeria?	S	S		P	

**Key**

**P** Primary method

**S** Supporting method

## 2.6 Chapter summary

This chapter has presented the basic concepts and principles related to research methodology and outlined the strategy adopted for this research to facilitate the achievement of the aim and objectives set for the research.

The nested approach to research design and development that highlighted the three key themes of philosophy, approach and techniques was discussed. The strategy adopted for this research to facilitate the achievement of the aims and objectives set for the research were also outlined and justified.

The ontological and epistemological considerations applicable to construction management research were outlined and discussed. Because of the complexity of the research subjects and contexts, a realist ontological and interpretivist epistemological positions were adopted to explain the fixed nature of the concepts but subject to varying socio-cultural contexts.

Qualitative and quantitative research approaches were discussed in terms of philosophical lineage and process, and their limitations were also highlighted. The adopted combination of both approaches (triangulation) was also discussed and the actions taken to minimise the effects of the limitations were highlighted. Various data collection and analysis techniques were outlined and the ones relevant to construction management research were briefly discussed. The techniques for data collection and analysis used in this research were highlighted.

## **CHAPTER THREE**

### **REVIEW OF PROCUREMENT CONCEPT, PRACTICES AND DEVELOPMENTS IN CONSTRUCTION**

#### **3.1 Chapter introduction**

This chapter presents an overview of procurement concept, practices and recent developments in construction. The chapter also presents review on the involvement of communities and private sector in the procurement of public sector construction facilities, and the need for collaboration/partnerships between the parties. The sources of literature include both Nigeria and the UK.

#### **3.2 General background to construction procurement**

'Procurement' has become an important process for realising projects and programmes, including those related to construction, and the nature of its scope is increasingly changing and expanding. It determines the overall framework and structure of responsibilities and authorities for guiding the participants within the construction process (Love *et al.*, 1998), and is considered as the key to performance improvement in the construction industry (Ofori, 2006). To illustrate the importance of procurement in construction, the International Council for Building Research Studies and Documentation Working Commission W92 (Procurement Systems) was established in 1990 as an international research group to investigate construction procurement. Since then, this global network of researchers has continued to research and publish outputs through workshops and conferences. From these symposia and other key industry reviews around

the world, the need to tackle the adversarial and inefficient working practices that had characterised the global construction industry have been emphasised (Gyles, 1992; Latham, 1994; Egan, 1998; McDermott, 1999; Grove, 2000; Tang, 2001; Walker and Hampson, 2003a; Cheung *et al.*, 2005; Khalfan *et al.*, 2006).

Like many terms used in the construction industry, *procurement* suffers the problem of proliferation of definitions, with little consensus between different authors (Ross and Scullion, 2006). The terms 'procurement system', 'procurement route', 'contractual arrangement', 'procurement strategy' and 'project delivery system' are often used synonymously (Love *et al.*, 1998; Cheung *et al.*, 2001; Tookey *et al.*, 2001; Office of Government and Commerce's (OGC), 2003). Palaneeswaran *et al.* (2005) examined the terms, assumptions and categories that procurement research has adopted over the last forty years. The definitions (cited below) of construction procurement could be classified as *input-orientated*, *product-orientated* or *relationship-orientated* depending on whether emphasis is on considering construction as amalgam of inputs or as a product or a process involving relationships between different parties such as clients, designers, constructors and suppliers.

According to The United Nation Commission on International Trade Law UNCITRAL (1994:1), procurement is "*the process used for the acquisition of goods, works and related services (i.e. transport, insurance, installation, training, maintenance and other similar services) required in the execution of a project, excluding consultancy services*". By extension to construction, the UNCITRAL definition suggests procurement is a process of acquiring the inputs (resources) required to deliver a finished facility. The product-orientated definitions include those of Nash *et al.* (1998), McDermott (1999), Rowlinson *et al.* (2000), Masterman (2002) and Bower (2003) whereas relationship-orientated definitions include those of Love *et al.* (1998) and Enekwechi (2003).

Nash *et al.* (1998) defined procurement as the "*acquisition of 'personal property' and non-personal services including construction (e.g. from non-government sources) by such means as purchasing, renting, leasing, contracting, bartering, and condemnation, donation and requisition*". Love *et al.* (1998:222) defined a construction procurement system as "*an organisational system that assigns specific responsibilities and authorities to people and organisations, and defines the relationships of the various elements in the*



*construction of a project*". McDermott (1999:4) in a best practice guide defined construction procurement as a *"framework within which construction is brought about, acquired or obtained"*. According to Rowlinson *et al.* (2000), procurement is *"an amalgam of activities undertaken by a client in order to obtain a new building"*. Masterman (2002) explicitly expanded the scope of construction procurement to include project financing, operating and facilities management as he defined procurement system as *"the organisational structure adopted by the client for the implementation and operation of a project"*. Bower (2003) defined procurement as simply *"the process of acquiring new products or services"*. Enekwechi (2003:2) defined procurement as *"the contractual arrangement suitable for the delivery of a project in record time, cost and quality standard"*. The OGC's (2003)'s key definitions for procurement, which cuts across the three broad classification, differentiates between procurement strategy and the procurement route that delivers the contract strategy that will best meet the client's needs:

- Procurement strategy is *"the best means of achieving project objectives and value for money by taking into account the risks and constraints, leading to decisions about the funding mechanism and asset ownership for the project"*.
- Procurement route *"delivers the procurement strategy and includes the contract strategy that will best meet the client's needs"*.
- Contract strategy *"determines the level of integration of design, construction and on-going maintenance for a given project, and should support the main project objectives in terms of risk allocation, delivery, incentivisation and control mechanisms"*.

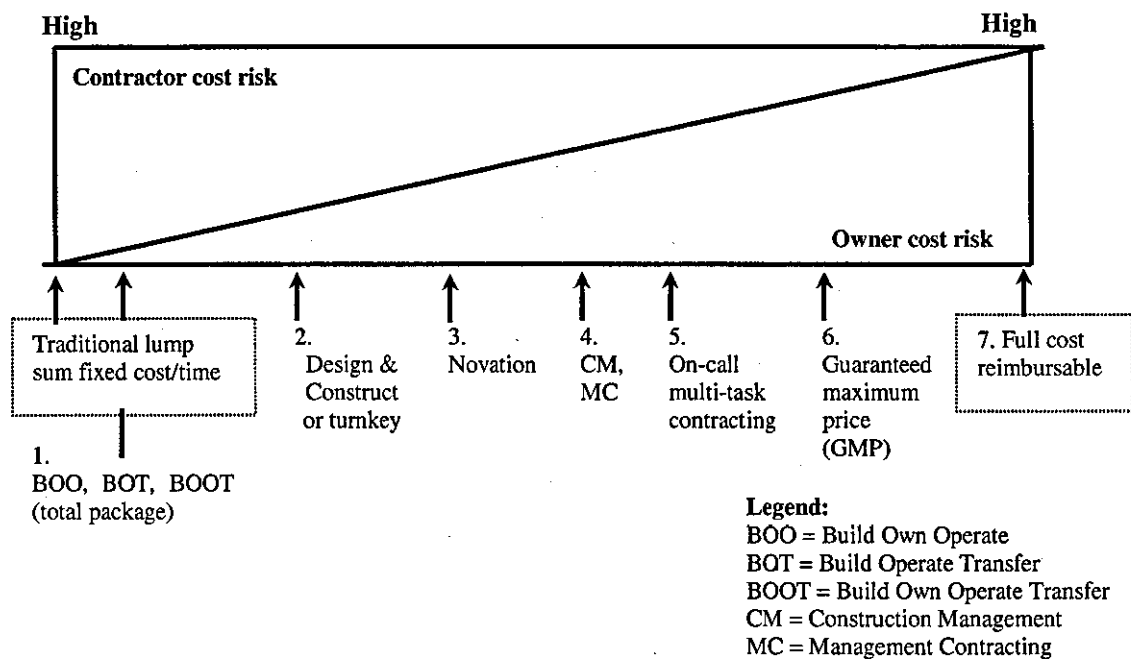
In general, McDermott (2006) maintained that the scope of procurement should encompass not only the method used to design and construct a facility but also the cultural, managerial, economic, environmental and political issues raised by the implementation of the procurement process. Therefore, procurement encompass all the activities involved in the whole-life cycle process of acquiring goods, services or works.

According to Masterman (2002), the decisions regarding which experts or firms to be engaged, when to employ them and the type of contract under which a project is to be procured, are taken through a procurement method. The functional and working relationships amongst and between the parties are normally dictated by the contractual

arrangement and are defined within each procurement method (Masterman, 2002). The organisation, structure and relationships that are contractually allowed or specified within the delivery team on a project are, therefore, dependent on the procurement approach (Kwakye, 1997; Morledge, 2002). According to Turner (1990) and Masterman (2002), the categorisation of procurement systems can be on the basis of:

1. the amount of risk taken by each participating party;
2. the level of information available or required at the time the construction contract is let;
3. contractor reimbursement approach; and
4. management of interaction between design and construction and sometimes funding and operation stages.

The fourth categorisation above enables the identification of the fundamental issues related to the relationships between the main participants of the project. Accordingly, Walker and Hampson (2003a) developed a continuum for procurement systems as shown in Figure 3.1.



**Figure 3.1: A construction cost continuum for project delivery systems**

*Source: Walker and Hampson (2003a)*

At one end of the figure lies the traditional 'fixed price' (and usually fixed time) project, and at the other is the fully reimbursable project. Between these extremes lies the total package (such as BOT, BOO, BOOT), design and build, novation, construction management/management contracting, on-call multi-task contracting and guaranteed maximum price. The figure was also used by Walker and Hampson (2003a) to explain procurement options for clients in terms of cost risk/relationship. The initial tender cost can be fixed with all risk being absorbed by the contractor, or alternatively the client can absorb a cost risk by letting variable sum contracts and adopting an open book philosophy in which incurred costs are verified or a formulated schedule of agreed rates for various aspects of the work is agreed upon.

The selection of the most suitable procurement method is critical for both clients and project participants. A fundamental underlying assumption is that while there can be one procurement method that is in some sense 'better' than all others for an individual project, there is no one procurement method that is likely to be better than others for all projects (Love *et al.*, 1998). Many studies have considered how this 'best' individual procurement method may be identified. However, because the range of different procurement methods is now so wide and projects are becoming so complex, the process of selecting a method needs to be carried out in a disciplined and objective manner within the framework of the clients overall strategic project objectives, by or on behalf of the client organisation. Examples include reference to a set of project characteristics, attributes or criteria (NEDO, 1985); or use of weighting factors and priority rating for project attributes such as speed, certainty, flexibility, quality, complexity, risk avoidance and responsibility, price competition and disputes/arbitration (Skitmore and Marsden, 1988; Singh, 1990). However, Nahapiet and Nahapiet (1985) found that the main factors affecting the choice of a procurement method include the characteristics of the client together with the project characteristics and requirements, and suggested that similar clients with similar project requirements may have similar and consistent priority ratings. Hibberd and Basden (1996) suggested that a contractual arrangement should be selected initially so as to take into consideration how risk will be allocated between parties, thereby determining the nature of the procurement method that can best fulfil the project objectives.

Love *et al.* (1998) indicated that a simple set of the criteria is generally adequate and sufficient for procurement path selection, and found reasonable consensus between typical

project participants (clients, designers and contractors) on the appropriate weighting for each path. They, however, revealed that, contrary to expectations, similar clients generally do not have similar procurement needs. Furthermore, the decisions a client makes in selecting a procurement method has been shown to have a significant effect on the project team and the flow of communication between project members (Shockley-Zalaback, 1991; Masterman and Gameson, 1994; Walker 1994). This is because communication has been linked to team effectiveness, the integration of work units across organisational levels, characteristics of effective supervision, job satisfaction, and overall organisational effectiveness (Walker and Hampson, 2003a). As a result, improved organisational communication will play a significant part in determining the effectiveness of a building project and improving the likelihood of client satisfaction, especially if the client is involved actively with the project's delivery process (Shockley Zalaback, 1991). Graves (1978) also argued that the standard of service offered by the building industry relates directly to the amount of effort expended by the client in establishing a good brief, and that satisfaction at the construction stage is linked closely to the degree of control and supervision by the client themselves.

Many researchers have argued that the procurement method is largely irrelevant in itself and that the real issue is how the adopted procurement form enhances or inhibits team members in achieving project goals (Walker, 1996; 1997a; 1998; Love *et al.*, 1998; Rowlinson, 1999a; Chan, 2007). The interaction and participation in the various phases of a project delivery process by the client, design and construction teams, working together as a cohesive group, have been shown to have direct impact on the quality of their relationships and subsequent project outcomes (Smith and Wilkins, 1996; Soetanto and Proverbs, 2004). Whilst it can be argued that traditional procurement approaches inhibit positive interactions (Latham, 1994; Egan, 1998), there are many other social, political, technological or environmental factors that impact upon the performance of non-traditional procurement choices (Goodier *et al.*, 2006). Notwithstanding, Walker and Hampson (2003a) contended that 'partnering'<sup>3</sup> can facilitate the required positive interactions and provided sufficient evidence of its applicability in various procurement paths, except in the traditional route because of its adversarial environment exacerbated

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<sup>3</sup> Bennett and Jayes (1995) defined 'partnering' as a "management approach used by two or more organisations to achieve specific business objectives by maximising the effectiveness of both parties. The approach is based upon mutual objectives, an agreed method of problem resolution, and active search for continuous measurable improvements".

by the fragmented nature that restricts the integration of the design and construction teams. The European Construction Institute (ECI) (2003) suggested that the impediments to improved performance in the construction industry could be removed or overcome by the supply and demand sides working together on a long-term basis. Cain (2004) further argued that long-term collaborative relationships can serve as effective platforms for promoting better value for money by encouraging both the clients and suppliers to work together as integrated project teams to:

- improve design, including operational efficiency and health and safety performance;
- minimise the need for costly design changes;
- identify ways of driving out inefficiency in the construction process;
- repeat good practice learned on earlier projects;
- minimise the risk of costly disputes;
- identify incentives to deliver tangible improvements in the quality of the construction product and reduce time and whole-life cost; and
- integrate the whole supply chain.

### **3.3 Procurement and funding of public construction in Nigeria**

In Nigeria, the construction industry was the dominant contributor to the nation's Gross Domestic Product (GDP) in the 1980s, accounting for about 70% of the GDP (Planning Committee on the National Construction Policy, 1989). This made the industry very strategic to Nigeria's development efforts and a major indicator of the country's wealth in social and economic terms. Unfortunately, however, the industry has been bedevilled by a combination of low demand and consistent low productivity and poor performance over the years (Olomolaiye, 1987; Aniekwu, 1995; Okuwoga, 1998; Adeyemi *et al.*; 2005). Nowadays, although the industry is still responsible for about 70% of the fixed capital formation, its contribution to the national economy in 2005 had reduced to just 3 per cent of the GDP (Central Bank of Nigeria (CBN), 2006). The industry is made up of an organised formal sector and an unorganised informal sector. The formal sector comprises foreign and indigenous companies, which are classified into small, medium and large scale according to their level of capitalisation and annual turnover. The few large firms

(mostly foreign), which constitute just about 5% of the total number of contractors in the formal sector, but control about 95% of the construction market, giving the small firms just about 5% share of the market (Oladapo, 2007). It is estimated that over three million people work in the industry in various capacities as professionals, administrative staff, operatives and labourers (Adeyemi *et al.*, 2006). This figure could be far greater if the manufacturers, suppliers and transporters of construction materials, components, tools and equipment in addition to funders and regulators are considered. In addition, over 65% of public procurement in Nigeria (in monetary terms) are construction-related (Adeyemi *et al.*; 2005).

Historically, governments at all tiers and their agencies have generally funded public construction projects either directly from budgetary allocations or by raising loans secured against government guarantees. The two commonest (representing over 70%) types of procurement method used for public construction projects in Nigeria are (Enekwechi, 2003; Oladapo, 2003; Hassan, 2004):

- the traditional design-bid-build (DBB)<sup>4</sup>; and
- the design and build (DB)<sup>5</sup>.

Hassan (2004) also indicated that the only documented use of management contracting (MC)<sup>6</sup> method that involved two layers of management consultants (at national and zonal levels) and contractors was during the defunct Petroleum (Special) Trust Fund (PTF) era of mass rehabilitation of key public infrastructure across the country. Oladapo (2003) and Hassan (2004) showed that the direct labour<sup>7</sup> method is also in minimal usage in all tiers of government, primarily for maintenance and new works of minor nature. However,

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<sup>4</sup> DBB method involves the appointment of an Architect to design the building and produce drawings and specification; engagement of a Quantity Surveyor to prepare bills of quantities on the basis of the specification and/or drawings; invitation of bidders to tender in competition to carry out the work, and offering the work to the contractor offering the lowest bid.

<sup>5</sup> In DB method, one organisation is responsible to the client for both design and construction (i.e. the contractor provides the design and construction under one contract)

<sup>6</sup> In MC method, the client engages the management contractor to participate in the project at an early stage, contributing construction expertise to the design and management process but engages work contractors to undertake the actual works.

<sup>7</sup> Under DL method, the client organisation utilises in-house staff to carry out works (design, construction or maintenance) directly.

approaches that encourage private sector participation on a longer-term basis as a partner, are becoming increasingly popular for diverse range of construction projects in Nigeria in recent years (Yusuf, 2005; Dada *et al.*, 2006).

### **3.3.1 Review of construction procurement problems in Nigeria**

The age-long approach to conducting government business in Nigeria was criticised to have degenerated to such an extent that the Public Service Rules, Financial Regulations and Ethics and Norms of the Service were jettisoned either due to sheer ignorance or for selfish reasons (NPC, 2004). A survey conducted by the Obasanjo Government revealed that before 1999, Nigeria was losing an average of ₦40 billion (over US\$ 300 million) annually through various kinds of manipulation of the procedure for award and execution of public contracts (Wahab, 2006). These manipulations were in the form of: inflation of contract costs; use of contract system to divert public funds to private pockets; award of contracts for non-existent projects; use of inexperienced contractors; over-invoicing; influence peddling; award of contracts to friends, relations and family members; and above all award of contracts without adequate planning and budgetary provisions (Wahab, 2006).

As a result, the FG commissioned some specialists from the Nigerian private sector in 1999 to work in collaboration with the World Bank to review the public Financial Systems and general procurement-related activities and to recommend a process for enthroning efficiency, accountability, integrity and transparency in government Procurement and Financial Management Systems. The review was aimed at reducing the scope of corruption in public procurement and improving efficiency in the management of Nigeria's public expenditures.

A participatory approach was used for the review, which involved key stakeholders from Federal, State and Local Governments together with representatives of the organised private sector. The comprehensive review of the country's public procurement system covered the existing legal framework; organisational responsibilities and capabilities within government; present procedures and practices; the reliability of government accounting systems and the effectiveness of budgeting systems in directing resources for

intended purposes. Comparisons were made in each of these areas on how practices in Nigeria differed from established international best practices and at the end of the exercise, two reports, namely the Country Report on the Financial Systems and the Country Procurement Assessment Report (CPAR), were produced and submitted to the Federal Government. The CPAR, which is the report of interest here, identified the following major weaknesses in the existing procurement systems in Nigeria namely:

- absence of both a contemporary law on Public Procurement and a specific oversight body to provide guidance and monitoring of purchasing entities;
- the existence of wide gaps between the Finance (Control and Management) Act, 1958, and the Financial Regulations which set basic rules for managing public expenditure;
- deficiencies and faulty implementation of existing regulations on procurement – for example the absence of permanent arrangements for control and surveillance had created opportunities for bribery and corruption;
- because of inflation and lack of regular adjustments of the thresholds of the approving limits of the Tender Boards, their authorisation were constantly being eroded resulting in abuses, prominent among which is splitting of contracts;
- proliferation of tender boards which were perceived by the private sector as sources of delays and non-transparency, as many of the tender boards had limited mandates, and powers to decide contracts were thus resting with the Permanent Secretary and the Minister/Commissioner;
- customs' systems and procedures were cumbersome and major causes of delay in clearing goods, and hence a source of corruption; and
- procurement is often carried out by staff that substantially lack relevant training.

The key recommendations of the CPAR, which were aimed at correcting the weaknesses identified above, include:

- the need for a procurement law based on UNCITRAL (United Nations Commission for International Trade Law) model;
- the need to establish a Public Procurement Commission (PPC) to serve as the regulatory and oversight body on Public Sector Procurements;



- the revision of key areas of the Financial Regulations to make them more transparent;
- the streamlining of Tender Boards and strengthening of their functional authority, including powers to award contracts;
- a critical need to re-build capacity for procurement and financial management in the public sector; and
- a comprehensive review of the businesses related to export, import and transit regulations, procedures and practices, including the ASYCUDA (Automated SYstem for CUstoms DAta) System.

### **3.3.2 Recent reforms in construction procurement in Nigeria**

Consequently, the FG issued Circular No. F. 15775 entitled “New Policy Guidelines for Procurement and Award of Contracts in Government Ministries/ Parastatals” on 27<sup>th</sup> June 2000, thus marking the first step towards enthroning transparency in conducting government business in Nigeria. The Circular spelt out the procedures and levels of approvals for the award of contracts to meet international best practices. The main provisions of the Circular include:

1. abolition of Federal and Departmental Tenders Boards and establishment and strengthening of the Ministerial Tender Boards;
2. strict prohibition of contract splitting;
3. open competitive tendering procedures;
4. call for pre-qualification of contractors;
5. advertisement of tenders in at least, two national dailies, and/or government gazette stating the objectives, technical specifications and specific information on the project, qualification and category of contractors expected to bid, clearly defined bid criteria and giving at least three weeks before submitting tenders;
6. public opening of tenders immediately after bidding period in the presence of bidders (or their representatives) with press coverage or attendance of civil society groups;
7. committee of professionals to evaluate bids;

8. officials involved in the tendering process to declare conflict of interest and exclude themselves;
9. bid security of not less than two per cent for contracts valued at ₦10 million (about US \$80,000) and above from a reputable Bank;
10. performance security for all contracts valued at ₦10 million (about US \$80,000) and above to attract performance security in an amount of 10 per cent of bid price. Performance Guarantee to be issued by reputable banks;
11. interest on delayed payment by Government Ministries/Extra-Ministerial Departments to suppliers/contractors not settled on or before 60 days from submission of invoice or certificate of job completion; and
12. final payment of contracts over ₦5 million (about US \$40,000) to be co-signed by the Auditor-General or his representative in Ministries or Agencies and the contract officer.

The Circular also announced the establishment of a Steering Committee and a Procurement Reform Implementation Unit (PRIU) to prepare the ground for the establishment and take-off of a Public Procurement Commission (PPC) which would be the apex policy making body on all procurements and award of contract matters in the public service. Consequently, the Budget Monitoring and Price Intelligence Unit (BMPIU), also known as the "Due Process Office" was established in June 2003 to operate as an independent PRIU prior to constitutional establishment of a PPC. The staff of the BMPIU comprises experts with biases in project management, construction and procurement.

#### ***3.3.2.1 Budget Monitoring and Price Intelligence Unit (BMPIU)***

The BMPIU was designed to act as the clearing-house for all FG contracts and procurement of goods and services, and has the goal of ensuring full compliance with laid down guidelines and procedures. The objectives of BMPIU include (BMPIU, 2007):

1. to harmonize existing government policies/practices on public procurement and update same from time to time;

2. to determine whether or not due process has been observed in the procurement of services and contracts;
3. to introduce honesty, accountability and transparency into procurement process;
4. to establish and update pricing standards and benchmarks for all supplies to FG;
5. to monitor the implementation of projects during execution with a view to providing information on performance, output and compliance with specifications and targets; and
6. to ensure that only projects which have been budgeted for are awarded for execution.

The BMPIU operates under the following functions:

#### *Regulatory Functions*

The regulatory responsibilities of BMPIU are:

1. to regulate and set standards, including the enforcement of harmonised bidding and tender documents;
2. to formulate the general policies and guidelines related to public sector procurement;
3. to develop, update and maintain a related system wide database and technology;
4. to undertake procurement research and survey in order to determine information needs and project costing; and
5. to enforce professional ethics and sanction erring officers and professionals.

#### *Certification Functions*

The BMPIU has the responsibility of certifying all federal-wide procurements in line with the Nigeria Treasury Circular of 5 July 2002 "Guidelines for Implementation of Due Process Certification of Contract" as follows.

1. The Permanent Secretary/Chief Executive of Agencies can approve projects below ₦1 million (US\$8,000) provided that due process is strictly followed.

2. Resident Due Process Team (RDPT) Certification for projects below ₦50 million (US\$400,000), with the RDPT comprising of the Permanent Secretary of the Ministry/Chief Executive of the agency (as Chairman) and the Director of Finance/Accounts, Director of Research and Statistics and Director of Administration/Finance/ Supplies and a representative of BMPIU (as Members). The role of the BMPIU representative at the meetings of RDPTs is to observe compliance in order to facilitate the Unit's endorsements of the Ministry/Agency and Department's internally generated certificate to which all the members of the RDPT are signatories.
3. Full Due Process (FDP) Certification for projects above ₦50 million (US\$400,000) at various stages such as "contract award certificate" and "payment certificate". These are processed by the relevant Ministry or Agency in accordance with Government guidelines and approved by the Ministerial Tender Board before being forwarded to BMPIU to obtain the relevant Certificate. It is only after the Due Process Certificate is obtained from BMPIU that the spending unit can forward the project to the FEC for final approval and award.

### *Monitoring Functions*

The monitoring functions of the BMPIU are:

1. to supervise the implementation of established procurement policies;
2. to monitor the prices of tendered items;
3. to perform procurement audits;
4. to undertake the monitoring of capital projects that have exceeded 50% of contract sum before release of further funds; and
5. to document all projects at award and completion stages, and publish same in designated journals.

### *Training and Advisory Functions*

The training and advisory functions of the BMPIU are:

1. to co-ordinate relevant training programmes so as to build institutional capacity;

2. to embark on regular public enlightenment programmes so as to sensitise various stakeholders involved in procurement; and
3. to interact with officials of Ministries and Parastatals, National Assembly members, consultants and relevant professional bodies so as to educate them on all aspects of the work of BMPIU.

Till date, no formal independent evaluation of the BMPIU has been undertaken apart from their own report that suggest that savings of about ₦137 billion (US \$1.096 billion) had been made as at October 2004 (BMPIU, 2007). These savings had resulted from inflation of public contracts with several instances where sums ranging from ₦10 million to ₦11 billion (US \$80,000 – US\$88,000) were saved from single transactions. The total savings had risen to ₦242 billion (US\$1.936 billion) by the end of 2006 (BMPIU, 2007). Nonetheless, critical auditing of the performance of the BMPIU functions is essential to appraise the extent of effectiveness and what modifications may be required.

### ***3.3.2.2 The proposed Public Procurement Commission (PPC)***

A draft Public Sector Procurement Manual was prepared in 2002 to introduce procedures that are consistent with extant Finance and Treasury Circulars and procurement procedures based on the UNCITRAL model, with the main objective of maximising economy and efficiency. A Bill for the establishment of the Public Procurement Commission (PPC) was prepared by the FG in 2005 and was passed by the National Assembly (NASS) on 21 May 2007. The draft Bill comprises of the legal framework based on the UNCITRAL Model and the harmonization of existing government practices and policies on procurement in Nigeria. The roles proposed for the PPC in the draft Bill include amongst other things:

- acting as a permanent oversight body independent of the Tender Boards aimed at ensuring the efficiency and effectiveness of procurement functions across the public sector by providing guidance and monitoring of all government purchasing entities;
- developing government Procurement framework at Macro level;
- monitoring of the procurement environment;

- acting as instrument of administrative review;
- serving as a regulator;
- providing coordination services; and
- monitoring and periodic review of the Procurement Law based on the United Nations Commission for International Trade Law (UNCITRAL) model.

From the draft Bill also, the expected benefits from the PPC include:

- increased transparency and the establishment of equal access for bidders to public sector contracts;
- minimised wastages and leakages resulting from inefficiency in the award to Government contracts and procurements through efficient and effective management; and
- increased fair hearing through the establishment of statutory contract Appeal Board where aggrieved Contractors and Suppliers would file their protests.

The Bill has 13 Parts and 62 Sections with the broad aim of dealing exhaustively with all matters/issues related to the business of public procurement in an orderly and transparent manner. One innovative aspect of the Bill is Section 28 which stipulates that all procurement contracts “shall contain warranties for durability of goods, exercise of requisite skills in service provided and use of genuine materials and inputs in execution”.

### ***3.3.2.3 The macro-economic reform programme in Nigeria***

In May 2004, the FG launched the National Economic Empowerment and Development Strategy (NEEDS), which recognises the importance of the private sector as the engine for growth and development (NPC, 2004). It advocates for the involvement of the private sector, whenever feasible, to increase investments in various physical and social infrastructure and focuses on four key strategies:

1. reforming government and institutions to restructure, right-size, re-professionalise and strengthen government aimed at improving service delivery to poor people, eliminating waste, and fighting corruption;

2. growing the private sector by reducing the influence of government in the economy, and accelerating the privatisation, de-regulation and liberalisation programmes;
3. implement a Social Charter to improve people's access to health, education, welfare, employment, empowerment, security and participation; and
4. value reorientation that emphasises that NEEDS is not 'business as usual' and paying attention to privatisation, anti-corruption, freedom of information, and enhancing the role of civil society in this campaign.

While no evaluation of the performance of the reform has been published to date, the following pertinent issues also need to be addressed in order to reap the full benefits of the procurement reforms:

- enacting the law establishing the Public Procurement Commission to provide adequate legal institutional framework and financial mechanism to enthrone transparency and accountability into public sector procurement;
- the development of a new cadre of professional procurement and contracting officers in the public service to implement the procurement reforms;
- capacity building and training for the new and existing procurement officers and contracting officers;
- incorporation of the procurement reforms in the curricula of universities and colleges offering courses related to procurement and contracting.
- restructuring of Ministries to ensure uniform implementation and easy monitoring of the procurement reforms; and
- building of consensus among the three tiers of government in order to promote the smooth implementation of the procurement reforms.

Yet, Ngowi (2002) noted that many developing countries face serious challenges in adopting (adapting) established best practices that are already effectively working in more developed countries through appropriate transfer of technology or knowledge. To bridge the gap between the capacities of local industries and national construction needs, Abbott (1985) and UNCTC (1999) suggested technology transfer through foreign companies undertaking the more complex construction projects that developing countries require for

their socioeconomic progress. The main potential technology transfer vehicles being subcontracting, licensing, joint ventures and training, each of which is appropriate under different circumstances.

### **3.4 Procurement and funding of public construction in the UK**

The UK construction industry contributes about ten percent of GDP and employs around 1.5 million people (Department of Trade and Industry, 2006). In the early 1960s, the industry was used as a major economic regulator by the government but because of increasing involvement of private sector in partnership with the public sector, Hillebrandt (2000) argued that its suitability as such has been limited. The industry is large, complex and diverse and covers a wide range of business interests and activities, brought together by their common usage and land development (Harvey and Ashworth, 1997).

According to Department of Environment, Food and Rural Affairs (DEFRA) (2007), the UK Government and wider public sector spends £150 billion annually on procuring a wide range of goods and services, from every day items such as pens and paper, to major construction such as schools and hospitals; with over £15 billion of this spent by the NHS. The procurement of goods and services by public authorities in the UK is governed by European Union Directives, designed to promote and encourage transparent and fair competition between contractors in EU member states. Changes to these Directives have been implemented in UK law from 31 January 2006. Prominent among the changes is the new procurement procedure of Competitive Dialogue for complex projects. A variety of methods have been used by UK public clients for procuring and funding construction.

#### **3.4.1 Reviews of construction performance in the UK**

Successive independent reviews of UK construction performance have been carried out over the years and have identified the need to tackle the adversarial and inefficient working practices that have characterised the UK construction industry. The reviews have also emphasised the need for further action to promote integration and environment for sustainable innovation in order to improve construction performance and wider value for



money benefits through continuous improvement of processes, products and services. Dickinson and McDermott (2006) examined the key conceptual and methodological design issues that are central to studying the implementation of policy innovations in public construction procurement. They argued that emphasis should be given to both the process of innovation and the contextual factors that influence implementation. Some of the key reports whose conclusions and recommendations have resonances for public construction procurement have been summarised in Table 3.1.

**Table 3.1: Key reports on the UK public construction between 1994 and 2007**

Author	Title and year report published/initiative launched	Key message
Sir Michael Latham	Constructing the Team: Final Report of the Government/ Industry Review of Procurement and Contractual Arrangements in the UK Construction Industry, 1994	This comprehensive review of the UK construction industry proposed a clear action plan for improvement, asserting that implementation must begin with the client and made ten recommendations, in particular: partnering as a way forward to improve efficiency and profitability in this sector; and that the Government commit itself to becoming a good practice client.
Peter Levene	The Levene Efficiency Scrutiny into Construction Procurement by Government, 1995	This report concluded that Government bodies were partly to blame for the poor performance of the industry and made recommendations to improve the structure and management of construction projects, including more realistic budgets and timetables, better communication with the construction industry to reduce conflict, adoption of a more commercial approach, negotiation of deals justified on value for money grounds and the skill level of Government clients.
Sir John Egan	Rethinking Construction: Report of Construction Task Force, 1998	This report on the scope for improving the quality and efficiency of delivery of UK construction recommended substantial changes in the construction industry's culture and structure, replacement of competitive tendering with long-term relationships based on clear performance measurements and sustained quality and efficiency improvements, and established quantified targets for improvements in construction costs, delivery times and defects.
Her Majesty Treasury	'Achieving Excellence in Construction' initiative, 1999	This initiative was launched in response to Egan report, and set out an action plan and targets for implementation and achievement of the Egan recommendations across Government through the basic principle of collaborative relationships with suppliers so that all parties work in an open and mutually productive environment whilst ensuring full involvement of an integrated supply chain in attaining maximum value for money and continuous improvement of construction products and services performed therein.
Office of Government Commerce	Modern Government, Modern Procurement, 1999	This report sets out the key recommendations of the Gershon Review of Civil Government Procurement and the Second Bates Review of the PFI and PPPs, and the Government's plans for their implementation; rehearsing the need for the achievement of value for money and continuous improvement of products and services procured

		by the public sector.
Government Construction Clients' Panel	Achieving Sustainability in Construction Procurement, 2000	This report set out an action plan to promote sustainable construction, that is, achieving less waste in construction and contributing to less pollution, better environmental management, and improved health and safety.
National Audit Office	Modernising Construction, 2001	This report, together with the report of the Committee of Public Accounts HC 337 ' <i>Improving Construction Performance</i> ', identified the need for further action to improve central government departments' construction performance and the scope for significant financial savings and wider value for money benefits, and made a series of recommendations to achieve: better coordination of industry improvement initiatives by sponsoring departments, better dissemination of good practice by OGC, better performance measurement by line departments and greater use of innovation by the whole supply chain in improving the quality and cost-effectiveness of public sector buildings.
Strategic Forum for Construction	Accelerating Change, 2002	This report reviewed the progress against the Egan recommendations and targets for the industry and assigned clear responsibility for their delivery, predominantly to Constructing Excellence – a DTI and industry sponsored body. The report highlighted the need for radical improvements in construction sustainability and the responsibility of the entire industry for delivering this.
Office of Government Commerce	'Building on Success' conference and the launch of the Achieving Excellence strategic targets, 2003	This conference reviewed progress made against the original three year Achieving Excellence action plan and announced a future strategy designed to improve the cost and time predictability and quality of construction projects and reduce average timescales for procurement.
National Audit Office	Improving public services through better construction, 2005	This report assessed the progress that departments and their agencies had made in improving their construction delivery performance since the <i>Modernising Construction</i> report, in part by examining data on 142 construction projects delivered between April 2003 and December 2004, as well as the impact of relevant OGC initiatives. The report highlighted good construction practices drawn from across public and private clients and projects which other organisations can learn from.
Strategic Forum for Construction	2012 Construction Commitments, 2006	This report, developed by industry with the strong support of Government, is aimed at maximising the opportunity to showcase the very best of UK construction practices, using the 2012 Olympics as a live example. The report covers six key areas of the construction process and is designed to promote collaborative working and best practice, ensuring the successful delivery of the Games infrastructure, buildings and subsequent legacy. The report does not involve any new initiatives but strives to make the most of existing initiatives, tools and talents in the industry.
Department of Food, Environment and Rural Affairs	UK Government Sustainable Procurement Action Plan - Incorporating the Government response to the report of the Sustainable Procurement Task Force, 2007	This report, together with the HM Treasury's report ' <i>Transforming Government Procurement</i> ' is the UK Government's response to the report of the Sustainable Procurement Taskforce, ' <i>Procuring the Future</i> ', and highlights the action that need to be taken through policies, performance frameworks and procurement practice, working with the supply-chain to provide the innovative eco-technologies and solutions that will be needed to satisfy the sustainable development targets set out in ' <i>Securing the Future</i> '. The report also highlights the need for Government departments to focus on increasing the

		level of procurement professionalism, raising the status and standard of procurement practice and ensuring rapid progress towards achieving targets for Sustainable Operations on the Government Estate.
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The Office of Government Commerce (OGC) has been implementing a range of construction improvement initiatives and support services since 2001. Some of these have been aimed specifically at improving the construction delivery capability of departments, sometimes in conjunction with other government bodies, or as part of wider initiatives to improve departments' programme and project delivery capability. For example, the 'Gateway Process' was introduced in February 2001 to subject all major central government procurement programmes (including construction projects) to external scrutiny, involving independent examination of each programme or project at six critical stages of its lifecycle to provide assurance that it can progress to the next stage. The process is based on well-proven techniques that lead to more effective delivery of benefits together with more predictable costs and outcomes. The six stages include: strategic assessment, business justification, procurement strategy, investment decision, readiness for service and benefits realisation. For construction projects, however, there are two additional major decision points between Gates 3 and 4; which are outline design and detailed design stages, and there may also be a requirement to repeat Gate 3 (OGC, 2007).

### 3.4.2 Recent reforms in construction procurement in the UK

A variety of methods have been used by the UK public clients for procuring and funding construction. However, the OGC has recommended that government departments and agencies focus on one of the following three main construction procurement routes believed to be more likely to encourage integrated working than traditional forms of procurement whereby each element of the project is separately and competitively tendered (NAO, 2005b):

1. *Public Private Partnerships (PPPs)*, particularly PFI – where the public sector client contracts, via competition, to purchase quality services, with defined outputs, from a private sector company or consortium on a long-term basis, and including maintaining or constructing any necessary infrastructure or buildings and managing the delivery of related services so as to take advantage

of private management skills incentivised by having private finance at risk. Funding for the construction is provided from private finance with ongoing payment from the public sector for, and income generated from, the provision of services going to the contractor. The PFI, while seen as additional to, and not a replacement for 'conventional' crown funded capital projects, is increasingly the preferred funding and procurement route in key sectors of government construction activity such as schools, hospitals and prisons. NAO (2005b) quoted the Prime Minister to have said in September 2002 that "*PFI has a central role to play in modernising the infrastructure of the NHS – but as an addition, not an alternative, to the public sector capital programme*". PFI has been favoured by the UK government for the delivery of various public services ranging from low value projects of about £5 million to high value projects with capital value in excess of £250 million. In total, over 750 PFI deals have now been signed with a combined capital value of £55 billion (NAO, 2007). The most prolific sectors in the use of PFI procurement in terms of the number and capital value of projects are health, education, transport and defence (Akintoye *et al.*, 2005). Related developments in PFI include:

- new forms of PPPs in the NHS primary care and schools sectors (local improvement finance trust (LIFT) and building schools for the future (BSF) schemes respectively); and
  - the transfer of ownership and management of departmental estates to the private sector under PFI type arrangements such as the Department for Work and Pensions PRIME and the Inland Revenue and HM Customs and Excise STEPS outsourcing deals in 1997 and 2001 respectively.
2. *Design and build* – in which a single contractor is appointed through competition to design as well as construct a building on time, within budget (taking account of whole-life costs) and in accordance with pre-define output specification using reasonable skill and care. The contractor is normally paid a combined fixed price for the design and construction and the risk of the design not working is mainly borne by the contractor, and this is reflected in the price paid by the client.

3. *Prime Contracting* - whilst Design and Build makes a single supplier responsible for the design and build of a facility, prime contracting extends this basic concept substantially. The Prime Contractor is expected to have a well-established supply chain of reliable suppliers of quality products so encouraging the increased quality and value for money that results from an element of consistency and standardisation. As well as integrating that supply chain into the design process with contributions from key suppliers, the Prime Contractor co-ordinates and manages all project activities throughout the design and construction period to provide a facility which is fit for the specified purpose and which meets predicted through-life costs. Prime Contracting has continued to develop as the main procurement route for many departments and agencies directly responsible for major repeat construction activity, such as the Ministry of Defence, Highways Agency and Environment Agency. Although the approaches differ in detail and maturity, each has involved progress towards streamlined procurement processes and longer-term partnering through national framework agreements<sup>8</sup> with fewer supply chain partners.

The concepts and examples of suitable applications of the main procurement and funding methods for public construction in the UK have been outlined in Table 3.2.

The essential differences between PFI, design and build and prime contracting are the use of private finance in PFI and the ongoing involvement of the contractor in at least running and maintaining the constructed asset. Under PFI the contractor, therefore, has a clear interest in reducing whole life operating costs. Central government departments often use one or more of the three methods across their construction programmes. For example, the Highways Agency and the Environment Agency both use Prime Contracting and PFI.

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<sup>8</sup> The EU Utilities Directive defined a framework agreement as "an agreement with suppliers, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and quantity. In other words, a framework agreement is a general term for agreements with suppliers which set out terms and conditions under which specific purchases (call-offs) can be made throughout the term of the agreement. The framework agreement may, itself, be a contract to which the EC procurement rules apply. This would be the case where the agreement places an obligation, in writing, to purchase goods, works or services for pecuniary interest (more commonly referred to as 'consideration' in the UK). For this type of agreement, there is no particular problem under the EC rules, as it can be treated in the same way as any other contract" (OGC, 2006). Framework agreements are now used in several national programmes such as NHS ProCure21, Ministry of Defence's SLAM project and Building Schools for the Future (BSF) schemes (involving around £45 billion over 15 years).

Defence Estates uses all three methods of procurement and the NHS Estates' ProCure21 approach, covering the majority of health non-PFI construction, incorporates best practice for both Design and Build and Prime Contracting.

**Table 3.2: Concepts and examples of suitable applications of the procurement routes**

Procurement route	Concept	Suitable applications
PPP/PFI	A private contractor is appointed to at least design, build, finance and maintain a facility. In most cases, the contractor will assume responsibility for operating the facility and, in many cases, for delivery of services.	Suits larger scale and duration projects. Includes on-going maintenance and operation provided by private sector as part of the service being procured.
Design and Build	A contract where a single supplier is responsible for both designing and constructing a built asset.	Often used on simpler projects, but can be used on complex ones. Comparatively less scope for integrated teamwork.
Prime contracting	A contract generally involving a main supplier, the Prime Contractor, with a well-established supply chain, to encourage increased quality and value for money.	Applies to a wide range of projects. Greater scope for repeatable integrated teamwork between the client and supplier.

*Source: NAO (2005b)*

The other two procurement approaches used in the UK construction industry are 'construction management'<sup>9</sup> and 'reimbursable contracts'<sup>10</sup>. According to NAO (2005b), while both approaches can have considerable benefits in certain circumstances, they are not generally recommended by the OGC for government clients because they tend to suit experienced clients, who can manage the inherently higher levels of risk and uncertainty they involve. For example, 'reimbursable contracts' suit expert and well-resourced clients who carry out complex, business critical projects where quality is the absolute priority, who recognise that the transfer of risk to third parties is impractical and who can operate robust cost management systems and controls in a less structured and fast-changing environment. Such contracts are used in the nuclear industry, and are being used by BAA in developing Terminal 5.

In the last decade, some wider issues relating to procurement began to gain prominence, such as organisational learning and knowledge management, sustainable procurement and

<sup>9</sup> Under construction management method, the contractor acts as a consultant builder providing significant advice on the practicality of the design and expected construction methods to be employed, construction planning, cost control, coordination and supervision of those who have direct contracts with the owner to carry out operational work.

<sup>10</sup> Under the reimbursable contracts, the client 'rents' the skills and capacity through contracting to pay a firm all the costs of production plus an agreed fee (to cover overheads and profit) for providing the expertise to advise on production techniques and coordinate implementation.

'developmentally-oriented procurement systems' that are charged with delivering wider social and/or economic benefits rather than just cost and time criteria (McDermott, 2006). In addition, there is now greater acknowledgement that the more 'softer' skills of persuasion and alignment are essential for the industry to best incorporate value creation and best practice in purchasing and procurement (Future Purchasing Alliance, 2003). Accordingly, the UK Government's White Paper on sustainable development stated that *'construction activity has a major part to play in the achievement of the Government's Sustainable Development Strategy by building and maintaining sustainable communities and, in so doing, minimising waste, resource usage, and energy consumption'* (Department of Environment, Transport and Regions (DETR), 1999). Consequently, the business-led Sustainable Procurement Task Force challenged the UK Government to "use its immense buying power" to make rapid progress towards the sustainable development goals identified in the UK Government Sustainable Development Strategy (DEFRA, 2005). The Task Force defined *'sustainable procurement'* as a *"a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits, not only to the procuring organisation, but also to society and the economy, whilst minimising damage to the environment"*. The Strategy has set out the ambitious goal of making the UK a leader in the EU in sustainable procurement by 2009, to support wider social, economic and environmental objectives, in ways that offer real long-term benefits. Already, the UK has been identified as one of the seven best performers in Green Public Procurement (GPP) and amongst a group of countries (Switzerland, Belgium, France, UK, Netherlands, Finland, Austria, Norway, Canada, Denmark and New Zealand) that are taking steps and have processes or initiatives in place to promote socio-economic procurement, but there is still significant room for improvement regarding GPP, and Sustainable Public Procurement (SPP) is still in the early stages of development (DEFRA, 2007). Patel and Fortune (2006) emphasised stakeholders' education as the key to successful attainment of these sustainability goals.

While reiterating that there may be no single method that can guarantee the delivery of all the objectives of a project, HM Treasury (2007a:4) outlined some general principles that UK procuring authorities need to follow to ensure successful procurement:

- be clear on the objectives of the procurement from the outset;

- be aware of external factors that will impact on the procurement such as the policy environment or planning issues;
- communicate those objectives to potential suppliers at an early stage, to gauge the market's ability to deliver and explore a range of possible solutions;
- consider using an output or outcome based specification, to give suppliers – who naturally know more about their business than potential buyers – more scope to provide innovative solutions to solve the underlying problem the procurement is designed to deal with, rather than deciding what the precise solution should be at the outset;
- follow a competitive, efficient, fair and transparent procurement process, and communicate to potential suppliers at the outset what that process will be to give the suppliers greater certainty about the costs and benefits to them of submitting a bid, and as all suppliers have the same knowledge going into the process, and will be assessed in the same way, the successful bidder can be chosen purely on its ability to provide the best solution;
- be clear about affordability on the basis of whole life value for money; and
- establish effective contract management processes and resources in good time to drive excellent supplier performance throughout the contract.

Accordingly, rigorous and independent critical evaluations of the procurement methods used will be required to identify the drivers, stimulants and barriers to achieving the desired long-term value for money.

### **3.5 Community participation in the procurement of public facilities**

Although the principle of participation may be as old as communities themselves, the deliberate encouragement of community participation by statutory sector agencies as a key element in the procurement of public facilities and services is a relatively recent phenomenon (Hardiman, 1986). Participation has been viewed in different ways with Morgan (1993) suggesting the consideration of the various definitions as lying on a continuum, from informal, bottom-up participation to coercive, compulsory participation. Different methods for participation in public healthcare planning have been identified to include: panels, discussion groups, citizen's jury, surveys and patients' forums (Strobl and



Bruce, 2000). Gilbert (1987) observed that the definitions of participation in the literature differ with respect to issues of what is being participated in, and consequently which kinds of participative activities are embraced by any such definition. This, therefore, suggests that there can be no universal definition of participation but each will depend on the specific setting, agents involved and their objectives. Some writers contend that not all programmes are suitable for popular participation, and that large-scale and technically complex systems may be better served by a high degree of centralised control (Gilbert, 1987; Strobl and Bruce, 2000). In any case, the assessment of successful participation depends on the expectations of the parties involved. Therefore, participation should be relevant enough to enhance planning decisions as well as genuine and responsive enough for participants to see their contributions being incorporated into policy formulation and implementation. In the UK, the Government has identified community ownership and/or management of physical assets as having an important role to play in the achievement of a number of key objectives. These include the development of active communities and civil renewal, the growth of social enterprise, the development of community anchor organisations, an improvement in the quality of neighbourhood level services, and an increase in citizen engagement in neighbourhoods (Office of the Deputy Prime Minister (ODPM), 2006).

In developing countries, because the traditional institutions are often more accessible to the ordinary people and more relevant to their daily lives, particularly those in rural areas, Agbese (2004) argued that they are essential to effective mobilisation of the citizens and for dissemination of government policies and views. In Nigeria for example, it is long-established that whenever policy makers are unable to carry the people along in implementing programmes and dread the consequences of failure, the help of the traditional institutions are usually sought (Lawal, 1989). Miles (1993) and Ayeni (1985) maintained that the traditional institutions in Nigeria could encourage community solidarity and provide administrative services in situations where government is ineffective, or even where it is disintegrating. This is because the citizens see the traditional rulers as ombudsmen for communities, which gives them recourse for complaints against the state bureaucracy.

In diverse and multi-ethnic countries such as Nigeria, the perceptions of citizens are often affected by local prejudices against national interest. Omoregie and Radford (2006)

argued that unlike in more developed western countries where patriotism to the country is commonly seen as overriding other personal or local interests, an average Nigerian typically shows a different pattern of loyalty; the order of allegiance being to immediate family, ethnicity and religion before the country. This has manifested in many areas such as the tendency to manipulate census figures to justify the increase in revenue allocation, dominance in the military, political positions and even contract award (Omorie and Radford, 2006), and has been severally offered as the possible explanation for the high level of corruption, recurring religious conflicts and other malpractices such as nepotism in favour a particular ethnic group or community over others (Oyelaran-Oyeyinka, 2006). Hence, this variation in the level of commitment to one's country demonstrates the importance of culture and its associated perceptions, beliefs and value systems in the conceptualisation and development of policies, guidelines and strategies underpinning the delivery of public infrastructure and service to communities. Besides, Hofstede and Fink (2007) argued that because national cultures are rooted in values, they are often difficult to change unlike organisational cultures which can be changed relatively easier as they are less deeply rooted.

Ng (1994) also argued that sustainable and synergistic procurement strategies must evolve from the people for which a project is intended. Kumaraswamy (1994) further contend that the superimposition of the procurement strategies or mechanisms of the developed countries on developing economies is inappropriate and often leads to unsuccessful project outcomes. Accordingly, Omorie and Radford (2006) proposed a polycentric cultural framework for infrastructure development in Nigeria, which emphasises the integration of infrastructure users throughout the process, from conceptualisation to actual delivery of infrastructure, by taking the recipients' culture, beliefs and values into account.

### **3.6 Private sector involvement in the procurement of public facilities**

Historically, most governments or their agencies have commonly funded public infrastructure projects either directly from budgetary allocations or by raising loans secured against government guarantees. However, these national budgets derived from revenue and taxes are often insufficient to meet the huge investments required to build the

much needed public infrastructure projects or renew the fast decaying ones (Ahadzi and Bowles, 2004). In order to meet the ever-growing aspirations of citizens, governments in the developed and developing worlds are increasingly using various forms of Public-Private Partnerships (PPPs) in the face of increasing limitations in capital resources. The concept of PPP is underpinned by a government's desire to resolve financial constraints by joining force with the private sector to increase the efficiency and effectiveness of public services and facilities delivery whilst ensuring better risk management and increasing certainty of outcomes (Lane and Gardiner, 2003).

### 3.6.1 General concept of Public Private Partnerships (PPPs)

Carroll and Steane (2000) highlighted that in broad terms, PPPs encompass very wide and diverse relationships and circumstances in which they arise and defined PPPs as *agreed*, cooperative ventures that involve at least one public and private-sector institution as partners. However, a comprehensive definition of PPP offered by Akintoye (2006:434) is *"a contractual agreement of shared ownership between a public agency and a private company, whereby they pool resources together and share risks and rewards, to create efficiency in the production and provision of public or private goods"*. A leading promoter of PPPs in Nigeria - the Abuja Investment and Property Development Company (AIPDC<sup>11</sup>) – defined a PPP as *"involving a risk-sharing contractual arrangement by which the public and private sectors aggregate their competencies and resources in order to offer better infrastructure and public services"* (Yusuf, 2005:1). PPPs are typically aimed at: accelerating economic growth, development and infrastructure delivery; and achieving quality service delivery and good governance (Akintoye, 2006), especially in developing countries. Among many reasons for using PPP, Blaiklock (2003) offered the following reasons:

- to remove the responsibility for funding the investments from the government's balance sheet;
- to relieve short-term pressure on public finances;

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<sup>11</sup> AIPDC is the private sector arm of the Federal Capital Development Authority (FCDA) and responsible for facilitating, encouraging and attracting investments by ensuring that the right incentives and initiatives are put in place to stimulate and promote the economic development of the territory.

- to introduce competition, and thereby ensure that the public sector receives best value for money (VFM);
- to take advantage of managerial practices and experience of the private sector;
- to provide opportunity for innovation in the provision of public services;
- to introduce new technologies and encourage technology transfer; and
- to restructure public sector service enterprises by embracing private sector capital and practices.

Different approaches to PPPs continue to be developed as a way of attracting the private sector finance and/or managerial expertise. The approaches vary from contracting out of services, such as refuse collection (Sindane, 2000) or cleaning to private firms, to the use of private finance in the provision of social infrastructure (Tanninen-Ahonen, 2000) such as healthcare and water facilities. Evidence from around the world shows that the delivery mechanisms for PPPs varies and covers a diverse range of approaches through which the private sector participates in the delivery of services and/or facilities for public use. Practices such as Joint Ventures (JVs) and Build Own Operate (BOO) which were traditionally not PPPs have now evolved to involve some of the core features of PPPs such as shared authority and responsibility, joint investment, sharing liability/risk-taking and mutual benefits, and are now accordingly considered as PPPs.

### **3.6.2 PPP applications in Nigeria**

One of the key pillars of the macro-economic reform agenda of the Nigerian FG is the attraction to public-private partnerships (PPPs) as a way of promoting active private sector involvement in the provision of public infrastructure and services. The applications of PPP in Nigeria are becoming increasingly popular for both new projects (such as road construction, market development, car parks and estate development) and for the operation and management of old facilities (such as conference centres).

In Nigeria, Joint Venture (JV<sup>12</sup>) and Build-Operate-Transfer (BOT<sup>13</sup>) approaches appear to be the commonest PPP delivery mechanisms used for a variety of infrastructural projects ranging from road, tourism, hostel development in universities to power generation. Dada *et al.* (2006) reported that over 85% (18) of the 21 PPP projects surveyed in Lagos State used either JV or BOT procurement method with two-third of the projects in the housing sector. The findings of this current research also corroborate the popularity of BOT and JV models, particularly for the provision of housing and office accommodation, civil engineering works and utilities in Nigeria.

The capital value of AIPDC's PPP projects at various procurement stages are estimated at over US\$30 billion. In December 2006, AIPDC awarded various contracts worth over ₦8 billion for the development of district markets using the BOT delivery system (Daily Trust, 2006). Other PPP projects being undertaken by AIPDC include: the development of multi-level car parks; 65KM metro/rail line; integrated tourism resorts; technology village; sports and commercial facilities; housing estates; office complexes; mega malls; automotive services village; neighbourhood centres; and the operation and management of two conference centres, hotels and banks. Apart from BOT, other typical areas/nature of private sector involvement with AIPDC's PPP project includes Build Operate Own Transfer (BOOT), Design Build Finance Operate (DBFO), Equity participation and formation of Special Purpose Companies (SPCs) and Facilities Management (Yusuf, 2005).

Given the growing interest in PPP applications in Nigeria, there is a need for a corresponding level of development in terms of policy, investment environment, legislative and operational frameworks. However, because of dearth of published literature and on PPPs in Nigeria, sources from the UK and other countries with matured

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<sup>12</sup> JVs have been defined by HM Treasury (2000) as "*partnerships in which public and private sector partners pool their assets, finance and expertise under joint management, so as to deliver long term growth in value for both partners*". They are commonly used by companies to gain entrance into foreign markets by forming joint ventures with domestic companies already present in the markets, with the foreign companies contributing new technologies and business practices into the joint venture.

<sup>13</sup> BOT has been defined by Tiong (1995) as "the granting of a concession by the government to a private promoter, known as concessionaire, who is responsible for financing, construction, operation, and maintenance of a facility over the concession period before finally transferring the fully operational facility to the government at no cost". This duration allows the private sector investor to recoup and realize some returns on his investment. Government or its agencies act as facilitators and regulators of the schemes and eventually retain the ownership of the facility after the expiration of the agreed period or reversionary period.

practices will be extensively used. The risk success factors associated with PPP applications are identified in Sections 3.6.3 and 3.6.4 respectively.

### **3.6.3 Risks associated with PPP projects**

Risks are parameters which can affect any venture either positively or negatively. Owing to the complexity, duration and multitude of stakeholders involved, PPP project delivery methods have been adjudged to be full of risks (Xenidis and Angelides, 2005). The identification, classification and presentation of a comprehensive list of these risks will provide prospective PPP practitioners with a useful tool during the setting up of successful PPP concession agreements. An extensive list of 61 risk factors related to PPPs was compiled from a variety of literature sources from Nigeria, UK and other European countries, including Aboki (2005); Akintoye *et al.* (1998); Ayeni (2005); Dixon *et al.* (2005); Ibrahim and Price (2006a); Li *et al.* (2005a); Sonuga *et al.* (2002); Xenidis and Angelides (2005); and Yusuf (2005).

In general, two major types of risk categorisation were identifiable from literature (Xenidis and Angelides, 2005): the first is according to the lifecycle phase that a risk occurs during the concession period; and the second is according to the source or origin of each risk. However, several variants of these broad groups abound in literature, with each covering either or both types. For example, Elbing and Devapriya (2004) classified PPP risks as either global (independent of a project) or project risks. Li *et al.* (2005a) used a meta-classification approach based on three levels of risk factors comprising of macro, meso and micro levels of risks. For the purpose of this study, the risks factors have been classified as either exogenous (risks which are external to the particular project under consideration) or endogenous (risk events and consequences of which occur within the system boundaries of the project being considered, and includes risks occurring in the relationships between the stakeholders due to the inherent differences between the working practices and strategies of the private and public sectors). It is believed that this type of classification will further facilitate a strategic approach to comprehensive management of risks on PPP projects. The risk factors have been further categorised into 13 sub-groups as shown in Table 3.3.

**Table 3.3: Classification of risk factors associated with PPP projects**

<b>Exogenous Risk Factors</b>	<b>Endogenous Risk Factors</b>
<b>Political and government policy</b> Unstable government Possible expropriation/nationalisation of assets Poor public decision making process Strong political opposition/hostility Inconsistencies in government policies	<b>Project selection</b> Land acquisition/site availability Level of demand for the project Prolonged negotiation period prior to initiation Competition risk
<b>Macroeconomic factors</b> Poor financial market Inflation rate volatility Interest rate volatility Unstable value of local currency Influential economic event (boom/recession)	<b>Project Finance</b> Availability of finance High finance costs Lack of creditworthiness High bidding costs Inability to service debt Lack of government guarantees Bankruptcy of concessionaire Financial attraction of project to investors
<b>Legal and Legislative factors</b> Legislation change/inconsistencies Change in tax regulation Corruption and lack of respect for law Import/Export restrictions Rate of returns restrictions Industrial regulatory change	<b>Residual risk</b> Residual value (after concession period)
<b>Social factors</b> Lack of tradition of private provision of public services Public opposition to projects Non-involvement of host-community Cultural differences between main stakeholders	<b>Design factors</b> Delay in project approvals and permits Design deficiency Unproven engineering techniques
<b>Natural factors</b> Force majeure Geotechnical conditions Weather Environment	<b>Construction risks</b> Construction cost overrun Construction time delay Availability of appropriate labour/material Late design changes Poor quality of workmanship Excessive contract variation Insolvency/default of subcontractors and suppliers
	<b>Operation risks</b> Risk regarding pricing of product/service Operational revenue below projection Operation cost overrun Low operating productivity Maintenance more frequent than expected Maintenance cost higher than expected
	<b>Relationship risks</b> Inadequate experience in PPP Inadequate distribution of responsibilities and risks Lack of commitment from public/private partner Inadequate distribution of authority between partners Organisation and coordination risk Different working methods/know-how between partners
	<b>Third party risks</b> Staff crises Third party tort liability

### **3.6.3.1 Risk allocation in PPP projects**

At the start of a typical PPP procurement process, the public client normally provides a risk allocation scheme to the contractor along with the tender documents (Li *et al.*,

2005a). Raftery (1994) identified four possible methods for responding to risks: risk elimination; risk transfer; risk retention; and risk reduction. Elbing and Devapriya (2004) provided a structured risk management process model aimed to minimise potential negative impact, maximise potential positive impact and optimise value for money in PPP projects. The cyclic model comprises five stages covering the identification, assessment, analysis, allocation and control of risks over the whole lifecycle of each project. The model uses a scoring-matrix for transferring different risks into a risk priority list for risk allocation and control.

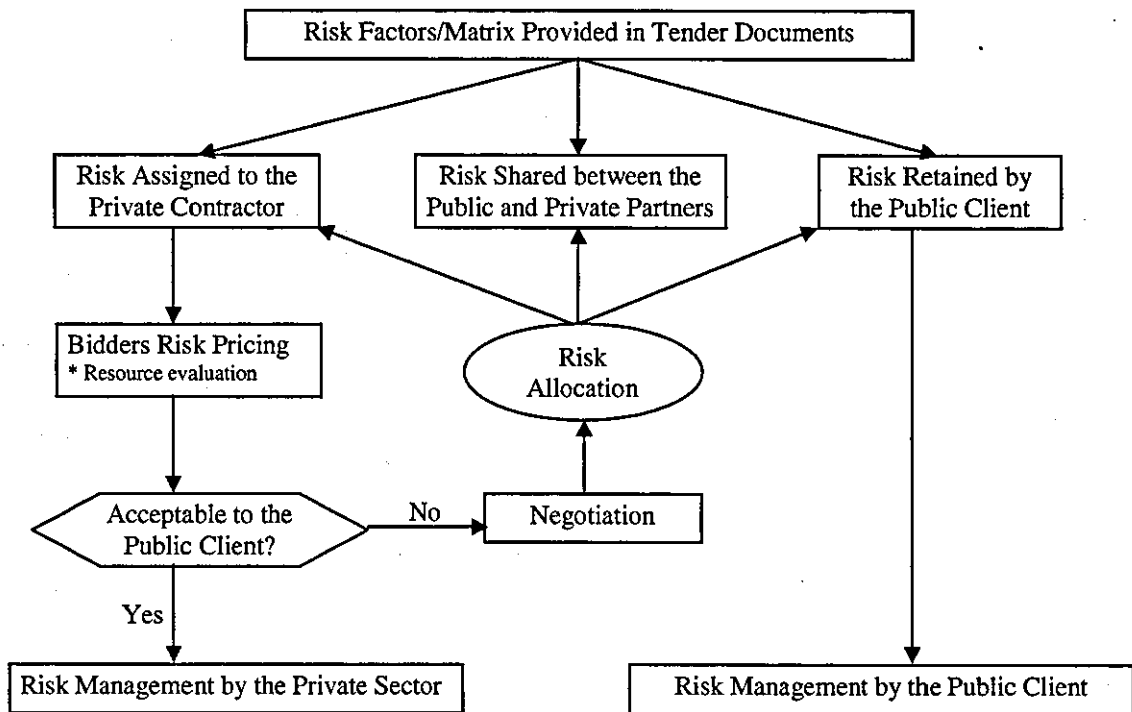
Elbing and Devapriya (2004) further stressed that in order to improve value for money during risk allocation on PPP projects, risk sharing between the public sector and special purpose company should be assessed and optimised by using guarantees and contracts including the output specification, service levels and appropriate payment mechanisms. Three common methods used for risk allocation include a simple list of risk factors, a risk matrix, and a risk allocation framework (Li *et al.*, 2005a). Since transparency in the procurement process is regarded as critical to the success of PPP projects (Jefferies *et al.*, 2002), it is important that risk allocation is clearly communicated and understood between the parties.

Li *et al.* (2005a) proposed a risk allocation framework, shown in Figure 3.2 in which the public sector sponsor: identifies risks associated with the projects in a risk register; sets out the risks relevant to each stage of the project; the likelihood of occurrence for each risk event; and an estimate of the financial consequences. At the end of negotiation, the public sector sponsor and the preferred private bidder would reach an agreed risk allocation scheme, assigning risks to the party best able to manage them. Typically, the public sector sponsor would assume some of the risks, transfer some to the private consortium and share some with it. The agreed scheme forms part of the final contract and thus legally enforceable.

Nonetheless, many infrastructure projects that had been developed through PPPs, even in countries with relatively long history of PPP applications, have failed (Abdul-Aziz, 2001; Levy, 1996 and Ogunlana, 1997) or did not even materialise (Birgonul and Ozdogan, 1998). These have resulted largely because of insufficient and untimely identification, assessment and management of risks between the relevant participants. Therefore, given



the multitude of stakeholders, the duration of most PPP projects and the complexity of contractual agreements involved, it is imperative for both the public and private sectors to understand the various risks associated with PPPs throughout the whole life cycle of the projects. This is particularly important for new entrants to the procurement method, such as Nigeria.



**Figure 3.2: Risk allocation process in PPP contract procurement**

Source: Li et al. (2005a)

### 3.6.4 Success factors for PPP projects

Project success means different things to different people depending on their perspective. The methodology used for determining success factors in practice has been to follow a procedure that attempts to make explicit the key areas that are essential for management success. In the context of information systems and project management, Rockart (1982) defined critical success factors (CSFs) as *“those few areas of activity in which favourable results are absolutely necessary for a manager to reach his/her goals”*. Rowlinson (1999b) stated that CSFs are *“those fundamental issues inherent in the project which must be maintained in order for teamwork to take place in an efficient and effective manner, and require day-to-day attention throughout the life of the project”*. Therefore, the definition of project success will amongst other things depend on project type, size and

sophistication, project participants, and experience of owners, etc. Nonetheless, a broad range of infrastructure projects have been successfully developed through PPPs with significantly improved value. In the UK for example, HM Treasury (1997) reported cost savings of 15% in the first eight DBFO roads; 10% in the Bridgend and Fazakerley prison projects; 60% for the national insurance recording scheme; and 40% for the Home Office's immigration casework IT project.

Previous related PPP research includes that undertaken by Tiong (1996) who explored success factors for private contractors in competitive tendering and negotiation in BOT projects in China. Morledge and Owen (1999) developed a methodology to assist in the establishment of a framework of factors considered vital to stakeholder and user success in private finance initiative (PFI) projects. PFI is the most commonly used PPP approach in the UK and typically comprises the public sector awarding authority, the special purpose vehicle (SPV) that is formed as a limited company solely to deliver the PFI project and third party funders. Morledge and Owen further raised concerns in the application of Rockart's approach in terms of subjectivity, bias, failures in data processing, changing environments, ambiguous definitions, and insufficient qualitative performance measure. In addressing the issues and weaknesses of Rockart's approach, Morledge and Owen argued that factors identified as critical may fall into one of two categories: necessary for success, but not critical; and critical for success. The former were labelled failure reduction criteria (FRCs) while the latter were labelled CSFs. Prefontaine *et al.* (2000) identified CSFs for the new collaborative models used for public service delivery, which they grouped along six dimensions related to: the project's macro, meso or micro environments; the partners involved; the collaboration process; the project development process, the governance methods used for organising and managing the project; and the performance level of the collaboration and the service delivery program that it operates. Qiao *et al.* (2001) established success factors for BOT projects in China and Jefferies *et al.* (2002) reported how public clients successfully manage BOT project procurement in an Australian sports stadium project.

Other more recent studies include Dixon *et al.* (2005) and Li *et al.* (2005b) which are described in more detail below. These two works comprehensively reviewed many of the other earlier studies. However, while the former revealed the existence of differences

between the stakeholders, the latter showed differences in the strengths of importance attached to the various success factors by the stakeholders.

Dixon *et al.* (2005) conducted research based on interviews with key stakeholders in UK PFI. In terms of the life cycle of PFI transactions, the study revealed that the success criteria varied according to the parties interviewed, as follows:

- efficient and cost-effective procurement process (SPV);
- reaching a financial close (lawyers/financiers);
- a good quality covenant and certainty of income from end-user (investors);
- delivery of project on time, to budget and to specification (awarding authority); and
- feedback from end-users (project sponsor).

Other success factors revealed from the interviews include:

- a robust business case, demonstrating the need for the project and its long-term financial viability;
- a well drafted output specification, establishing the quantity and quality of infrastructure/services to be provided over the period of the contract;
- consultation with end-users to ensure that their needs are properly reflected in the output specification and inform the detailed design of facilities;
- a balanced performance measurement system coupled with clear and appropriate risk transfer, to ensure that the service provider is incentivised to deliver the project and operate facilities to suit the needs of end-users;
- commitment and adequate resourcing of projects by awarding authorities;
- involving financiers at an early stage, to ensure their criteria for funding can be met and to avoid abortive negotiations;
- good communication between the awarding authority and the SPV; and
- good project management and appropriate composition of the project team.

Following an extensive literature review of PPP/PFI CSFs, Li *et al.* (2005b) surveyed the UK construction sector regarding the relative importance of the identified CSFs which

they further grouped into five clusters through factor analysis (See Table 3.4). Since the success factors identified by Li *et al.* (2005b) comprehensively cover the issues raised in many of the earlier studies, this study adopted the 19 CSFs. However, *technology transfer*, which was not relevant for (and excluded from) the UK study and *political support*, which fell outside the main principal factor groupings for the UK study, have been included in this research and categorised under effective procurement and government guarantee groups respectively. Both factors are thought to be relevant to developing countries such as Nigeria.

**Table 3.4: Summary of CSFs for PPP projects**

	<i>Critical success factor</i>
I	<b>Effective procurement</b>
1	Transparent procurement process
2	Competitive procurement
3	Good governance
4	Well-organised and committed public agency
5	Social support
6	Shared authority between the public and private sector
7	Thorough and realistic cost/benefits assessment
8	Technology transfer
II	<b>Project implementability</b>
9	Project technical feasibility
10	Favourable legal framework
11	Appropriate risk allocation and risk sharing
12	Commitment and responsibility of public and private sectors
13	Strong private consortium
III	<b>Government guarantee</b>
14	Government involvement by providing guarantees
15	Multi-benefit objectives
16	Political support
IV	<b>Favourable economic conditions</b>
17	Stable micro-economic conditions
18	Sound economic policy
V	<b>Available financial market</b>
19	Available financial market

Although many PPP projects in the developed countries are regarded as successful (Ive *et al.*, 2000; Qiao *et al.*, 2001; Jefferies *et al.*, 2002) and the drivers of success have become subject of extensive investigation (Dixon *et al.*, 2005), little is known about the relative importance of these success factors in developing countries such as Nigeria. This is particularly important as a recent study of the cross-cultural features of PPPs in the UK, Ireland, Turkey, Portugal, The Czech Republic and Palestine established that the application of the UK PFI model was unsuitable in the other countries (Eaton *et al.*,

2007). The features investigated included social, legal, economic, environmental, political and technological (SLEEPT).

### **3.7 Collaboration/partnerships in the procurement of public facilities**

To successfully achieve effective community and private sector involvement in the procurement of public facilities and services, Miller and Ahmad (2000) highlighted that collaboration and partnerships between agencies, professions and across sectors have now become major policy goals in both developed and developing countries.

According to Sullivan and Skelcher (2002), partnership is the new language of public governance. The increasing popularity of both collaborative and partnership systems reflects a desire to move from the development of policy and the planning and delivery of services through fragmented organisational, professional or sectoral premises toward integrated multi-sectoral, multi-professional and multi-party approach which will deliver improvements in the outcomes of projects and programmes to all stakeholders. This is particularly important given the rapid changes in demographics, technologies, fashions, expectations, coupled with the increasing opportunities for different ways of working offered by advances in information and communication technology and process redesign. These collaborations can occur as a result of a variety of motives and goals, take a range of forms and occur across vertical and horizontal boundaries (Ngowi, 2007). These, however, come with tremendous challenges in managing the interfaces and the potential conflicts of interests, especially in relationships involving parties from the construction industry that is historically characterised with adversarial relationships.

As a way of enhancing project delivery through improved supply chain relationships, many countries have encouraged the incorporation of 'partnering' philosophy into their procurement systems (Gyles *et al.*, 1992; Latham, 1994; Egan, 1998; Grove, 2000; Tang, 2001). The concept of partnering encapsulates a variety of practices intended to facilitate greater collaboration amongst those involved (Barlow *et al.*, 1997). Partnering eschews traditional adversarial relationships between project parties and encourages relationships based on the principles of trust, mutual respect and cooperation towards the achievement of a common goal (Warne, 1994; Holti and Standing, 1996; CIRIA, 1999). In the

construction-related businesses, partnerships may be either short-term and project-orientated or long-term and strategic in nature (Barlow *et al.*, 1997). In the former, emphasis is more likely to be on agreeing project governance issues to secure immediate project benefits rather than on developing advanced cooperative practices, whilst in the latter case the partnership is typically concerned with optimising the partnership's resources through closer collaboration to maximise long-term benefits (Beach *et al.*, 2005). The application of partnering has been shown to be especially beneficial when the alliance partners are not in direct competition, such as between public and private sector organisations.

Ibrahim (2005a) explored the potentials for using partnering approach to support the establishment of sustainable relationships between contractual parties in the Nigerian construction industry. In making a case for the adoption of partnering in public construction procurement in Nigeria, Ibrahim (2005b) examined the limitations of traditional procurement approaches, outlined the main ways by which partnering could address the limitations and highlighted the potential implementation barriers under the Nigerian context. Even in the UK construction industry where partnering can be said to have matured, however, the success of partnering amongst main contractors, subcontractors and their suppliers is still not thought to be entirely successful (Dainty *et al.*, 2001; Beach *et al.*, 2005; Smyth and Edkins, 2007). These may not be unconnected with differences in values, beliefs and cultures of the different parties from different sectors (Thompson *et al.*, 2003).

### **3.8 Chapter summary**

This chapter presented an overview of construction procurement concept, practices and recent developments in Nigeria and the UK. The chapter also presented review on the involvement of communities and private sector in the procurement of public sector construction facilities, and the need for collaboration/partnerships between the parties.

The importance of 'procurement' in successful realisation of construction projects and programmes was emphasised as it provides an overall framework and structure of responsibilities and authorities for guiding the participants within the construction

process. In using 'procurement' as a key to performance improvement of construction, it is now thought that the procurement method is largely irrelevant in itself and that the real issue is how the adopted procurement form enhances or inhibits team members in achieving project goals. The review highlighted the current trend away from standard forms of contractual arrangements and towards a more holistic, integrated and relationship-based systems that seek to align the objectives of all the project participants.

The size and characteristics of the Nigerian construction industry as well as the various procurement methods commonly used were highlighted. The consequences of the various abuses of procurement procedures and the efforts at mitigating them were outlined. The chapter highlighted the size and importance of the UK construction industry on the economy. It also outlined the successive reviews of the industry's performance in the last two decades aimed at tackling the adversarial and inefficient working practices. The chapter also briefly discussed the recommended procurement routes and other improvement initiatives aimed at improving the delivery capability of government departments or for achieving important agendas such as sustainability. Overall, given the huge investments in public construction programmes across many sectors in both Nigeria and the UK that have impact on future generations, assessing the long-term value for money of these projects has become imperative. Some of the key pertinent issues that need to be addressed include:

- ascertaining the effectiveness and appropriateness of these preferred procurement methods in facilitating collaborative working and efficient delivery process in an environment that was (and is still likely to be) largely characterised with attitudes and culture that are individualistic and often adversarial;
- exploring ways by which long-term value for money can be facilitated, measured and enhanced through these procurement methods;
- exploring how to mitigate the barriers to effective learning from project-to-project and effective sharing of best practices from scheme-to-scheme;
- investigating the drivers, stimulants and barriers to innovation in the implementation of the preferred procurement routes for the benefits of the projects and all the participants, and identifying effective mitigating strategies; and

- assessing the extent to which these preferred procurement routes facilitate the meeting of sustainable construction agenda of the government both through whole-life value considerations and investigation of sustainable construction materials and/or methods that can further aid the attainment of those objectives.

The significant issues associated with the participation of communities in order to effectively capture the customs, beliefs and unique values of the host communities were highlighted. The involvement of private sector in the provision of public sector facilities and services as well as their risks and success factors were thoroughly discussed. Finally, the need for partnership and collaborative working between the different sectors, professionals and participants as necessary prerequisites for successful implementation were discussed.



## **CHAPTER FOUR**

### **REVIEW OF PHC CONCEPT, HEALTHCARE SYSTEMS AND PROCUREMENT OF PHC FACILITIES IN NIGERIA AND THE UK**

#### **4.1 Chapter introduction**

This chapter presents an overview of the 'primary health care' concept and briefly discusses the healthcare systems and recent organisational developments within the Nigerian and UK healthcare sectors. The chapter also reviews the contemporary issues in the procurement of PHC facilities in Nigeria and the UK.

#### **4.2 Primary Health Care (PHC) concept**

'Primary Health Care' (PHC) has been described as a philosophy that emphasises the movement of health care out of large institutions, such as hospitals, into community-based settings, thereby bringing it closer to the people and making it more responsive to their needs (Baggot, 2004). The concept of PHC as a 'level' in the management of illness can be traced back to the Dawson (1920) report, which identified three levels of service: primary care centres, secondary health centres and teaching hospitals. The PHC level has been identified as the appropriate setting to tackle most of the major causes of morbidity and mortality because in many countries, at least 90 per cent of the patient's contact with the healthcare system is at this level (World Health Organisation (WHO), 1978; Nwakoby, 2004; National Audit Office (NAO), 2005a). The World Health Organisation (WHO) (1978) also identified PHC as "*the first level of contact of individuals, the family*

*and community with the national health system*". At the PHC level, preventive, promotive and community development activities are integrated as the core services (Egwu, 2004).

The Alma-Ata Declaration (WHO, 1978:1) defined PHC as the *"essential health care based on practical, scientifically-sound and socially-acceptable methods and technology made universally accessible to individuals and families in the community through their participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process"*. Pritchard (1979:1) defined PHC in terms of *"health maintenance, prevention of illness, diagnosis and treatment, rehabilitation, pastoral care, and the certification of illness"*. Boaden (1997:2) defined primary care in terms of *"services provided by specific professional groups, such as GPs, dentists, pharmacists, opticians, district nurses, midwives, health visitors, chiropodists and speech therapists"*. Starfield (1998:6) defined primary care as *"that level of a health service system that provides entry into the system for all new needs and problems, provides person-focussed (not disease-oriented) care over time, provides for all but very uncommon or unusual conditions, and coordinates or integrates care provided elsewhere or by others"*.

The above definitions of PHC reflect different ambitions about the possibility and desirability of changing the focus of health care. The focus of the definitions ranges from consideration of primary care as a level of care, in terms of the specific services provided, to the services provided by specific professional groups. The more traditional definitions, particularly those rooted in notions of professional territory and specific services, contrast with more radical approaches that emphasise health promotion and community empowerment (Baggot, 2004). However, each definition is underpinned by a different set of assumptions and values (Peckham and Exworthy, 2003).

The Alma-Ata Declaration (WHO, 1978) identified three principles and ten components of PHC, as shown in Table 4.1.

**Table 4.1: Principles and components of primary health care**

Principles of PHC	Components of PHC
1. Equity	1. Health education
	2. Identifying and controlling prevailing health problems
2. Self-reliance	3. Food supply and proper nutrition
	4. Provision of safe water and basic sanitation
3. Prevention	5. Maternal and child health care, including family planning
	6. Immunisation
	7. Prevention and control of endemic disease
	8. Appropriate treatment of common diseases and injuries
	9. Promotion of mental health
	10. Provision of essential drugs

*Source: WHO (1978)*

The Declaration contains important socio-political implications that address not only treating disease, but also ensuring fair access to a positive state of well-being for all citizens. It recognises the social, economic and environmental determinants of health and promotes the importance of community participation. It also acknowledges that improvements in health result mainly come from activities outside the health sector.

Vuori (1986) offered a four-perspective view of PHC as:

1. *a set of activities*: as outlined in the Alma-Ata Declaration (Table 4.2);
2. *a level of care*: PHC being that part of the care system which people contact first when they have a health problem;
3. *a strategy for organising health services*: defined as accessible care, relevant to the needs of the population, functionally integrated, based on community participation, cost-effective and characterised by collaboration between all sectors of society. This may also require a reorientation of health personnel and resources from tertiary and secondary to primary health care; and
4. *a philosophy that should permeate the entire health-care system*: the essence of the PHC movement. A country can claim to practise PHC only if its entire health-

care system is characterised by social justice and equality, international solidarity, self-responsibility and an acceptance of the broad definition of health<sup>14</sup>.

Accordingly, Nwakoby (2004) summarised the three major pillars of PHC as:

1. Equity – emphasising that people's needs rather than social privileges should drive the distribution of opportunities for healthcare and wellbeing. Social privilege is reflected by differences in socio-economic status, gender, geographic location, age and ethnic/religious considerations. Therefore, equity in health care aims to reduce the available gaps in health status and health services.
2. Community participation – in the planning and implementation of system and services. It is, however, important to recognise the need for diversity in the interpretation of community participation since community needs, resources and local practices vary considerably worldwide.
3. Inter-sectoral collaboration – this involves making health goals a high priority in the overall development process as the PHC philosophy recognises that the health of a society is closely related to the overall socio-economic situation and the extent of poverty within it.

Since the Alma Ata conference in 1978, health service reforms around the world have been moving towards primary care-centred services. The available evidence broadly supports this shift, although it also indicates the limits of substitution for secondary care (Baggot, 2004). Starfield (1992) reviewed primary care in 11 Western nations and found that:

- a higher primary care orientation is likely to produce better health for a population at a lower cost;
- primary care is not necessarily synonymous with managed care (which restricts medical choice in terms of investigation, referral and treatment);
- the total healthcare expenditure is generally higher in countries where healthcare systems are left to the vagaries of market forces;

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<sup>14</sup> Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1946).

- free market systems appear to have higher inpatient costs per capita and a higher per capita expenditure on medication;
- the restriction of specialists to hospitals and their payment by salary are generally associated with a better systems performance for the population as a whole; and
- the regulation of the location of physicians and their equitable distribution across the population are generally associated with better health system performance.

Starfield also found associations between availability of PHC and health outcomes (including reduced hospital use), patient satisfaction and reduced health-care costs. Gesler *et al.* (2004) have also established a direct relationship between PHC and social care. These sectors (PHC and social care) have been described as one of the most complex and rapidly changing organisational and technical environments involving: multiple stakeholders that participate in care delivery and characterised with convoluted funding mechanisms and rapidly changing patterns of demand and use as well as government policies (HaCIRIC, 2007). The sectors are also heavily influenced by rapidly changing demographics; clinical technologies and innovations; fashions; expectations; and increasing opportunities for different ways of working offered by advances in information and communication technologies and process redesign (Ibrahim and Price, 2005a; 2005b; 2006a). However, investments for providing efficient PHC facilities has been historically inadequate and piecemeal in many countries including Nigeria (National Primary Health Care Development Agency (NPHCDA), 2004) and the UK (National Audit Office (NAO), 2005a). In order to strengthen PHC, Starfield (1992) recommended a front-line and ongoing care that is comprehensive and coordinated.

### **4.3 Healthcare system in Nigeria**

The ingredients of Nigeria's National Health System are an admixture of its national philosophy (equity and social justice) and operationalised using the PHC (PHC) principles, as defined by the WHO (1978). This was reinforced following a resolution by African Health Ministers at Bamako, Mali in 1987 to reform the health sectors through the acceleration and strengthening of PHC in Africa and the subsequent WHO guidelines that laid down the principles and measures to operationalise the initiative. A three-phase Health Development Scenario was adopted and this subsequently stimulated the

development of the National Health Policy in 1988 (Federal Ministry of Health (FMOH), 1988).

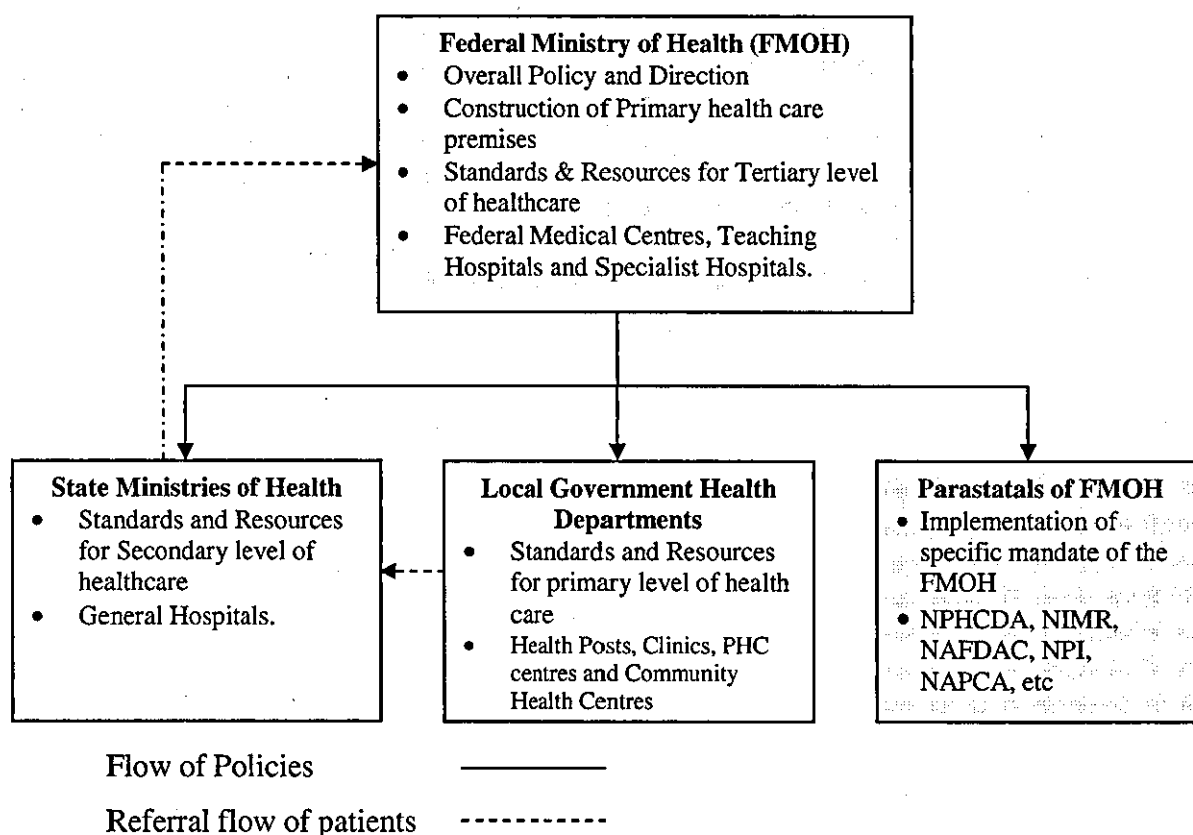
Although the 1999 constitution (which is the operative document in Nigeria) fell short of clearly specifying what the roles the FG, the SGs and the LGAs are in the national health care delivery system, the National Health Policy (both the 1988 and the 2004 revised versions) stated that the FMOH is responsible for providing the overall policy direction, strategic guidance, coordination, supervision, monitoring and evaluation at all levels. The FMOH also has operational responsibility for disease surveillance, essential drugs supply and vaccine management in addition to the provision of specialized health care services at tertiary health institutions (university teaching hospitals and federal medical centres). The State Ministries of Health (SMOHs) are to offer a secondary level of care, provide technical advice and supervision to the Local Government Authorities (LGAs); whilst the LGAs are responsible for PHC implementation at the operational level (FMOH, 2004a). Over the years, the roles of the three tiers of government have overlapped considerably, resulting in the FMOH directly implementing programmes at State and LGA levels (FMOH, 2004b). In addition, as in other sectors, the federal governance arrangement has constrained the leverage that the FMOH has over the SMOHs and Local Government Health Departments (LGHDs). For instance, the FMOH cannot compel the SMOHs to implement its health policies and programmes and this has widened the gap between policy formulation by the FMOH and implementation by SMOHs and LGHDs, thereby making stewardship of the health sector very challenging.

The unbalanced allocation of national wealth amongst the three tiers of government in addition to other hostile relations (typically related to withholding of funds when expenditures are perceived wasteful, unreasonable or in conflict with the policies of the higher level of government) have made it impossible for the SGs and LGAs to fulfil their responsibilities. Currently in Nigeria, the distribution of national wealth (as issued by the National Revenue Mobilisation and Fiscal Commission (NRMAF)) in 2001 is 41.5% to the FG, 31% to the 36 SGs, 16% to the 774 LGAs, 11.5% for special funds and 13% is the derivation formula (i.e. percentage of revenue SGs retain from the taxes on oil and other natural resources produced in any given State). Oyelaran-Oyeyinka (2006) had argued that the success of any federal system of government depends on the institutional

capacities and resources of both the central and the sub-units to carry out their assigned responsibilities.

### 4.3.1 Organisation of healthcare system in Nigeria

The organisation of health services in Nigeria is pluralistic and complex. It includes a wide range of providers in both the public and private sectors: private for profit providers, NGOs, community-based organisations, religious and traditional care providers. Figure 4.1 shows the flows of policies and referral within the Nigerian health care system. Some parastatals within the health system have been created to deal with priority health issues such as National Agency for Food and Drug Administration and Control (NAFDAC), National Primary Health Care Development Agency (NPHCDA), National Programme on Immunization (NPI), Nigerian Institute for Medical Research (NIMR) and National Action for Prevention and Control of AIDS (NAPCA). Yet, Egwu (2004) argued that the roles of these parastatals are not well delineated.



**Figure 4.1: Flow of policies and patient referral in Nigeria's healthcare system**

While private expenditures are estimated to be over 70% of total health expenditure with most of it coming from out-of-pocket expenditures in spite of the endemic nature of poverty (Uzochukwu *et al.*, 2004a), Public expenditure on health in Nigeria is less than US\$8 per capita, compared to the US\$34 recommended internationally (FMOH, 2004a). An analysis of the public budgetary allocation on health by all the three tiers of government in Nigeria between 2000 and 2005 is provided in Table 4.2. While it should be noted that not all the approved budgetary allocation may have been actually released, it can be seen from Table 4.1 (item 22) that the total annual approved budgetary allocation to health never exceeded 5.42% of the total annual public expenditure by the three tiers of government. The average allocation for the six years, 2000 – 2005, is 4.7%.

**Table 4.2: Public health expenditure in Nigeria: 2000 – 2005 (N '000,000)**

S/No	Item	2000	2001	2002	2003	2004	2005
1	Federal Government (FG) Recurrent Expenditure	461,608.50	579,329.10	867,337.50	984,268.10	1,032,741.30	1,223,730.00
2	FG Capital Expenditure	239,450.90	438,696.50	321,398.10	241,688.60	351,260.00	519,510.00
3	FG Total Expenditure	701,059.40	1,018,025.60	1,188,735.60	1,225,956.70	1,384,001.30	1,743,240.00
4	FG Recurrent Expenditure on Health	11,579.60	24,523.50	50,563.20	33,254.50	34,198.50	55,663.00
5	FG Capital Expenditure on Health	8,865.60	20,128.00	12,608.00	6,431.00	18,297.60	21,835.80
6	FG Total Expenditure on Health	20,445.20	44,651.50	63,171.20	39,685.50	52,496.10	77,498.80
7	SG/LGA Recurrent Expenditure	196,784.10	294,709.50	424,195.40	545,308.70	556,812.30	640,334.10
8	SG/LGA Capital Expenditure	158,895.60	235,241.70	283,473.80	324,019.90	412,926.20	454,218.80
9	SG/LGA Total Expenditure	355,679.70	529,951.20	707,669.20	869,328.60	969,738.50	1,094,552.90
10	SG/LGA Recurrent Expenditure on Health	17,860.20	7,835.10	26,308.20	36,711.10	45,998.70	52,898.54
11	SG/LGA Capital Expenditure on Health	6,395.50	7,371.90	8,750.40	15,515.60	21,171.10	23,288.18
12	SG/LGA Total Expenditure on Health	24,255.70	15,207.00	35,058.60	52,226.70	67,169.80	76,186.72
13	Total Recurrent Expenditure	658,392.60	874,038.60	1,291,532.90	1,529,576.80	1,589,553.60	1,864,064.10
14	Total Capital Expenditure	398,346.50	673,938.20	604,871.90	565,708.50	764,186.20	973,728.80
15	Total Expenditure	1,056,739.10	1,547,976.80	1,896,404.80	2,095,285.30	2,353,739.80	2,837,792.90
16	Total Recurrent Expenditure on Health	29,439.80	32,358.60	76,871.40	69,965.60	80,197.20	108,561.54
17	Total Capital Expenditure on Health	15,261.10	27,499.90	21,358.40	21,946.60	39,468.70	45,123.98
18	Total Health Expenditure	44,700.90	59,858.50	98,229.80	91,912.20	119,665.90	153,685.52
19	FG Total Health Expenditure as Percentage of FG Total Expenditure	2.92%	4.39%	5.31%	3.24%	3.79%	4.45%
20	FG Recurrent Expenditure on Health as Percentage of FG Recurrent Expenditure	2.51%	4.23%	5.83%	3.38%	3.31%	4.55%
21	FG Capital Expenditure on Health as Percentage of FG Capital Expenditure	3.70%	4.59%	3.92%	2.66%	5.21%	4.20%
22	Total Health Expenditure as Percentage of Total Expenditure	4.23%	3.87%	5.18%	4.39%	5.08%	5.42%
23	Total Recurrent Expenditure on Health as Percentage of Total Recurrent Expenditure	4.47%	3.70%	5.95%	4.57%	5.05%	5.82%
24	Total Capital Expenditure on Health as Percentage of Total Capital Expenditure	3.83%	4.08%	3.53%	3.88%	5.16%	4.63%

\* All data obtained from CBN Annual Reports 2000 – 2005



The average budgetary allocation of the FG during the six year period is even less (4.02%) (item 19) and its allocations for 2006 and 2007 (of 5.63% and 5.37% respectively) are not any significant improvements even though there is no major foreign debt servicing being incurred. In addition, the gains from the US\$ 18 billion debt relief offered by the World Bank are supposed to be mainly devoted to health, education and other social services in order to meet the Millennium Development Goals. These consistently low funding to the health sector are far less than the WHO recommended minimum allocation to health and the Abuja 2001 agreement by 40 African Heads of State to allocate at least 15 per cent of their annual budgets to health.

In addition, FMOH (2004b) noted a general lack of transparency and fiscal discipline as well as a complete absence of a healthcare-financing framework to guide government's rationale for investment, allocation and disbursement of resources. In attempting to mitigate the low per capita funding to health, the government has embarked on a series of initiatives such as revolving fund schemes for some services in hospitals and the newly introduced National Health Insurance Scheme (NHIS) which is being complemented by a small private insurance market in the country, operated by private insurance firms. Chukwuani *et al.* (2006) revealed increasing willingness by Nigerian to invest in health financing through insurance schemes and payment of health tax among others. The FGN also launched a health sector reform programme (HSRP) in September 2004 to set the tempo and direction for strategic reforms and investment in key areas of the national health system, within the context of the overall government macroeconomic framework, the NEEDS. The seven key areas of the HSRC are (FMOH, 2004b):

1. rationalisation and reorganisation of all federal agencies responsible for primary healthcare delivery functions;
2. building and equipping model health care facilities, rehabilitating existing PHC facilities and strengthening their capacities to provide effective, efficient, affordable and quality services;
3. strengthening the performance of the PHC delivery system through refurbishment and standardisation programmes, as well as building accountable management structure and system within the framework of a new agency identified as the National Hospitals Commission;

4. advocacy for diversification and improvement in funding of National Health Account with institutionalisation of management processes for better and more transparent accountability;
5. undertaking studies to determine the country's burden of diseases and directing priority attention and resources to reduce this identified primary health burden;
6. promoting effective public-private sector partnering; and
7. building and strengthening such diverse programmes as health management system (including research), national blood transfusion and ambulance service, continuing the war against fake and adulterated drugs, stimulating local production of health input such as vaccines, disposable syringes, drugs, insecticide treated nets amongst other things.

Since 2004, the FG has also been making concerted efforts at institutionalising quality in service delivery across public sector organisations through the promulgation of 'service compact with all Nigerians', popularly called SEVICOM (SERVICOM Book, 2006). SERVICOM is a policy intervention that is based on TQM principles and aimed at instilling trust and quality into public service delivery in Nigeria. Every government department is required to have a SERVICOM unit responsible for formulating and implementing a service delivery system comprising customer relations/grievance redress mechanisms, using marketing research to identify customer expectations, promoting quality assurance and training service frontline personnel (Ogunrin *et al.*, 2007). Within the healthcare sector, Ogunrin *et al.* (2007) revealed that the employees consider their motivational status to be more crucial to quality service delivery than sheer statistics both in monetary terms and in terms of number of physicians or facilities, thereby highlighting another dimension to the challenges facing the sector.

#### **4.3.2 Procurement of PHC facilities in Nigeria**

Prior to 1991, the organisation of PHC services was such that each LGA had a comprehensive health centre (CHC) serving as a referral centre for four primary health centre (PrHC) and with each PrHC serving as a referral centre for five clinics. In 1991, the organisation was modified with a recommendation that each village should have a health

post, a group of villages to have a clinic, each district to have a PrHC while each LGA was to have a CHC.

The NPHCDA, set up through Decree 29 of 1992, announced the WHS in 2001 to replace the old district system (NPHCDA, 2004). The WHS scheme was initially targeted at constructing 200 Model PHC centres in selected wards across the six geopolitical zones of Nigeria (NPHCDA, 2001). However, further approval was granted to provide a total of 740 Model PHC facilities targeted at providing access to basic health services for 15 million Nigerians. As at September 2006, the contract for 561 Model PHC facilities had been awarded at the total cost of ₦11.22 billion (about US\$ 90 million), with the initial 200 completed (Daily Triumph, 2006). While this target is insignificant in itself, the extent to which the scheme is achieving its objectives remains abysmal and mixed, and a strong case for further re-examination of its structure, process and function, including its overall place in the PHC subsystem has been made by Nwakoby (2004), Uzochukwu *et al.* (2003; 2004a; 2004b). According to NPHCDA (2004), the objectives of WHS are to:

- facilitate provision of integrated PHC services;
- provide opportunity for NPHCDA to mobilise political support for PHC; and
- revitalise the principle of community ownership and co-management of the facilities.

Prior to the introduction of the WHS initiative, community participation, which is an important component of PHC (Newell, 1975; UNICEF, 1988), had been encouraged in the procurement of PHC facilities in Nigeria through a variety of district health committees (DHCs) and village health committees (VHCs) under the district system (DS) (FMOH, 1996). While a DHC was responsible for a particular district and the management/supervision of the health facilities within the district, a VHC was responsible for a particular village/community and the management/supervision of the health facilities and volunteer health workers within that village/community. The membership of these committees comprised a *person in charge of the health centre* (link between the government and the community), *the primary school headmaster* (secretary), *representatives of religious and women's groups/associations*, *representatives of the Red Cross and Boys Scout organisations*, *a representative of the town union*, and *some drawn from age group and pensioners associations*. Each committee, made up of 8–12 persons,

had a chairman appointed by the other members of the committee and were required to meet at least once every month in their various villages and districts.

The functions of the DHCs and VHCs included: deciding health activities in the community; supervising the activities of traditional birth attendants (TBAs); selection, supervision and payment of village health workers (VHWs); control and management of revenue and profits from drug sales; management of drugs income and expenditure in the context of community financing and mobilization; priority setting of health activities in the health centre; identifying those to be exempted from user fees; and remuneration of health workers. Other functions outside the core areas included health education of the community, monitoring performance of health facilities, and provision of waste disposal system (FMOH, 1996). The shortcomings of the past (DS) and current (WHS) strategies were articulated by Ibrahim and Price (2006a) and include:

1. *The strategies were not linked to any target community.* The health facilities were built without taking into consideration the needs of the target community and were thus ineffective (FMOH, 1996).
2. *Inequality in access to health care services.* Only few health centres provide daily or routine immunisation services (Nwakoby, 2004), and great disparity in access to public health exist between the poor and the rich (Uzochukwu *et al.*, 2003), between the rural and urban areas (Uzochukwu *et al.*, 2004b) and between geographical areas (Nwakoby, 2004). Human resources for health is skewed in favour of urban public health facilities and allocation of resources is skewed in favour of curative services at the expense of preventive services (Nwakoby, 2004).
3. *There was no agreed pattern of service delivery.* The past strategies for implementing PHC in Nigeria neither had any well formulated pattern of service delivery nor a system for managing them and for ensuring the attainment of the desired quality of service delivery (FMOH, 1996).
4. *Lack of involvement of local communities in the planning and implementation.* In Nigeria, despite willingness to participate, communities are rarely involved in health activities due to resistance of the health workers (Uzochukwu *et al.*, 2004a). An important issue in community participation is that of remuneration of the committee members (Uzochukwu *et al.*, 2004a) as well as the Village Health Workers (Nwakoby, 2004). This has implications for the sustainability of

community participation within the context of PHC since there are personal costs of time and sometimes income associated with participation.

5. *Inequitable and misdistribution of PHC facilities.* NPHCDA (2001) reviewed the national pattern of distribution of PHC facilities and stated that a good number of communities did not have functioning PHC centres, majority of the health workers did not possess the appropriate skills or conceptual understanding of the PHC approach as their training orientation often emphasised clinical as opposed to working within communities, remuneration and conditions of service were considered punitive by the workers.
6. *Conversion or non-existence of Community Health Centre (CHC<sup>15</sup>) component.* In recent years, under combined political and administrative pressure, a number of CHCs have been converted to general or cottage hospitals. In other cases, CHC may have been planned for but not implemented. In either case, the structural void created by eliminating the CHC component either due to conversion or non-existence has a number of implications:

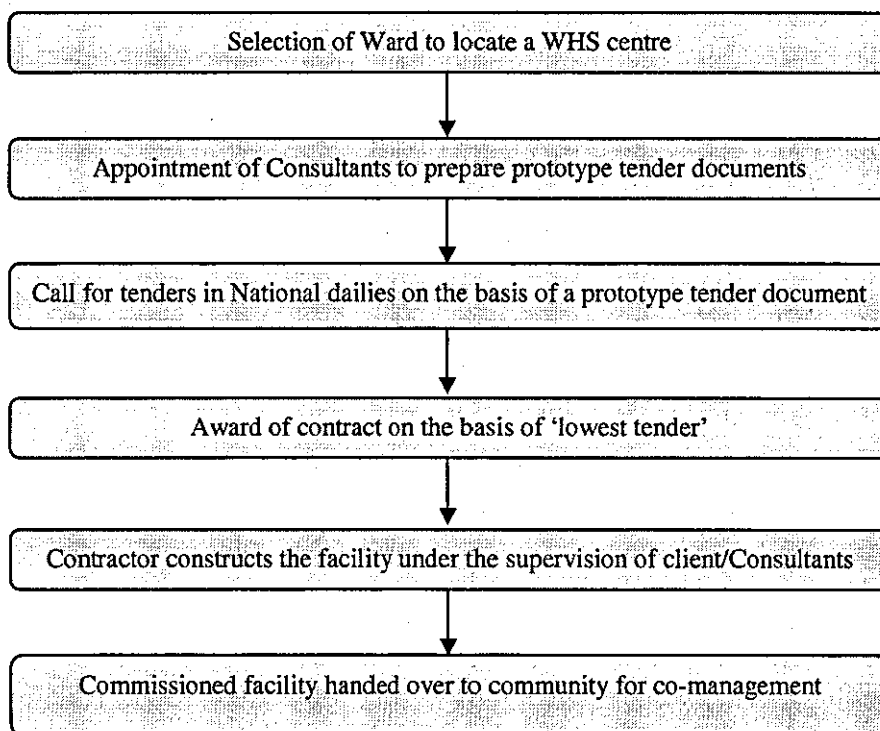
- i. weakening or total breakdown of the fragile health referral network as general hospitals are supposed to serve as first-line of referral to the LGA health sub-system via the CHC and so the conversion or non-existence of a CHC introduces operational and functional complications;
- ii. ownership problems as LGAs are not supposed to run or own hospitals;
- iii. destruction of the World Health Organisation's concept of comprehensiveness of PHC services (WHO, 1981) as these cannot be provided by a hospital;
- iv. dismantling of the CHC promotes unemployment and wrangling amongst the displaced health workers who may be forced to take positions in other health centres lower than the CHC; and
- v. reduced utilisation of services, as hospitals will cost more than the CHCs and the economic situation will not permit the desired patronage on need basis.

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<sup>15</sup> The CHC is the apex healthcare centre at the PHC level from where referrals are made to the General Hospitals at the secondary healthcare level.

#### 4.3.2.1 WHS procurement process

The procurement process of the WHS is represented below in Figure 4.2. Under the scheme, a consortium of design consultants were commissioned by the NPHCDA to prepare a prototype design and tender documents for use across the country, and prospective contractors compete for the projects in open competition on a site-by-site basis so that local conditions and peculiarities are highlighted in each package. The design consultants alongside the representatives of the NPHCDA supervise the successful contractors on all the sites. After completion, each project is:



**Figure 4.2: WHS procurement process**

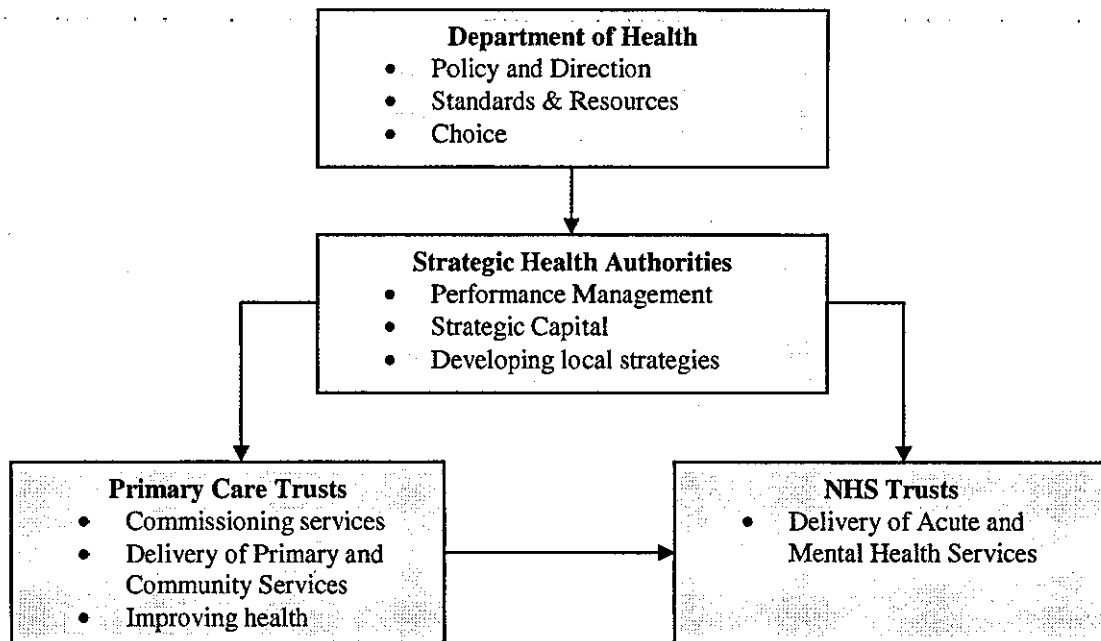
- equipped with clinical facilities worth ₦5 million (US\$ 40,000);
- equipped with essential drugs, for the value ₦500,000.00 (US\$ 4,000), for the treatment of common diseases such as Malaria, Diarrhoea and other services like Family Planning, Pre and Post Natal, children and adolescent care; and
- the sum of ₦1.3 million (US\$ 10,400) (in cash) is provided for the implementation of community-based PHC work plan.

Each completed Model PHC facility is subsequently handed over to the host Ward Development Committee (WDC) to implement community co-ownership work plan. However, these sums have been criticised to be inadequate and the work plan is both scanty and unsystematic, and hence the concept can hardly be sustainable (Ibrahim and Price, 2006a). To date, the extent to which the WHS scheme has achieved its objectives remains abysmal and mixed, and a strong case for further re-examination of its structure, process and function, including its overall place in the PHC subsystem has been made by Nwakoby (2004), (Uzochukwu *et al.*, 2003), (Uzochukwu *et al.*, 2004a) and (Uzochukwu *et al.*, 2004b). In addition, there has been an increasing debate for the involvement of communities, private and not-for-profit sectors in a way that will not fundamentally change the welfare nature of healthcare philosophy.

#### **4.4 Health care system in the UK**

The United Kingdom's National Health Service (NHS) was established in post-war Britain (1948) as a social contract between the government and the people, based on explicit values of universality and equity. It is considered to be an icon worldwide, both as a social insurance system and as a nationalised health delivery service (Baggot, 2004). The NHS is responsible for maintaining the health of the over 50 million UK population, spending an annual budget of around £40 billion and providing working environment for over 1.2 million people (Department of Health (DoH), 2005). A wide range of services, largely free at the point of delivery, is provided by the NHS. However, around 12 per cent of the population have private health insurance to supplement NHS provision, primarily for elective procedures (Leatherman and Sutherland, 2004). In the UK, the primary care level provides the first level of professional care within a locality or community, occupying the interface between self-care and hospital-based secondary (acute) and tertiary (specialist) levels of care.

The structure of the NHS healthcare planning has been subject to considerable change and the current configuration has been illustrated in Figure 4.3.



**Figure 4.3: Structure of healthcare planning system in the UK**

The NHS policies are determined nationally by the *Department of Health* (DoH), which is responsible for providing direction, and maintaining standards, resources and choice. The policies are implemented by the NHS Executive, the NHS's over-arching management body which operates through regional offices across England. It also sets targets and checks performance. The *Strategic Health Authorities* (SHAs) – currently numbering ten – are responsible for assessing the health needs of their populations and ensuring these are met through appropriate provision of services by the PCTs, NHS Trusts and other agencies. The *Primary Care Trusts* (PCTs) – currently numbering 151 - commission services and deliver primary and community services whereas the *NHS Trusts* – currently around 240 (including Foundation Trusts) – deliver Acute and mental health services. The reforms to the NHS's organisational structure are expected to continue during 2007 with changes to the configuration and functions of SHA and PCTs. However, the reform likely to have the most profound impact on capital investment is the transition of further NHS Trusts to NHS Foundation Trusts (NHS FTs) status, the fundamental difference being that the NHS FTs are free to reinvest all cash generated from their operations, rather than relying on operational and strategic capital allocations for the maintenance and replacement of their assets, and they may borrow from a loan facility to fund further capital investments (DoH, 2007a). At the end of 2006, there were 32 NHS FTs and 24 further applications under consideration (DoH, 2007a).



The NHS was considered remarkably frugal as the UK has been among the lowest health care spenders within Organisation for Economic Cooperation and Development (OECD) countries for over four decades, both in absolute terms and as a proportion of GDP (Wanless, 2002). The relatively low expenditure, which was once celebrated as a virtue achieved through efficiency, has increasingly been seen as under-investment that has compromised the system's ability to meet the population's health care needs (Leatherman and Sutherland, 2004). Access is mediated by a tradition of "surreptitious rationing" based on the "5 D's" of delay, defer, deter, dissuade and decline (Leatherman and Sutherland, 2004).

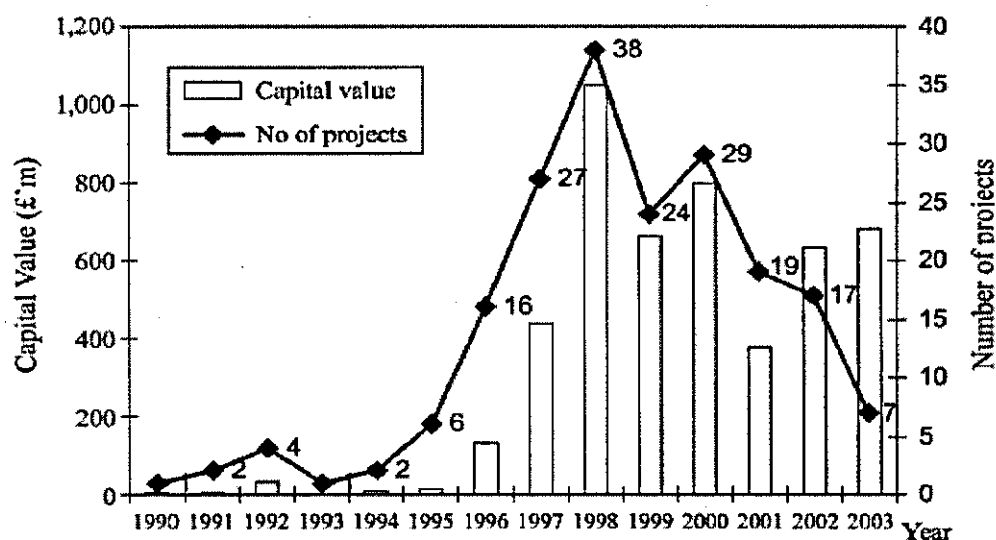
#### **4.4.1 New construction procurement regimes in the UK health sector**

On the basis of the reforms in UK construction procurement discussed in Section 3.4.2, the four notable delivery forms that have evolved for the procurement of healthcare facilities of various sizes in the UK in recent years include the private finance initiative (PFI), NHS ProCure21, local improvement finance trust (LIFT) and the capital funding regime (CFR). In the procurement of healthcare facilities in the UK, Goodier *et al.* (2006) noted a developmental shift from infrastructure production to service provision and highlighted the importance placed upon delivering end-user value.

Akintoye and Chinyio (2005) analysed the trend in the use of PFI in the UK healthcare sector from 1990 and showed that about £5 billion PFI schemes were signed up by end of 2003. They also showed that investment in the UK healthcare sector had increased significantly with over £600 million worth of PFI schemes signed annually (except for the drop to about £350 million in 2001), as shown in Figure 4.4 below. Yet investment in healthcare development through PFI procurement has continued to increase with further approval of 15 NHS hospital developments in 2004, worth more than £4 billion, as part of the *NHS Plan* to open 100 new hospitals by 2010 (DoH, 2004).

In addition, approval for additional seven PFI schemes was granted on 27 February 2007, worth around £1.5 billion, having passed checks on affordability and value for money, thereby allowing them to move a step closer to opening their doors to patients (DoH,

2007a). As at February 2007, some 109 hospitals had either opened to patients or were at finishing stages of construction (DoH, 2007b).



**Figure 4.4: Trend in healthcare PFI projects between 1998 and 2003**

*Source: Akintoye and Chinyio (2005)*

The NHS ProCure21 scheme was launched nationally in October 2003 following the appointment of 12 Principal Supply Chain Partners (PSCPs), each in a five year framework agreement with the Secretary of State for Health for projects of estimated capital costs of up to around £1.4 billion per annum. According to Contract Journal (2007a), the programme is being used by 133 Trusts, and 38% of these have more than one scheme in the programme. Of those Trusts progressing to more than one scheme, 83% continued to use the same PSCP – showing an impressive rate of return. As at March 2007, 278 active schemes (at all stages) had been registered with a total value of just under £2 billion, 121 projects each with capital cost of over £1 million and 33 projects each with capital cost of under £1 million had been completed, with 54 projects currently on-site (NHS Estates, 2007a). While the original five year frameworks are due to end by September 2008, the DoH recently announced their extension by two years till September 2010.

Under the NHS LIFT initiative, the DoH provided a start-up fund of £195 million and targeted at leveraging up to £1 billion of private investment in primary care between 2000 and 2010 to refurbish or replace up to 3000 GP premises and establish 500 new one stop care centres (DoH, 2001a). Forty-two LIFT schemes were announced in the first three

waves, but since the seven fourth wave LIFT schemes were announced by the Secretary of State for Health in November 2004, no new schemes have been further approved. Perhaps, this is to enable substantial lessons that have been learnt in the earlier schemes to be reflected in future schemes. The 49 LIFT schemes are geographically spread across England and all the 42 schemes under the first three waves have reached financial close, and several are proceeding towards second and subsequent financial closes. The procurement process for the fourth wave schemes is under way with a number of them having selected their preferred partners. Between 2003 and 2005, over 90 buildings with a total capital cost of over £700 million had become operational and open to patients (Partnerships for Health (PfH), 2006). By mid 2007, a total of 125 buildings had opened with another 75 under construction worth the combined capital value of over £1.1 billion. More recently, the DoH announced the capital funding regime (CFR) in January 2007 to encourage the participation of smaller local contractors in the acute hospital programme. The Plymouth Hospitals NHS Trust has already taken advantage of this new regime by opting for a £155 million refurbishment contract against their original £600 million PFI plans. Under the new arrangements, only the £30 million Planned Care Centre will use the PFI option whilst the £15 million Children's Hospital will be a Design and Built contract and the refurbishment programme has been packaged into smaller contracts worth no more than £3 million to £5 million (Contract Journal, 2007b). Several other Trusts are also keen to use this new initiative.

In addition to increasing capacity and efficiency, these huge investments in the construction and refurbishment of UK healthcare facilities have further highlighted the importance of considering healthcare buildings as 'therapeutic environments'. These therapeutic values of healthcare designs have been classified as *physical*, *social* and *symbolic* (Gesler *et al.*, 2004). Gesler *et al.* (2004) also identified four significant emerging ideas regarding what constitutes good therapeutic healthcare designs as: *clinical efficiency*, *integrated within the community*, *accessible to consumers and the public*, and *encouraging patient and staff well-being*. The Achieving Excellence Design Evaluation Toolkit (AEDET) is being used to evaluate healthcare building designs under the PFI, ProCure21 and LIFT schemes, broadly in terms of build quality, functionality and impact. Gesler *et al.* (2004) highlighted the shortcomings of using AEDET and suggested a conceptual matrix for evaluating healthcare building designs in terms of the three therapeutic values identified above. Furthermore, it is pertinent to investigate innovative

design and construction methods that can facilitate the attainment of these therapeutic values of healthcare buildings in terms of improving medical outcomes, increasing patient safety, reducing patient stress, increasing patients' and carers' satisfaction with care, improving staff morale and retention, increasing overall effectiveness in delivering care and strengthening institutional financial performance.

#### **4.4.2 Procurement of PHC facilities in the UK**

The condition and functionality of primary care facilities were also reported to be unsuitable for the provision of modern integrated healthcare delivery, with facilities not able to meet patients' expectations and poor access to health care that had fallen below acceptable standards (DoH, 2000a). DoH (2000b) revealed that as at 2000 only 40% of PHC facilities were purpose-built; almost half were either adapted residential buildings or converted shops; less than 5% of General Practitioner (GP)'s premises were co-located with a pharmacy and around the same proportion were co-located with social services; and around 80% were below the recommended size. These limitations in facilities used to deliver healthcare severely hampered service development (DoH, 2001a). Grimsey and Graham (1997) reported that the fragmentation of responsibilities under the traditional healthcare delivery arrangements was responsible for non-achievement of co-ordinated planning, service delivery and investment.

Consequently, the NHS LIFT initiative was announced by the DoH in 2000 as a way of mobilising huge investments to improve the quality of primary care buildings, particularly in the deprived areas of the UK. The initiative aims to deliver a step change in the quality of the primary care estate, remedy some of the deficiencies in the existing arrangements and contribute to delivery of the investment targets identified within the *NHS Plan* (DoH, 2000a). According to NAO (2005a), the objectives of the initiative include helping in:

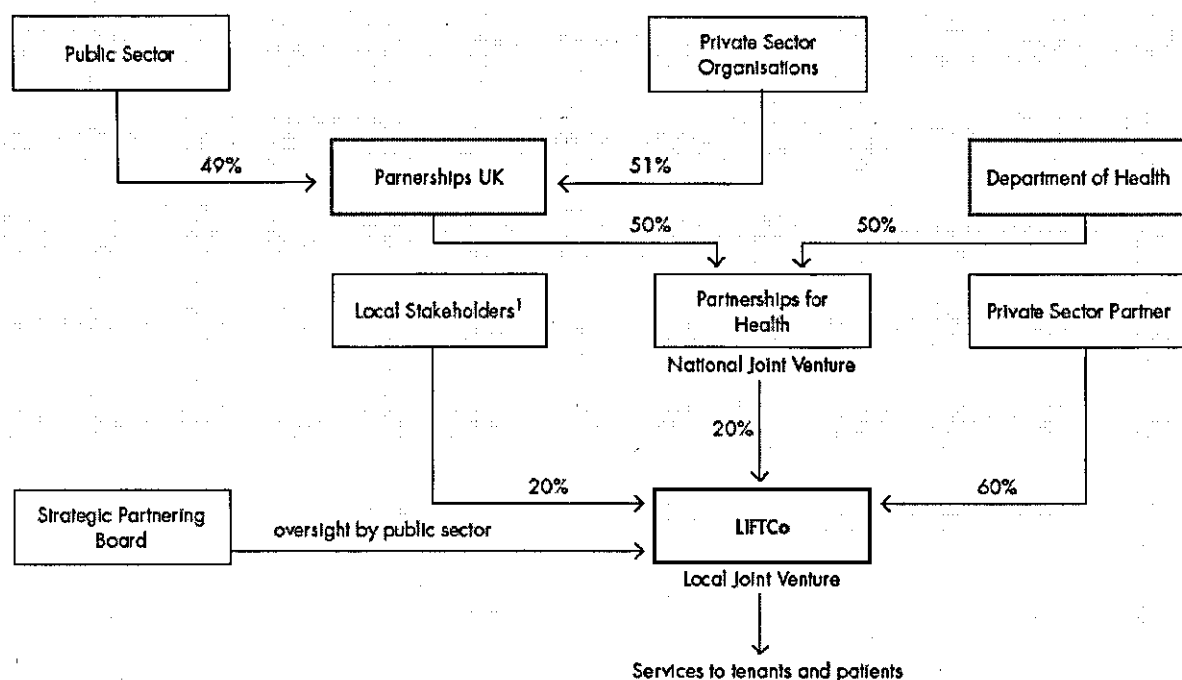
- bringing significant improvements to the GP premises;
- supporting co-location of healthcare professionals;
- forging links between primary and social care;
- indirectly resolving GP recruitment and retention problems;
- shifting services away from the secondary care level;
- assisting in achieving good chronic disease management; and

- enhancing “Patient Choice” by providing patients with more choice over how, when and where they receive treatment.

Like the Private Finance Initiative (PFI), LIFT is a way of accessing private money for public projects. But while the former is simply a contract to build and finance a building or group of buildings, LIFT involves a much deeper partnership.

#### 4.4.2.1 The structure of a LIFT scheme

Under the LIFT initiative, the DoH had established a national joint venture, *Partnerships for Health* (PfH), with Partnerships UK plc (PUK). PUK is itself a Public Private Partnership (PPP), with 49% ownership by HM Treasury and the Scottish Executive, and 51% by a range of private sector interests. For each locality, a *private sector partner* (PSP), a consortium of diverse specialties, is identified through a competitive procurement and then a local joint venture, *LIFT Company* (LIFTCo.), established between the local stakeholders (such as Primary Care Trusts – PCTs and the Local Authorities – LAs), PfH and the PSP. Figure 4.5 shows the structure of a typical LIFT and the recommended shareholding limits.



**Figure 4.5: Structure of LIFT**  
Source: NAO (2005a)

However, the 50% shareholding of PUK in Pfh was sold to the DoH for the total consideration of £25.8 million on 21 December 2006, thereby making the DoH the sole owner of the Pfh (HM Treasury, 2007b).

The *LIFTCos.* are set-up as PPPs in the form of limited liability companies under Strategic Partnering Agreements (SPAs) to deliver investment and services in local care facilities over 20 - 25 year periods. The public sector *Strategic Partnering Boards* (SPBs) formed between the core statutory bodies in the local health and social care community (i.e. PCTs and LAs) and representatives of other interests (such as medical and dental practitioners, and voluntary sector groups) are responsible for monitoring the performance of the *LIFTCos.* and for identifying their future workloads. Each *LIFTCo.* has the exclusive right to provide new primary and social facilities and/or services commissioned by the public sector participants within its locality so long as the SPB is satisfied that the proposals meet the approval criteria and the participant's key requirements; i.e. are affordable and demonstrate value for money (VfM).

The LIFT philosophy embodies an integrative way of working between organisations from public and private sectors and demands the harmonisation of their working practices to enable them deliver the LIFT objectives in a collaborative fashion (DoH, 2001b). However, organisations from the public-sector stakeholder groups (e.g. the health and social care professionals) have traditionally worked independently (Moullin, 2002), and the complexities involved in having to work collaboratively with other public sector organisations and private sector consortium exert tremendous pressure on the skills needed to support the resulting structure and processes. Although NAO (2005a) concluded that LIFT was an attractive way of securing improvements in primary and social care and that the schemes examined were effective and offered value for money, it observed that local management frameworks needed further strengthening. The SPA explicitly provides that LIFT schemes demonstrate the delivery of value for money (by Market Testing) both at commencement and at five yearly intervals, and this demonstration of value for money is used as a fundamental approval criterion within the procurement process. However, Holmes *et al.* (2006) found from a case study of two LIFT schemes that because the bidding processes typically involved unequal struggles between large consortia and inexperienced clients, the demonstration of value for money had been difficult and resulted in wasted opportunities in obtaining optimum designs and

prices. Also, the attainment of the contractual requirements for both the demand and supply sides to continuously improve performance under the LIFT scheme still remains elusive. Specifically, the NAO (2005a) report was critical about the inconsistencies in the evaluation and performance measurement arrangements, and emphasised the need for strengthening the accountability framework.

Accordingly, because of the increasing interest in and the implications of emerging concepts of 'patient-centred' service and 'continuous improvement', related literature are reviewed below in Section 4.4.3 and 4.4.4.

#### **4.4.3 'Patient-centred' service**

In the UK healthcare sector, the notion of a 'patient-centred' service has triggered increased recognition of the need to engage with a wide range of stakeholders in decision making processes across different contexts. These have resulted in a number of government policies and the impetus for greater efficiency in organisational management and development projects. One of the key reasons for this has been an intention to ensure that the services that are delivered are sensitive to the needs of the users in a more accountable manner (McCrae *et al.*, 2002). Some other drivers for this have been identified as: increase in activism and campaigning by users and advocacy groups (Dick and Cunningham 2000 cited in Ridley and Jones, 2002); the introduction of ideas of consumerism into the public services (*ibid*); and an increase in lay knowledge (McCrae *et al.*, 2002; Olzsewski and Jones, 1999; Barnes and Evans, 1998 cited in Ridley and Jones, 2002) accompanied by increased awareness of patients' rights and medical uncertainty (McCrae *et al.*, 2002). In addition, there has been an increasing tendency for providing care closer to home, particularly through primary care facilities and community hospitals in the hearts of communities.

Ridley and Jones (2002) highlighted two broad approaches to stakeholder involvement within the existing literature:

- the consumerist approach, which relates to the private sector's desire for competitiveness in the market; whereas

- the democratic approach, which refers to an approach that values the process of participation for the ethical issues of equity and empowerment of citizens (Ridley and Jones, 2002; Rowe and Shepherd, 2002).

It has been argued that in order to make healthcare services 'people-centred', the democratic approach is more appropriate (Ridley and Jones, 2002). Rowe and Shepherd (2002) emphasised that although a variety of engagement techniques have been used for healthcare planning, the purpose of this engagement has been advisory in nature - to increase legitimacy and learn the values of users, rather than to offer the community any chance of affecting decisions significantly. Milewa (2004) identified four key recent developments which reflect increased emphasis on greater patient and public involvement in the healthcare decision-making and governance:

- the establishment of Patient and Public Involvement Forums;
- the contracting-out of advocacy services for patients and carers to voluntary or not-for-profit organisations;
- the power given to elected local authorities to establish Overview and Scrutiny Committees for Health; and
- the plans for Foundation Trusts.

Ridley and Jones (2002) identified the following as the key issues that can determine good user and public involvement in health service provision:

- building engagement into the philosophy of the organisation instead of viewing it as an add-on activity;
- conducting engagement in a strategic approach instead of series of individual projects;
- capacity development of the community as well as the organisation;
- partnerships with other agencies such as local authorities;
- careful choice of methods of engagement to match the purpose and context;
- a commitment to long-term investment of resources; and
- evidence of some change as a result of the engagement of stakeholders; and
- regular feedback and evaluation.



#### 4.4.3.1 Stakeholder values

According to Preiser and Vischer (2005), buildings are constructed in order to facilitate specific activities within them. While the type of activities can vary widely, the buildings are required to enable their being undertaken efficiently, effectively and economically. Delivering value<sup>16</sup> implies the maximisation of the benefits delivered by a project by meeting or surpassing the needs of the various stakeholders whilst simultaneously minimising the use of resources. Dallas (2006) argued that one way of describing the critical factors required for the delivery of value through the useful life of a facility is through the use of value drivers, which he described "*as the various components of value, which together contribute to the overall benefits of the completed project to its stakeholders*", which Thompson *et al.* (2003) have argued to be typically associated with the stakeholders' values. Although the details of these drivers and their relative importance may vary from project to project and from participant to participant, the degree to which the built facility satisfies each of them is a measure of the success of the project.

A good understanding of the stakeholders' values has been argued to play a vital role towards successful project outcomes (Kamara *et al.*, 2000; Thompson *et al.*, 2003). Values are the deep-rooted beliefs about what is right or wrong, and what is important and unimportant (Martin and Henderson, 2004). In thinking about values, Martin and Henderson (2004) suggested that it is helpful to consider the interaction between societal, organisational, group/team and individual levels of values as for instance: the values of a society influence organisations; and an organisation's values can influence the values of teams and individuals within it. Because NHS is largely funded from general taxation, its essential values have been identified as equality, inclusion and justice (Milewa, 2004).

#### 4.4.3.2 Stakeholder engagement methods used in healthcare policy making

There are wide range of methods used in the healthcare sector for identifying the views of patients and the public: citizens' jury; questionnaires to assess patients' needs before a

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<sup>16</sup> Value has been described as the function of the relationship between the 'satisfaction of needs' (in terms of business benefits and requirements) and the resources needed to deliver them (NAO, 2004).

consultation with the clinician; shared decision making; focus groups with patients to include their views in clinical guidelines and surveys among patients to provide feedback to care providers or the public (Wensing and Elwyn, 2003). Kravitz (2001) highlighted various approaches used for eliciting and measuring patients' expectations, which differ in timing, form of administration and specificity. Surveys done before the visit or after the visit or both, self-administered questionnaires, personal interviews and telephone interviews have been used. Kravitz *et al.* (1997) carried out a preliminary evaluation of three common approaches: self-administered pre-visit questionnaire combined with a post-visit questionnaire; a semi-structured pre-visit personal interview combined with a post-visit questionnaire; and a post-visit questionnaire only. They concluded that more work is needed to clarify the role of various instruments for different purposes and for use among different patient groups. Because the use of different techniques for eliciting and measuring consumers' expectations in healthcare can lead to different conclusions (Kravitz *et al.*, 1997), it is, therefore, important to evaluate the existing approaches on the basis of the purpose and context. In support of this agenda, Wensing and Elwyn (2003) argued that there is an urgent need to evaluate the validity and effectiveness of different methods used for incorporating patients' views.

Attention has also been drawn to the importance of involving stakeholders in the design process of construction projects for identifying and understanding the values of the stakeholders in a project (Thompson *et al.*, 2003). The importance of stakeholders' satisfaction from healthcare buildings has been emphasised by Mason (2006:6), according to whom, "buildings for healthcare are buildings for people – patients, visitors and staff". In addition, recognition of the importance of addressing sustainability concerns within the built environment including the healthcare sector has also led to increased emphasis on stakeholder participation in the design and planning of buildings and spaces. For example, it has been argued that in order to achieve sustainability, there is a need to enhance the decision making structures in a way so as to enable wider citizen involvement, with an emphasis on the inclusion of those groups of the society into decision making who are generally not considered within established approaches (Irwin *et al.*, 1994).

Many literature sources have presented considerable evidence on the impacts of healthcare premises on patients, staff and visitors. These include (Diette *et al.*, 2003; Williams *et al.*, 2003; Hendrich *et al.*, 2004; Ulrich, 2004):

- specified improved clinical outcomes for patients;
- improved patient safety;
- reduced staff fatigue and increased time for patient care and observation; and
- greater cost and operational efficiencies to the wider healthcare system in general.

In addition, the National Audit Office (NAO) (2003) demonstrated that increasing space and removing blind corners and stairwells reduces the risk of violence and aggression against NHS staff by patients or other users of hospital facilities. Commercial organisations are also increasingly coming to recognise that well-designed offices and work environments are important factors in successful recruitment and retention of highly skilled staff in competitive recruitment markets, which are crucial issues in the UK health sector. The increasing tendency for providing care closer to home through primary care facilities and community hospitals in the hearts of communities and through leveraging modern technology for providing remote care (via telecare and telemedicine) also pose challenges that require further systematic research.

One of the tools commonly used for stakeholder engagement in design of healthcare buildings is *Enquiry by Design*. Enquiry by Design is a process where the key stakeholders, such as the local community and the statutory authorities, are involved with the design team in developing a vision for a site or a place that will be developed. An example where this tool was used effectively is the Cherry Knowle Hospital, Ryhope Village, in which 150 stakeholders contributed to the process over four days during November 2003. The processes involved public open house, technical design sessions and presentations. The design that emerged was significantly different from the original strategy of the local authority (NHS Estates, 2004). The process and the resulting design, it has been argued, have led to the healthcare facility better integrated with the broader community (ibid.).

Accordingly, just as medicine has increasingly moved towards “evidence-based practices” where clinical choices are informed by research, the design and construction of healthcare buildings needs to be guided by linking the physical environment of hospitals and clinics to positive outcomes established from rigorous research. Therefore, there is a need for a more systematic research tool for identifying the value-adding contributions that each of

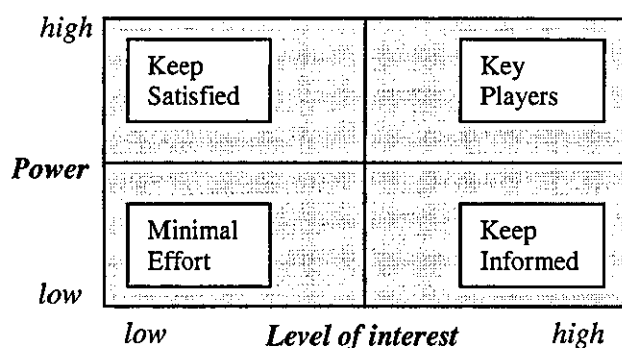
the stakeholders can make to the design and construction of user-centred healthcare buildings.

#### **4.4.3.3 Stakeholder analysis tools**

Stakeholder analysis has been used both at policy and project levels in healthcare and other sectors. In healthcare management, it has mostly been used as an organisational management tool rather than focussing on individual projects for identifying new stakeholders, assessing their relative importance and developing strategies for managing them (Brugha and Varvasovszky, 2000). In addition, Olander (2003) argued that stakeholder analysis is used to identify stakeholders, assess their claims on the project and each stakeholder's interest and power to influence project decisions, in order to form and choose appropriate strategies. Some helpful stakeholder analysis tools include: stakeholder maps for establishing stakeholder mission (Winch and Bonke, 2002); environmental scanning; stakeholder mapping; and the power/interest matrix for determining the strengths and weaknesses of project stakeholders (Mendelow, 1981; Johnson and Scholes, 1999; Winch and Bonke, 2002).

Mendelow (1981) presented a model of environmental scanning in the context of stakeholder participation, which included the dynamism of the environment and the power of the stakeholder relative to the organisation or project. According to Mendelow (1981), the basis on which stakeholders possess power relative to an organisation is liable to change depending on the impact which the stakeholders' environment has on the stakeholders' basis of power. The model comprises a grid where power and dynamism are relevant factors. Johnson and Scholes (1999) simplified and adapted Mendelow's model but changed the axes of dynamism to instead measure interest, and thus formulated the power/interest matrix (Figure 4.6) which analyses the following questions:

- How interested is each stakeholder group to impress its expectations on the project decisions?
- Do they mean to do so?
- Do they have the power to do so?



**Figure 4.6: Stakeholder mapping: the power/interest matrix**

*Source: Johnson and Scholes (1999)*

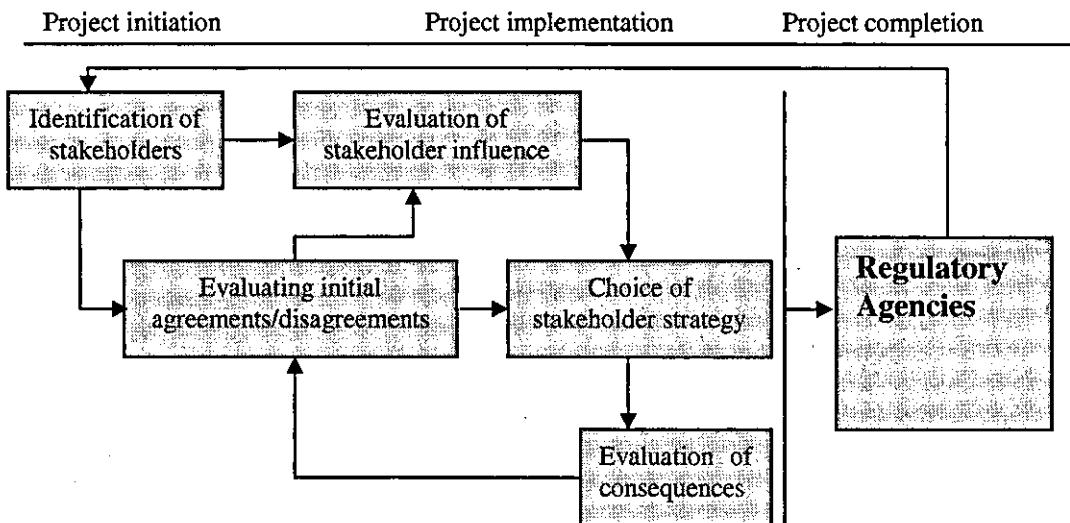
By grouping stakeholders in the power/interest matrix, it is possible to visualise how communication and relationships between the stakeholders can affect, and be affected by, the implementation of a project (Olander and Landin, 2005). To place stakeholders in the matrix, both their relative power over the project and their interest to improve project outcomes are usually judged on a scale of 0 to 10. The meanings of each of the four matrices of Figure 4.6 are summarised in Table 4.3. The categorisation of the stakeholders into each matrix will depend on the specific circumstances of each project.

**Table 4.3: Explanations of the power/interest matrices**

Matrix	Meaning
Key players	These are the most important stakeholders with extensive interests in the project and a high degree of power to influence project implementation and completion.
Keep informed	These are stakeholders with great interest in the project but with limited means to influence the project.
Keep-satisfied	These stakeholders are often passive, but can have a great impact on the project and can often be found in institutional investors and legislative bodies.
Minimal effort	Stakeholders who do not have a great interest nor have the power to make an impact.

In combination with the power/interest matrix, Winch and Bonke (2002) developed the stakeholder map, which also analyses the problems and the proposed solutions the different stakeholders have in the implementation of the project. The stakeholder map includes: stakeholders, divided into proponents and opponents, problems identified by the stakeholders and their suggested solutions to the problems. According to Olander and

Landin (2005), a tool for evaluating the stakeholder management process can be created if Winch and Bonke's stakeholder map is added to the actual outcome of project decisions and the consequences of the outcome. Figure 4.7 illustrates a model of stakeholder evaluation based on the stakeholder map and the power/interest matrix.



**Figure 4.7: Model for evaluating stakeholder influence on the project process**  
*Source: Olander (2003)*

However, because of the difficulty in assessing 'power' and level of 'interest' on a scale, Olander and Landin (2005) suggested that the assessments should rather be the impact that each stakeholder has on a project and the probability that a stakeholder will have an impact on project decisions respectively. Consequently, Olander and Landin (2005) changed the power/interest matrix (in Figure 2) to an impact/probability matrix, following Ward and Chapman's (2003) probability-impact analysis of risk assessment. Bourne and Walker (2005) further developed this concept into the vested interest-impact index (ViII), comprising vested interest levels (probability of impact) and influence impact levels (level of impact) parameters. The vested interest-impact index is then calculated as  $ViII = \sqrt{(v \cdot i / 25)}$ , where  $v$  (vested interest levels) and  $i$  (influence impact levels) are qualitatively assessed on a scale of 1 to 5, where 1 = very low, 2 = low, 3 = neutral, 4 = high and 5 = very high (Bourne and Walker, 2005). According to Olander (2007), evaluating the total impact of stakeholders in relation to a project requires more than identifying the impact level and probability of impact, but also requires the project managers assessing the stakeholder attributes and classes (Mitchell *et al.*, 1997), and their position towards the project (Cleland, 1999; Winch and Bonke, 2002) – i.e. are they opponents or proponents?

McElroy and Mills (2000) cited in Olander (2007) also proposed five different levels of stakeholder position towards a project: active opposition; passive opposition; not committed; passive support; and active support.

For construction-related projects, it is typically the responsibility of the project management team to identify the stakeholders, determine what their needs and expectations are, and then manage and influence those expectations to ensure a successful project (PMI, 2000). This entails establishing interfaces between the stakeholders, obtaining feedback as appropriate throughout the project, resolving conflicts between the stakeholder needs, and paying adequate attention to changing stakeholder needs, including new stakeholders, throughout the project (Gardiner, 2005).

#### ***4.4.3.4 Alignment of stakeholders' values***

Alignment has been recognised as a prerequisite for any truly coordinated action, both within an organisation and between collaborating organisations that are working together in order to realise common project goals (Griffith and Gibson, 2001). Alignment differs from teamwork because while it is possible for a team to be working well together but pursuing the different objectives, alignment involves groups pursuing the same objectives. Also, alignment should not be confused with agreement on everything, but it should be viewed as the acceptance by all parties of the validity of the prescribed project outcomes and of the means chosen to achieve them. It is therefore recommended that mechanisms that will enable stakeholders to reach consensus on key issues should be developed. This should result in clearly defined targets that harmonises the diverse values of different project stakeholders into a uniform set of measurable project objectives, and articulated set of strategies for attaining the objectives. In addition, alignment should not be considered as something that once created, will continue to exist. Steps need to be taken on a continuing basis to ensure that alignment is maintained, reinforced and adapted when necessary.

Consequently, Ibrahim *et al.* (2006a) argued that under a partnership arrangement, alignment should consider the harmonisation of the operational procedures, cultures, tools and documentations of the different project participants within acceptable tolerances in

order to optimise resources and achieve maximum performance. In addition, Bayliss *et al.* (2004) identified the mechanisms for effective alignment to include joint planning; effective communication strategy using regular newsletters; attitude surveys; facilitated workshops at different levels; partnership review meetings; and social events.

#### 4.4.3.5 Project governance

Davenport (1993) reported that the front-end definition of information flows, approval and review points can aid clear identification and effective allocation of key roles and resources, as well as contribute to the elimination of the problems of fragmentation and poor coordination and communication between project team members. Project governance relates to the way the different processes or transactions that take place over the lifecycle of a project are coordinated, steered, and controlled structurally and procedurally in order to meet the project objectives (Pietroforte, 1997; Turnbull, 1997). Corporate governance has been defined by the Audit Commission (AC) (2003) as “*the framework of accountability to users, stakeholders and the wider community, within which organisations take decisions, and lead and control their functions, to achieve their objectives*”. Such an inclusive framework requires a combination of both ‘hard’ factors, such as robust systems and processes, and the ‘softer’ characteristics of effective leadership and high standards of behaviour while incorporating strong internal characteristics and the ability to scan and work effectively in the external environment. According to AC (2003), organisations with good corporate governance have the capacity to maintain high-quality services and to deliver improvements. Although the NHS has committed itself to a system of clinical governance<sup>17</sup> aimed at continuous improvement (DoH, 1997), it has often ignored the impact of the environment where care is provided on the clinical outcomes. Many literature sources have presented considerable evidence on the impacts of healthcare premises on patients, staff and visitors.

The Cadbury Committee described the key principles of good governance as *integrity*, *transparency* and *accountability* (Cadbury, 1992). Peak *et al.* (2005) identified the three

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<sup>17</sup> Clinical governance has been defined as the “framework through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish” (DoH, 1998).



essential dimensions of clinical governance to include *accountability, assurance* and *innovation*, which are also relevant to the governance of the built facilities where the medical care services are undertaken. Hale (2003) defined accountability as "*the responsibility for the delivery of a project and recommended the representation of the whole-life stages of the project on a process map for effective results*". The structure and network of this responsibility will differ from project to project depending on the procurement route adopted and hence the parties involved. For example, while responsibility for delivery under a traditional procurement route would be fragmented between the designer, consultants and contractors, project delivery responsibility would be centred on the contractor under a design-build route. However, in public-private partnerships, the responsibility for project delivery is often shared between the participating organisations from both the private and public sectors, with the boundaries becoming blurred, especially where the public sector client organisation gets embedded within the ownership structure of the pseudo-organisation formed to deliver the project, as in *LIFTCos*.

Assurance relates to the means of assuring stakeholders about how the project objectives will be met, and these can often be given through the use of independent internal and external assurance processes for the achievement of satisfactory outcomes or results (Sarshar *et al.*, 2000). The front-end involvement of the production (contractors) and operation (facilities managers) teams in addition to improved design-construction-operation interfaces have been demonstrated to be beneficial to effective management of project process (Cooper *et al.*, 2005). This is because these teams can normally contribute specific knowledge such as life cycle performance of materials and components, programming of site and maintenance operations, etc. to the design process. This would, however, require pushing the current boundaries of contractual requirements, which establishes roles and responsibilities, to include working relationships and interactions between the participants within the spirit of partnering. This way, when problems arise, the relevant organisations are able to work together to determine appropriate concessions and compromises in reaching a solution.

At a project level, the development of governance approaches and understandings have been parallel and overlapping within the public and private sectors (Koch and Buser, 2006). While in public sector approaches, project governance is viewed as a new form of

administration which is used to underline indirect forms of control, self-organisation and other soft and network elements of governance instruments, the private sector focuses on corporate governance issues relating to transparency and accountability (OECD, 1999). The delineation of the accountability boundaries for each of the participants offers a considerable challenge. Bruce and Cooper (2000) argued that it is vital to identify the roles and responsibilities required to effectively execute the various associated tasks. The effective aggregation of the various skill sets and competencies of the stakeholders (supplemented by external consultants, when necessary) right at the outset of each project can, therefore, maximise the potential level of project accountability and assurance.

Peak *et al.* (2005) highlighted that a fundamental principle of governance that is often overshadowed by over-emphasis on accountability is the ability to implement change and make continuous improvement. Peak *et al.* (2005) also noted that it is important that accountability processes and systems are not so constraining as to stifle the development of innovative new ways of working and continuous improvement. This makes the establishment of a balance between innovation and accountability an important regulator of true governance.

#### **4.4.4 Continuous improvement concept**

During the past two decades, there has been growing interest in the concept of incremental innovation as a route towards improvement of various aspects of manufacturing (Bessant *et al.*, 1994; Hamel, 2000; Steele and Murray, 2004) and more recently construction (Slaughter, 1998; 2000; Powell, 1999; Davey *et al.*, 2004; Maqsood *et al.*, 2007). This has resulted from increasing demand for accountability and performance expectations on organisations to continuously improve their efficiency and effectiveness. Consequently, the phrase “continuous improvement” (CI) has become increasingly popular and has been associated with a variety of organisational development initiatives.

The CI philosophy adopts the stance that creating a development process is never completed (Oakland, 1995) and that improvements only occur if attempts are made to learn from new information generated by the process itself rather than the product

(Cooper *et al.*, 2005). The process is commonly associated with the *plan-do-check-act* (PDCA) cycle, with each phase of the cycle playing very important role in sustaining improvement in an ongoing fashion. Suzaki (1987:12) defined CI as “*incremental improvement of products, processes, or services over time, with the goal of reducing waste to improve workplace functionality, customer service, or product performance*”. Bessant *et al.* (1994:18) defined CI as “*a company-wide process of focussed and continuous incremental innovation sustained over a long period of time*”. It is clear from these definitions that CI is multi-faceted and extends across several organisational development initiatives.

Available literature on CI shows that it has no theoretical basis (Savolainen, 1998) and that it tends to be used as a generic term that has acquired many of its attributes from other initiatives including total quality management (TQM), just-in-time (JIT) production system, lean techniques, six sigma, employee involvement programmes, etc. However, there is a growing recognition of its application in other areas such as cost reduction, value enhancement, flexibility, waste minimisation, inter-organisational relations and for supporting process improvement (Imai, 1986; Kilburn, 1988; Robinson, 1991; Gallagher *et al.*, 1997; Caffyn, 1999; Oakland, 1999). Clearly, these goals are applicable to many facets of the construction process and have contributed to the growing interests in managerial concepts such as partnering, lean construction, sustainable construction, value management and TQM in the construction sector. Whilst valuable research has been conducted on CI (Bessant *et al.*, 1994; Bessant and Caffyn, 1997), more perspectives are required to approach organisational CI implementation and to shed further light on the comprehensiveness of the concept (Gilmore, 1999) and on the dynamisms of its implementation processes (Savolainen, 1999).

Hill (1996) argued that CI and learning are inextricably linked such that learning is the most compelling reason for undertaking any CI within an organisation. Whetherill *et al.* (2002) also asserted that an organisation's only sustainable advantage lies in its capability to learn faster than its competitors and the rate of change imposed by the external environment, and that there is a need to ‘integrate learning within day-to-day work processes’. In a study of strategic change in four UK industries, Pettigrew and Whipp (1991) concluded that more successful firms had developed effective learning processes at all levels of their organisation. To remain successful though, Barlow and Jashapara (1998)

argued that learning needs to be dynamic and evolving along with the competitive forces at play. This will necessitate a shift from an essentially static approach to learning based on information acquisition towards a greater emphasis on information interpretation, distribution and adaptation.

According to Barlow and Jashapara (1998), the nature of organisational learning in a particular industry is dependent to a large extent on factors such as the dominant competitive environment and the size and underlying cultural assumptions and values of organisations in the industry. The highly fragmented nature of the market and structure of the construction industry as well as over-emphasis on contractor selection based on lowest price often result in organisations being locked up together with overly restricted forms of contract, resulting in high levels of claims, counter-claims, litigation and dissatisfied clients (Latham, 1994; Egan, 1998). The dichotomy between and amongst the demand and supply sides of construction projects has consequently made 'learning' about the market's changing needs difficult (Thomas and Thomas, 2005). The unique and transient nature of many construction projects also deters any attempt to standardise the process-steps, consequently resulting in lost opportunities in feeding back the experiences gained on projects for the benefits of future projects (Latham, 1994; Egan, 1998). These historical and cultural factors associated with the construction industry coupled with the deep fragmentations in the healthcare sectors along professional divides (Grimsey and Graham, 1997; Crisp and Onwukwu, 2000) both militate against a more dynamic approach to learning in the procurement of healthcare facilities in general. Thus, improving the performance and competitiveness of construction projects in the healthcare sector would require both cultural and behavioural shifts in the mindset of practitioners and the various professional groups. These shifts will require the development of new skills and techniques and the 'unlearning' of traditional practices or as Kumaraswamy (1998) noted, the structural arrangements may need to be 'reconstructed' so that constant innovation and CI can be encouraged to become the norm. Accordingly, Tenant *et al.* (2002) recommended the development of an organisational culture and management style to support the CI of daily working practices, management of change against the achievement of appropriate quality targets, and training of teams in problem solving, use of quality tools and techniques.

It is widely agreed that one of the prerequisites for CI success is a clear strategic framework, which is clearly communicated to all employees together with the long-term and short-term targets and milestones related to that (Imai, 1986; Bessant *et al.*, 1994). In taking a long-term strategic approach, the success and sustainability of the emerging CI initiatives will therefore depend on the exploration of *driving* and *enabling* factors. While there are some general prescriptions for creating a suitable environment for establishing an innovative culture, there is little systematic research on the specific requirements for CI, or how these might vary according to different organisations (Bessant *et al.*, 1994; Kerrin, 1999).

For project-based organisations like construction, Barlow and Jashapara (1998) had argued that long-term relationships can provide considerable opportunity for learning from project-to-project, thereby facilitating CI of products and services. Schindler and Eppler (2003) noted that earlier publications on harvesting project experiences had focused primarily on explicit<sup>18</sup> knowledge that are relatively easy to document (such as costs, time lines or other quantitative data), mostly comprising numerical data that answers “what”, “where” and “how many” questions. In addition, relevant project documentation like feasibility studies, technical reports and user manuals are often superficial and focus merely on capturing standardised business figures or the description of the project’s results in order to meet minimal documentation standards (Schindler and Eppler, 2003). However, because the numerical data often do not provide answers to other key pressing project questions and problems such as the reasons for failure or how particularly efficient solutions have been built or how certain special issues have been addressed, the consideration of tacit<sup>19</sup> aspects to address questions such as “know-how” (procedural or heuristic knowledge) and especially “know-why” (such as experiences and insights into cause–effect relationships) are now being advocated (Williams *et al.*, 2001).

However, despite the successes recorded in the manufacturing and automotive industries through the application of CI methodologies, the construction industry is still lagging

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<sup>18</sup> Explicit knowledge is knowledge that has been or can be articulated, codified, and stored in certain media, and can be readily transmitted to others. The most common forms of explicit knowledge are manuals, documents and procedures, audio-visual, works of art and product design (Wikipedia, 2007a).

<sup>19</sup> Tacit knowledge is knowledge that people carry in their minds and is, therefore, difficult to access and effective transfer generally requires extensive personal contact and trust. Tacit knowledge is considered very valuable because it provides context for people, places, ideas, and experiences (Wikipedia, 2007b).

behind in adopting these technologies and management techniques for performance improvement (Ferng and Price, 2005).

#### **4.4.4.1 Importance of learning and reuse of project knowledge in construction**

Kamara *et al.* (2003) proposed a 'live' methodology for capturing project knowledge, requiring members of the supply chain to capture learning in a collaborative effort in tandem with project implementation, irrespective of the contract type used to procure the project from the basis of both ongoing and post-project evaluation. The imperative of learning and capturing of project knowledge is supported by the recent survey result of organisations involved in PFI projects where the 'live' capture of knowledge was noted as crucial by 76% and 70% of construction and client organisations respectively (Robinson *et al.*, 2004). According to Kamara *et al.* (2003) and Tan *et al.* (2005b), the benefits of capturing and reusing project knowledge include:

- facilitate the reuse of collective learning on a project by individual firms and teams involved in its delivery, especially in collaborative environments where each of the members in the project team knows only bits of the whole story about the project (Kerth, 2000);
- provide knowledge that can be utilised at the operation and maintenance stages of the assets' lifecycles;
- enable project teams to better manage the subsequent phases of a project and to plan future projects more efficiently and collaborate better with other organisations through the capture and transfer of learning from a previous phase or projects; and
- prevent knowledge loss due to time lapse in capturing the knowledge as supported by Ebbinghaus's (1885) and Linton's (1975) findings which revealed that the percentage of human memory retained on a set of data depletes over time and that the probability of forgetting an event (and knowledge) increases as time elapses.

However, despite the growing awareness, there are limitations in the current practices for capturing and re-using project knowledge. In particular, there are problems resulting from time lapse, high staff turnover and reassignment of people.

#### 4.4.4.2 *Types of reusable construction project knowledge*

From a case study of six organisations in the UK, Tan *et al.* (2007) identified the types, nature and characteristics of project knowledge that can be reused, and are grouped into the following categories.

- *Process Knowledge* – This is the knowledge pertaining to the execution of various stages of a construction project. The types of reusable project knowledge belonging to this category include briefing, design, tendering and estimating, planning, construction methods and techniques, and operation and maintenance knowledge.
- *Knowledge of Clients* – This covers the knowledge about clients' specific requirements, their internal procedures and business.
- *Costing Knowledge* – This knowledge is about the costs of alternative forms of construction and the whole life cost of an asset.
- *Knowledge of Legal and Statutory Requirements* – Regulatory requirements change over time. This knowledge covers the requirements and responsibilities imposed by regulations and the best practices to address these requirements.
- *Knowledge of Reusable Details* – Reusable details comprise standard design details, specifications and method statements. These details may be reused with adaptations. They help to avoid recreating similar details from scratch and also lead to time and cost savings.
- *Knowledge of Best Practices and Lessons Learned* – These are the proven ways of working that contribute to the success of projects, and the mistakes made that must be avoided in future projects.
- *Knowledge of Performance of Suppliers* – The suppliers referred to are consultants, contractors, subcontractors, material suppliers and others who have contributed services or goods to a project. The capture of this knowledge facilitates better selection of suppliers for future projects.
- *Knowledge of Who Knows What* – This is the knowledge on the skills, experience and expertise of each of the members of staff. It helps to locate the right people with the right knowledge for the sharing of knowledge, particularly the tacit knowledge which is difficult to codify.

- *Other Types of Knowledge* – This knowledge category includes knowledge about competitors, risk management, key performance indicators, and other specific types of key knowledge.

#### **4.4.4.3 Learning mechanisms/tools used in construction**

According to Kululanga *et al.* (1999), a learning mechanism is “*a tool that, in many cases, is applied deliberately to achieve a desired outcome*”. To address improvements, companies use learning mechanisms that help acquire knowledge for generating new and effective ways of working. According to Barnett (1994), organisations employ learning mechanisms to acquire knowledge for sustaining continuous improvement. Thus, within organisations, learning as a corporate activity is manifested in the form of deliberately utilising various learning mechanisms for appropriating knowledge from their internal and external environments (Nonaka, 1991).

Schindler and Eppler (2003) classified the methods used for fostering learning from project experiences into two groups:

- *process-based* methods of gathering lessons learned from concluded projects, stressing the relevant steps and their sequence in the course of a project’s time line, and thus focus is on a procedural approach to capture key learning from a project; and
- *documentation-based* methods to learn from project experiences by focusing on aspects of the content-wise representation of the experiences and the storage of contents within the organisation, and thus serve as appropriate representation formats or structures for project insights.

Al-Ghassani (2003) broadly categorised the approaches used for capturing and sharing knowledge as either Knowledge Management (KM) techniques (non-IT tools) or KM technologies (IT tools). Tan *et al.* (2005a) argued that no single KM technique or technology is capable of meeting all of the knowledge capture and reuse requirements on a typical construction project. They, therefore, recommended a rather pragmatic through the use of a combination of KM techniques and KM technologies.



Based on the literature review, a pilot study, and interviews with construction contractors, Kululanga *et al.* (1999) outlined the main learning mechanisms based on:

- *collaborative arrangements* such as corporate mentoring, partnering/alliancing, joint-venturing, etc. where enterprises can remain as distinct firms but learn from others or each other (Badaracco, 1991), provide a forum for knowledge acquisition (Hamel, 2000) and through joint research schemes and as a result of teamworking (Luffman *et al.*, 1996; Mendelsohn, 1998);
- *non-collaborative arrangements* involving the combination of enterprises as in mergers and acquisitions between firms operating in the same industry or different industries;
- *networks* such as networks based on international institutions (e.g. Construction Industry Institute and European Construction Institute), research and development based networks (e.g., British Research Establishment), technology based networks (e.g. Construction Information Technology), theme focused networks based on a topic that professionals want to address for the industry, learning networks (e.g. Construction Productivity Learning Network), professionally based networks (e.g. Institute of Civil Engineers), inter-company networks based on the value chain, socially based networks and employee based networks;
- *in-house research schemes* such as team learning, failure/success reviews, benchmarking, shows and exhibitions; and
- through *individual employees* as they acquire new competencies and understand new processes and functions that result in effectiveness and efficiency improvement at the operational level (Maloney and Federle, 1995) through staff training, internal and external seminars, attracting staff from other organisations, inviting experienced practitioners to tutor the organisation, contacting staff from companies with innovative methods, individual learning initiatives and employee learning contracts.

Tan *et al.* (2007) identified the key requirements required of captured knowledge to be reusable and stressed the inclusion of details such as:

- background information on the project such as project title, project location, project sector, type of project, type of contract, start and completion dates, duration, companies involved, and date on which the knowledge is captured;
- an abstract that provides a short description of the knowledge captured;
- detailed explanation of the knowledge so as to help others to understand and hence reuse the knowledge, and use of appropriate video clips, diagrams and photographs;
- conditions for reuse that clearly spells out the condition(s) for reusing a particular knowledge entry;
- reference to other relevant knowledge captured in the system, project documents, publications (e.g. books and reports), websites and people, where further details may be obtained. Links to information and contact details of the authors of knowledge entries (e.g. email address, phone and fax numbers, and expertise) should be provided. This helps to connect the readers and the authors together for the sharing of knowledge, in particular the tacit knowledge; and
- a knowledge map and an index to give users an overview of the knowledge available.

Table 4.4 shows other KM techniques and technologies commonly used in construction organisations.

**Table 4.4: Common KM tools used in construction organisations**

	<b>KM Techniques</b>	<b>Meaning</b>
1	Post project reviews (also called Post project appraisals, After action reviews, Project post mortem, Post implementation evaluation, Project audit, Project close-out, Post completion review)	These are debriefing sessions used to highlight lesson learned during the course of a project and to capture knowledge about causes of failures, how they were addressed, and the best practices identified in a project (Ruikar <i>et al.</i> , 2005)
2	Communities of practice (also called knowledge teams)	These are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis (Wenger <i>et al.</i> , 2002)
3	Learning history	This is a process for capturing usable knowledge from an extended experience of a team and transferring that knowledge to another team that may be distant in terms of context (Dixon, 2000), with the written story consisting of the main events of a project arranged in a chronological order (Roth and Kleiner, 1998).
4	Documentation of knowledge	This involves the documentation of company and may include

		production of a handbook that documents the standard design procedures, key design issues, forms to be filled or web links to relevant information and accessible through the intranet or the creation of feedback notes to capture the company's best practices and lessons learned (Tan <i>et al.</i> , 2005a).
5	Research and development team	This involves a team conducting research aimed at creating new knowledge, and the results shared across the company (Tan <i>et al.</i> , 2005a).
6	Trainings	These are programmes organised for employees changing job description or promoted to enhance their skills and knowledge, and can be conventional (typically instructor-led) or aided by ICT (commonly called online or net-based training) (Harman and Brelade, 2000) typically in the form of Continuous Professional Development courses.
7	Recruitment	This is a process of finding people to join a company and bringing new knowledge into an organisation (Ruikar <i>et al.</i> , 2005)
8	Succession planning and management	This is concerned with the identification of the gaps which are likely to occur in an organisation due to anticipated future changes of known factors such as retirement and reassignment (Huang, 2001) to ensure continuity in management practices.
9	Mentoring	This is a practice where new personnel or junior staff are assisted in their work by attaching them to an experienced colleague for a certain amount of time (Al-Ghassani, 2002); may be formal/informal (Chao <i>et al.</i> , 1992) and internal/external (Ragins, 1997).
10	External sources of knowledge	This entails obtaining knowledge from sources outside the organisation either through attendance at external workshops, seminars or best practice networks.
11	Reassignment of people	This method is based on the assumption that the knowledge acquired from one project can be transferred by reassigning the people involved to another project (Kamara <i>et al.</i> , 2003)
12	Face-to-face interaction	This is oldest, most fundamental yet powerful form of knowledge capture and sharing practice in organisations, relying on people meeting 'face-to-face' (Ruikar <i>et al.</i> , 2005)
<b>KM Technologies</b>		
13	RECALL	This approach uses a database front end to collect lessons learned by submitting directly using an Internet browser thereby facilitating the automation of the lesson learned capture and retrieval (Sary <i>et al.</i> , 1995)
14	Knowledge bases	These are repositories that store knowledge about a topic in a concise and organised manner (Ruikar <i>et al.</i> , 2005) such as lessons learned and best practices. The details captured may include where the idea originated, a brief description of the practice, the savings it achieved, and the name and phone number of a contact from whom more information can be obtained (Dixon, 2000).
15	Intranets	These are company-wide information distribution systems that use internet tools and technology (Tyndale, 2002) in addition to other information retrieval software to deliver information and knowledge to a closed group of users over an organisation's network (ITCBP, 2003).
16	Project extranet	This is a network linking the various parties to a construction project for the exchange and storage of project information in digital form (Hamilton, 2005), with access only extended to a privileged user group from other parties or organisations (Watson, 1999).
17	Groupware	These are ICTs that support collaboration, communication, coordination of activities and knowledge sharing of geographically dispersed groups of people (Robertson <i>et al.</i> , 2001) and include the ability to send and receive email, conferencing, shared scheduling of appointments, workflow management, and multimedia document

		management (Rezgui, 2001), most up-to-date regulatory requirements, standard design procedures (Tan <i>et al.</i> , 2005a). Examples include Lotus Notes™ and IBM's Quickplace™
18	Case-based reasoning	This is a problem-solving approach that relies on past similar cases to find solutions to problems (Kolodner, 1993) with the internal structure usually divided into two parts; the case retriever and the case reasoner (Shiu and Pal, 2004).
19	Text mining	Also known as text data mining or knowledge discovery from textual databases, refers to the process of extracting interesting and non-trivial patterns or knowledge from text documents (Tan, 1999); the difference from text mining and data mining being that in the former the patterns are extracted from natural language text rather than from datasets (Hearst, 2003).
20	Custom-designed software	These are company specific software used for capture and reuse of explicit knowledge such as cost information, subcontractor performance and improvement suggestions from staff (Tan <i>et al.</i> , 2005a)
21	Expert directory	This refers to web-based Personal Profile, Divisionary Directory and staff appraisal reports that captures knowledge on 'who knows what', covering details such as the skills, experience, expertise, contact details and job functions of company staff (Tan <i>et al.</i> , 2005a) thereby facilitating the connection of people with the right knowledge to the people who need the knowledge, particularly the more tacit knowledge.
22	Audio diary	This involves oral recording of events, maintained by someone over time, which can then be collected and analysed, thereby providing opportunity to record experiences, perceptions and feelings about daily operations relatively soon after they had occurred (Boyd <i>et al.</i> , 2004).
23	Forums	These are web-based platforms provided by groupware that facilitate 'live' sharing of project knowledge (Tan <i>et al.</i> , 2005a).
24	Micro Articles	This is a way of securing experiences after completion of a project through short articles written in informal style using illustrations and appropriate contextualisations to support the individual learning processes and stored in databases and shared through company's intranet (Willke, 1998)

#### 4.4.4.4 Learning situations

Learning situations are a range of circumstances emerging during the course of a project where new learning can be captured, and these can be either some critical events or the normal day-to-day operations (Kamara *et al.*, 2003). Literature suggests that there are two broad categories of learning situations; formal and *ad hoc*.

*Formal* learning situations involve routine events such as site meetings, project reviews conducted at the end of each of the project stages or at predetermined intervals, and post project reviews (Tan *et al.*, 2007). Formal learning situations can be identified through the RIBA Plan of Work (RIBA, 1998) or the Process Protocol (Kagioglou *et al.*, 1998).

*Ad hoc* learning situations are the non-routine special learning situations such as problems and unforeseen circumstances encountered which have a bearing on the performance of the project (Tan *et al.*, 2007), which may lead to the capture of lessons learnt and best practices.

Because a great proportion of new learning from construction projects are believed to be created in the learning situations (Tan *et al.*, 2007), the identification of various learning situations is therefore crucial for the capture of reusable project knowledge in construction.

## **4.5 Chapter summary**

This chapter has presented an overview of 'primary health care' concept and then briefly discussed the healthcare systems and recent organisational developments within the Nigerian and UK healthcare sectors. The chapter also reviewed the contemporary issues in the procurement of PHC facilities in Nigeria and the UK.

Various definitions of PHC that reflect different ambitions about the possibility and desirability of changing the focus of health care were highlighted. The spectrum of definitions ranges from consideration of PHC as a level of care, in terms of the specific services provided, to the services provided by specific professional groups. Importantly, the review established the PHC philosophy's emphasis in moving care out of large institutions into community-based settings, thereby bringing care closer to the people and making it more responsive to their needs.

The philosophy of Nigeria's national health system, based in equity and social justice and PHC principles was highlighted. The shortcomings of the operative constitution in clearly delineating the specific roles and responsibilities of the three tiers of government in addition to unbalanced distribution of national wealth were identified as fundamental problems hampering the effectiveness of PHC delivery system in Nigeria. The shortcomings of the past and current strategies were outlined. The roles of ward health system (WHS) scheme established in 2001 and the seven key areas of the health sector reform programme aimed at strengthening the entire healthcare system and particularly

facilitate the concept of community co-ownership and co-management of completed PHC facilities.

The UK healthcare system based on the principles of social contract between government and the people on the explicit values of universality and equity was discussed. The ongoing structural and directional reforms as well as the renewed vigour in capital investments aimed at improving the quality of healthcare facilities, particularly at PHC level, was also discussed. In particular, the attainment of 'patient-centred' service and continuous improvement in the PHC sector were explored in terms of greater stakeholder engagement and development of learning culture aimed at improving performance.

In general, the review highlighted the need to investigate both the value-adding activities that host communities can contribute to promote effective co-ownership or co-management of PHC facilities in Nigeria and good practices from the UK LIFT initiative that can promote sustained improvements in the procurement of PHC facilities in Nigeria.

## **CHAPTER FIVE**

### **STRATEGIC EVALUATION OF WHS PROCUREMENT STRATEGY IN NIGERIA**

#### **5.1 Chapter introduction**

This chapter presents the results of the evaluation of the planning and implementation of Ward Health System (WHS) scheme in Nigeria. The evaluation was conducted through semi-structured interviews vis-à-vis the on-going procurement and health sector reforms in Nigeria, particularly the “New Policy Guidelines for Procurement and Award of Contracts in Government Ministries/ Parastatals” issued via Circular No. F. 15775 of 27<sup>th</sup> June 2000. The information obtained during the interview sessions were analysed and evaluated following the principles of constant comparative analysis.

#### **5.2 Characteristics of the interviewees**

The characteristics of the interviewees in terms of their background profession, organisation and rank are shown in Table 5.1. Of the twelve interviewees, four were from the public sector, six were from private organisations whereas the remaining two were from universities. The interviewees had a range of different backgrounds: Architectural (2), Quantity Surveying (3), Civil Engineering (2), Building construction (1), Business Administration (1), Human Medicine (1), Community Medicine (1) and Public Health (1). This diversity provided the opportunity for wide range of views. Ten of the interviewees were directly affiliated with the WHS whereas the two from academia had no direct involvement in any of the schemes but have extensive research experience in public

health issues in Nigeria, and one is the Founder/Chief Executive of a healthcare non-governmental organisation (NGO). The blend of interviewees provided a holistic view as it covers at least five principal stakeholder groups: public sector, consultants, contractors, academics and civil society.

**Table 5.1: Interviewee details**

S/No	Rank	Background profession	Organisation
1	Project Director	Architect	NPHCDA
2	Senior Quantity Surveyor	Quantity Surveyor	NPHCDA
3	Deputy Director of Primary Care	Human Medicine	FMOH
4	Assistant Director (Planning and Research)	Business Administration	FMOH
5	Managing Director	Civil Engineering	Contractor A
6	General Manager	Civil Engineering	Contractor B
7	Assistant General Manager (Operations)	Building	Contractor C
8	Director (Contracts)	Quantity Surveyor	Contractor D
9	Managing Partner	Architect	Consultant A
10	Associate Partner	Quantity Surveyor	Consultant B
11	Professor	Community Medicine	University/NGO
12	Senior Lecturer	Public Health	University

The interviews were all conducted as individual sessions and each lasted an average of 90 minutes. Notes were taken on a proforma (see Appendix B1) designed to capture relevant information from the interviews, and were used to steer the interview process.

### 5.3 Interview results

In analysing the interviews using the constant comparative analysis principles, the opinions of the participants have been homogenised but where necessary, the opinion of a specific interviewee or group of interviewees are highlighted. In complying with the confidentiality requirements, the researcher has, as much as possible, tried to keep the identities of the interviewees anonymous.

It was established from the investigations that the current implementation of the WHS is ineffective and unsustainable but that the concept offers a viable platform for achieving



the primary objectives of PHC. The constraints observed in the planning and implementation of the scheme includes structural (in terms of weakened referral system) and legislative problems as well as lack of institutional capacities. It was observed that the involvement of diverse stakeholders was *ad-hoc*, grossly inadequate and unsystematic. Though emphasis is currently on PHC services, the scheme can facilitate the provision of integrated services from the same facility as it has the potential to accommodate social and other community services.

### **5.3.1 Planning of the WHS procurement**

Under this section, the issues investigated include the organisation of the healthcare system, community involvement and project design.

#### **5.3.1.1 Healthcare system**

Although inter-sectoral collaboration has been identified as one of the key pillars of PHC, the interviews revealed that neither the FMOH nor the NPHCDA has established any effective working relationships with other relevant Federal Ministries such as: Agriculture; Education; Science and Technology; Water Resources; Housing; Works; Transport; and Environment. As with the Federal level, the situation at the SMOHs and LGHDs were noted to be the same. It was further established that there is no sense of cohesion, consultation and cooperation between the LGHDs, SMOHs and the FMOH because of the federal system of governance. This has had severe effect on the referral system, especially between PHC and other levels of healthcare. The public sector interviewees noted that the SGs and LGAs perceive the National Health Council which meets once a year for a week as a waste of time and a "talk-shop" where it is alleged that the FMOH tries to get them to merely rubber-stamp decisions already taken.

The investigations also established that there is currently no clear policy that enables the FMOH to monitor progress towards the goals it sets and thereby making them adequately accountable for the health of the nation. In addition, the interviewees also noted that the information system in place is ineffective and fragmented, and that information from the private sector is not being captured, thus making comprehensive health planning difficult.

Within the PHC implementing agency (NPHCDA), the interviewees lamented the unclear delineation of responsibilities between PHC policy issues and the construction-related responsibilities. Currently, emphasis is on health-related policy issues and no effort has been made to recruit competent personnel to handle the procurement and sustenance of the PHC facilities being built under the WHS scheme.

In terms of managerial accountability, the interviewees noted that one of the biggest constraints of the ongoing reform programme remains the rigidity of the civil service. For example, the FMOH does not recruit some categories of staff on the Ministry's payroll and this leads to little accountability. The interviewees also described the annual budget preparation exercise by the Ministry as a "ritual" characterised by over-expenditure on what they termed 'irrelevant issues'. In addition, the interviewees noted that the existing organisational structure as well as communication and reporting relationships within the healthcare system is complex and has grown out of so many obtuse "needs" that the best approach to reform may be to start afresh and plan the system from the beginning. Furthermore, the interviewees noted that the LGAs have been incapacitated in implementing PHC effectively because of inadequate resources from the federation account and the frequent hostile relationships typically related to withholding of funds by the SGs and FG.

The interviewees noted that even the National Health Act being deliberated upon by the National Assembly may not achieve much efficiency gains in the system because of poor engagement with the diverse stakeholders of the health sector during the preparation of the draft Bill. Besides, the redefined roles and responsibilities for essential public health functions for each of the three tiers of government (and their agencies) may not yield any improvements without a more rational basis for distribution of national revenues vis-à-vis the assigned responsibilities and supported with appropriate structural and accountability mechanisms.

#### **5.3.1.2 Community involvement**

The interviewees argued that the success of any scheme like the WHS, which has one of its central objectives as the promotion of community co-ownership of the completed

facilities, is very dependent on high level of engagement with the diverse groups within each community. They also attested to the strong influence on, and diversity of, cultural values and attitudes of the different cultural groupings in Nigeria. The benefits of involving members of the communities were outlined as:

- development and strengthening of community voice in participating in decision making processes and in demanding accountability from the service providers;
- empowering communities in building a common vision, a sense of belonging, positive identity where diversity is valued, and enhanced knowledge and awareness of personal obligation to better health as well as providing them with quality information on health;
- wealth creation activities, such as local job creation, will directly bring increased income and improved health within the local community;
- ensuring that local communities are in a position to influence the 'what' and 'how' questions related to service delivery and, where appropriate, participate in service delivery and planning for the future; and
- increased confidence and capacity of individuals and small groups to get involved in activities and build mutually supportive networks that hold communities together.

The interviewees noted that the low level of community involvement has resulted in feelings of isolation from decision-making and ownership arrangements as well as missed opportunities in the potential use of traditional communication systems in eliciting and understanding the communities' values and their potentials both in terms of skills and materials resources. In addition, there were no logically thought-out procedures both for the selection of beneficiary communities and the specific project sites within the selected wards. Although the public sector interviewees admitted that the selection of benefiting wards is done nationally largely on the basis of political affiliation, they argued that the choice of specific project sites are normally done in consultation with relevant local government agencies and the community heads. Yet, the other interviewees contend that the site selections are often based on personal or political interests rather than the interests of society as a whole. As a result, many facilities have been reportedly located at places with poor accessibility because those involved in the oft non-transparent process places

the satisfaction of their personal interests above the wishes of the community. The interviewees indicated that the host communities often only get to know about the projects when the contractors begin to mobilise their equipment and other resources to the construction sites. Besides, no attention has been paid to integrating the PHC facilities into the neighbourhood by locating them within close proximity of other community facilities and services or tapping into the strengths of other community services that have impact on promoting health and wellbeing of the people.

The inapplicability of the concept of co-ownership or co-management of facilities that the communities do not truly possess, or have any control of, or responsible for, was also highlighted. Nonetheless, the essential areas in which communities can add value and facilitate the satisfaction of the unique requirements of the diverse members of host communities thereby encouraging their effective participation in the management of the completed PHC facilities were identified as:

- undertaking of research to investigate and understand the dominant preferences, customs, beliefs and values of the communities;
- setting of priorities, decision making, planning and implementation of strategies of specific community needs;
- effective communication through traditional institutions to promote community education on both health and non-health related aspects of PHC philosophy;
- increased capacity of communities to nurture the skills and talents required in making meaningful contribution, particularly behavioural aspects related to health promotion such as smoking, alcohol and nutrition;
- transparent and clear allocation of roles, responsibilities and accountabilities;
- collaborative and partnership working between local organisations from public, private and not-for-profit sectors to aggregate competences and resources; and
- joint identification of risks associated with each project and the potential mitigation measures.

### **5.3.1.3 Project design**

The investigations revealed that while the idea of a prototype design may be economically sensible, the current design being implemented has limited future-proofing potential as the incorporation of any additional functions at later phases of the facilities' useful lives may not be cost-effective. As a result, the interviewees suggested that the design development process should involve wider consultations with larger stakeholder groups and assessed at strategic points before commencing construction, as well as during and after the construction of the facilities. The interviewees also noted that the lack of stakeholder involvement has resulted in lost opportunities such as:

- designing and defining the most appropriate and economic solution that meets the requirements of all the stakeholders; and
- benefiting from the expertise and skills of contractors and facilities managers that could promote buildability, maintainability and facilitate harmonious working relationships.

The consultants indicated that they: possessed some experience in the design of healthcare premises; were conversant with the implications of the built environment on the healing process and had incorporated those knowledge and expertise in their design solutions. However, the investigations revealed that the design development process was unsystematic and that there was dearth of best practice requirements and guidelines. For example, only internal evaluation (within the design team) of the design was made and no access or facilities were provided for disabled persons. However, the contractors felt indifferent about the need for any expertise in healthcare premises design and construction and consider the PHC facilities as any other building. The interviewees unanimously called for more systematic method for evaluating the design, construction and operation of the facilities based on international best practices.

### **5.3.2 Bidding and contracting under the WHS scheme**

The issues covered under this section include tendering and contractor selection process, the contract strategy and the monitoring and governance of the projects.

### ***5.3.2.1 Tendering and contractor selection process***

The investigations revealed that the WHS procurement was designed to comply with the basic tenets of the UNCITRAL Model Procurement Law, particularly the principle that best value is achieved by maximising competition. The interviewees established that the call for tenders for all approved Model PHC wards are generally advertised in at least two national newspapers in addition to the Federal Tender journal as required, and that the qualification and category of contractors expected to bid are normally indicated. It was also established that although the bids are normally opened at the end of the bidding period in the presence of all the bidders (or their representatives), they were not usually covered by press or witnessed by civil society groups as required.

In addition, the interviewees revealed that the call for pre-qualification were often vague and not taken seriously by both the bidders and client organisation. It was also established that the emphases of the pre-qualification questionnaire and the bases for recommending suitable contractor were often tilted towards contractors' current construction workloads, turnover and financial stability while crucial issues such as the contractor's quality rating, managerial/technical capability, method statement, health and safety records, training policies, risk management system and environmental management systems are often disregarded. Besides, the bid evaluation criteria were neither specified in the calls for tender nor in the bidding documents.

In addition, some of the interviewees (contractor) complained that information on the specific project sites that would have helped them in making adequate provision for relevant site conditions and prevent variations and claims after contract award were not indicated in the calls for tender or tender documents. In any case, despite that bidding is done on a site-by-site basis, the contracts are awarded to the lowest bidders as recommended by the UNCITRAL procurement law but at the same price (consultant estimate) nationwide. As a result, the investigations revealed that a number of technical hitches are being encountered in the forms of variation claims, contractual difficulties and delayed completions.

### 5.3.2.2 *Contract strategy*

The investigations established the traditional design-bid-build philosophy adopted for the WHS as highly adversarial, inappropriate and inflexible. The interviewees acknowledged that the contract strategy, based on the Standard Form of Building Contract in Nigeria of 1990 (SFBCN 90<sup>20</sup>), exacerbated the ingrained frictions between the client and contractors, between different members of the design team, and between the designers and contractors in which each party works for, and defends, its own interest regardless of those of others, and were counter-productive. The investigations revealed that considerable time and effort are often spent in dealing with commercial issues and disputes as a result of suspicion that each party tries to focus on containing losses or transferring risks of failure to others. In addition, because the contractual clauses and specifications used forces the employment of conventional solutions that may have been successfully applied elsewhere, the interviewees confirmed that the experimentation of innovative solutions in providing optimal solutions were precluded.

In demonstrating the inappropriateness of procurement strategy in facilitating effective community co-management of the completed PHC facilities, the interviewees queried how can people who did not partake in the planning and implementation of a facility take effective co-ownership when it is completed. In addition, the interviewees cautioned that the low patronage of local skills and material makes the facilities' maintenance very difficult as soon as the external contractors depart. Besides, the investigations revealed that there were no specific requirements for the attainment of relevant standards such as quality management (in terms of ISO 9001 or any similar standard), environmental management (in terms of ISO 14001 or any similar standard), health and safety (H&S) management (in terms of OHSAS 18001 or any similar standard). Notwithstanding, some of the interviewees revealed that monitoring and enforcement of contract provisions were grossly inadequate. For example, it was established that there was no monitoring of health and safety at project level and reasons adjudged included: contractors do not include the full cost of meeting their health and safety obligations in tenders because of fear of losing contracts to competitors; and workers are fearful of losing their jobs if they complain about unsafe or unhealthy worksites. Yet, many workers are simply unaware of their rights.

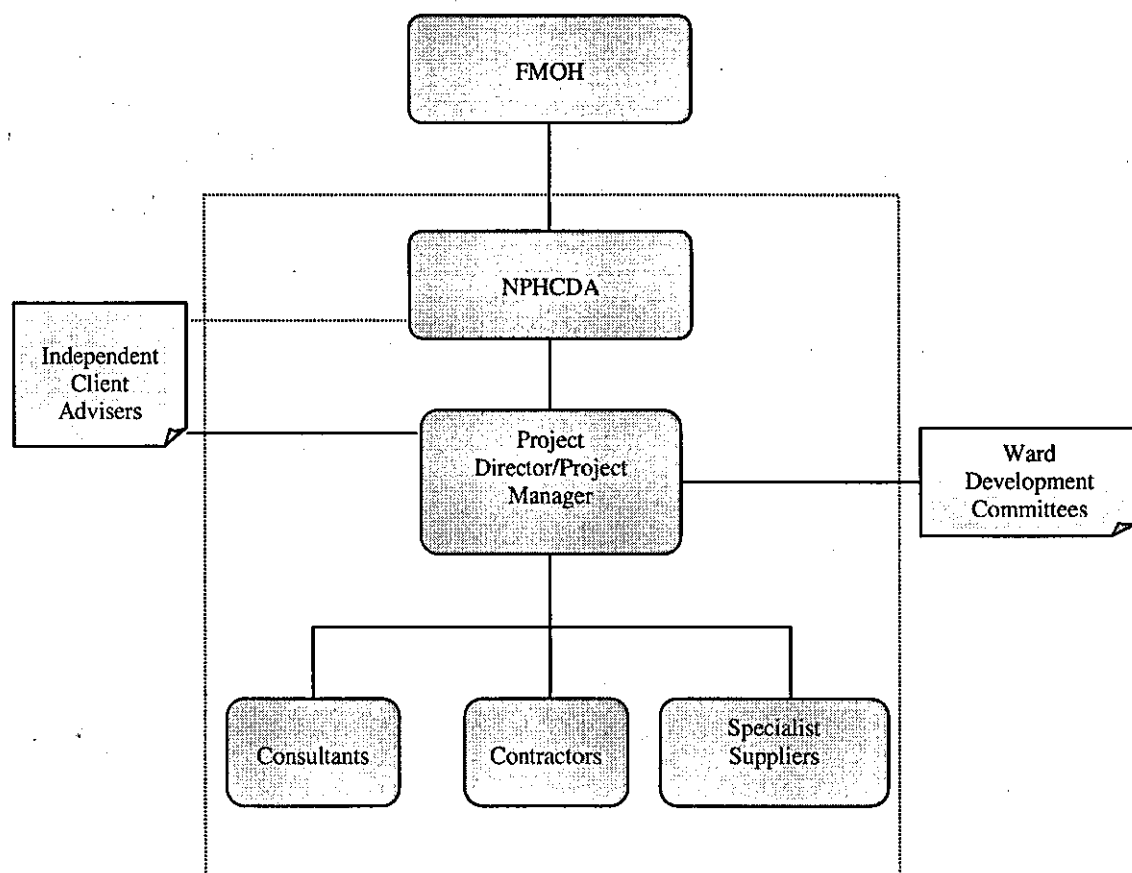
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<sup>20</sup> SFBCN 90 is the Nigerian adapted version of the Joint Contracts Tribunal 1980 edition (JCT 80).

Accordingly, the interviewees recommended the adoption of procurement strategies that involve the allocation of responsibilities for construction, operating and maintenance to one party that would imbibe the local patronage concept through employment of local skills, materials and components. In order to mitigate the potential adversity that may arise as a result of including the recommended diverse array of participants, the interviewees suggested the adoption of partnering ethos and the development of long-term relationship-based contracting methods that encourages collaborative working that will aim at meeting the common objectives of all the participants.

### 5.3.2.3 Project monitoring and governance

The investigations revealed a fragmented governance structure (illustrated in Figure 5.1) with unclear roles, responsibilities and accountabilities within and between the participating organisations at both national and ward/project levels, the consequences of which include corruption, distorted decision making processes, increased project costs and dissatisfied public.



**Figure 5.1: Fragmented governance structure used in WHS procurement**



The interviews revealed that the client organisation does not have adequate staff with the necessary skills and competence to effectively monitor the progress of the projects across the country even with the support of the consultants. Of the over 100 employees working for the client organisation, there are only five that have qualifications and experience in procurement and management of construction facilities. The interviewees noted that an average of one supervision visit is typically made to construction sites in a month by the client/consultants' staff, with emphasis skewed towards valuation for contractors' progress payments rather than checking adherence to specifications or the standard/quality of workmanship. However, apart from political constraints, the relatively small size and one-off nature of the projects were adjudged as the possible reasons why more experienced and specialised contractors are not participating in the scheme.

Though to a much reduced magnitude compared to the past, the interviewees noted that corruption is still prevalent throughout the project life cycles, from identification of the project through to the construction stages. It was established that despite the existence of a resident due process team (RDPT) aimed at curbing corruption in public procurement. Some of the interviewees (contractors) revealed that there were instances where public officers directly demanded bribes, or frustrated their progress payments. The ineffectiveness of the RDPT intervention was blamed on the detachment of the members of the team from the operational activities at the project sites. Contractors also complained about instances where project progress were retarded because of delayed payments and generally noted that no interest payments have ever been made to them as required. As a result, contractors have resorted to cutting costs through use of sub-standard materials or taking other shortcuts that have adverse effect on the quality of the completed facilities. Other tactics commonly used by the successful bidders include cutting back on labour costs by pushing down staff wages, hiring casual workers and failure to meet contractual requirements for ensuring the health, safety and welfare of the workers.

## **5.4 Interview discussions**

The Federal Government of Nigeria accepted the recommendations of the World Bank's Country Procurement Assessment Report (CPAR) in 2000 and has since embarked on a reform programme aimed at building supportive institutions to strengthen procurement

framework in Nigeria to promote efficiency, accountability, transparency and integrity in the Nigerian public procurement system. As well-intentioned as these objectives may be, the findings of this study revealed that the desired results are not being achieved as a result of inordinate implementation. Within the PHC sub-sector, the investigations into the planning and implementation of the WHS scheme to promote community participation, inter-sectoral collaboration and equitable provision of PHC services revealed a number of key messages.

The absence of effective working relationships between the healthcare delivery system and other socio-economic sectors in addition to the structural and institutional cracks resulting from poor governance structures, as well as the lop-sided distribution of national resources between and within the three tiers of government have marred the chances of securing equitable provision of basic healthcare to the people. In addition, the absence of systematic planning and engagement with relevant stakeholder groups within the communities in order to empower them to build a common vision and ensure a sense of belonging has made the achievement of community co-ownership of completed PHC facilities difficult to attain. Some of the consequences of the lack of cohesion in the healthcare delivery system in Nigeria were identified as:

- poor cooperation and trust between the relevant agencies across the three tiers of government;
- poor monitoring of progress and accountability for the health of the populace;
- ineffective, fragmented, and incomprehensive information system about the system;
- absence of transparency in the recruitment and remuneration of personnel;
- non-transparent and unfocussed budgetary system;
- unclear definition of roles and responsibilities in relation to public health functions between the three tiers of government;
- inability of relevant tier of government or agencies to effectively carry out assigned responsibilities;
- feelings of isolation from decision making process leading to disinterest in ownership arrangements or demanding accountability of service providers;

- missed opportunities in utilising traditional institutions to elicit information and understand the communities' unique requirements and cultural values; and
- poor and non-transparent decision making processes.

In order to successfully facilitate the participation of host communities in the co-management of PHC facilities, areas where the communities can add value were identified.

Although the traditional design-bid-build procurement philosophy adopted for the WHS scheme has a long history of reliability, this investigation further confirmed its inflexibility and highly adversarial tendencies between the different participants. The 'one size fits all' stance adopted for the scheme in terms of design and contract award on the basis of fixed price without adequate evaluation and monitoring mechanism resulted in numerous problems such as sub-optimal design, inflexibility, adversarial relations, delayed completions, stifled innovation, unsustainable solutions and waves of corruption.

In terms of design, while it makes economic sense to adopt a prototype design for use across the country, it is important that the selected design should be chosen through an open design competition aimed at obtaining an optimum design solution that will provide a therapeutic and environmentally-sensitive building with adequate future-proofing potential to enable cost-effective adaptation in the future, whilst enabling the delivery of modern and high quality primary care services. Newton and Ormerod (2007) had argued that the adoption of 'inclusive design' approach can result in facilities and environments that are both usable and appealing to everyone regardless of age, ability or circumstance by working with all relevant stakeholders to remove barriers in the social, technical, political and economic processes underpinning building and design. The construction and operation phases of each individual project delivered using the selected design should also be subjected to evaluation using best practice toolkits at various stages, and these can serve as an effective platform for national benchmarking of the facilities built under the WHS scheme. However, adequate legislation and effective administrative frameworks in the form of guidance notes and toolkits are vital to achieving the desired results.

The preclusion of whole life cost considerations and rigid prescription of specifications deterred sustainability and innovation. In addition, the exclusion of bid evaluation criteria

from the advertisements as well as insufficient information about specific site conditions consequently resulted in disputes, claims and delayed completions. Besides, the selection of contractors that submitted the lowest tender and awarding the contract at consultant estimate is itself a form of corruption as it opens the avenue for unrealistic bids. As a result, a move away from the lowest price approach was suggested, with greater emphasis on more flexible approaches that will encourage front-end considerations of long-term social and economic implications of decisions. To achieve these, it would be vital to involve and integrate the whole supply chain (including consultant and contracting teams, together with manufacturing and component sectors) from the earliest possible stage to ensure that the client's (including users of the facilities) and community requirements are understood through an effective and iterative briefing process and that all are committed to the whole project, not just to their part of it.

The absence of clear requirements, governance structure, performance management system and adequate skilled personnel within the client organisation for monitoring the WHS scheme resulted in poor enforcement of standards and corruption. It is therefore essential that the requirements for each project, the roles and responsibilities of the different participants, the decision making processes at each stage of the procurement cycle and the performance measurement system are sufficiently clear and transparent.

In order to instil transparency and discipline in the procurement system, a sufficiently adapted version of the UK Gateway reviews developed by the Office of Government Commerce (OGC), which subjects procurement programmes to external scrutiny, can be applied at key milestones of each project. The 'Gateway Review Process' (GRP), involves independent examination of each programme or project at six critical stages of its lifecycle to provide assurance that it can progress to the next stage. These six stages are strategic assessment, business justification, procurement strategy, investment decision, readiness for service and benefits realisation. For construction projects, however, there are two additional major decision points between Gates 3 and 4; which are outline design and detailed design stages, and there may also be a requirement to repeat Gate 3 (OGC, 2007). The GRP is based on well-proven techniques that lead to more effective delivery of benefits together with more predictable costs and outcomes.

Overall, a procurement strategy that emphasises the integration of relevant stakeholders throughout the process, from conceptualisation to actual delivery is being envisaged as capable of meeting the objective of community co-ownership of completed facilities over their useful lives. This will involve the incorporation of the representatives of the host communities through the traditional (cultural) institutions to take account of the community's beliefs and values and private sector partners that can demonstrate the capability for delivering and operating quality healthcare buildings. Other essential ingredients identified include increased transparency in the decision-making processes, appropriate allocation of risk on the basis of 'ability to manage' that are supported with efficient governance structures at both strategic and operational levels, and the adoption of 'post-award' partnering arrangement to sustain harmonious working relationships between the diverse parties. Crane *et al.* (1997) provided a partnering process model offering a step-by-step guide to achieving partnership relationships in the construction industry. However, possession of appropriate skills, knowledge and attitudinal requirements by all the parties involved (particularly the client organisation) are critical to the success of partnering relationships (Briscoe *et al.*, 2001).

## 5.5 Chapter summary

This chapter has presented the results of the evaluation into the planning and implementation of WHS procurement system in Nigerian in attaining the envisaged objectives of PHC philosophy. The evaluation involved semi-structured interviews with twelve people vis-à-vis the on-going procurement and health sector reforms in Nigeria. The investigations indicated that the planning and implementation of on-going strategies lack focus, impact and sustainability. Amongst other things, the evaluation revealed ineffective involvement of the diverse stakeholder groups that would have enabled robust elicitation and understanding of their requirements, strengthening of accountability framework and effective harnessing of private sectors' managerial and property management expertise to provide quality and sustainable PHC facilities.

Although the interviewees questioned the applicability of the concept of community co-ownership or co-management of public facilities, they affirmed the importance of engaging with wide groups of stakeholders to achieve the objectives of PHC philosophy.

The investigations subsequently identified the essential areas in which communities can add value to facilitate the satisfaction of the unique requirements of the diverse members of host communities thereby encouraging their effective participation in the management of the completed PHC facilities.

## **CHAPTER SIX**

### **EXPLORATORY EVALUATION OF UK LIFT PROJECTS**

#### **6.1 Chapter introduction**

This chapter describes the semi-structured interviews aimed at exploring some key implementation issues in the LIFT procurement strategy (see Appendix B2) that can be used to promote sustained improvements in the Nigerian context. The interviews involved ten senior staff from six organisations working on three LIFT schemes.

In addition to the supporting documentations provided as supplementary information, the interviews were analysed and evaluated using the principles of constant comparative analysis.

#### **6.2 Characteristics of the interviewees**

In whole, ten interviewees from six different organisations that are involved in three LIFT schemes participated in this research. Table 6.1 shows that six of the interviewees were from the public sector and include three Project Directors, two Project Managers and a Director of Primary Care from a lead PCT; while the remaining four were from the private sector and include a *LIFTCo.* Chair, a *LIFTCo.* General Manager and two independent external advisers.

**Table 6.1: Interviewee details**

S/No	Rank	Sector	Number
1	Project Director	Public	3
2	Director of Primary Care in a PCT	Public	1
3	Project Managers	Public	2
4	General Manager of a LIFTCo.	Private	1
5	Chair of LIFTCo.	Private	1
6	External Advisers	Private	2
	<b>Total</b>		<b>10</b>

The three LIFT schemes had varying characteristics both in terms of the size and mix of stakeholder composition and project sizes. The combined capital cost for the first tranche of projects under the three schemes is over £100 million.

### **6.3 Interview results**

In analysing the interviews using the constant comparative analysis technique, the opinions of the participants have been homogenised but where applicable, both the differences in practices between the three schemes and between the opinions of those from the public and private sectors have also been highlighted. In complying with the confidentiality requirements, the researcher has as much as possible tried to keep the identities of the interviewees anonymous.

In general, it was established from the interviews across the three schemes that the LIFT process started with the redesign of the healthcare system to facilitate the needed improvements in primary and social care services at each local level. The 'hub' and 'spoke' model was generally used in the three schemes. Under this model, a 'hub', which represents a primary care centre where core and enhanced services such as diagnostics, minor surgery and outpatient services are provided will work with a network of 'spokes', which provides other services more locally in the community, for example at GP practices. Subsequently, the organisational structures that link the various partners were simultaneously defined as the relationships between the organisations and people



involved were evolving over time. The design and construction processes were then defined and developed.

### **6.3.1 Key drivers and enablers of LIFT schemes**

According to the public sector interviewees, the key drivers or objectives for their involvement in the LIFT initiative involve working with the private sector to:

- meet the national and local policy requirements in terms of increased capacity and integrated patient-centred primary and social care services with greater accessibility to the public;
- revamp the local healthcare situation that manifests in terms of extent of health deprivation and care inequality;
- meet the realised need for additional investment in NHS properties other than through the Trusts to facilitate attraction and retention of staff in the primary care sector;
- achieve effective management of the procurement process and project delivery efficiency that provides good value for money; and
- construct buildings that support efficient service delivery and have lasting civic value.

According to the private sector interviewees on the other hand, their key drivers under the LIFT schemes include:

- striving to meet the performance requirements in terms of delivery of constructed products on time, to budget and specification;
- maximisation of operational efficiency of the facilities;
- taking whole-life view of the process and striving to achieve optimised whole-life value;
- enhancement of the environment through the facilities by projecting the appropriate image, impacting positively on the locality and with reduced environmental impact; and

- ensuring health, safety and wellbeing of users (employees, patients and visitors) during project implementation and in operation.

The following were identified by the interviewees as the key enablers for achieving the LIFT objectives:

- availability of finance in the form of bank's money;
- affordability of the schemes;
- efficient project management processes;
- engagement of people with the right skills and experience;
- effective management of the supply chain;
- identification and use of cost-effective and sustainable construction materials and methods;
- effective partnerships between the public and private sectors;
- good working relationships between the private sector partner and the supply chain;
- co-location of the core teams to facilitate sharing of resources and information;
- inspirational leadership with ability to carry others along; and
- regular reviews in addition to training and re-training for both private and public sectors.

### **6.3.2 Mechanisms for establishing and managing project requirements**

Although the PCTs generally have a commitment to stakeholder participation in the design and implementation of healthcare strategy, this investigation revealed that the processes of capturing and managing stakeholder values and requirements were fragmented, unstructured and incomprehensive in the three LIFT schemes. The engagements were largely restricted in terms of participants, scope and content.

The *Strategic Service Development Plan* (SSDP) was identified as the primary document used for capturing the requirements of the diverse interests in each LIFT locality. The procedures for the development of the SSDPs were largely common across the three schemes, involving consultations with several interest groups such as patient forums,

potential tenants and relevant public sector bodies to determine the current service levels, formulate a 5–10 year vision of the service requirements, together with ambitious plans to develop community-based facilities capable of supporting the delivery of the vision. In the first instance, Project Boards comprising the Chief Executives of the PCTs (chaired by the Chief Executive of the lead PCT) and representatives of the LAs and other key partners were responsible for the content of the first SSDP and for managing the tendering process that led to the establishment of each *LIFTCo*. Procurement Evaluation Teams (PETs) were then constituted to review the expressions of interest from the bidders before recommending a shortlist to the Project Boards. The PETs comprised representatives of local partner organisations at Chief Executive and Director levels with PfH providing legal and financial advice. Once the PSPs were selected, the Project Boards became the *Strategic Partnering Boards* (SPBs). Because the SSDPs are expected to be ‘living documents’, it was also gathered that the *LIFTCos*. (in collaboration with the local NHS, LAs, and other relevant parties in each local health economy) share the responsibility for updating them annually to reflect changes and developments in strategy, objectives and priorities in each and all of the partner organisations. The SPBs on the other hand had the responsibility for ensuring good strategic fit with other local initiatives in related areas – for example in secondary, acute and social care.

Although to varying degrees, the initial stages across the three case study schemes were characterised with apparent inadequate understanding of the project requirements and the capacity to process the requirements into design and construction terms. According to one interview, this had resulted because of:

*“non-dedication of adequate amount of efforts and resources by the LIFTCos.  
and their inexperience in healthcare service provisioning”,*

and these had consequences. For example, the disabled access of a project in one of the schemes was located at the rear of the building such that staff and visitors would have to pass through the children’s clinic to gain access to the healthcare area thereby compromising the high priority goal of children protection. In the same scheme, another project that has been supposedly completed cannot be put to use six months after commissioning because it is not entirely fit-for-purpose. These deficiencies have been blamed on a number of factors including:

*“inadequacies in the capturing of project requirements; poor understanding of the project requirements; poor management of the delivery process; poor design and programme management; and erratic changes during project implementation”.*

Finally, the interviewees suggested that the process of capturing and managing project requirements can be improved by giving more attention to the consultation and engagement of the key stakeholders (including the end-users) in the planning, design and monitoring of the projects by adopting a structured stakeholder engagement methodology.

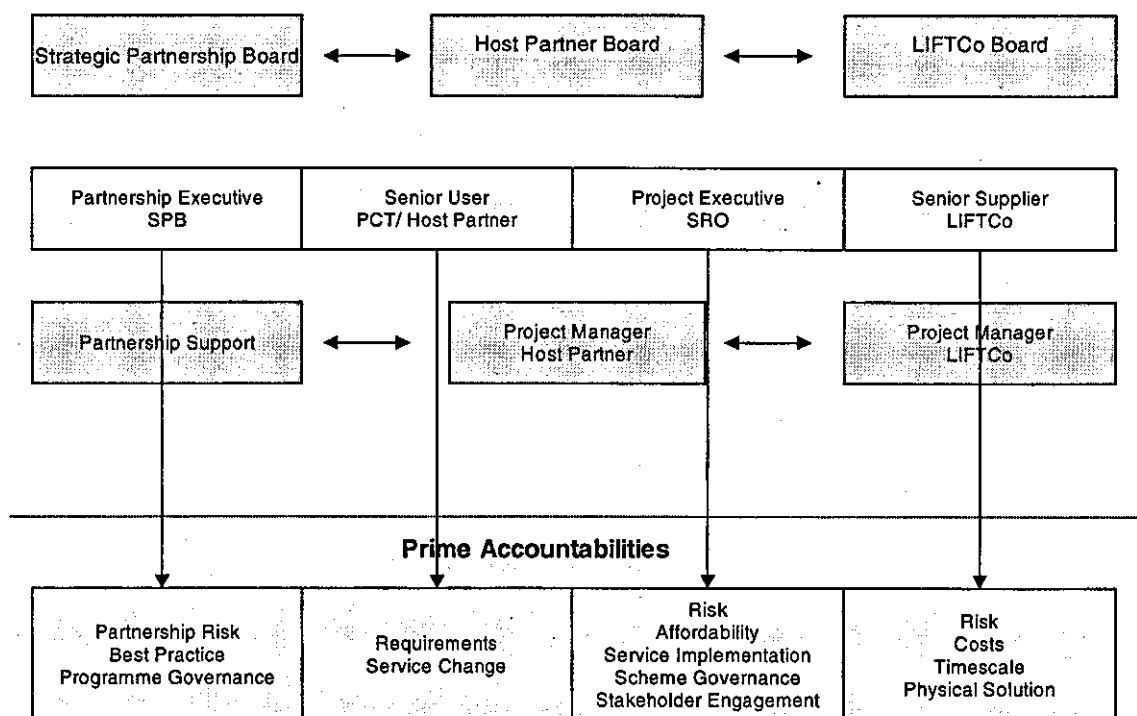
### **6.3.3 Definition of roles, responsibilities and accountabilities**

Two of the schemes examined did not have any clearly defined roles, responsibilities and accountabilities and relied on *ad hoc* arrangements in managing their projects. As a result, the schemes witnessed some degree of confusion and overlaps with regards to roles and responsibilities. The interviewees on one of the schemes noted that the confusions were greatest prior to financial close as a result of negotiations (which was not necessarily adversarial *per se*) between the public and private sectors. Also, although the overlaps that existed in certain roles (as a result of partnership) were considered by most of the interviewees to have potential benefits, one interviewee stressed that:

*“it is appropriate to clearly identify the party that takes the lead role for the purpose of accountability”.*

However, the other scheme developed a project map that comprised sufficiently defined roles and accountabilities for both the core staff (at strategic level) and the project boards. These definitions helped to reduce unnecessary overlaps whilst providing clear project leadership. The generic project structure adopted by the scheme, which shows the broad areas of accountabilities, is shown in Figure 6.1. The scheme established the roles that were relevant for each project board to include the senior responsible owner (SRO), project manager, finance manager, senior supplier, senior user and other major stakeholder(s). In that scheme, clear distinction between the roles and responsibilities of

Partner Teams and the Central Team was also in place. For each project, the structure required the Project SRO to ascertain that:



**Figure 6.1: Generic project structure**

- each board member has sufficient delegated authority so that decisions can be taken in a timely fashion;
- the deputising process is appropriate;
- key stakeholders are adequately involved; and
- the project team is clear on its delegated authority and tolerances.

In addition, owing to the apparent lack of specific expertise across the three schemes, there were difficulties in terms of translating directives from the strategic leadership to the operational level. Consequently, although each partner organisation had a communication officer with the responsibility of coordinating and ensuring timely exchange of information, changes and strategies with other organisations, the interviewees indicated that the tempo dries out down the organisational hierarchy, from the SPBs to the departmental levels. According to one interviewee, this is sometimes because:

*“personality takes over”*

... and another noted that:

*“it is important to strengthen the effectiveness of communication and capturing of knowledge generated at the operational level since the participants are always under pressure to move from one project to the next”.*

The delay in communicating updates and changes led to different understandings of what each partner can, or should, bring to the table, and unequal or unmet expectations. Most of the interviewees also highlighted the dearth of adequate operational policies that reflects demographic and service requirements over time.

Finally, the drive for innovation was relatively weak on all the three schemes, as none had any formal strategic approach to steer and facilitate innovation. This might have perhaps resulted from the absence of any incentivisation arrangement to motivate innovation. Under an incentivisation agreement, while the attainment of target cost can be used as the baseline, a pain share/gain share formula can be agreed and implemented as a result of innovative practices.

### **6.3.4 Definition of project management process**

The investigations revealed that it was only the scheme that developed a project map that also had a defined project process called the *Project Assurance Framework*, which defined the Project Management processes and sits at the heart of project governance, risk containment and continuous improvement. The eight-stage approach clusters project deliverables in a typical project stages such as strategy, scoping, feasibility/proof of concept, design, build, implement and benefits realisation. In producing the project assurance pack, shown in Figure 6.2, accounts were taken of the following:

- mapping to the LIFT project stages 1 and 2 and associated guidelines;
- mapping to the PSP Process Map;
- mapping to the OGC Gateway process and use of Gateway checklist questions as far as is practicable and appropriate;
- reference to good project governance within PRINCE2;

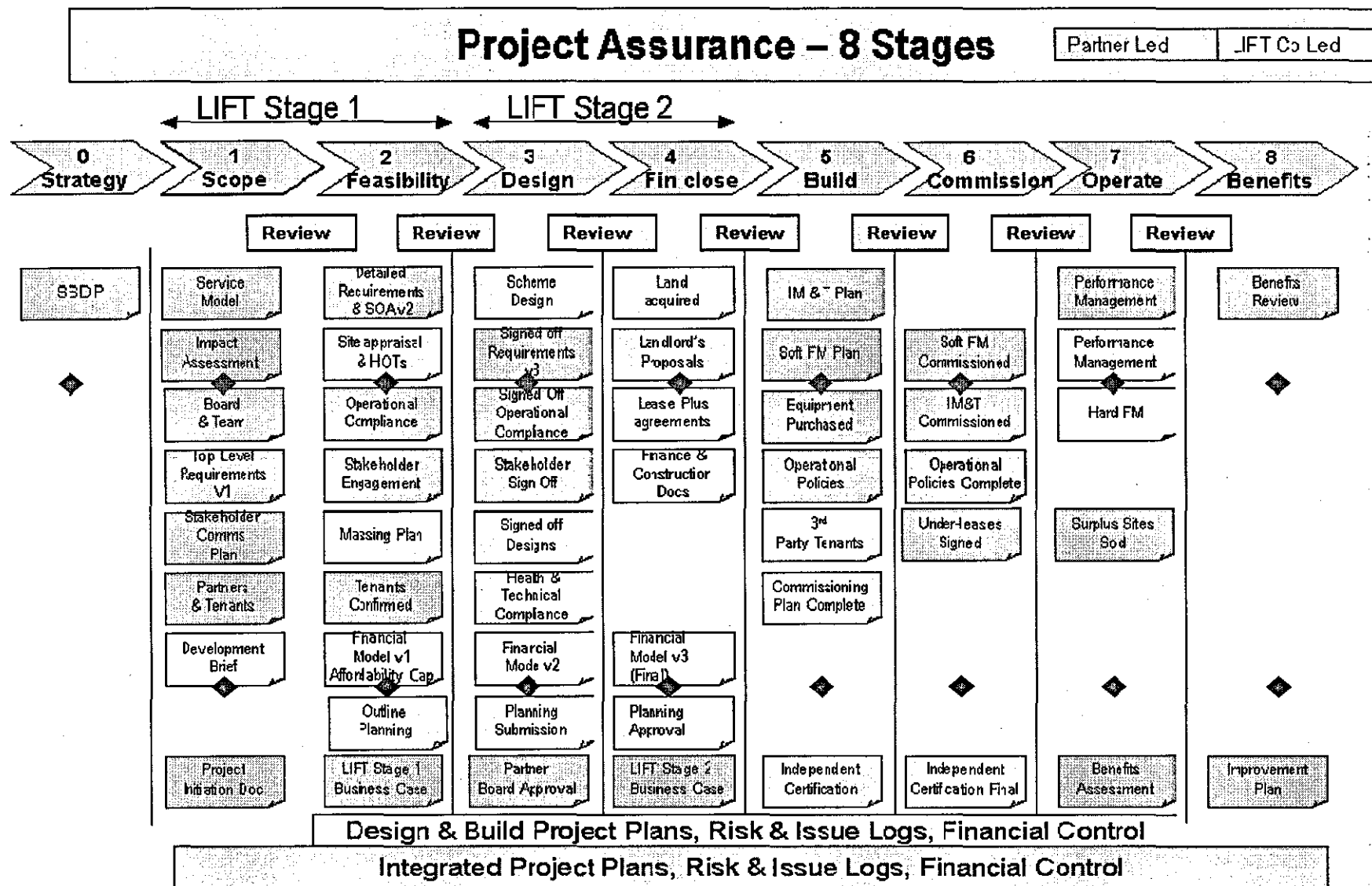


Figure 6.2: Project assurance framework

- reference to standard project deliverables for property/regeneration projects;
- account of NHS specifics (i.e. clinical governance); and
- the need to share best practice and demonstrate continuous improvement.

The project assurance process also sets out the key deliverables and the sorts of issues that the board will need to collectively satisfy itself on. It is envisaged to be undertaken in two stages; either a short review say four weeks into a stage or four weeks before a project team is ready to move onto the next major stage. However, as assurance confidence grows it is anticipated that only one stage end-review would be needed. It was also established that although not currently utilised as such, the framework could be used as the basis for defining and assigning roles and responsibilities that reflect the true spirit of partnership.

However, the other two schemes had no structured and clearly defined Project Management processes for their projects.

### 6.3.5 Alignment of stakeholder values

The interviews revealed a lack of internal direction within many of the participating organisations and the resulting poor internal alignment often caused project participants to pull towards different directions at the expense of the project objectives. One of the private sector interviewee remarked that:

*“some stakeholders rarely have any articulated set of requirements and what some say upfront and in the public may be different from what they actually practice”.*

In addition, the established culture of the public sector not communicating changes to the private sector on a timely basis resulted in project fatigue. One of the public sector interviewees acknowledged that:

*“although it would be naïve not to consider the commercial interests of the private sector, the real challenge is how that can be achieved without compromising value for money and public interest”.*



Many of the interviewees acknowledged that due to lack of effective coordination between the strategic and operational levels of management of the *LIFTCos.*, the benefits of long-term partnerships were being inhibited. Furthermore, while the project participants in two schemes were physically co-located, to varying degrees, no efforts had been made at harmonising their processes, cultures and tools in order to maximise the benefits of the partnerships. Besides, the collaborations between the project participants were done rather intuitively in the projects under both schemes without following any formalised procedures. While there was no physical co-location in the other scheme, the *Project Assurance Pack* was used to facilitate collaboration between the project participants. The *Assurance Pack* offered both a backward team appraisal of the standard and quality of work that had taken place and a forward looking view for the project team to make judgements about the project's readiness to move forward to the next stage. The scheme also implements shared risk register between the *LIFTCo.* and the PCTs, and a shared issue log as a way of disseminating lessons.

### **6.3.6 Practices of continuous improvement (CI)**

#### **6.3.6.1 CI definitions**

The interviews revealed that continuous improvement (CI) meant different thing to different participants and their understanding were quite diverse. Some of the phrases/sentences used to describe CI by the interviewees include:

- quality improvement;
- application of innovative technologies and techniques to enhance functionality of a project;
- application of innovation to improve project outcomes in terms of time, cost and quality;
- improved satisfaction for all stakeholders through value enhancement mechanisms;
- improved efficiency to deliver projects at lower cost to the client;
- demonstration of learning from project-to-project in terms of project outcomes of time, cost and quality;
- improved effectiveness to deliver projects faster to the client; and

- improved client satisfaction with the overall project.

However, in order to ensure common understanding, the interviewees were informed that CI in this research refers to *“a culture of sustained improvement involving everyone (at individual and team levels) and focusing on adding value in all systems and processes of an organisation through the use of appropriate tools and techniques dedicated to learning focussed on searching for sources of problems, waste, and variation, and finding ways to minimise them”*.

Across the three schemes, although the interviewees recognised the importance of learning from project-to-project and from other schemes, there were no formal structures to facilitate effective knowledge capturing or sharing in the format that it can be effectively re-used in subsequent phases or projects. Lessons learnt reviews were carried out at both strategic and operational levels in one of the schemes, but the reviews were restricted to the commissioning process only. The three schemes have been generally more of inward-looking relying on reflective and audit trailing techniques through the governance departments but the interviewees recognised the need for broader perspectives through the use of more systematic and structured approaches for learning from within and outside their schemes. One of the interviewee opined that:

*“by holding meetings within the LIFT buildings, a lot of lessons for improving the future projects can be generated”.*

#### **6.3.6.2 Preconditions and success factors for CI**

In order to enshrine CI culture in the employees and hence the organisation, the following preconditions were identified by the interviewees:

- establishment of common understanding in what CI is; what the targets are; what the success criteria are; and what the roles, responsibilities, accountabilities and lines of communications are at individual, team and organisational levels;

- availability and/or access to appropriate competence/skills for CI, and these were identified as systematic problem solving, experimentation with new approaches, learning from own experience and past history, learning from experience and best practices of others and transferring knowledge quickly and efficiently throughout the organisation;
- joint creation of supporting/enabling processes that are understood by all; and
- commitment and trust at all levels of each participating organisation.

#### **6.3.6.3 *CI driving values***

In projects involving multiple participants from diverse sectors such as LIFT projects, the driving values, which provide answers to the questions 'why should we continuously improve' and 'what values should we have to want to improve' were recognised by the interviewees as the basic values necessary for establishing and reinforcing commitment to CI. They were identified to include:

- mutual respect, both vertically through the hierarchy of each organisation and horizontally across the different organisations involved in the project;
- responsibility and capability to perform assigned tasks at the expected time, within the expected budget, and with the expected quality; and
- ability to restrain commercial prejudices and empathise with other participating organisations.

#### **6.3.6.4 *CI enabling values***

The interviewees outlined the enabling values required to facilitate the CI efforts to include:

- trust;
- openness and transparency;
- humility;
- cooperation;

- respect for people;
- responsibility and integrity; and
- empathy and responsiveness.

#### **6.3.6.5 *CI infusing values***

In order to infuse the driving and enabling values into the culture and practices of multi-party projects, the following key sustaining values were outlined by the interviewees:

- commitment and leadership by the top management of all participating organisations in providing deliberate role modelling, teaching and coaching and the design of an environment for nurturing and promoting mutual learning;
- team-based organisational structure that foster better communication, improve respect, and create trust;
- supporting infrastructure in the form of policy formulation and deployment, reward and recognition system, monitoring and measurement, learning and knowledge capture;
- shift in control system from inspection and policing to prevention and empowerment through systematic idea management; and
- behavioural change programme with specific improvement targets and a clear reward system.

#### **6.3.6.6 *CI tools***

The interviewees acknowledged that there is no single technique or technology that is sufficient or capable of meeting all the requirements of capturing and sharing knowledge in any project or from project to project.

In terms of KM technologies, the interviews revealed that the Activity DataBase (ADB), a briefing, design and equipping package, is being used to provide the PCTs, Architects, health planners and consulting engineers with access to an integrated database of healthcare built environment data. The ADB uses its internal graphical editor and interface with AutoCAD to

provide data in both textual and graphical formats. Although two schemes have project websites, they are not used as a platform for exchanging project information and knowledge between the participants. It was also established that some of the individual organisations use some form of common platform for internal sharing of information, but there was no reported use of any groupware or custom-designed software application for sharing and capturing project knowledge across the participating organisations working on projects.

In terms of KM techniques, although they were mainly undertaken to satisfy contractual requirements, post-project reviews are being conducted on the projects under the three schemes within six months after each building is opened. The scope of knowledge aimed to be captured in the reviews were usually wide and include various types of project knowledge in the forms of best practices, lessons learnt, do's and don'ts. Overall, only one scheme followed a systematic procedure for harvesting lessons from all the stakeholders through the project life cycle using the in-house project assurance framework and through the Office of Government Commerce (OGC) gateway reviews. The reviews undertaken by the other two schemes at both strategic and operational levels were rather uncoordinated and *ad hoc*.

#### **6.3.6.7 Barriers to achieving continuous improvement**

The key barriers identified by the interviewees, which if removed are capable of facilitating continuous improvement, include:

1. Distrust and lack of mutual understanding

These two themes of distrust/suspicion and lack of mutual understanding were interwoven in most responses, often leading to other obstacles. For example, as one interviewee put it,

*“there can be lack of information and discussion due to lack of trust – if nothing is shared in the partnerships, then they are not really partnerships”.*

Another commented that:

*"understanding the other sectors is sometimes the biggest issue. One example is where the public sector partners are unable or unwilling to talk about the 'commercial concerns' or when the public (especially civil society organisations) thinks that the profit-motive of the private sectors that stake enormous resources over a long period of time is 'evil', these can get in the way of practical cooperation".*

## 2. Different *modus operandi*

Linked to lack of mutual understanding is the fact that there is often what one interviewee described as:

*"'culture clashes' caused by different methods of working, different accountabilities, and divergent objectives".*

Another interviewee expressed concern over the on-going reforms in the NHS which has created in a situation:

*"where people spend more time in understanding the requirements and impact of the reorganisation than doing the work, and these often results in frustration".*

## 3. Different time-frames

A number of the interviewees spoke about the frustration of partners operating on different time-frames. One interviewee commented that:

*"the 'lead time' is often so different between each of the sectors that this can lead to problems. For example, the private sector partner tends to be slow to move up to the point that it has made a decision and then it wants action and delivery instantly, whereas the public sector is often quick to engage but then gets stuck in bureaucracy and it can take a long time to get funding even when they are committed in principle and the funding is technically available".*

Another interviewee commented that:

*“partners do not always appreciate or have sufficient patience for the time commitment that ... is needed to make partnerships work effectively”.*

#### 4. Lack of clarity and communication

The lack of clearly defined or communicated goals, roles and responsibilities was another obstacle cited by many of the interviewees. According to one interviewee:

*“failure to agree all the difficult details ab initio can be a major obstacle”.*

The lack of clarity can lead to differing analysis of what each partner can, or should, bring to the table, and unequal or unmet expectations. Most of the times also, there is dearth of adequate operational policies that reflects demographic and service requirements over time.

#### 5. Lack of appropriate skills and competencies

Insufficient or inadequate skills for building effective partnerships were cited as another obstacle. The necessary skill sets and competencies cited by the interviewees ranged from technical and managerial to behavioural and attitudinal.

Furthermore, although independent advisors for design, quantity surveying, legal and financial advisors have been appointed on all the schemes, there were inadequate healthcare professionals with the right planning skills to support the on-going organisational reconfigurations in the NHS. One of the interviewees remarked that:

*“the current crop of health planners do not possess the required expertise to support the reforms taking place in NHS, and so there is a dire need for new talents”.*

#### 6. Adversarial context

Finally, there are the obstacles created by the broader enabling framework. Besides the legal process is often time consuming and costly. One of the interviewees commented that:

*“the context in which the partnership operates is critical. If the local environment - political, social, and economic - is not conducive to growing the partnership, it has little chance of succeeding. Moreover, since the challenge of sustainable development is a complex one, where results may take five to ten years to manifest themselves, a stable environment is important”.*

Other interviewees spoke explicitly about the increasing demands from the government and the general public in the face of constantly changing policies and the non-inclusion of the other supply chain partners under the partnering ethos as major obstacles to building effective and long-term partnerships.

### **6.3.7 Assessment of performance of LIFT projects**

Generally, the interviewees acknowledged that all the projects had demonstrated higher performance as against many other public buildings procured using traditional delivery mechanisms. Two schemes had been able to deliver all their projects to budget, ahead or on time and to the required quality levels, but the other scheme had faced some slight schedule overruns (of average of one month each on three projects). The delays were attributed to poor coordination of the process of capturing and managing project requirements. Although the delays were relatively small compared to the typical performance of public projects, the public expressed great disappointments and mounted heavy criticisms and this explains the high expectations placed on LIFT schemes by the public to deliver high quality and iconic buildings. LIFT projects have also portrayed greater public satisfaction in meeting the regeneration agenda of the local communities. A common innovative practice in two of the schemes involves the provision of multi-faith facilities within the LIFT buildings in order to meet the diverse spiritual needs of the various communities. The performance levels of the schemes are expected to provide the expected economies of scale after some years as the processes are being repeated and mature. Already, the interviews revealed that there are evidences of reduction in the procurement and legal times/expenses.

In all the schemes, a diverse variety of criteria are being developed for evaluating project performance. These include public perception surveys, staff attraction and satisfaction



surveys, benefits realisation surveys, Key Performance Indicators (KPIs) and benchmarking. In order to satisfy certain approval requirements, design quality and sustainability are also being evaluated using *Achieving Excellence Design Evaluation Toolkit* (AEDET) and *NHS Environmental Assessment Toolkit* (NEAT) respectively. However, it is being argued that none of these criteria can adequately measure the objectives normally set out by the project participants or the drivers identified for implementing the projects. A paradigm shift is therefore advocated to develop criteria that can sufficiently measure the project objectives and/or drivers as agreed by the project participants. Some of the objectives/drivers that the interviewees would have like to see the success criteria encompass include those that assess whether:

- the desired proportion of services moving from secondary to primary levels has been achieved?
- the regeneration targets been achieved?
- patients have more effective and efficient access and choice to care?
- the usage of the facilities has been optimised?
- the required staff are being attracted and retained?
- quality of contributions from the independent advisors is effective and provides VFM?

In addition, since one of the central objectives of LIFT is to move down a number of services that are currently being provided at the secondary care level to the primary care level, it is necessary to create facilities that are relatively flexible and easy to adapt to meet the requirements of the evolving service needs. This would require both innovative design techniques and the use of modern and sustainable construction methods and materials. However, the interviewees across the three schemes indicated that inadequate attention was being paid to the exploration of effective future-proofing of the facilities. The current practices rely on dealing with the flexibilities through equipment and workforce reconfiguration rather than through the designs. The approaches involve the construction of some multi-purpose rooms where a number of procedures can be undertaken, and through creation of flexibilities in working hours of staff and introduction of hot-desking in the use of the facilities.

## 6.4 Interview discussions

The execution of LIFT schemes generally involves consultations with diverse stakeholder groups in order to develop a SSDP for each locality. To implement the adopted strategy in the SSDPs, a number of overlapping relationships evolves, typically involving the DoH, PfH, SHAs, PCTs, LAs, Acute Hospitals, NHS Trusts, Ambulance Service, Administrators, Policy-makers, Patients forums within the LIFT community, GPs, Pharmacists, Opticians, and Dentists. The combinations of these groups do vary from scheme to scheme in terms of number and composition, and over time. However, this investigation revealed that the processes of capturing and managing stakeholder values, requirements and expectations were fragmented, unstructured and incomprehensive. The engagements were largely restricted in terms of participants, scope and content, and in the selection of competing designs during the first tranche of projects in the three schemes that were investigated. Holmes *et al.* (2006) suggested that these may be because the procurement processes and proposed designs by the bidders were regarded as being confidential during the competitive tendering. It is, therefore, hoped that these omissions will be corrected in later tranches when the designs are not being produced under competitive environment. In addition, contrary to the stipulation that lessons would be learnt from initial schemes and would be incorporated in subsequent schemes, NAO (2005a) revealed that there was little evidence of knowledge sharing between PCTs they evaluated and that subsequent projects have been embarked upon. In fact, further tranches were announced even before holistic evaluation of the earlier schemes had been undertaken and the lessons learnt sufficiently reflected.

The LIFT philosophy embodies an integrative way of working between organisations from public and private sectors and demands the harmonisation of their working practices to enable them deliver the LIFT objectives in a collaborative fashion (DoH, 2001a). However, organisations from the public-sector stakeholder groups (e.g. the health and social care professionals) have traditionally worked independently (Moullin, 2002), and the complexities involved in having to work collaboratively with other public sector organisations and private sector consortium exert tremendous pressure on the skills needed to support the resulting structure and processes. SCRI (2005) identified the skill sets required for effective management of LIFT schemes to include: expertise in healthcare, development, design,

construction and facilities management, sound project management, ability to tackle unconventional problems, analytical ability, results-orientation, good at risk analysis, visionary and leadership skills, cultural sensitivity, transparency, creativity, flexibility, willingness to compromise, diplomacy, commitment, patience, empathy, negotiation, mediation and facilitation abilities, collaborative mindset, strategic thinking, interpersonal communications, strategic thinking, coaching and capacity building skills, and broader understanding of politics, global issues and the environment. However, this investigation revealed that the *LIFTCos.* do not aggregate and fully utilise the competences available within the partner organisations, largely as a result of the ingrained culture of distrust and fragmentation in the construction industry. Although most of the required skill sets were available, albeit to varying degrees, from within the participating organisations, evidence from these case studies and other schemes (Chan and Cooper, 2006) show that they were often not well harnessed to facilitate the effectively delivery of projects. Besides, the collaborations between the project participants were done rather intuitively without the use of any formalised procedures. In order to maximise the efficiency of the competences available within the partnerships, Chan and Cooper (2006) suggested the mapping of 'as is' skills mix so that the gaps can be identified and should be subsequently filled preferably from within the partner organisations, and outsourced only when absolutely necessary and covering the three levels of human resources practices of recruitment, deployment and development at the partnership, project and team/individual levels respectively.

Because it is widely recognised that it is people and the way in which they work individually and collectively that is the main determinant of the results obtained, the success of project relationships (especially involving multiple parties from diverse sectors) will fundamentally depend on the effectiveness of the relationships between the different participants, both at the corporate levels and within the integrated cross-organisational project teams, and how these relationships are nurtured over the duration of the partnerships. It will, therefore, be beneficial for the project participants to aggregate their resources and competences and jointly harmonise the objectives, strategy, processes, and operational procedures for each project and these should be clearly communicated to all participants. Bolton (2003) suggested the aggregation and balancing of the approaches, methodologies, tools and techniques applied within the two "slightly different" sectors (public and private) whose missions and overall objectives may be similar but using different means for achieving them. For example, while

"customer satisfaction" may be part of the agenda for both sectors, they are addressed differently in each since the supplier-customer relationship itself is fundamentally different. Additionally, the public sector organisations are being increasingly required to adopt private sector performance improvement methodologies to demonstrate their accountability (Bolton, 2003). However, the investigations revealed that the different stakeholders had different priorities and drivers, largely resulting from differences in their organisational values. For example, while public sector values are usually policy-driven, the private sector values are often commercially driven. The use of alignment mechanisms suggested by Bayliss *et al.* (2004) can strengthen the bond between the partners and their employees. Bolton (2003) further suggested that the harmonisation should extend to the development of the "basket of performance measures", through a collaborative process so that the resulting measures are "owned" by those subjected to them. Equally important is the harmonisation of policies and practices of the project participants, the optimisation of which Evans and Jukes (2000) suggested can be achieved through the four key steps of process standardisation, knowledge sharing, alignment of existing practices, and continuous elimination of waste within the joint development cycles.

This investigation revealed that because the project processes were seldom sufficiently defined, the projects were plagued with lack of common understanding in the initial stages of the early projects, subsequently leading to some degree of confusion and overlaps with regards to roles and responsibilities. In one of the schemes where a structured framework is used to clearly identify and define the key deliverables and the sorts of issues that the board will need to satisfy itself on collectively, a two-dimensional map that describes the sequence of activities on one axis and the actors or functions responsible for the sub-process on the other axis would have provided a more holistic assurance mechanism. It could also facilitate consistency and integration through the replication of the operating practices (activities, deliverables and functions) embedded in the generic process in all the projects handled by a LIFT scheme, thereby increasing the predictability of outcomes. In addition, it can also be used both as a learning tool for new employees and for monitoring relationships and performance of the members of the supply chain and projects. Other benefits of implementing process models at the project level include increased assurance of the product quality (Ulrich and Eppinger, 2000), reduced circle times and costs (Kagioglou *et al.*, 1998), clear definition of stakeholders' roles (Gray and Hughes, 2001).

While there were some forms of co-location between the participants in two schemes, no efforts had been made at harmonising their processes, cultures and tools in order to maximise the benefits of the partnerships. The other scheme that had no physical co-location but uses the *Project Assurance Pack*, a shared risk register and issue logs to facilitate collaboration between the project participants had apparently different operational procedures and tools used by the different project participants, thereby compromising a fundamental spirit of partnership. Also, the *Project Assurance Framework* does not emphasise the learning benefits realisable from an effective feedback function towards continuous improvement. It is therefore recommended that lessons (successes and failures) and project experiences captured during each of the stage/phase reviews be fed back to the framework for the benefits of the later phases and future projects. The creation, maintenance and use of a Legacy Archive had been suggested to be capable of aiding this process (Kagioglou *et al.* 1998).

Continuous improvement remains an illusive concept and subject to varied understandings and interpretations from both the demand and supply sides. Nonetheless, it was clear that the participants view CI as a concept that is based on an effort to upgrade the performance of every area of an organisation and covers more than simply improving the quality of the built products. However, a common understanding and explicit tools and techniques are essential for any meaningful progress in enshrining it in the culture and practices of the construction industry. The importance of values to the success of CI is widely recognised, but these have been usually addressed only within other contexts such as Total Quality Management (TQM) or partnering. The behaviour and culture of the people in an organisation have been adjudged to be a reflection of the organisation's values and priorities (Berger, 1997; Bessant and Caffyn, 1997; Hyland *et al.*, 2000; Jabnoun, 2001). Garfield (1986) contend that commitment to values is a key determining factor in the pursuit of any mission. Consequently, the identification of values that motivate and sustain continuous improvement became pertinent. The CI driving values were identified to include mutual respect, responsibility and empathy. The enabling values required to facilitate CI efforts were identified to include trust, openness, transparency, humility, integrity, responsiveness and cooperation. In order to infuse these values into the organisation, however, values such as leadership, policy formulation and deployment, idea management, monitoring and measurement, reward and recognition systems, learning and knowledge capturing were identified as essential ingredients. Jabnoun

(2001) identified CI infusing values to include leadership role, structural support, a shift of focus in the control system and an explicit behavioural change programme.

A number of tools for facilitating CI were unearthed from the investigations but they were unsystematic and thus providing sub-optimal results. For example, although reviews (such as post-project reviews, Gateway reviews, lessons learnt reviews) are being conducted, they generally do not facilitate the effective sharing of the learning/knowledge captured because the reports are often not in the format that they can be easily reused. Also, the time lapse between the discovery and creation, and the capture and sharing of knowledge leads to loss of important insights and does not allow the current project to benefit from it. Moreover, the reviews were mostly undertaken at such times that the useful lessons may have been forgotten or the projects participants have moved out of the partnership or have been tied up with pressure of other projects. Nonetheless, since learning from experience can only occur where there is opportunity to reflect on those experiences and compare them with mental models which is then followed by experimentation, it can be argued that LIFT procurement provides viable platform for double-loop learning. In addition, a more 'inclusive' partnering acculturation will provide effective vehicle for experiential learning.

Given the long-term nature and the partnership features of the LIFT initiative, the interviewees advocated that the project participants need to devise ways of learning from current practices in order to be able to continuously improve the performance of current and future projects. However, the study revealed that *ad hoc* procedures were mostly used for capturing lessons learnt during the planning and implementation of various LIFT projects. Although a variety of techniques and few technologies were being employed in capturing relevant project knowledge, the study revealed that the reuse of the captured knowledge have been largely ineffective. The key barriers to the achievement of continuous improvement on NHS LIFT projects identified include distrust and lack of mutual understanding, difference in *modus operandi* and timeframes of the key participants, lack of clarity and communication, lack of appropriate skills and competencies; and adversarial contexts.

This investigation established that the project outcomes of LIFT schemes are better than those obtained from traditional procurement processes. Hudson *et al.* (2003) had also used the NHS Environmental Assessment Toolkit (NEAT) to demonstrate that LIFT schemes are delivering

more sustainable solutions compared to buildings delivered through the traditional procurement route. However, Holmes *et al.* (2006) argued that demonstrating value for money in the implementation of two case study LIFT schemes was difficult because the bidding process was an unequal struggle between large consortia and inexperienced clients, which resulted in wasted opportunities while trying to obtain optimum design and price. While a diverse variety of criteria have been used to evaluate the performance of the LIFT projects, it is being argued that the criteria used cannot comprehensively measure the objectives set out by the project participants or the drivers identified for implementing the projects. A paradigm shift is, therefore, advocated to develop criteria that can sufficiently measure the project objectives and/or drivers as agreed by the project participants.

In order to ensure maximum possible level of adaptability/flexibility of the PHC facilities to accommodate the changing needs and evolving ways of delivering care in a cost-effective manner over the facilities' useful lives, healthcare designs have been suggested to adopt a 'long-life, loose-fit' approach that will yield a 'universal' building type that can be adaptable to new function within the building shell (Griffin and Roughan, 2006). Griffin and Roughan (2006) recommended the use 'shell and core' concept, establishing reasonable and consistent structural bays (eg 9m x 9m) and locating vertical elements such as stairs, lifts and shafts on the perimeter so that the cores can maintain maximum flexibility.

In addition, although it has been established that an incentivisation scheme is capable of encouraging higher performance and motivating innovation, it is noteworthy to mention that none of the three schemes operate any form of incentivisation arrangement.

## **6.5 Transferable 'good' practices from the UK to Nigeria**

While the practices in the NHS LIFT schemes are not perfect themselves (as shown in interview results reported in Section 6.3), a number of potential improvements have been suggested (in the interview discussions reported in Section 6.4). In particular, the investigations highlighted the need for developing a comprehensive framework for achieving continuous improvement that will make learning followed-through from planning, design and construction into occupancy, and post occupancy to become a natural part of the process of

procuring PHC facilities. Nonetheless, the following key practices have been identified as capable of facilitating sustained improvements in the procurement of PHC facilities in Nigeria:

### **1. Stakeholder identification, analysis, engagement and alignment**

This entails the process of generating robust requirements and values of the various stakeholders, their joint processing and management into commonly agreed project requirements and strategies for developing and operating the built facilities.

Tools such as citizens' juries, stakeholder impact indices and enquiry by design have been successfully used in healthcare and other sectors and when integrated into value and risk management methodologies, can facilitate the achievement of optimised solutions. These analyses should facilitate the pre-emption of difficulties and problems that can occur at later dates and affect outcomes, thereby preventing false assumptions which can consequently result in errors in the product specification, rework, delays and cost overrun.

The success of long-term relationships has been shown to fundamentally depend on the effective management of the project participants, both at the corporate levels and within the integrated cross-organisational project teams. This will require systematic alignment mechanisms to build and sustain common goals and objectives throughout the whole-life of the relationships. This should result in clearly defined targets that harmonises the diverse values of different project stakeholders into a uniform set of measurable project objectives, and articulated set of strategies for attaining the objectives. The development and maintenance of 'inclusive' partnering ethos across and between all levels of employees of the multi-stakeholder organisation (preferably facilitated by an external party) should facilitate the effective transfusion of the CI driving, enabling and infusing values identified in this research. The establishment of incentivisation and reward schemes may also motivate innovation and facilitate the attainment of higher performance. Under an incentivisation agreement, while the attainment of target cost can be used as the baseline, a pain share/gain share formula can be agreed and implemented whereby savings or excesses are shared as agreed by the shareholders on the basis of contribution to that performance.



However, there is a research need to evaluate current practice for managing stakeholders' values and the identifying the potential for knowledge transfer from other sectors to develop an effective methodological framework for capturing, quantifying, integrating and aligning the diverse values of the stakeholders to facilitate the attainment of whole-life value for money.

## **2. Definition of processes, roles, responsibilities and accountabilities**

The development of a procurement process map that shows clear information flows, deliverables, approval and review points, and identify the roles and responsibilities and the appropriate skills mix that are required to satisfy each of the process stages is advocated at both strategic and operational levels. Individual tasks (or group of related tasks) in the project can be identified in a work breakdown structure (WBS) and this can form the basis for role and responsibility assignment. The underlying principle for the allocation of roles and responsibilities is to ensure that each partner retains accountability for delivering the part of the project for which it has been selected (for example design, finance, construction, fabrication, etc) whilst at the same time signing up to the collective responsibility of successfully delivering the completed project. Therefore, the allocation of personnel, especially to key positions, should reflect individual corporate accountability and each of the key functional areas should be led by a person from the partner that is accountable for that function. The potential conflicts of interest that can arise when an individual has a dual role should also be managed in the same light, i.e. accountability should be on the basis of original parent organisation. In order to reflect the collective responsibility of the partners, allocation of responsibilities should avoid duplication and on the basis of 'best for the job', while avoiding parochial protectionism. To correct the current situation, an 'as is' skills mix can be mapped so that the gaps can be identified and these should be filled preferably from partners or if necessary from outside the organisation or outsourced.

Cross-functional diagrams (to show who is responsible for specific tasks and decisions, and the sequence of those actions) and RASCI charts (to show for each task who is responsible for carrying it out, who is authorised to approve work or expenditures, who provides administrative or technical support, who should and can provide counsel, and who should be kept informed) are commonly used in conjunction with jointly defined governing principles

and operating guidelines. In addition, the process map should also indicate the members of each team or community of practice responsible for delivering each task, the deliverables, the task duration and a unique identification number for easy reference in other documentations and guidance notes.

### **3. Periodic reviews throughout the whole-life cycle of each project**

The use of periodic stage-gate reviews throughout the whole-life of projects is recommended to ensure that:

- learning events are current (when lessons and knowledge generated can be recalled more easily) whilst limiting the danger of forgetfulness of especially procedural knowledge in projects involving long life cycles. The learning events identified by Tan *et al.* (2007) include: weekly site meetings; project reviews conducted at the end of each of the project stages; post project reviews; and unforeseen circumstances and problems which have a bearing on the performance of the project. The OGC Gateway review and decision points are considered as useful basis;
- it is easier to assemble the entire project teams during the project's course than after the project is terminated and the teams disbanded or reconfigured;
- the gradual harvesting of experiences during the course of projects will result in reduced expenditures compared to reviews undertaken at the end of projects; particularly the problem of the availability of outsiders (e.g. design, legal, technical and management consultants) that may cost more money to assemble after decommissioning; and
- periodic measurement and management of performance using measures that really matter to the purpose for which the PHC facilities have being built. Accordingly, AEDET, ASPECT and NEAT toolkits have been identified as useful best practice tools.

#### 4. New project roles and tasks

The appointment of a continuous improvement facilitator (CIF) to act as an independent and neutral facilitator who manages the debriefing processes under workshop settings (i.e. the workshop preparation, the workshop itself, and its documentation) at the approved learning events is advocated. The CIF should be responsible for providing suitable tools and could be from within or outside the organisation, but preferably an outsider who understands the working processes and practices of all the individual parties involved in the project and has access to all the relevant project documents. Rather than traditional meetings, formal continuous improvement teams (CITs) could be formed on the basis of functional groups and the learning events can concur with the stage-gate meetings of each CIT. The CITs are responsible for generating ideas for improvement termed 'potential continuous improvement ideas' (PCIIIs). Periodically, a continuous improvement champions (CIC) team comprising of senior employees from cross-organisational disciplines and with responsibility of evaluating all the PCIIIs should meet along with the CIF to agree on the ideas that can add value towards the achievement of the organisation's strategic plan and also to validate the lessons and knowledge captured by the CITs along with their associated contexts, before storage and dissemination. Neve (2003) constructed a toolkit for increasing individual's capacity to describe and be aware of his/her own situation in an organisation in a structured way. The toolbox comprise questions that serves as a dynamic mechanism for forcing individuals to continually rethink their actions, their implicit assumptions, their relations to others and to their environment. Such a toolkit can be adapted for use in during learning events in the procurement of PHC facilities.

However, success in achieving CI over the whole-life of the schemes will depend on the development of a comprehensive framework for achieving CI in the procurement of PHC facilities such that learning followed-through from planning, design and construction into occupancy, and post occupancy can become a natural part of the process of procuring PHC facilities. In addition, the recruitment of staff with the desired skills and the continuous training of all staff are also essential.

## 6.6 Chapter summary

This chapter described the investigation into some key implementation issues and lessons learnt on NHS LIFT schemes. The methodology adopted for the investigation involved semi-structured interviews with ten senior officers of six organisation working across three LIFT schemes.

The investigation revealed significant differences in the maturity levels of the schemes evaluated in terms of availability of appropriate systems, processes and structures in the planning and implementation of the schemes. The pattern of progress made in the various schemes generally confirmed an evolving system that has considerable scope for improvement. The schemes also indicated high potential to deliver the expected economies of scale and increased performance to meet the requirement for continuous improvement from both the demand and supply sides. The investigations particularly highlighted the need to develop a comprehensive framework for achieving continuous improvement in the procurement of PHC facilities such that learning followed-through from planning, design and construction into occupancy, and post occupancy can become a natural part of the process of procuring PHC facilities. Nonetheless, some 'good' practices that are capable of facilitating sustained improvements in the procurement of PHC facilities both in the UK and Nigeria were identified and these include stakeholder identification, analysis, engagement and alignment; definition of processes, roles, responsibilities and accountabilities; some new project roles and tasks; and periodic reviews throughout the whole-life cycle of each project.

## **CHAPTER SEVEN**

### **DEVELOPMENT OF A PROCUREMENT STRATEGY FOR PHC FACILITIES IN NIGERIA**

#### **7.1 Chapter introduction**

On the basis of the issues raised from the evaluations of the WHS and LIFT procurement strategies in Nigeria and the UK reported in Chapters Five and Six respectively, this chapter presents a proposed procurement strategy aimed at facilitating the achievement of the objectives of WHS scheme in Nigeria. The proposal relies on the aspirations expressed (explicitly and implicitly) by the Nigerian interviewees and the good practices highlighted following the interviews in the UK, as well as the on-going public sector reforms and legislative developments in Nigeria. The chapter also presents a proposed project organisation for implementing the procurement strategy.

#### **7.2 Conceptualising a procurement strategy for PHC facilities in Nigeria**

In Chapter Five, the interviewees in Nigeria questioned the applicability of the concept of community co-ownership or co-management of public facilities. However, they affirmed the importance of engaging with wide groups of stakeholders to achieve the objectives of PHC philosophy and identified essential areas in which communities can add value and facilitate the satisfaction of the unique requirements of the diverse members of host communities; thereby encouraging their effective participation in the management of the completed PHC facilities.

These include:

- undertaking of research to investigate and understand the dominant preferences, customs, beliefs and values of the communities;
- effective communication through traditional institutions to promote community education on both health and non-health related aspects of PHC philosophy;
- increased capacity of communities to nurture the skills and talents required in making meaningful contribution;
- transparent and clear allocation of roles, responsibilities and accountabilities;
- collaborative and partnership working between local organisations from public, private and not-for-profit sectors to aggregate competences and resources; and
- joint identification of risks associated with each project and the potential mitigation measures.

The interviewees also recommended the adoption of long-term collaborative procurement strategy that involves the allocation of responsibilities for construction, operating and maintenance to one party whilst imbibing local patronage concept through employment of local skills, materials and components. However, the key factors that influence a procurement strategy have been identified to include (OGC, 2003):

- project objectives – expressed in terms of capacity, such as the number of patients or bed or delivery of specific services;
- project constraints - such as budget and funding, the timeframe in which the facility is be delivered and exit strategy;
- cultural factors – such as considerations about workspace environment that will best support the way people work;
- risks – such as late completion of the facility and innovative use of materials;
- the client's capabilities to manage a project of this type; and
- the length of operational service required from the facility.

### **7.2.1 Overview and philosophy of the proposed strategy**

The proposed procurement model is focussed at bringing the diverse local stakeholders, interests and users together to plan and implement community-targeted strategies. The premise for this proposal revolves around the desire of various tiers of government to use private sector, where feasible, to increase healthcare investment as enshrined in the operative macro-economic framework (NPC, 2004) and the health sector reform programme (FMOH, 2004b). The underlying philosophy of the proposal is that focus should be less on whether the provider is public or private and more on identifying what roles the different actors can play most effectively in improving health and wellbeing of the people. It is a collaborative and standardised approach where the public sector retains responsibility for funding, setting of quality and performance standards and enforcement of corrective actions if performance falls below targets. The proposed arrangements are aimed at providing a powerful combination of the different elements in the communities to deliver significant innovations in PHC facilities and sustainable improvements in health and wellbeing of the Nigerian citizens. The strategy is based on long-term relationships with pre-selected supply chains from the private sector (preferably from within the host communities) whilst engaging with diverse stakeholder groups from within the host communities to empower the people and motivate them to contribute to both health and non-health components of PHC. This will involve the formation of a number of local development partnerships (LDPs) between private, public and not-for-profit organisations within each community to leverage the competences and resources in order to satisfy the components of PHC and boost the overall wellbeing of the community. It is also important that provisions are made for facilities required for other community services such as conference facilities, banquet hall, internet café, restaurant, indoor games and fitness centre. These facilities can be leased out to tenants and the rents charged.

### **7.3 Proposed procurement process**

Having established the need for a new PHC facility for a community, the proposed procurement model is represented in Figure 7.1.

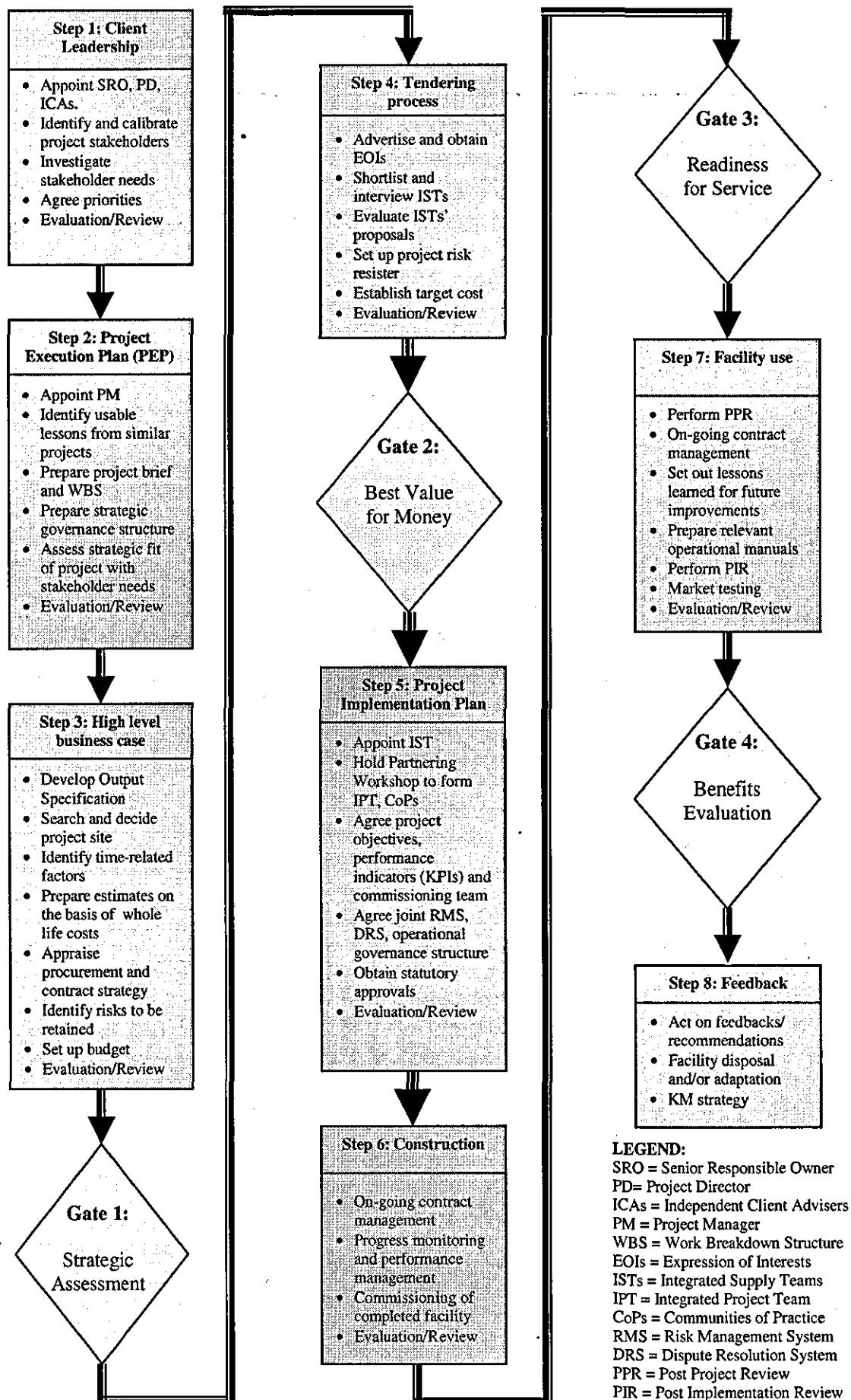


Figure 7.1: Proposed procurement life cycle framework



The introduction of the four gateway review points is aimed at ensuring that the project is critically evaluated and a decision to proceed obtained at the stipulated stages. It should be noted that although the upgrading of existing facilities are highly encouraged, this proposal supports the adoption of prototype design solutions to be used across the country, wherever new facilities are inevitable. These standard designs can be incorporated into the procurement of new PHC facilities in the form of standard output specifications. Design quality has been shown to be critical to the success of construction projects and the operations undertaken within them over their whole lives. For example, better designed healthcare facilities have been shown to help in improving the ease and efficiency of care process and could promote faster recoveries and patient safety (Ulrich, 2004). According to CABE (2000), a good design should:

- make a positive addition to the location, the environment and the community;
- add value and reduce whole-life costs;
- create built environments that are safe to construct and safe to use;
- create flexible, durable, sustainable and ecologically sound environments for the community;
- minimise waste of materials, energy and pollution both in construction and in use;
- be attractive and healthy for users and the public;
- contribute to construction that is quick, safe and efficient; and
- produce facilities that are easy and cost effective to manage, clean and maintain.

Hamilton (2007) had shown that the time of greatest human decision-making impact on a project's cost is during the early stages of a project. Hence, the project brief, on which the design solutions are based, should reflect the specific project circumstances and should be expressed in output terms as specifications to promote innovation; such as:

- the scope of use to which the facility will be put;
- the number of people it will accommodate, both in terms of staff, patients and visitors;
- the type of clinical and support equipment that will be used in the facility and the operational environment that these require;

- the sorts of other services (such as social and community services) that facility has to support; and
- performance criteria in terms of components and outputs.

It is also important that in defining design quality, consideration is given to the specific facility and the use to which it is intended to be put. To achieve a good design that will adequately represent the specific project needs and context, an open design competition of innovative solutions by each Independent Supply Team (IST) is proposed whilst using 'inclusive design' and 'lean' principles. Effective client leadership (with help from necessary ICAs) to develop a clear brief, appoint senior project leaders, identify and engage with relevant stakeholders are critical to success. It is believed that design ideas developed alongside knowledge of construction options and anticipated changes in the operational activities during the whole-life of a facility will provide better long term value. Each of the designs should be subjected to evaluation by an independent team using adapted versions of relevant UK healthcare-based best practice toolkits such as Achieving Excellence Design Evaluation Toolkit (AEDET) Evolution, A Staff Patient Environment Calibration Toolkit (ASPECT) and NHS Environmental Assessment Toolkit (NEAT), whilst demonstrating adequate future-proof tolerance for cost-effective adaptability in the future. These toolkits are aimed at facilitating sustainable construction and whole life cost consideration whilst ensuring facilities management planning based on lean principles that will avoid wasteful long-term expenditure on maintenance. The existing facilities can also be subjected to the same evaluations and that should serve as a systematic basis for identifying areas or components requiring improvements and for benchmarking of PHC facilities.

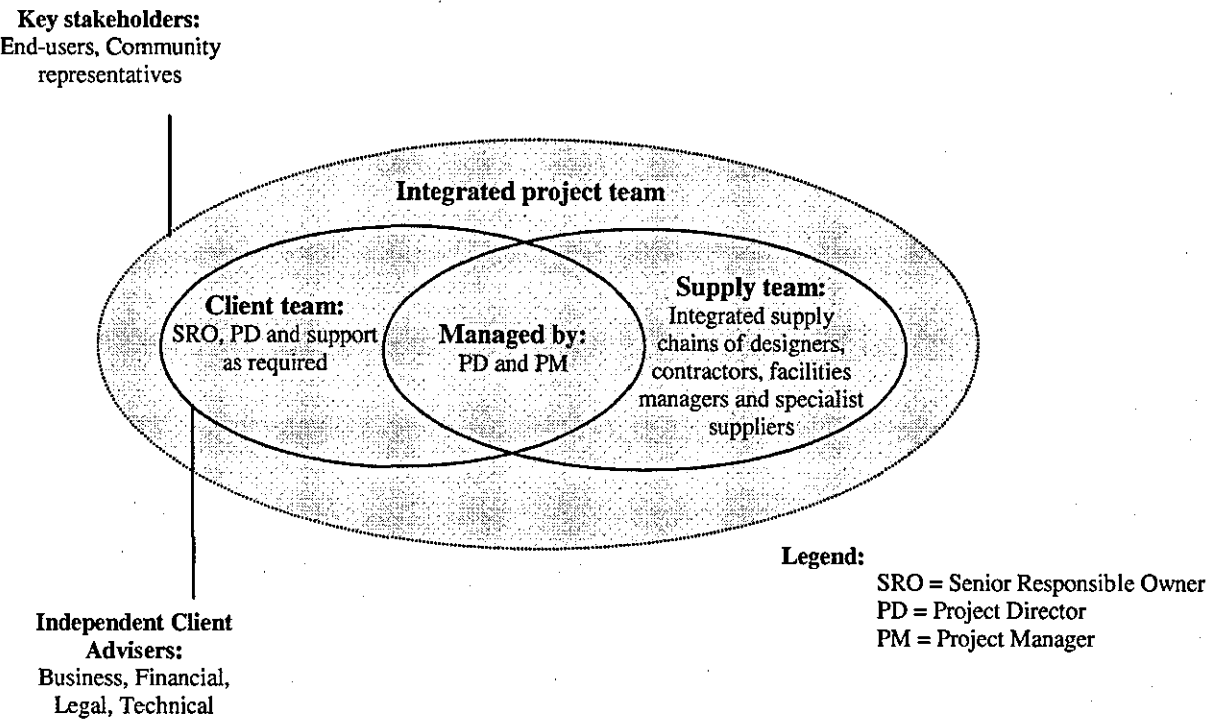
AEDET Evolution is a tool used for evaluating the quality of designs of healthcare buildings. It comprises three main sections developed in Microsoft Excel spreadsheet; impact, build quality and functionality; which are further split into ten key assessment criteria, each of which produces a score on the basis of six-point scoring scale (NHS Estates, 2005). AEDET Evolution delivers a profile that indicates the strengths and weaknesses of a design or an existing building. It should be noted that because of the nature of design, which inevitably involves tradeoffs, it may not be possible to produce a building that would have the maximum scores for all the sections, and a single overall score may also be misleading and uninformative. In addition, AEDET Evolution is specifically directed towards achieving

excellence in design rather than ensuring compliance with any legislation, regulation and guidance and may be used in standalone form, in evaluation workshops, for benchmarking purposes and in Design and Risk Toolkit (DART) workshops (NHS Estates, 2005). DART is used to identify design and risk profiles, and integrating them together to show the effect of risk on a project. The three main sections, ten assessment criteria and statements under each criterion are shown in Appendix C1.

ASPECT is a tool used for evaluating the quality of design of staff and patient environments in healthcare buildings. It is based on a database of over 600 pieces of research that deals with the way the health environment can impact on the levels of satisfaction shown by staff and patients and on the health outcomes of patients and the performance of staff. ASPECT comprises of eight sections and also developed in Microsoft Excel spreadsheet, each of which produces a score on the basis of six-point scoring scale (NHS Estates, 2007b). Like the AEDET, it also produces a profile that indicates the strengths and weaknesses of a design or an existing building and can be used as a standalone tool, or to support AEDET to provide a more comprehensive evaluation of the design of healthcare environments. The eight sections and statements under each are shown in Appendix C2. On the other hand, NEAT has been developed to help raise the awareness of the impacts that NHS facilities and services (and by extension any healthcare facilities and services) can have on the environment and also to estimate the level of environmental impact taking place during day-to-day operational activities. It was developed using the experience that the Building Research Establishment (BRE) gained over many years in assessing the impacts of buildings and building services and in the development of assessment tools such as the BRE Environmental Assessment Method (BREEAM). The assessment tool covers ten different areas considered to have potential to reduce the impact of the site and its related services on the surrounding external and internal environment (DoH, 2002). NEAT can be applied to any type of NHS healthcare facility; both new/refurbishment work and existing buildings. The ten areas are shown in Appendix C3.

It is also argued that because no matter how elaborate or innovative the design of a facility may be, a construction project will be judged ultimately on the quality of the finished product over its whole life, it is recommended that emphasis be placed on front-end engagement of the members of the design, construction and facility management teams in an integrated manner. This will ensure the best use of their combined skills and conveyance of information that

cannot easily be translated into documents, such as architectural aspirations. In the proposed integrated project team (IPT) concept shown in Figure 7.2, the procuring authority in consultation with all the key stakeholders within the host community (with the support of necessary independent advisers) partners with an integrated supply team (IST) (preferably from within the host community) that offers the best VfM solution during the tendering.



**Figure 7.2: Integrated project team concept**

Appropriate strategies are essential for dealing with the inevitable diversity of interests and influence between and within different stakeholder groups. An Integrated Project Team (IPT) is subsequently formed between the selected IST and client to work together to reduce waste, improve quality, innovate and deliver the project. This integrated governance structure requires clear identification and definition of the roles, responsibilities and accountabilities as well as the management mechanisms to support decision making and the day-to-day activities with clear lines of communication and reporting.

It should also be noted that keeping these diverse stakeholders together successfully over the whole life of these facilities is not easy; thus requiring effective and on-going management of relationships and expectations through the use of alignment mechanisms as part of formal or informal partnering arrangements. To cater for macro-economic changes and other

developments, it is recommended that market-testing be carried at the beginning of the long-term agreement and at five yearly intervals. This testing should cover not only performance standards but also rents and fees.

The key steps, together with brief description of each step, the key activities under the step and the recommended responsible roles are shown in Table 7.1 below.

**Table 7.1: Main framework steps, description, key activities and responsible roles**

Main Step	Brief Description	Key Activities	Responsible Role
1. Client leadership	This step is concerned with the client's ability to form a team capable of providing a clear understanding of the community needs, their wider responsibilities (such as sustainability and health and safety) and what the finished facility must deliver.	<ol style="list-style-type: none"> <li>1. Appointment of SRO responsible for achieving project objectives and projected benefits.</li> <li>2. Appointment of PD to serve as interface between project ownership and delivery.</li> <li>3. Appointment of ICAs to provide independent advice to client on strategy, financial, legal, and technical issues.</li> <li>4. Identification of stakeholders including potential users (staff, patient groups, visitors) and other supporting groups such as Local Development Partnerships (LDPs), classifying them, engaging with them to establish their values, requirements and expectations, and obtaining commitments.</li> <li>5. Stakeholder analysis to identify their unique cultures, short- and long-term needs and requirements from the facility, and agreeing priorities</li> <li>6. Evaluation and review to ascertain all stakeholders and requirements are captured.</li> </ol>	<p>Procuring Authority</p> <p>SRO</p> <p>SRO or PD</p> <p>SRO or PD</p> <p>SRO or PD</p> <p>PD and ICAs</p>
2. Project Execution Plan (PEP)	This step is aimed at preparing the mechanism for developing the	<ol style="list-style-type: none"> <li>1. Appointment of PM to lead, manage and coordinate the IPT on a day-to-day basis.</li> <li>2. Researching previous similar projects to identify appropriate lessons to apply to</li> </ol>	<p>PS</p> <p>PD and ICAs</p>

	strategy and control for the project	<p>current project.</p> <ol style="list-style-type: none"> <li>3. Preparation of project brief and work breakdown structure (WBS).</li> <li>4. Preparation of competence, roles and responsibility matrix at strategic level, and identify resource requirements.</li> <li>5. Preparation of project strategy – contract, procurement, safety, organisation and resourcing, construction, quality, coordination and commissioning strategy.</li> <li>6. Review of PEP to assess strategic fit of project with stakeholders' needs.</li> <li>7. Evaluation and review to assess feasibility of PEP.</li> </ol>	<p>PD and ICAs</p> <p>PD and ICAs</p> <p>PD and ICAs</p> <p>PD and ICAs</p>
3. High level business case	This step is aimed at exploring high level options and assessing their affordability and achievability.	<ol style="list-style-type: none"> <li>1. Development of output-based specification, using VM.</li> <li>2. Consultation and agreement on a project site.</li> <li>3. Establishment of optimum time-span for the life of the facility.</li> <li>4. Preparation of whole-life costs for various options.</li> <li>5. Appraisal and selection of appropriate procurement and contract strategies.</li> <li>6. Setting up of budget using base estimates and total risk allowance.</li> <li>7. Evaluation and review to assess suitability of selected options.</li> </ol>	<p>PD, ICAs, PM</p> <p>PD, ICAs</p> <p>PD, ICAs</p> <p>PD, ICAs</p> <p>PD, ICAs</p> <p>PD, ICAs</p> <p>PD, ICAs</p>
<p><b>Gate 1: Strategic Assessment</b> - this review involves ascertaining the direction and planned outcomes of each delivery entity, together with the progress of its constituent projects. It is to be repeated over the life of the contract at key decision points.</p>			
4. Tendering Process	This step is concerned with the process leading to the appointment of the IPT.	<ol style="list-style-type: none"> <li>1. Invitation for EOIs through adverts in at least two national dailies.</li> <li>2. Short-listing of ISTs on the basis of considering SC, QAS, HSM, EMS, FM, etc.</li> <li>3. Evaluation of proposals of the short-listed ISTs in detail.</li> <li>4. Identification of risks and setting up of a</li> </ol>	<p>PD, PM</p> <p>PD, ICAs, PM</p> <p>PD, ICAs, PM</p> <p>PD, ICAs, PM</p>

		project risk register..	
		5. Evaluation and review to identify the proposal that offers the best value for money (VfM).	PD, ICAs, PM
<b>Gate 2: Best Value for Money</b> - this review investigates the delivery strategy selected before any formal contractual agreement is established with the selected ITS.			
5. Project Implementation Plan	This step is concerned with the joint development of the implementation plan and project governance structure by all participants.	1. Appointment of IST that offers the best VfM. 2. Holding of partnering workshop with senior management from parties in IST and the client to form IPT, agree partnering charter, project objectives, KPIs, joint RMS and DRS, operational level governance structure and commissioning team. 3. Holding of partnering workshops with operational level managers to form CoPs, agree approval and communication lines, documentation and record keeping system. 4. Obtaining all necessary statutory approvals. 5. Evaluation and review to assess alignment of objectives and processes.	PD, ICAs, PM  IPT   IPT  PM  IPT
6. Construction	This step is concerned with the construction of the facility.	1. On-going regular review by IPT senior management to address major issues arising. 2. On-going monitoring and progress reporting against contract programme and performance targets. 3. On-going monitoring of QAS to outcomes. 4. Ongoing contract management and ensuring payments in line with contractual arrangements. 5. Commissioning of completed facility. 6. Evaluation and review to confirm facility is ready for service.	IPT  PD/PM  PD/PM  PD/PM  IPT PD/PM
<b>Gate 3: Readiness for Service</b> - this review focuses on the readiness of the organisation or project to go live with			

the necessary business changes, and the arrangements for management of the operational services.			
7. Facility Use	The aim of this step is to assess how well the project was managed to meet the desired outcomes.	<ol style="list-style-type: none"> <li>1. Post project review to assess how well project was managed.</li> <li>2. On-going contract management to ascertain that desired performance level is being achieved.</li> <li>3. Preparation of relevant operational manuals for the use of end users and visitors.</li> <li>4. Setting out of lessons learned for future improvements.</li> <li>5. Post implementation review to assess whether projected benefits are achieved.</li> <li>6. Market testing at five yearly intervals.</li> <li>7. Evaluation and review to ensure that performance standards are being attained to support the delivery of services of the highest quality.</li> </ol>	PD/PM  PD/PM  IPT  IPT  PD, ICAs, PM  PD, ICAs  PD/PM
<b>Gate 4: Benefits Realisation</b> - this review confirms that the desired benefits of the project are being achieved, and the business changes are operating smoothly. The review is repeated at regular intervals during the lifetime of the new service/facility.			
8. Feedback	This step relates to the end of the economic life of the facility when decision to either demolish or put the facility to alternative use will be taken.	<ol style="list-style-type: none"> <li>1. Evaluation of the residual values and potential alternative uses of the facility.</li> <li>2. Taking optimum decision on disposal of the PHC facility.</li> <li>3. Capturing, processing, storage and dissemination of knowledge generated.</li> </ol>	PD, ICAs, PM  PD, ICAs, PM  PD, ICAs, PM

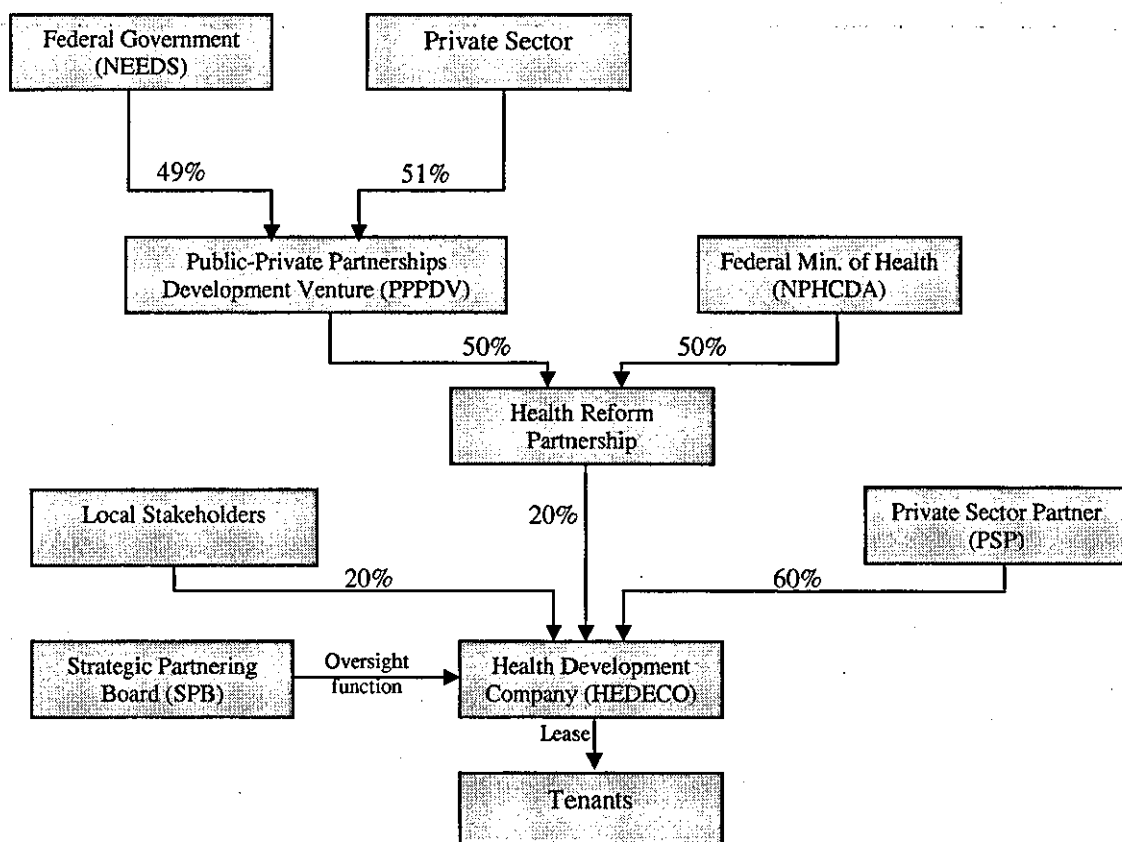
## 7.4 Proposed project organisation

The proposed project organisation provides details of funding and contract strategy. In implementing the proposed strategy shown in Figure 7.1, a generic downstream delivery vehicle in the form of an integrated project team (IPT) akin to the NHS LIFT (Local Improvement Finance Trust) scheme under the British health sector is proposed. Some of the fundamental differences between this proposal and LIFT are in funding and asset-ownership



arrangements. Like the current WHS regime, it is recommended that government retains the funding responsibilities through a Build Transfer Operate (BTO) structure in which the PSPs will be responsible for delivering and sustaining the facilities to agreed performance standards in exchange for one-off payment at commissioning and regular payments during the facility use. The reason for proposing this financing style is hinged on the argument that ownership change at the microeconomic level alone may not be sufficient to guarantee enterprise efficiency. The premise for this argument is that since the theoretical basis for privatisation success has been linked to competition (and its regulation), weaknesses in these fields explain why privatisation is negatively related to sustainable developments in developing countries where only few members of the society are able to participate. Recent reviews of competition policies in developing countries indicate fundamental weaknesses in implementation at the expense of effective and affordable service delivery that is accessible to the greater number of the citizens (Kirkpatrick *et al.*, 2004; Metcalfe and Ramlogan, 2005; Uchida and Cook, 2005; Cook *et al.*, 2007). It is therefore argued that other reforms more directly related to enterprise development, rather than private ownership, may play more crucial role in developing countries, especially in the social infrastructure sectors. This type of financial arrangement has been recommended by Sohail *et al.* (2006) for concession contracts for providing sustainable water services that is suited to the needs, resources and aspirations of local impoverished communities in Asia, Africa and Latin America.

In addition, the contribution of not-for-profit organisations such as youths and women clubs can be harnessed in the Facilities Management processes in order to reduce the financial burden on government. The *modus operandi* at both strategic and operational levels will involve the formation of communities of practices (CoPs) from amongst cross-functional organisations aimed at feeding back lessons learnt in order to improve future phases and projects. One delivery mechanism is proposed for each of the 774 LGAs in Nigeria to provide and maintain the PHC facilities built across all the wards within each LG. Figure 7.3 shows the structure and proposed composition for each integrated project team.



**Figure 7.3: Structure of an integrated project team**

The key components of the delivery vehicle include:

1. The establishment of a 50:50 national joint venture, *Health Reform Partnership (HRP)*, between the FMOH (for the PHC, the FMOH should be represented by NPHCDA) and the Public-Private Partnerships Development Venture (PPPDV). The PPPDV itself is to be established as a PPP between the Federal Government (represented by the National Economic Empowerment and Development Strategy (NEEDS) Department of the National Planning Commission) and the private sector with a composition of 49% and 51% respectively. The PPPDV should be responsible for improving the development and delivery of PPPs across the Nigeria public sector.
2. The establishment of local joint ventures (LJVs) in the form of IPTs at each LGA level, between a *private sector partners (PSPs)* - consortia of diverse specialties (the ISTs) identified through competitive procurement, the local health bodies (comprising of Local Government Health and Social Services Departments, Medical and Para-medical professionals, Voluntary/Community organisations) and HRP. Each LJV (*Health*

- Development Company - HEDECO*) should benefit from a long-term partnering<sup>21</sup> agreement to deliver investment and services in local care facilities of agreed performance standards over contractual period of between 15 to 20 years.
3. The HEDECOs should be set-up as public-private partnerships in the form of limited liability company and each should be run by a management board comprising of directors nominated by the major parties; the PSP, local stakeholders and HRP through strategic partnering agreement<sup>22</sup> with the procuring authority.
  4. The functions of each HEDECO would include the development of strategic service development plans<sup>23</sup> that incorporates local primary care service needs, the management and implementation of agreed investments and services, the planning of future estate and services requirements to meet the local health economy's needs, and the development of opportunities identified by the PSP.
  5. A Strategic Partnering Board<sup>24</sup> (SPB) should be formed between the core statutory bodies and the representatives of each local healthcare community (including the Ward Development Committee). The SPBs should be responsible for monitoring the performance of the HEDECOs and for identifying their future workloads.

A summary of the proposed functions of the various components of the model are presented in Table 7.2 below.

**Table 7.2: Basic functions of model components**

Component	Proposed function
Federal Government through the National Economic Empowerment and	Responsible for formulating and implementing the financial and economic policies that can provide a step change in the development of physical and social infrastructure in Nigeria. Its role under this proposal

<sup>21</sup> Development of sustainable relationships between two or more organisations, to work in cooperation for their mutual benefit in the requisition and delivery of works, goods and/or services over a specified period to achieve continuous performance improvement (ECI, 2003).

<sup>22</sup> Standard document which establishes the long-term strategic partnering between HEDECO and other participants relating to the delivery of healthcare services in the area.

<sup>23</sup> Document that forms the basis of the HEDECO strategy for primary and community-based health services, reviewed and approved annually by the SPB. It defines the local health needs and prioritise development of facilities and services.

<sup>24</sup> Board established by the core public sector bodies in local healthcare community and the representatives of the host community, and responsible for monitoring the performance and identifying the future direction of the HEDECOs.

Development Strategy (NEEDS) Department within the National Planning Commission (NPC)	is to partner with the private sector having 49% composition to establish a national joint venture organisation that will coordinate the development of PPPs in Nigeria.
Private Sector Management Consultants	This diverse group of private organisations to comprise financial, legal, contracting, consulting, and facilities management firms will participate as partners in the establishment of the national joint venture with 51% composition.
The Public-Private Partnership Development Venture (PPPDV)	The PPPDV is the national joint venture formed between the Federal Government (NEEDS) and private organisations. Under this proposal, PPPDV will work solely with and for the public sector at all levels, providing knowledge, advice and expertise to support the delivery of better public sector services and infrastructure programmes across all sectors; and will participate as equal partner with the PPPDV in the establishment of the primary care sector-specific partnership, called the Health Reform Partnership (HRP).
The National Primary Health Care Development Agency (NPHCDA)	The agency within the Federal Ministry of Health (FMOH) responsible for providing policy direction relating to primary care services in Nigeria. Its role under this proposal is to participate as an equal partner with the PPPDV in the establishment of the primary care sector-specific partnership, called the Health Reform Partnership (HRP).
The Health Reform Partnership (HRP)	The HRP is the proposed sector-specific partnership formed between the PPPDV and NPHCDA as equal partners to enable investment in local primary health care facilities and services. Its role under this proposal is to support the stakeholders in the local health economy in identifying, and reaching agreement with, a private sector partner; and investing, alongside other stakeholders, in establishing a local joint venture (LJV), called Health Development Company (HEDECO), in each locality and holding 20% composition.
Local Stakeholders	The local stakeholders comprise Health and Social Services Departments of Local Government Authorities, Primary Care Departments of the State Ministries of Health, Medical and Para-medical professionals, the Ward Development Committees, Voluntary/Community organisations, etc. The role of local stakeholders under this proposal is to invest alongside other stakeholders in establishing the HEDECO for each locality and holding 20% composition.
The private sector partners (PSPs)	The PSP for each locality is a consortium of diverse specialties, identified through competitive procurement, to form the HEDECO for

	each locality. Under the proposal, the PSP controls 60% of the HEDECO.
The Health Development Companies (HEDECOs)	Each HEDECO is formed as a public-private partnership (PPP) in the form of a limited liability company. The responsibilities of each HEDECO include the development of strategic service development plan (SSDP) for each locality, management and implementation of agreed investments and services; planning of future estate and services requirements; and the development of opportunities identified by the PSP.
The Strategic Partnering Boards (SPBs)	Each SPB is formed from the core statutory public sector bodies in the locality and representatives of the local health community. Each SPB enters long-term strategic partnering agreement (SPA) with HEDECO, and has responsibilities of agreeing the SSDP; monitoring the performance of each HEDECO and identifying their future workloads.
Tenants	The tenants occupy the facilities and have the responsibilities of paying rents (under tenancy agreement) and contributing to the process of capturing user requirements during the pre-construction stage.

## 7.5 Chapter summary

This chapter has presented the proposed a procurement strategy based on public-private partnership (PPP) principle that will be responsive to the peculiar needs of the host community and have adequate accountability structure for sustaining PHC facilities in Nigeria. This proposal falls in line with the new macro-economic strategy adopted for growth and the health reform agenda of the present government. These strategies have variously emphasised the expansion of the approach to improving healthcare delivery through increased private sector participation, whenever feasible. One of the key objectives of the method is the idea of bringing together the various local stakeholders, interests and users that comprise the local health economy. This way, it is expected that the active community participation will offer considerable social and economic benefits such as social inclusion, employment and training opportunities for the members of the host communities in addition to the attainment of other fundamental aspects of PHC provisioning.

The proposal advocates national outlook for consistency but with local control to be responsive to actual needs. However, it has become imperative to investigate issues associated

with the implementation of PPPs in the provision of public facilities and services in Nigeria and this has been presented in Chapter Eight. In addition, further research is needed to assess the adequacy and relevance of the components of the proposed model, the underlying logic in the causal relations between the different components and the efficacy of the model in achieving the primary objectives of the scheme, and this is presented in Chapter Nine.

## **CHAPTER EIGHT**

### **SUPPLEMENTARY STUDIES ON PPPS IN NIGERIA**

#### **8.1 Chapter introduction**

This chapter presents the analysis of the questionnaire survey administered in Nigeria to investigate the risk and success factors and risk allocation preferences in PPP projects in Nigeria (see Appendix B3). In order to ensure a common understanding, the introductory section of the questionnaire provided the working definition adopted for PPP and the aim of the research. This research considers PPPs as “contractual arrangements in which public and private sectors work together for mutual benefits by aggregating their competencies and resources in order to increase the efficiency, effectiveness and quality of public facilities and/or services through optimal sharing of risks and rewards. In these relationships, the private sectors could be involved in the financing, design, construction and operation of the facilities and/or services”. The 36 usable responses obtained were analysed and the results evaluated using both descriptive and inferential statistical techniques.

#### **8.2 Survey results and discussions**

The statistical analyses were undertaken using the Statistical Package for Social Sciences (SPSS) for Windows, version 12.0 (SPSS, 2003). The rankings of PPP risk and success factors in Nigeria were based on arithmetic mean value scores. For interpretation purposes, the mean score of 0 indicates “no importance”, 1 “little importance”, 2 “some importance”, 3 “moderately important”, 4 “important” and 5 “very important”. For example, if the mean score of a particular variable is 3.2, then it could be interpreted that the variable is perceived

to be between “moderately important” and “important” but tends more towards being “moderately important”.

The standard deviation (SD) of the responses, which measures the variability or dispersal of the responses and demonstrates how clustered the response values are around the means for each risk and success factor, were also computed. Higher SD is often interpreted as higher disparity.

One-way analysis of variance (ANOVA) were then performed to test whether the mean values for each risk and success factor were equal for each of the following groups:

- a. those working for public sector and private sector; and
- b. those that have been involved in PPP projects as partners and those whose involvement has been of only an advisory nature.

Finally, the ‘*F* statistics’ (based on *F*-ratio or value), which tests the null hypothesis that all groups have the same mean were also computed with ‘*F* significant’ indicating the probability of rejecting the null hypothesis of no difference between the mean values between the groups. A probability value (significance level) below 0.05 suggests a high degree of difference of opinion between groups on that factor.

### **8.2.1 Responses**

In all, 42 questionnaires were returned out of the 150 distributed, but the responses from six respondents who were not involved either as partners or advisers were discarded. The 36 usable responses represents 24% effective response rate. Of the respondents, eight worked in the public sector, nine were consultants, nine were contractors and ten were academics involved in teaching and research. However, unlike in many other countries, academics are often appointed in developing countries, such as Nigeria, to provide advisory roles to the public sector on PPP schemes, and have been accordingly classified as public sector respondents. Consequently, the responses from the private and public sectors are thus 18 each. The small size of responses may be because the development of PPP procurement systems is



still at formative stage in Nigeria. Although a small sample generally precludes some types of statistical tests of significance, the effective response rate of 24% is not unusual for this type of survey; for example similar questionnaire surveys in the UK by Li *et al.* (2005a) received a response rate 11% while Soetanto *et al.* (2004) received a response rate of 18.9%. Nevertheless, this sample is still statistically valid as it yields a 7% standard error against the 10% maximum allowable error (Kish, 1995). Mbugua *et al.* (2000) further argued that a minimum of 30 responses is adequate for research based in the construction industry.

In addition, the Cronbach alpha for the risk and success factors of 0.722 and 0.754 respectively indicate that the data collected are reliable (SPSS, 2003).

## 8.2.2 Characteristics of respondents

Most of the respondents were experienced, with 75% having over 15 years of relevant experience in the construction sector (average = 18 years; standard deviation (SD) = 6.30). The majority of the respondents (over 95%) currently belong to either the top or middle management levels of their respective organisations. Table 8.1 shows the experience and position/rank of the respondents. Two-thirds of the respondents have been or are currently involved in PPP project as partners, whereas the remaining third have an interest and knowledge of PPP and all currently serve in advisory roles in on-going PPP projects. Table 8.2 confirms that BOT and JV are the commonest PPP procurement methods used in Nigeria in housing and office accommodation, civil engineering works and utilities.

**Table 8.1: Survey respondents' experience and position/rank in organisations**

Years of experience	Top Management		Middle management		Lower management		Overall	
	Public	Private	Public	Private	Public	Private	Total	%
Less than 5 years	2	0	0	0	0	0	2	6
6 – 10 years	0	0	0	1	1	0	2	6
11 – 15 years	0	0	4	0	0	1	5	14
16 – 20 years	2	5	2	2	0	0	11	30
21 – 25 years	4	7	1	1	0	0	13	36
25 - 30 years	1	1	1	0	0	0	3	8
<b>Total</b>	<b>9</b>	<b>13</b>	<b>8</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>36</b>	<b>100</b>

**Table 8.2: Survey respondents' PPP sector involvements and type of procurement methods**

PPP sector involvement	PPP procurement method		Overall	
	BOT	Joint Venture	Total	%
Housing and offices	5	4	9	38
Civil engineering works	8	0	8	33
Utilities	1	5	6	25
IT and Telecommunication	0	1	1	4
<b>Total</b>	<b>14</b>	<b>10</b>	<b>24</b>	
<b>%</b>	<b>58</b>	<b>42</b>	<b>100</b>	<b>100</b>

### 8.2.3 Relative importance of risks associated with PPPs in Nigeria

Tables 8.3 and 8.4 respectively present the consolidated results of the analyses for the risk factors comparing the responses of private and public sector respondents and those of respondents with and without involvement in PPP projects as partners. As much as possible, the Tables and analyses have been clearly sorted into exogenous and endogenous risks. The analysis of survey response data produced mean importance values for the 61 PPP risk factors ranging from 2.50 to 4.17. Tables 8.3 and 8.4 (Column 6) show that three factors scored mean values greater than 4.0, 45 factors had mean scores between 3.0 and 4.0, while the remaining 13 factors scored mean values between 2.0 and 3.0.

Overall, the top 10 most important risk factors for PPPs in Nigeria are *“unstable government”*, *“inadequate experience in PPP”*, *“availability of finance”*, *“land acquisition/site availability”*, *“poor financial market”*, *“residual value (after concession period)”*, *“availability of appropriate labour/material”*, *“financial attraction of project to investors”*, *“corruption and lack of respect for law”* and *“poor quality of workmanship”*. Of these, only three are exogenous risks whereas the remaining seven are endogenous risks. Furthermore, the results also show that the overall top 20 important risk factors were among the top 20 rankings of the sub-groups with the exception of *“risk regarding pricing of product/service”* which was ranked at 25<sup>th</sup> position by the public sector respondents, *“unstable local currency”* and *“interest rate volatility”* which were ranked 21<sup>st</sup> and 22<sup>nd</sup> respectively by the public sector respondents and those without practical involvement in PPP projects, and *“lack of government*

*guarantees*” which was ranked 22<sup>nd</sup> by the sub-group with practical involvement in PPP projects. Strategies would therefore be required to address each class of risk.

In dealing with the endogenous risks, a strong private sector partner can be engaged in addition to the appointment of competent external advisers that have appropriate skills and experience in PPP. Although there is no evidence that the Nigerian banks have any experience or expertise in PPPs, the recent consolidation reform in the Nigerian financial market has strengthened the capability of the local banks to offer commercial loans to prospective private concessionaires.

**Table 8.3: Respondents’ perceptions of relative importance of PPP risk factors (by sector)**

Exogenous Risk Factors	Public sector		Private sector		Total				
	Mean	Rank	Mean	Rank	Mean	SD <sup>y</sup>	Rank	F	Sign.
Unstable government	4.06	1	4.28	1	4.17	0.378	1	3.317	0.077
Poor financial market	3.83	7	4.00	4	3.92	0.500	5	1.000	0.324
Corruption and lack of respect for law	3.83	8	3.83	8	3.83	0.845	9	0.000	1.000
Lack of tradition of private provision of public services	3.67	11	3.61	12	3.64	0.487	11	0.114	0.738
Non-involvement of host-community	3.61	12	3.61	13	3.61	0.494	12	0.000	1.000
Poor public decision making process	3.61	13	3.50	16	3.56	0.652	13	0.256	0.616
Unstable value of local currency	3.28	21	3.56	18	3.42	0.604	18	1.959	0.171
Interest rate volatility	3.28	22	3.56	19	3.42	0.604	19	1.959	0.171
Inflation rate volatility	3.11	30	3.39	26	3.25	0.439	25	3.899	0.056
Legislation change/inconsistencies	3.11	31	3.39	27	3.25	0.604	26	1.959	0.171
Influential economic event (boom/recession)	2.89	49	3.56	20	3.22	0.760	29	8.384	0.007*
Possible expropriation/nationalisation of assets	3.11	32	3.33	29	3.22	0.422	30	2.615	0.115
Cultural differences between main stakeholders	3.06	36	3.11	38	3.08	0.280	37	0.347	0.560
Inconsistencies in government policies	3.00	43	3.06	45	3.03	0.377	44	0.191	0.665
Strong political opposition/hostility	2.83	56	3.17	35	3.00	0.676	47	2.267	0.141
Rate of returns restrictions	2.89	51	3.06	47	2.97	0.654	49	0.577	0.453
Weather	2.94	46	2.94	53	2.94	0.232	51	0.000	1.000
Public opposition to projects	2.83	57	3.00	51	2.92	0.500	53	1.000	0.324
Environment	2.94	47	2.83	56	2.89	0.319	54	1.097	0.302
Force majeure	2.94	48	2.83	57	2.89	0.319	55	1.097	0.302
Import/Export restrictions	2.78	58	2.89	54	2.83	0.507	57	0.425	0.519
Geotechnical conditions	2.89	55	2.67	59	2.78	0.422	58	2.615	0.115
Change in tax regulation	2.33	60	2.72	60	2.53	0.654	60	3.400	0.074
Industrial regulatory change	2.33	61	2.67	61	2.50	0.507	61	4.250	0.047*

**Table 8.3: Respondents' perceptions of relative importance of PPP risk factors (by sector) continued**

Endogenous Risk Factors	Public sector		Private sector		Total				
	Mean	Rank	Mean	Rank	Mean	SD*	Rank	F	Sign.
Inadequate experience in PPP	4.06	2	4.11	2	4.08	0.047	2	0.347	0.560
Availability of finance	4.00	3	4.11	3	4.06	0.532	3	0.386	0.538
Land acquisition/site availability	4.00	4	3.89	6	3.94	0.232	4	2.125	0.154
Residual value (after concession period)	3.94	5	3.83	7	3.89	0.319	6	1.097	0.302
Availability of appropriate labour/material	3.78	10	4.00	5	3.89	0.319	7	4.857	0.034*
Financial attraction of project to investors	3.94	6	3.78	11	3.86	0.723	8	0.471	0.497
Poor quality of workmanship	3.83	9	3.83	9	3.83	0.063	10	0.000	1.000
Level of demand for the project	3.56	14	3.56	14	3.56	0.652	14	0.000	1.000
Inadequate distribution of responsibilities/risks	3.56	15	3.56	15	3.56	0.504	15	0.000	1.000
Risk regarding pricing of product/service	3.22	25	3.83	10	3.53	0.146	16	4.840	0.035*
Operation cost overrun	3.44	16	3.56	17	3.50	0.085	17	0.425	0.519
Lack of government guarantees	3.39	17	3.44	21	3.42	0.500	20	0.108	0.744
Design deficiency	3.39	18	3.44	22	3.42	0.500	21	0.108	0.744
Construction cost overrun	3.33	19	3.44	23	3.39	0.494	22	0.447	0.508
Low operating productivity	3.33	20	3.44	24	3.39	0.082	23	0.447	0.508
Lack of commitment from public/private partner	3.28	23	3.44	25	3.36	0.487	24	1.055	0.312
Excessive contract variation	3.28	24	3.22	30	3.25	0.073	27	0.140	0.710
Operational revenue below projection	3.22	26	3.22	31	3.22	0.098	28	0.000	1.000
Maintenance more frequent than expected	3.00	42	3.39	28	3.19	0.087	31	5.591	0.024*
Competition risk	3.06	34	3.22	32	3.14	0.351	32	2.096	0.156
Insolvency/default of subcontractors/suppliers	3.17	28	3.11	36	3.14	0.058	33	0.221	0.641
Inability to service debt	3.06	35	3.22	33	3.14	0.351	34	2.096	0.157
Inadequate distribution of authority between partners	3.11	33	3.11	37	3.11	0.319	35	0.000	1.000
Staff crises	3.17	29	3.06	44	3.11	0.319	36	1.097	0.302
High finance costs	3.06	37	3.11	39	3.08	0.554	38	0.347	0.560
Lack of creditworthiness	3.06	38	3.11	40	3.08	0.280	39	0.347	0.560
Delay in project approvals and permits	3.06	39	3.11	41	3.08	0.280	40	0.347	0.560
Construction time delay	3.06	40	3.11	42	3.08	0.280	41	0.347	0.560
Late design changes	3.06	41	3.11	43	3.08	0.047	42	0.347	0.560
Unproven engineering techniques	3.22	27	2.94	52	3.08	0.649	43	1.680	0.204
Prolonged negotiation period prior to initiation	3.00	44	3.06	46	3.03	0.506	45	0.106	0.747
Third party tort liability	2.89	50	3.17	34	3.03	0.377	46	5.519	0.025*
High bidding costs	3.00	45	3.00	49	3.00	0.586	48	0.000	1.000
Different working methods/know-how between partners	2.89	52	3.06	48	2.97	0.446	50	1.264	0.269
Maintenance cost higher than expected	2.89	53	3.00	50	2.94	0.039	52	2.125	0.154
Organisation and coordination risk	2.89	54	2.83	58	2.86	0.639	56	0.066	0.799
Bankruptcy of concessionaire	2.61	59	2.89	55	2.75	0.604	59	1.959	0.171

\* implies no agreement in opinion between the sub-groups at 5% level of significance; SD\* = Standard Deviation

**Table 8.4: Respondents' perceptions of relative importance of PPP risks (by involvement)**

Exogenous Risk Factors	Involved as Partner		Not involved as partner		Total				
	Mean	Rank	Mean	Rank	Mean	SD <sup>y</sup>	Rank	F	Sign.
Unstable government	4.21	1	4.08	1	4.17	0.378	1	0.872	0.357
Poor financial market	3.88	7	4.00	4	3.92	0.500	5	0.493	0.487
Corruption and lack of respect for law	3.88	9	3.75	10	3.83	0.845	9	0.171	0.682
Lack of tradition of private provision of public services	3.58	14	3.75	11	3.64	0.487	11	0.935	0.340
Non-involvement of host-community	3.63	11	3.58	13	3.61	0.494	12	0.055	0.816
Poor public decision making process	3.63	12	3.42	16	3.56	0.652	13	0.812	0.374
Unstable value of local currency	3.46	18	3.33	21	3.42	0.604	18	0.337	0.566
Interest rate volatility	3.46	19	3.33	22	3.42	0.604	19	0.337	0.560
Inflation rate volatility	3.33	24	3.08	34	3.25	0.439	25	2.720	0.108
Legislation change/inconsistencies	3.29	27	3.17	31	3.25	0.604	26	0.337	0.566
Influential economic event (boom/recession)	3.33	25	3.00	44	3.22	0.760	29	1.563	0.220
Possible expropriation/nationalisation of assets	3.29	28	3.08	35	3.22	0.422	30	2.009	0.165
Cultural differences between main stakeholders	3.08	39	3.08	38	3.08	0.280	37	0.000	1.000
Inconsistencies in government policies	3.04	45	3.00	46	3.03	0.377	44	0.095	0.760
Strong political opposition/hostility	3.17	32	2.67	58	3.00	0.676	47	4.857	0.034*
Rate of returns restrictions	2.96	50	3.00	47	2.97	0.654	49	0.032	0.860
Public opposition to projects	2.88	55	3.00	48	2.92	0.500	53	0.493	0.487
Environment	2.96	53	2.75	55	2.89	0.319	54	3.680	0.064
Force majeure	2.88	56	2.92	53	2.89	0.319	55	0.133	0.717
Import/Export restrictions	2.79	58	2.92	54	2.83	0.507	57	0.479	0.494
Geotechnical conditions	2.83	57	2.67	59	2.78	0.422	58	1.259	0.270
Change in tax regulation	2.54	60	2.50	60	2.53	0.654	60	0.032	0.860
Industrial regulatory change	2.50	61	2.50	61	2.50	0.507	61	0.000	1.000

**Table 8.4: Respondents' perceptions of relative importance of PPP risks (by involvement) continued**

Endogenous Risk Factors	Involved as Partner		Not involved as partner		Total				
	Mean	Rank	Mean	Rank	Mean	SD*	Rank	F	Sign.
Inadequate experience in PPP	4.08	2	4.08	2	4.08	0.047	2	0.000	1.000
Availability of finance	4.08	3	4.00	3	4.06	0.532	3	0.192	0.664
Land acquisition/site availability	4.00	4	3.83	5	3.94	0.232	4	4.533	0.041*
Residual value (after concession period)	3.96	5	3.75	9	3.89	0.319	6	3.680	0.064
Availability of appropriate labour/material	3.92	6	3.83	6	3.89	0.319	7	0.540	0.468
Financial attraction of project to investors	3.88	8	3.83	7	3.86	0.723	8	0.026	0.873
Poor quality of workmanship	3.83	10	3.83	8	3.83	0.063	10	0.000	1.000
Level of demand for the project	3.50	16	3.67	12	3.56	0.652	14	0.515	0.478
Inadequate distribution of responsibilities and risks	3.63	13	3.42	17	3.56	0.504	15	1.382	0.248
Risk regarding pricing of product/service	3.58	15	3.42	18	3.53	0.146	16	0.282	0.599
Operation cost overrun	3.46	17	3.58	14	3.50	0.085	17	0.479	0.494
Lack of government guarantees	3.42	22	3.42	19	3.42	0.500	20	0.000	1.000
Design deficiency	3.42	23	3.42	20	3.42	0.500	21	0.000	1.000
Construction cost overrun	3.46	20	3.25	23	3.39	0.494	22	1.438	0.239
Low operating productivity	3.46	21	3.25	24	3.39	0.082	23	1.438	0.239
Lack of commitment from public/private partner	3.29	26	3.50	15	3.36	0.487	24	1.438	0.232
Excessive contract variation	3.25	29	3.25	25	3.25	0.073	27	0.000	1.000
Operational revenue below projection	3.21	30	3.25	26	3.22	0.098	28	0.039	0.845
Maintenance more frequent than expected	3.17	31	3.25	27	3.19	0.087	31	0.197	0.660
Competition risk	3.08	37	3.25	28	3.14	0.351	32	1.850	0.183
Insolvency/default of subcontractors and suppliers	3.13	33	3.17	32	3.14	0.058	33	0.110	0.742
Inability to service debt	3.08	38	3.25	29	3.14	0.351	34	1.850	0.183
Inadequate distribution of authority between partners	3.13	34	3.08	36	3.11	0.319	35	0.133	0.717
Staff crises	3.13	35	3.08	37	3.11	0.319	36	0.133	0.717
High finance costs	3.00	46	3.25	30	3.08	0.554	38	1.659	0.206
Lack of creditworthiness	3.08	40	3.08	39	3.08	0.280	39	0.000	1.000
Delay in project approvals and permits	3.08	41	3.08	40	3.08	0.280	40	0.000	1.000
Construction time delay	3.08	42	3.08	41	3.08	0.280	41	0.000	1.000
Late design changes	3.08	43	3.08	42	3.08	0.047	42	0.000	1.000
Unproven engineering techniques	3.13	36	3.00	45	3.08	0.649	43	0.291	0.593
Prolonged negotiation period prior to initiation	2.96	48	3.17	33	3.03	0.506	45	1.369	0.250
Third party tort liability	3.08	44	2.92	49	3.03	0.377	46	1.591	0.216
High bidding costs	2.96	49	3.08	43	3.00	0.586	48	0.358	0.554
Different working methods/know-how between partners	3.00	47	2.92	50	2.97	0.446	50	0.273	0.605
Maintenance cost higher than expected	2.96	52	2.92	52	2.94	0.039	52	0.252	0.619
Organisation and coordination risk	2.92	54	2.75	56	2.86	0.639	56	0.536	0.469
Bankruptcy of concessionaire	2.75	59	2.75	57	2.75	0.604	59	0.000	1.000

\* implies no agreement in opinion between the sub-groups at 5% level of significance; SD\* = Standard Deviation

In order to address the exogenous risks, there is a need for an effective legislation and standardised administrative framework to regulate the development and implementation of PPPs and to check the corruptive tendencies that were prevalent with public contracts in Nigeria. This is in line with Bennett's (1998) suggestion that an enabling regulatory, legal and political environment is the cornerstone of sustainable private sector participation in urban infrastructure services. Furthermore, the establishment of a well-organised public agency to coordinate the development of PPPs can facilitate the appropriate utilisation of lessons learnt from previous projects in future schemes, sharing of experience and good practice across schemes and standardisation of procedures, processes and documentation. However, the public regulatory agency should possess essential management and technical ability to effectively work with the private consortia that has adequate financial, managerial and technical capability to deliver quality and cost-effective facilities and services.

The consistently least important overall PPP risk factors and within the sub-groups are "*industrial regulatory change*", "*change in tax regulation*", "*bankruptcy of concessionaire*", "*geotechnical conditions*" and "*import/export restrictions*". Most of these risks fall under the legal and legislative category, but they do have business and economic implications and hence can impact project revenue and profitability. In Nigeria for example, in order to attract private sectors to participate in public projects the government often makes special provisions to instil confidence in, and to reduce the risk burden on, the private sector. For instance, there are reduced tax rates, tax shields, unrestricted rate of returns and in the amount of profit that can be repatriated for certain class of foreign and private corporations. However, in order to prevent a deficit trade balance, the government also imposes certain restrictions in respect of imports and exports by increasing tariffs for imported products that are locally available. While these measures may be beneficial during the early stages of PPP implementations, they would require monitoring and revisions as the market becomes more stable and matured. Conversely, risks such as *geotechnical conditions* and *bankruptcy of the concessionaire* indisputably fall within the purview of the private consortia both professionally and entrepreneurially.

In general, Tables 8.3 and 8.4 show low values for the Standard Deviations (SDs), which indicate high degree of consistencies in the respondents' opinions. Table 8.3 (column 9) also shows that the mean values for six risk factors were not equal for public and private sector

respondents at 5% level of significance, implying difference of opinion between the sub-groups. These factors include “*availability of appropriate labour/material*”, “*risk regarding pricing of product/service*”, “*influential economic event*”, “*maintenance more frequent than expected*” “*third party tort liability*” and “*industrial regulatory change*”. On the other hand, Table 8.4 (column 9) shows that the mean values for two risk factors were unequal for the respondents groups with PPP practical involvement and those without practical involvement, and these risk factors are “*land acquisition/site availability*” and “*strong political opposition/hostility*”. These inequalities in the group mean values indicate differences in the perception of the groups in respect of the risk factors in question.

#### **8.2.4 Risk allocation preferences**

The risk allocation preferences are presented as percentages of total counts of responses. The criteria used for allocation is the popularity of opinions (in this case, greater than 50%). For interpretation purposes, a risk is allocated to the party that over 50% of the respondents are also in favour of allocating the risk. Within the above categorisation, response frequencies above 75% are regarded as “sole allocation” whereas response frequencies between 50% and 75% are regarded as “primary allocation”. On the other hand, if none of the frequencies for any risk factor is up to 50%, the risk is regarded as being “dependent on individual project circumstances”. This method of allocation had been previously used by Li *et al.* (2005a). The detailed survey results are shown in Tables 8.5 and 8.6. While Table 8.5 shows the overall percentage of respondents’ preferences for each PPP risk factor in descending order, Table 8.6 shows the distribution of the risk allocation preferences between the various sub-groups considered; i.e. respondents from public and private sectors, and those with and without PPP experience as partners.

##### **8.2.4.1 Risks that should be retained by the public sector**

Overall, the survey results show that the respondents generally prefer to allocate eight risk factors to the public sector sponsor (Column 8 of Tables 8.5 and 8.6: score greater than 50%). Of these, six risk factors were solely allocated to the public sector (Tables 8.5 and 8.6: frequencies over 75%) and these include “*unstable government*”, “*poor public decision*



*making process*", *"strong political opposition"*, *"inconsistencies in government policies"*, *"unstable value of local currency"*, and *"land acquisition/site availability"*. The other two risk factors that were primarily allocated to the public sector (Tables 8.5 and 8.6: frequencies between 50% and 75%) are *"possible expropriation/ nationalisation of assets"* and *"corruption and lack of respect for law"*. Perhaps as expected, most of these risks are exogenous and fall either directly within government policy group or are such that government is in the best position to manage such as *"land acquisition"*. These results corroborates with the previous findings of Zhang *et al* (1998) and Li *et al.* (2005a) for studies carried out in Hong Kong and UK respectively.

#### **8.2.4.2 Risks that should be allocated to the private sector partner**

Tables 8.5 and 8.6 (column 8) also indicate that the respondents prefer to allocate majority of the identified PPP risk factors to the private sector partner. Out of the 61 risk factors, the survey respondents indicated that 34 (representing 56%) should be assigned to the private sector partner. All the risks under this category are endogenous. These results concur with the survey of risk factors associated with PFI procurement in the UK which showed that 32 out of 46 risk factors should be preferably assigned to the private sector (Li *et al.*, 2005a). Of these, five risk factors are preferably allocated solely to the private sector partner (Tables 8.5 and 8.6: frequencies over 75%) and these include *"lack of creditworthiness"*, *"design deficiency"*, *"poor quality of workmanship"*, *"maintenance cost higher than expected"* and *"unproven engineering techniques"*. The remaining 29 risk factors were preferably assigned primarily to the private sector partner and with 24 risk factors having strong perceived opportunities for sharing with the public sector (Tables 8.5 and 8.6: frequencies of up to 25% for sharing between public and private sectors). In general, there was no attempt at allocating 19 risk factors within this category to the public sector (Tables 8.5 and 8.6: frequencies of zero). Consequently, since a substantial amount of the risks associated with PPPs have been allocated to the private sector, the selection of the private sector partner with the necessary skills, experience and resources to manage the risks and yet deliver quality and cost-effective facilities and services is very crucial to the success of PPP projects, and thus require further investigation.

### 8.2.4.3 Risks that should be shared between the public and private sectors

Tables 8.5 and 8.6 (column 8) also show that seven risk factors should be preferably shared between the public and private sector partners. Four of the risk factors are endogenous, and three of them belong to the relationship sub-group “*inadequate distribution of responsibilities and risks*”, “*lack of commitment from public/private partner*”, and “*inadequate distribution of authority between partners*”. This strengthens the perception that harmonious and collaborative working relationships are very vital to the success of long-term PPP projects (Li *et al.*, 2005a). The other risk factors that should be preferably shared include “*force majeure*”, “*legislation changes*”, “*high bidding costs*” and “*change in tax regulation*”.

**Table 8.5: Survey respondents’ perceptions of PPP risk allocation preference**

Exogenous Risk Factors	Allocation (%)			Preferred allocation
	Public	Private	Shared	
Unstable government	92	0	8	Public
Poor public decision making process	86	8	6	
Strong political opposition/hostility	78	8	14	
Inconsistencies in government policies	83	6	11	
Unstable value of local currency	78	6	16	
Possible expropriation/nationalisation of assets	72	17	11	
Corruption and lack of respect for law	69	3	28	
Weather	8	62	30	Private
Environment	11	61	28	
Poor financial market	20	58	22	
Geotechnical conditions	8	58	34	
Lack of tradition of private provision of public services	22	56	22	
Interest rate volatility	33	53	14	
Import/Export restrictions	39	53	8	
Inflation rate volatility	36	50	14	
Rate of returns restrictions	39	50	11	
Force majeure	22	6	72	Shared
Legislation change/inconsistencies	39	3	58	
Change in tax regulation	42	3	55	
Influential economic event (boom/recession)	42	47	11	Project dependent
Cultural differences between main stakeholders	8	44	47	
Non-involvement of host-community	39	17	44	
Public opposition to projects	36	39	25	
Industrial regulatory change	33	36	31	

**Table 8.5: Survey respondents' perceptions of PPP risk allocation preference continued**

Exogenous Risk Factors	Allocation (%)			Preferred allocation
	Public	Private	Shared	
Land acquisition/site availability	78	0	22	Public
Lack of creditworthiness	0	92	8	Private
Design deficiency	0	86	14	
Poor quality of workmanship	0	75	25	
Maintenance cost higher than expected	0	75	25	
Unproven engineering techniques	0	75	25	
Bankruptcy of concessionaire	0	72	28	
Availability of finance	0	72	28	
Maintenance more frequent than expected	0	72	28	
Insolvency/default of subcontractors and suppliers	0	72	28	
Operational revenue below projection	0	69	31	
Financial attraction of project to investors	14	67	19	
Operation cost overrun	0	67	33	
Low operating productivity	0	67	33	
Residual value (after concession period)	0	64	36	
Availability of appropriate labour/material	0	64	36	
Construction cost overrun	0	64	36	
Inability to service debt	0	64	36	
High finance costs	0	64	36	
Late design changes	36	64	0	
Third party tort liability	3	64	33	
Construction time delay	0	61	39	
Competition risk	0	58	42	
Different working methods/know-how between partners	8	56	36	
Level of demand for the project	11	53	36	
Risk regarding pricing of product/service	19	50	31	
Inadequate distribution of responsibilities and risks	11	14	75	Shared
Lack of commitment from public/private partner	17	17	66	
Inadequate distribution of authority between partners	11	25	64	
High bidding costs	11	33	56	
Prolonged negotiation period prior to initiation	42	33	25	Project dependent
Excessive contract variation	33	25	42	
Staff crises	39	14	47	
Delay in project approvals and permits	38	33	29	
Lack of government guarantees	39	28	33	
Organisation and coordination risk	11	47	42	
Inadequate experience in PPP	30	28	42	

**Table 8.6: Perceptions of PPP risk allocation preference  
(by sector and PPP involvement)**

Exogenous Risk Factors	Public sector			Private sector			Not involved as partners			Involved as partners		
	Pb <sup>a</sup>	Pr <sup>a</sup>	Sh <sup>a</sup>	Pb <sup>a</sup>	Pr <sup>a</sup>	Sh <sup>a</sup>	Pb <sup>a</sup>	Pr <sup>a</sup>	Sh <sup>a</sup>	Pb <sup>a</sup>	Pr <sup>a</sup>	Sh <sup>a</sup>
Unstable government	83	0	17	100	0	0	75	0	25	100	0	0
Poor public decision making process	78	17	5	94	0	6	83	17	0	88	4	8
Strong political opposition/hostility	83	6	11	72	11	17	75	17	8	79	4	17
Inconsistencies in government policies	72	11	17	94	0	6	84	8	8	83	4	13
Unstable value of local currency	78	0	22	78	11	11	92	0	8	71	8	21
Possible expropriation/nationalisation of assets	89	0	11	56	33	11	58	17	25	79	17	4
Corruption and lack of respect for law	72	6	22	67	0	33	67	8	25	71	0	29
Weather	11	50	39	6	72	22	0	50	50	12	67	21
Environment	17	61	22	6	61	33	17	66	17	8	59	33
Poor financial market	22	50	28	17	66	17	17	58	25	21	58	21
Geotechnical conditions	11	56	33	6	61	33	0	67	33	13	54	33
Lack of tradition of private provision of public services	28	55	17	17	55	28	50	50	0	8	58	33
Interest rate volatility	28	61	11	39	44	17	25	50	25	38	54	8
Import/Export restrictions	39	56	5	39	50	11	25	67	8	46	46	8
Inflation rate volatility	33	61	6	39	39	22	34	58	8	37	46	17
Rate of returns restrictions	28	55	17	50	44	6	42	42	16	38	54	8
Force majeure	33	6	61	11	6	83	17	0	83	25	8	67
Legislation change/inconsistencies	44	0	56	33	6	61	25	0	75	46	4	50
Change in tax regulation	44	0	56	39	6	56	25	0	75	50	4	46
Influential economic event (boom/recession)	44	44	12	39	50	11	58	42	0	33	50	17
Cultural differences between main stakeholders	11	50	39	6	39	56	0	33	67	12	50	38
Non-involvement of host-community	33	22	45	44	12	44	33	17	50	42	17	42
Public opposition to projects	33	50	17	39	28	33	50	33	17	29	42	29
Industrial regulatory change	22	39	39	44	33	22	25	42	33	38	33	29

**Table 8.6: Perceptions of PPP risk allocation preference  
(by sector and PPP involvement) continued**

Endogenous Risk Factors	Public sector			Private sector			Not involved as partners			Involved as partners		
	Pb <sup>a</sup>	Pr <sup>a</sup>	Sh <sup>a</sup>	Pb <sup>a</sup>	Pr <sup>a</sup>	Sh <sup>a</sup>	Pb <sup>a</sup>	Pr <sup>a</sup>	Sh <sup>a</sup>	Pb <sup>a</sup>	Pr <sup>a</sup>	Sh <sup>a</sup>
Land acquisition/site availability	89	0	11	67	0	33	58	0	42	88	0	12
Lack of creditworthiness	0	94	6	0	89	11	0	83	17	0	96	4
Design deficiency	0	83	17	0	89	11	0	92	8	0	83	17
Poor quality of workmanship	0	78	22	0	72	28	0	75	25	0	75	25
Maintenance cost higher than expected	0	94	6	0	56	44	0	83	17	0	71	29
Unproven engineering techniques	0	78	22	0	72	28	0	75	25	0	75	25
Bankruptcy of concessionaire	0	67	33	0	78	22	0	92	8	0	63	37
Availability of finance	0	83	17	0	61	39	0	83	17	0	67	33
Maintenance more frequent than expected	0	78	22	0	67	33	0	75	25	0	71	29
Insolvency/default of subcontractors and suppliers	0	72	28	0	72	28	0	75	25	0	71	29
Operational revenue below projection	0	61	39	0	78	22	0	58	42	0	75	25
Financial attraction of project to investors	11	61	28	17	72	11	0	75	25	21	62	17
Operation cost overrun	0	78	22	0	56	44	0	75	25	0	62	38
Low operating productivity	0	50	50	0	83	17	0	58	42	0	71	29
Residual value (after concession period)	0	72	28	0	56	44	0	67	33	0	62	38
Availability of appropriate labour/material	0	61	39	0	67	33	0	67	33	0	62	38
Construction cost overrun	0	78	22	0	50	50	0	75	25	0	58	42
Inability to service debt	0	67	33	0	61	39	0	58	42	0	67	33
High finance costs	0	50	50	0	78	22	0	67	33	0	62	38
Late design changes	22	78	0	50	50	0	50	50	0	29	71	0
Third party tort liability	6	61	33	0	67	33	8	67	25	0	62	38
Construction time delay	0	72	28	0	50	50	0	58	42	0	62	38
Competition risk	0	67	33	0	50	50	0	58	42	0	58	42
Different working methods/know-how between partners	6	67	27	11	44	44	17	58	25	4	54	42
Level of demand for the project	6	50	44	17	55	28	8	50	42	13	54	33
Risk regarding pricing of product/service	11	50	39	28	50	22	25	50	25	17	50	33
Inadequate distribution of responsibilities and risks	11	11	78	11	17	72	25	17	58	4	13	83
Lack of commitment from public/private partner	6	22	72	28	11	61	8	25	67	21	12	67
Inadequate distribution of authority between partners	6	22	72	17	28	55	0	17	83	17	29	54
High bidding costs	11	33	56	11	33	56	16	42	42	8	29	63
Prolonged negotiation period prior to initiation	44	33	22	39	33	28	42	42	16	42	29	29
Excessive contract variation	28	28	44	39	22	39	0	33	67	50	21	29
Staff crises	44	11	44	33	17	50	50	8	42	33	17	50
Delay in project approvals and permits	39	33	28	39	28	33	42	25	33	38	33	29
Lack of government guarantees	33	28	39	44	28	28	33	25	42	42	29	29
Organisation and coordination risk	11	56	33	11	39	50	8	33	58	13	54	33
Inadequate experience in PPP	17	39	44	44	17	39	16	42	42	37	21	42

<sup>a</sup> Pb = Public; Pr = Private; Sh = Shared

Although the results show that the public sector respondents agree that “*legislation changes*” and “*change in tax regulation*” risks should be shared between the private and public sector

partners, they strongly feel that they should not be assigned only to the private sector (Table 8.5: frequencies of zero). Table 8.6 also indicates that the respondents without previous or current involvement in PPP projects shares the above opinion and also feel that the risk of *“inadequate distribution of authority between partners”* should not be left to the public sector sponsor only.

#### **8.2.4.4 Risks whose allocation strongly depends on specific project circumstances**

One of the central problems that can occur in risk allocation, especially in PPP/PFI projects, is where none of the parties has much experience of managing the particular risk (Robinson, 2001). This survey results indicate that 12 risk factors were difficult to be clearly assigned to either the public or private sector, or to be shared (Tables 8.5 and 8.6: frequencies less than 50%). These risks, which are a mixture of exogenous and endogenous types, depend on the nature and specific requirements of each project and include: *“prolonged negotiation period prior to initiation”*, *“influential economic event”*, *“excessive contract variation”*, *“staff crises”*, *“cultural differences between the main stakeholders”*, *“non-involvement of host community”*, *“delay in project approvals and permits”*, *“lack of government guarantees”*, *“public opposition to projects”*, *“organisation and coordination risk”*, *“inadequate experience in PPP”* and *“industrial regulatory change”*. However, the responses indicate the tendency of allocating *“influential economic event”* and *“organisation and coordination”* risks to the private sector partner, and sharing of risks of *“staff crises”* and *“cultural differences between the main stakeholders”* between the public and private sector partners. Although it appears that these risks do not relate clearly to project type or procurement method, it is imperative that the parties to PPP projects consider them carefully when making risk allocation decisions.

#### **8.2.5 Relative importance of PPP Success factors in Nigeria**

Tables 8.7 and 8.8 present the consolidated results of the analyses for the success factors comparing the responses of private and public sector respondents and those of respondents with and without involvement in PPP projects as partners. The analysis of the survey response data produced mean importance values for the 19 success factors ranging from 2.31 to 4.47. Table 8.7 (column 6) shows that six factors scored mean values greater than 4.0, 11 factors

had mean importance between 3.0 and 4.0, while the remaining two factors scored mean values between 2.0 and 3.0.

**Table 8.7: Respondents' perception of the relative importance of PPP success factors (by sector)**

<i>Success factors</i>	<i>Public sector</i>		<i>Private sector</i>		<i>Total</i>				
	<i>Mean</i>	<i>Rank</i>	<i>Mean</i>	<i>Rank</i>	<i>Mean</i>	<i>SD<sup>¶</sup></i>	<i>Rank</i>	<i>F</i>	<i>Sign.</i>
Favourable legal framework	4.33	2	4.61	1	4.47	0.506	1	2.852	0.100
Well-organised public agency	4.44	1	4.39	3	4.42	0.500	2	0.108	0.744
Strong private consortium	4.22	3	4.44	2	4.33	0.676	3	0.971	0.331
Appropriate risk allocation and risk sharing	4.17	4	4.22	4	4.19	0.401	4	0.168	0.684
Available financial market	3.83	8	4.22	5	4.03	0.736	5	2.628	0.114
Good governance	4.00	6	4.00	7	4.00	0.676	6	0.000	1.000
Transparency in procurement process	4.17	5	3.78	9	3.97	1.158	7	1.015	0.321
Competitive procurement process	3.83	9	4.06	6	3.94	0.583	8	1.320	0.259
Stable micro-economic environment	3.78	10	3.83	8	3.81	0.889	9	0.034	0.854
Political support	4.00	7	3.56	12	3.78	0.929	10	2.125	0.154
Sound economic policy	3.33	13	3.67	10	3.50	1.108	11	0.810	0.375
Government involvement by proving guarantees	3.61	11	3.39	13	3.50	0.737	12	0.814	0.373
Commitment of public and private sectors	3.50	12	3.39	14	3.44	0.607	13	0.296	0.590
Thorough and realistic cost/benefit assessment	3.11	15	3.67	11	3.39	0.994	14	2.972	0.094
Project technical feasibility	3.22	14	3.22	16	3.22	0.591	15	0.000	1.000
Shared authority between public and private sectors	3.06	17	3.28	15	3.17	0.878	16	0.569	0.456
Technology transfer	3.11	16	3.17	17	3.14	0.543	17	0.092	0.764
Social support	2.83	18	2.94	18	2.89	0.747	18	0.194	0.662
Multi-benefit objectives	2.22	19	2.39	19	2.31	0.535	19	0.905	0.348

¶ SD – Standard deviation

**Table 8.8: Respondents' perception of the relative importance of PPP success factors (by PPP involvement)**

<i>Success factors</i>	<i>Involved as partners</i>		<i>Not involved as partners</i>		<i>Total</i>				
	<i>Mean</i>	<i>Rank</i>	<i>Mean</i>	<i>Rank</i>	<i>Mean</i>	<i>SD<sup>W</sup></i>	<i>Rank</i>	<i>F</i>	<i>Sign.</i>
Favourable legal framework	4.58	1	4.25	4	4.47	0.506	1	2.852	0.100
Well-organised public agency	4.42	2	4.42	1	4.42	0.500	2	0.108	0.744
Strong private consortium	4.33	3	4.33	2	4.33	0.676	3	0.971	0.331
Appropriate risk allocation and risk sharing	4.29	4	4.00	6	4.19	0.401	4	0.168	0.684
Available financial market	4.21	5	3.67	10	4.03	0.736	5	2.628	0.114
Good governance	4.04	6	3.92	7	4.00	0.676	6	0.000	1.000
Transparency in procurement process	3.79	9	4.33	3	3.97	1.158	7	1.015	0.321
Competitive procurement process	3.96	7	3.92	8	3.94	0.583	8	1.320	0.259
Stable micro-economic environment	3.83	8	3.75	9	3.81	0.889	9	0.034	0.854
Political support	3.58	10	4.17	5	3.78	0.929	10	2.125	0.154
Sound economic policy	3.54	11	3.42	13	3.50	1.108	11	0.810	0.375
Government involvement by proving guarantees	3.46	12	3.58	11	3.50	0.737	12	0.814	0.373
Commitment of public and private sectors	3.38	14	3.58	12	3.44	0.607	13	0.296	0.590
Thorough and realistic cost/benefit assessment	3.42	13	3.33	15	3.39	0.994	14	2.972	0.094
Project technical feasibility	3.13	15	3.42	14	3.22	0.591	15	0.000	1.000
Shared authority between public and private sectors	3.13	16	3.25	17	3.17	0.878	16	0.569	0.456
Technology transfer	3.04	17	3.33	16	3.14	0.543	17	0.092	0.764
Social support	2.79	18	3.08	18	2.89	0.747	18	0.194	0.662
Multi-benefit objectives	2.25	19	2.42	19	2.31	0.535	19	0.905	0.348

SD<sup>W</sup> – Standard deviation

A *favourable legal and administrative framework*, ranked first in the survey analysis (Tables 8.8 and 8.8: mean value 4.47) and this is certainly a fundamental requirement for establishing and sustaining PPP implementation in any country. Although Bennett (1998) noted that an enabling regulatory, legal and political environment is the cornerstone of sustainable private sector participation in urban infrastructure services, there is as yet no law to regulate the development and implementation of PPPs in Nigeria. This is a fundamental requirement for attracting foreign investors. It is therefore expedient for the executive arm of the government to ascent to the recent Act enacted by the National Assembly for the establishment of a regulatory agency for PPP implementation in Nigeria. The law should be comprehensive and among other things cover planning and environment, administrative procedures, employment, health and safety, corporate and commercial law, construction, finance and insurance issues related to PPP implementation.



A *well-organised and committed public agency* to negotiate on behalf of the public body and coordinate the development of PPPs is ranked as the second most important factor for achieving successful PPP projects in Nigeria (Tables 8.7 and 8.8: mean value 4.42). Currently, the PPP market in Nigeria is characterised by a multitude of projects without coordination and standardisation of procedures. Ibrahim *et al.* (2006b) noted the benefits of a well-organised public regulatory agency to include the opportunity to develop effective documentation, appropriate utilisation of lessons learnt from previous projects in future schemes, sharing of experience and good practice across schemes and standardisation of procedures, processes and documentation. Although it would be appropriate to seek external skills and experience from competent advisers, the public regulatory agency should possess essential management and technical ability.

The third ranked important factor is a *strong private consortium* (Tables 8.7 and 8.8: mean value 4.33). Li *et al.* (2005b) suggested that private companies wishing to participate in PPP projects should explore other participants' strengths and weaknesses and, where appropriate, join together to form consortia capable of synergising and exploiting their individual strengths. Experience shows that even in the UK, it is mainly the large and well established companies that win PFI contracts (Birnie, 1999).

*Appropriate risk allocation and risk sharing* is ranked as the fourth most important factor for achieving successful PPP project (Tables 8.7 and 8.8: mean value 4.19). In general terms, it has been established that risk should be allocated on the basis of ability to manage it. This way, the individual risk premium and overall project cost should reduce because the party in the best position to manage a risk should be able to do so at the lowest possible price. Li *et al.* (2005b) recommended a strategic approach to risk allocation during project development.

Another important factor is that the private concessionaire can easily access a *financial market* (Tables 8.7 and 8.8: mean value 4.03) with associated benefits of lower financial costs. Although the recent consolidation reform in the Nigerian financial market is an indicator of increased capability for banks to offer commercial loans to prospective private concessionaires, the banks currently lack any experience or expertise in PPP schemes. One

common approach used in the UK is to tie the finance provider(s) into the private consortium or entity created for the project (known in PFI as the special purpose vehicle or SPV).

*Good governance* (Tables 8.7 and 8.8: mean value 4.00) is important for the success of PPP projects in terms of the general political stability in the country, developing sound economic policies and in the administration of projects. In addition to attracting foreign investors, Badshah (1998) emphasises that good governance is essential to attract private sector participation in public services delivery. Mustafa (1999) puts the policymakers at the apex of PPP structures, and recognizes their dominant influence in determining the development of PPP.

*Transparency and competition* in the procurement process are essential for the public client in PPP project procurement (Tables 8.7 and 8.8: mean values 3.97 and 3.94 respectively). Li *et al.* (2005b) suggest three essential features of transparency in tender processes or negotiation between the public client and private consortia (and their advisers) to include good communication, open consultation while keeping responsibility for decisions and establishment of a clear basis for decision making. Hall (1998) also insisted that VFM gains depend on the existence of a competitive bidding process to which the National Audit Office (NAO, 1999) attached these three conditions: a good tender list of firms invited to bid; a clear specification in requirements; and competitive tension maintained throughout the procurement process.

*Stable micro-economic environment* (Tables 8.7 and 8.8: mean value 3.81), where the market exhibits reasonable certainty and market risks are correspondingly low, does a great deal to reduce risks for the private investors (Li *et al.*, 2005b). Dailami and Klein (1997) maintain that good micro-economic policy affects the credibility of a price regime and trust in the convertibility of the local currency, which is essential for foreign investors. The recent credit rating of BB-minus (stable outlooks) by Fitch, a global credit rating agency, signals improved prospects for foreign investments as it puts Nigeria on a comparable standing with countries such as Brazil, the Philippines, Serbia, Turkey and Ukraine. However, sustaining this achievement requires improved transparency and accountability in governance.

*Political support* (Tables 8.7 and 8.8: mean value 3.78) has a close relationship with the development, implementation and sustainability of any public policy. Although a positive political attitude seems to have been formulated by the present government towards private sector involvement in public infrastructure development through the National Economic Empowerment Strategy (NEEDS) white paper (NPC, 2004), its impact and sustainability would depend on an effective implementation strategy that would promote adequate political support by successive governments.

*Sound economic policy and government involvement by providing guarantees* (Tables 8.7 and 8.8: mean value 3.50) are both essential to the success of PPP projects. Sound economic policy and maintaining balanced budgets that ensure stable market prices are essential ingredients for attracting private and foreign investors. Government can provide guarantees in a number of ways in order to assure greater access with low user charges for essential social infrastructure such as housing, agriculture, healthcare, water and waste management.

The *commitment and responsibility* of both public and private sector participants across all levels of management are also important for the success of PPP projects (Tables 8.7 and 8.8: mean value 3.44). Trust and integrity are the important ingredients to facilitate the effective management of the relationship between the private and public sectors.

Another important success factor for PPP projects is *thorough and realistic assessment of the costs and benefits* (Tables 8.7 and 8.8: mean value 3.39). Of particular importance is the treatment of uncertainty in the assessment, as most of the assessment of costs and benefits during the project development stage is based on projections for a period of up to 30 years. Li *et al.* (2005b) suggest that although much of the assessments are treated as commercial-in-confidence, some forecasts may need to withstand open public scrutiny.

*Project technical feasibility* (Tables 8.7 and 8.8: mean value 3.22) is important to the private sector for winning a PPP contract (Tiong, 1996). Although novel technology would add to the riskiness of projects, the private consortia must demonstrate that the technical aspects of a proposal will satisfy all relevant regulatory requirements.

Clearly demarcated *shared authority and responsibility* (Tables 8.7 and 8.8: mean value 3.17) are important in maintaining the type of long-term alliance desirable in PPP projects (Li *et al.*, 2005b). This will promote harmonious working relationships between the project participants by breaking barriers to effective communication and adversarial tendencies.

An opportunity for appropriate and relevant *technology transfer* (Tables 8.7 and 8.8: mean value 3.14) is also considered an important success determinant of PPP projects (Qiao *et al.*, 2001). Traditionally, technology transfer was conceptualised as the transfer of hardware or physical objects, but it nowadays often involves information, knowledge or new ideas which may be completely devoid of any hardware aspects. The benefit for such transfers is long-term in nature as it provides the basis for development in future schemes and in other related sectors.

*Social support* (Tables 8.7 and 8.8: mean value 2.89) is based on the public acceptance of the tradition of private provision of public services. The social tradition has been reported to have influenced PPP models in different countries (Savitch, 1998). Thus, public support needs to be addressed at an early stage of PPP project development. Bennett (1998) also notes placement of public employees as another important social issue associated with PPP projects.

To embark on long-term partnerships, PPP partners must agree on and pursue *multi-benefit objectives* (Tables 8.7 and 8.8: mean value 2.31) so that each partner's individual goals are simultaneously met. Li *et al.* (2005b) noted that the typical objectives of the public sector under PPP projects are: reduced financial restraints; avoidance of public finance restrictions; effective provision of public goods and services; the transfer of risks; and the achievement of value for money (VfM). They further observed that the objectives of the private sector party are typically: profit generation and market penetration, diversification, and technology and skills acquisition; while the objectives of the user communities are: to receive better services or to occupy a better environment.

### 8.2.5.1 Comparison between the ranking of PPP success factors in Nigeria and the UK

Table 8.9 compares the ranking for public and private sectors as well as the overall ranking of the success factors for PPP projects in Nigeria and the similar UK study by Li *et al.* (2005b).

**Table 8.9: Comparison of the ranks of PPP success factors in Nigeria and the UK**

Success factors	Public sector		Private sector		Overall	
	Nigeria	UK	Nigeria	UK	Nigeria	UK
Favourable legal framework	2	12	1	7	1	9
Well-organised public agency	1	4	3	8	2	7
Strong private consortium	3	5	2	1	3	1
Appropriate risk allocation and risk sharing	4	8	4	2	4	2
Available financial market	8	7	5	4	5	3
Good governance	6	2	7	9	6	8
Transparency in procurement process	5	9	9	10	7	10
Competitive procurement process	9	1	6	16	8	12
Stable micro-economic environment	10	13	8	15	9	15
Political support	7	3	12	11	10	11
Sound economic policy	13	15	10	13	11	13
Government involvement by providing guarantees	11	18	13	12	12	16
Commitment of public and private sectors	12	10	14	3	13	4
Thorough and realistic cost/benefit assessment	15	6	11	5	14	5
Project technical feasibility	14	11	16	6	15	6
Shared authority between public and private sectors	17	17	15	17	16	17
Technology transfer	16	-	17	-	17	-
Social support	18	16	18	18	18	18
Multi-benefit objectives	19	14	19	14	19	14

The above table shows that the three most important factors fall within the top five important factors for both countries, and this trend is similar to that of the five least important factors. These results imply that although there is incongruence in the cross-cultural features (Eaton *et al.*, 2007) and risk factors (Ibrahim *et al.*, 2006b) of PPPs between different countries, PPP success factors may be isomorphic (similar in form but genetically different, as between the UK and Nigeria). This suggests considerable potential for useful cross-country learning regarding PPPs. But Eaton *et al.* (2006a; 2006b) contend that the development of a 'generic'

and 'internationalised' PPP approach is almost impossible to achieve and that non-recognition of existing exogenous features of a local area is a recipe for potential operational failures. Therefore, despite the evidence of similarity in PPP success factors, it is essential that adequate attention is given to identification, understanding and management of the specific drivers at national and sectoral levels. This, therefore, supports the development of 'modified individual' approach suggested by Eaton *et al.* (2006a).

### 8.3 Chapter summary

This chapter has described the results of a questionnaire survey that investigated the perception of Nigerian construction professionals on the relative importance of the identified risks and success factors, and their risk allocation preferences in PPP projects. The survey instrument used a catalogue of 61 risk factors and 19 success factors identified from relevant literature about the Nigerian construction industry and PPP research in other parts of the world. A risk classification into exogenous and endogenous types was adopted, and this covered the sources of risks through the lifecycle phases of PPP projects resulting into 13 risk sub-groups. The rankings of the risk and success factors were done based on arithmetic means. In addition, one-way analysis of variance (ANOVA) were performed to test whether the mean values on each success factor for the groups were equal for those working for public sector and private sectors, and those that have been involved in PPP projects as partners and those that have not been involved as partners. In general, the results show that there is sufficient evidence that all groups have the same mean, indicating significant agreement in the opinions of the different groups.

The results show that seven out of the top ten most important PPP risk factors in Nigeria are endogenous and include "*unstable government*", "*inadequate experience in PPP*", "*availability of finance*", "*land acquisition/site availability*", "*poor financial market*", "*residual value (after concession period)*", "*availability of appropriate labour/material*", "*financial attraction of project to investors*", "*corruption and lack of respect for law*" and "*poor quality of workmanship*". The least important PPP risk factors include "*industrial regulatory change*", "*change in tax regulation*", "*bankruptcy of concessionaire*", "*geotechnical conditions*" and "*import/export restrictions*". The results also show that while

the majority of the endogenous risk factors could be assigned to the private sector partner, the public sector should retain political and site acquisition risks, while relationship-based risks should be shared between the private and public sector partners.

Three factors - *favourable legal framework*, *well-organised public agency to negotiate on behalf of government* and *strong private consortium* – emerged as being the most important in the development of successful PPP projects in Nigeria. The two success factors considered by the respondents to be less important for PPP projects in Nigeria are *social support* and *multi-benefit objectives*. The comparison of the findings of this study with similar previous study in the UK suggests isomorphism in the success factors of PPP projects.

Given the amount of importance the respondents attached to favourable legal/administrative framework as well as a well-organised public sector regulatory agency, it is therefore crucial for the Nigerian government to create an enabling and secure investment environment for both local and foreign investors. Also, since this research shows that a strong private consortium is required to deliver quality and cost-effective facilities and services under PPP arrangements, it is important to investigate the mechanisms for selecting private sector partners with the necessary skills, experience and resources.

Although PPP procurement implementation can be said to be in its formative stages of development in Nigeria, the public sector must equip itself appropriately in adopting the role of consumer of services and the regulator of the PPP implementation through effective policy development and deployment. The findings of this research should serve as a good baseline for policy development and a useful guide for interested parties in both private and public sectors.

Finally, the survey results have established that the most commonly used PPP approaches in Nigeria are BOT and JV for housing estate development, civil engineering infrastructure and utilities, and it is thus recommended that PPP applications should be extended to other social infrastructure such as healthcare, educational, prison, water and waste management projects.

## **CHAPTER NINE**

### **VALIDATION OF PROPOSED PROCUREMENT STRATEGY IN NIGERIA**

#### **9.1 Chapter introduction**

A procurement strategy to facilitate community co-ownership or co-management of PHC facilities in Nigeria was developed in Chapter Seven. Further supplementary studies to understand the issues associated with PPP applications in Nigeria were conducted in Chapter Eight. This chapter presents the results of the two focus group discussions in Nigeria aimed at validating the appropriateness of the proposed procurement strategy in the light of recent legislative developments and the results of the questionnaire survey (see Appendix B4). The chapter also presents the modified procurement strategy based on the feedback obtained from the focus discussions.

#### **9.2 Validation approach and objectives**

An earlier conception of validation was dependent on the view that a model/theory is a representation of the real world, or part of it, and model/theory validation checks if the model/theory imitates the real world under some specified conditions (Miser, 1993). However, this view has been described as only suitable for quantitative models and not necessarily appropriate for interpretive approaches where various perspectives of epistemologies play important roles. According to Pidd (2003), the social and historical perspectives imply that a model is valid if it gains acceptance by the practice and expert



communities. Miser further argued that there are no universal criteria for validation, and that any validity judgment depends on the situation in which the model is used and the phenomena being modelled. As a result, Smith (1993) demonstrated that complex and non-quantitative models could be validated using qualitative approaches via interviews and survey techniques.

Accordingly, this research uses focus groups to validate the proposed procurement strategy. These focus groups were conducted under workshop settings. The format adopted for each workshop involved a short presentation on: the background to the research; preliminary results obtained thus far; the proposed procurement model; and highlights of the recent legislative developments related to the research. Each workshop lasted for about three hours.

The specific objectives of the validation were identified as follows:

- assessing the strengths and weaknesses of the proposed strategy;
- assessing the adequacy and relevance of the components of the proposed IPT;
- assessing the underlying logic in the causal relationships between the different components of the IPT; and
- assessing the efficacy of the model in facilitating the achievement of the objectives of the WHS procurement in Nigeria.

### **9.3 Characteristics of the participants**

Each of the two focus groups involved four participants and were both facilitated by the researcher. Of the eight participants, four participated in the initial interviews. The remaining four included one from the public sector, one from the private sector and the remaining two are researchers with extensive expertise in healthcare planning in Nigeria (and both currently serve advisory roles to the NPHCDA on healthcare system planning and strategic capital investment programme). Overall, Table 9.1 shows that two of the participants were from the public sector, two were from private organisations whereas the remaining four have extensive research experience in healthcare planning and procurement in Nigeria, and of which one is the Chief Executive of a healthcare non-governmental organisation (NGO).

**Table 9.1: Participants' details**

S/No	Rank	Background profession	Organisation
<b>Focus Discussion I</b>			
1*	Project Director	Architecture	NPHCDA
2	Assistant Director of Primary Care	Public Health	FMOH
3	Managing Director	Construction Management	Contractor E
4*	Managing Partner	Architecture	Consultant A
<b>Focus Discussion II</b>			
5*	Professor	Community Medicine	University/NGO
6*	Senior Lecturer	Public Health	University
7	Professor	Public Health	University/Adviser to NPHCDA
8	Reader	Construction Management	University/ Adviser to NPHCDA

\* Discussants that participated in the initial interviews

## 9.4 Relevant recent legislative developments

### *Legislative developments*

The National Assembly<sup>25</sup> (NASS) enacted an Act for the establishment of an *Infrastructure Concession Regulatory Commission* (ICRC) in August 2006. This Act is aimed at facilitating the participation of private sector in the financing, construction, operation and maintenance of public development projects in Nigeria. More recently, the Act for the establishment of an apex agency for public procurement and contract matters, the Public Procurement Commission (PPC), was passed by the NASS in May 2007. While these Acts await promulgation into law by the federal executive council (FEC), the NASS is also currently considering a Bill for the establishment of a *National Health Delivery Commission* to coordinate and facilitate private ownership and control of public healthcare institutions.

<sup>25</sup> The National Assembly is the central legislative organ in Nigeria application to the whole federation and comprises of the Senate (upper) and House of Representatives (lower) chambers. Each State of the federation has a State Assembly responsible for making laws applicable within the State.

## 9.5 Analysis and discussions of the of focus groups

In analysing the focus discussions using the principles of constant comparative analysis, the opinions of the participants have been homogenised but where necessary, the opinion of a specific group of discussants are highlighted. In complying with the confidentiality requirements, the researcher has as much as possible kept the identities of the discussants anonymous.

The generic procurement lifecycle framework presented in Figure 7.1 and the generic structure of the IPT presented in Figure 7.2 (reproduced below in Figure 9.1) were the subjects of validation. Figure 9.1 below shows the model components, the interrelationships between the components (represented by small caps alphabets *a* to *i*) and the proposed composition (in percentages).

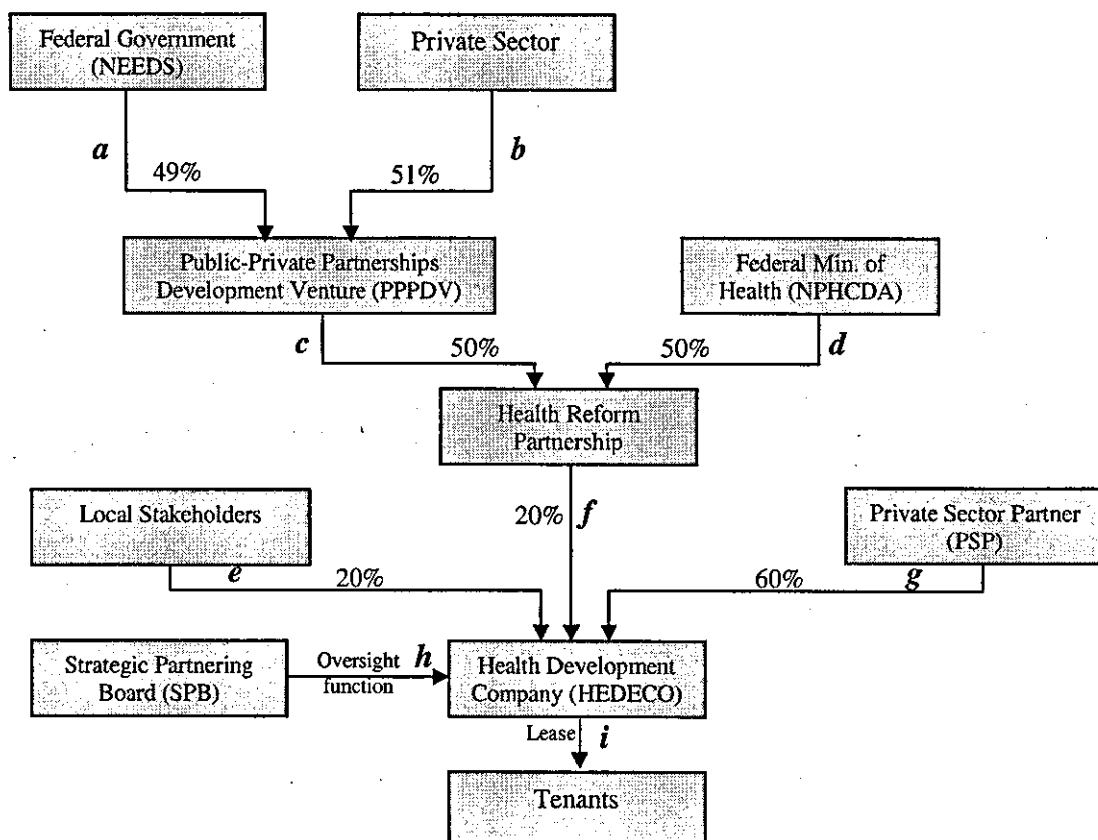


Figure 9.1: Proposed structure of IPT

### 9.5.1 Strengths and weaknesses of the proposed procurement strategy

The strengths of the proposed procurement strategy identified by the discussants include:

- the involvement of FG in all the schemes along the various LGAs will close the gap between policy development for PHC at national level and implementation at local levels whilst ensuring consistency;
- the funding mechanism based on the Build Transfer Operate against any mechanism that will give the private sector the leverage to cause increased costs of healthcare to the citizens;
- the retention of ownership of the facilities by government (as against being transferred to private ownership) will increase the confidence of the communities to participate;
- the recommendation of output-based specification can motivate innovation from the private sector;
- the recommended tendering procedure and selection criteria in addition to long-term nature of the proposed contracts will encourage the participation of experienced and capable contractors or in the least to go into joint venture arrangements with the contractors that are 'local' to the various wards or LGs;
- the proposed partnering concept as well as the potential for working together to develop joint risk management and dispute resolution systems can alleviate the adversarial atmosphere currently inherent in the WHS procurement system;
- the proposed governance structures at both strategic and operational levels will ensure greater compliance with performance standards; and
- the involvement of senior managements at both strategic and operational levels will make the work of RDPT more effective and reduce the erstwhile problems of corruption.

The weaknesses of the proposed strategy identified by the discussants include:

- there is tendency for conflict between the proposed 'local stakeholders' that will result in poor accountability and it was suggested that the local stakeholders should be limited to the LGAs whose responsibility it is to implement PHC;

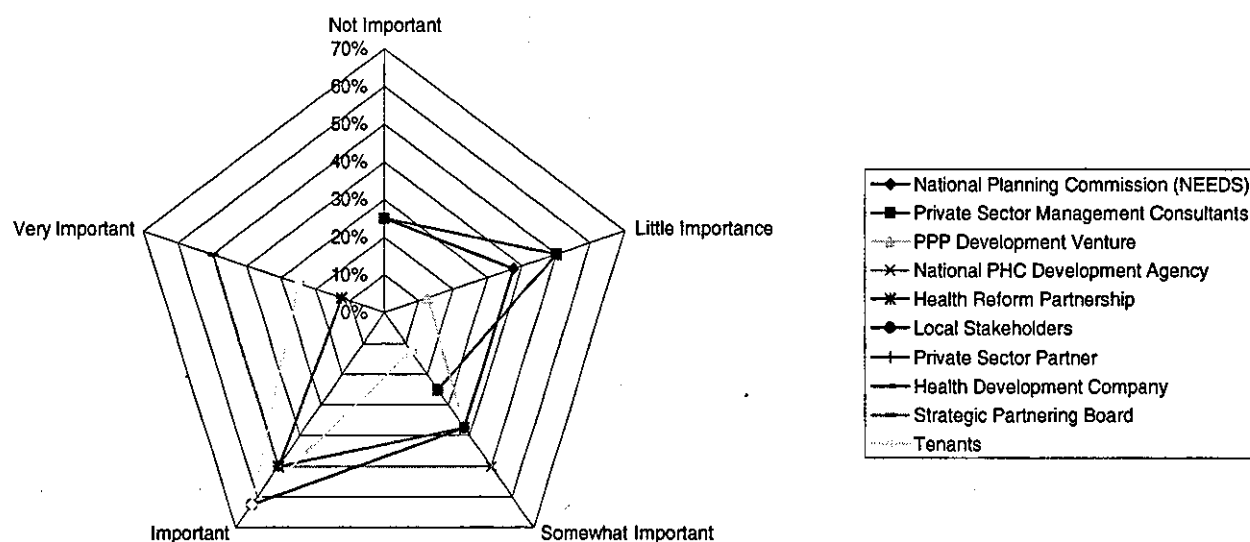
- the multitude of approval requirements may result in inefficiency (as a result of bureaucracies) and a simpler delivery structure was suggested; and
- the absence of adequate staff with the needed skills within the procuring authority to implement the proposal and so further training and recruitments were suggested in addition to development of implementation guidelines.

### 9.5.2 The comprehensiveness of the proposed IPT components

The proposed strategy consists of ten key components, as shown in Figure 9.1. The participants in the focus discussions were requested to assess the *level of importance* of the various components on a scale of 1 to 5: where 1 = not important; 2 = a little important; 3 = somewhat important; 4 = important; and 5 = very important. They were also requested to suggest alternative components (if necessary) in addition to, or to replace, the proposed components. The distribution of the scores (in percentages) and the mean scores of the eight discussants are presented in Table 9.2 and illustrated in Figure 9.2.

**Table 9.2: Evaluation of importance of the components of the proposed model**

	Components	Level of Importance					Mean scores
		1	2	3	4	5	
1	National Planning Commission	25%	37.5%	37.5%			2.125
2	Private Sector Management Consultants	25%	50%	25%			2.000
3	PPP Development Venture		12.5%	37.5%	50%		3.375
4	National PHC Development Agency			50%	50%		3.500
5	Health Reform Partnership			37.5%	50%	12.5%	3.750
6	Local Stakeholders			37.5%	62.5%		3.625
7	Private Sector Partner			37.5%	50%	12.5%	3.750
8	Health Development Company			12.5%	62.5%	25%	4.125
9	Strategic Partnering Board				50%	50%	4.500
10	Tenants			12.5%	62.5%	25%	4.125



**Figure 9.2: Overall rating of the importance of proposed model components**

In terms of adequacy of the components, it can be seen from Table 9.2 and Figure 9.2 that the discussants do not consider the involvement of the National Joint Venture between the National Planning Commission (NEEDS) and Private Sector Management Consultants to be important (both components having achieved a mean score of less than 2.5). The primary reason adjudged for this is the need to keep the bureaucratic structure of the proposed strategy as simple as possible. Okafor (2005) highlighted the structural problems that have beset Nigeria's civil service in terms of personnel regulations, personnel qualifications, organisational structure and the work environment. In order for the strategy to be both effective and efficient, a simple structure was considered more appropriate by the discussants. However, the discussants considered the other components to be important, especially the actual delivery mechanism.

The discussants further suggested the renaming of some of the components (3, 5 and 8) in Table 9.2 in line with some of the recent legislative changes, and these are shown in Table 9.3 below.

**Table 9.3: Suggested changes in the names of model components**

Proposed Name	New Suggested Name
Public-Private Partnership Development Venture	Infrastructure Concession Regulatory Commission
Health Reform Partnership	National Health Delivery Commission
Health Development Companies	Primary Care Improvement Partnerships

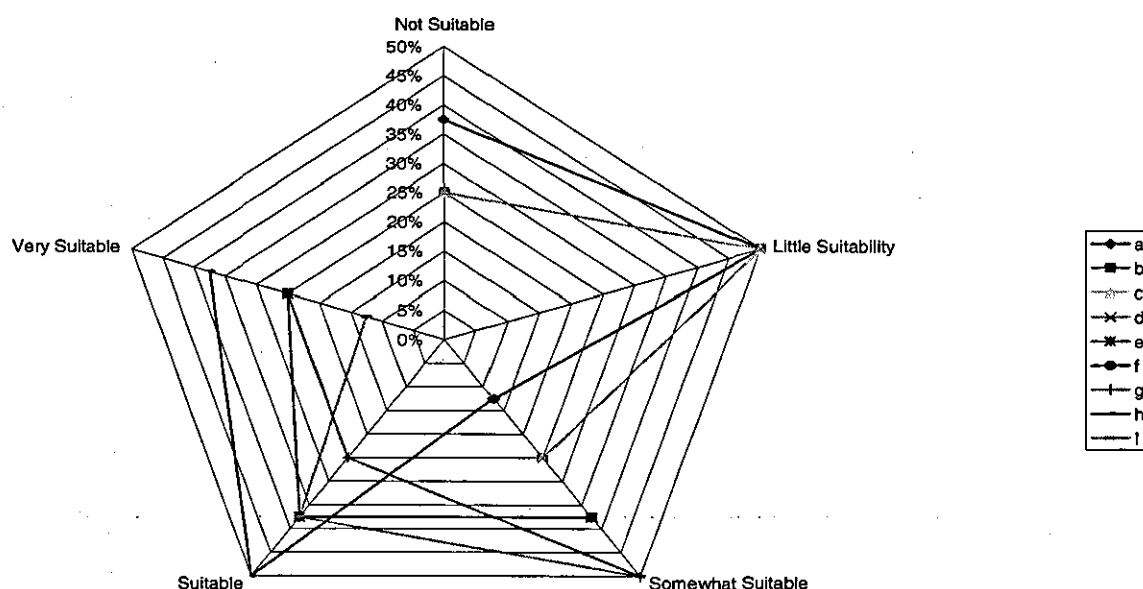
The discussants also contend that although the role of the NPHCDA is crucial, it should focus on the provision of a policy framework and strategic direction for the planning and implementation of PHC in Nigeria. In addition, the relatively high mean score for the SPB (4.5) may not be unconnected with the renewed recognition of the importance of accountability in the provision of public facilities and services in Nigeria. The discussants suggested that systematic involvement and engagement with the communities (through local development partnerships between various public and private sector agencies or groups as well as not-for-profit organisations such as Youth and Women groups and WDCs) in the SPBs will improve the demand for accountability from the service providers. As stated earlier, the discussants also reiterated the need to restrict the local stakeholders to the health and social departments of each LGA.

### **9.5.3 The underlying logic between the model components**

The proposed downstream delivery vehicle comprises seven key relationships. The proposed control limits are also shown in percentages. The discussants were requested to assess the *level of suitability* of the underlying logic between the model components and the proposed composition limits on a scale of 1 to 5: where 1 = not suitable; 2 = a little suitable; 3 = somewhat suitable; 4 = suitable; and 5 = very suitable. The results of the evaluation are shown in Tables 9.4 and 9.5 below.

**Table 9.4: Evaluation of the underlying logic between the model components**

S/No	Causal relationships	Level of Suitability					Mean score
		1	2	3	4	5	
1	<i>a</i>	37.5%	50%	12.5%			1.750
2	<i>b</i>	25%	50%	25%			2.000
3	<i>c</i>	25%	50%	25%			2.000
4	<i>d</i>	25%	50%	25%			2.000
5	<i>e</i>			37.5%	37.5%	25%	3.875
6	<i>f</i>			37.5%	37.5%	25%	3.875
7	<i>g</i>			50%	25%	25%	3.750
8	<i>h</i>			12.5%	50%	37.5%	4.250
9	<i>i</i>			50%	37.5%	12.5%	3.625



**Figure 9.3: Rating of the suitability of relationships between model components**

Concurring with results of the previous section, it can be seen from Table 9.4 and Figure 9.3 that the discussants do not consider some of the proposed relationships (and by extension the proposed composition limits) to be suitable. For example, the low mean scores for relationships *a* to *d* suggest their unsuitability and subsequent removal from the model. This was aimed at keeping the proposed strategy free of unnecessary bureaucratic bottlenecks, and thus enhancing its efficiency.



Table 9.5: Evaluation of the proposed composition limits

S/No	Proposed composition limits	Level of Suitability					Mean score
		1	2	3	4	5	
1	<i>a</i> (49%)	37.5%	50%	12.5%			1.750
2	<i>b</i> (51%)	25%	50%	25%			2.000
3	<i>c</i> (50%)	25%	50%	25%			2.000
4	<i>d</i> (50%)	25%	50%	25%			2.000
5	<i>e</i> (20%)		25%	12.5%	25%	37.5%	3.625
6	<i>f</i> (20%)		25%	12.5%	25%	37.5%	3.625
7	<i>g</i> (60%)		25%	12.5%	25%	37.5%	3.625

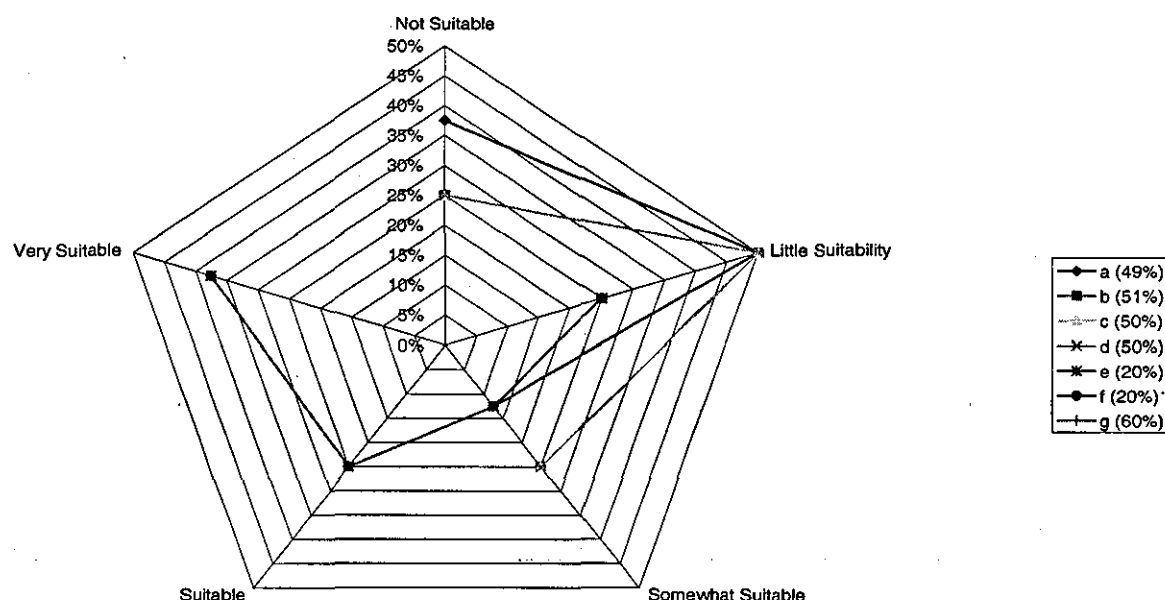


Figure 9.4: Rating of the suitability of proposed composition of model components

As with the underlying logic between the model components, Table 9.5 and Figure 9.4 shows low mean scores for components *a* – *d*. However, over 60% of the discussants were of the view that the proposed control limits for the PCIPs were reasonable and should be adopted. Yet, two discussants suggested the review of the control limits for the PCIPs to 39%:20%:41% and 39%:10%:51% for the local stakeholders (*e*), NHDC (*f*) and the PSPs (*g*) respectively. These two discussants were of the opinion that the proposed limits would give too much control to the PSPs who will be too commercially-orientated and this would negate the basic spirit of healthcare as a social responsibility of government. They, however, feel the

proposed distribution (20%:20%:60%) was appropriate for other physical or economic infrastructure such as roads or power generation. Given the strategic importance of community co-ownership of the PHC facilities, the discussants believed that their suggested distribution is capable of empowering and strengthening the involvement of the host communities.

#### 9.5.4 The usefulness, practicality and applicability of the proposed model

The discussants were requested to assess the *overall efficacy* of the proposed model by evaluating its usefulness, practicality and applicability in delivering the primary objective of PHC in Nigeria. The evaluations were done on a scale of 1 to 5 where 1 implies not useful, not practicable and not applicable while 5 implies very useful, very practicable and very applicable. The results of the evaluation are shown in Table 9.6 below.

**Table 9.6: Evaluation of the usefulness, practicality and applicability of the model**

	Criteria of evaluation	Level of usefulness, practicality or applicability					
		1	2	3	4	5	Mean score
1	Usefulness of the model			12.5%	50%	37.5%	4.250
2	Practicality of the model			25%	37.5%	37.5%	4.125
3	Applicability of the model			37.5	50%	12.5%	3.750

Table 9.6 shows that the discussants consider the model to be useful, practicable and applicable under the Nigerian PHC sector and for promoting the achievement of community co-ownership of PHC facilities, as indicated by the high mean scores. The discussants, however, observed that the Act passed by the National Assembly for the establishment of the Infrastructure Concession Regulatory Commission is inadequate in providing assurances to the funders (along with the other members of the private sector consortia) that, in the event of bankruptcy, the Government will provide suitable financial reimbursement. While urging for the executive arm of the government to ascent to the Act for the establishment of the ICRC, Ibrahim *et al.* (2006b) further suggested that the law should be comprehensive and among other things cover planning, administrative procedures, employment, health and safety,

environment, corporate and commercial law, construction, finance and insurance issues related to PPP implementation.

The discussants affirmed the relevance of the findings of the questionnaire survey to the PHC premises sector. According to the results of the questionnaire survey presented in Chapter Eight, the top ten most important PPP risk factors in Nigeria are: “*unstable government*”, “*inadequate experience in PPP*”, “*availability of finance*”, “*land acquisition/site availability*”, “*poor financial market*”, “*residual value (after concession period)*”, “*availability of appropriate labour/material*”, “*financial attraction of project to investors*”, “*corruption and lack of respect for law*” and “*poor quality of workmanship*”. However, the discussants argued that the risks of “*availability of finance*”, “*land acquisition/site availability*” and “*residual value*” may not have as much impact under the proposed strategy. In addition, the discussants affirmed the results of the allocation of risks in PPP projects which principally assigned political and site acquisition risks to the public sector while sharing relationship-based risks between the private and public sector partners.

From the questionnaire survey, the top three success factors are: *favourable legal framework*, *well-organised public agency to negotiate on behalf of government* and *strong private consortium*. The discussants viewed these factors as the fundamental pillars of a sustainable procurement strategy for PHC premises in Nigeria, especially given the involvement of diverse stakeholder groups from both formal and informal sectors. In order to increase the confidence of the private sector in staking their resources in these long-term arrangements under unstable political climate as in Nigeria, the discussants recommended for a mandatory clause in the agreement between the members of PCIPs that gives the project financiers relevant ‘step-in-rights’ in the event that any member of the consortium consistently perform below standard. The discussants also suggested that the PCIPs should be required to indemnify the procuring authorities against any form of contractual default through necessary performance bonds. Given that the procuring authorities may not possess the capability to effectively participate in these partnerships, the discussants recommended the engagement of competent and experienced consultants to advise them on technical, legal and financial aspects.

The discussants also recommended the extension of the same model to the water and waste management sectors which they believe are essential to complement PHC services in uplifting the wellbeing of people.

### 9.6 The revised structure of the IPT

Following the feedbacks obtained from the two focus groups, the IPT structure was revised. The revised structure is shown in Figure 9.5 below.

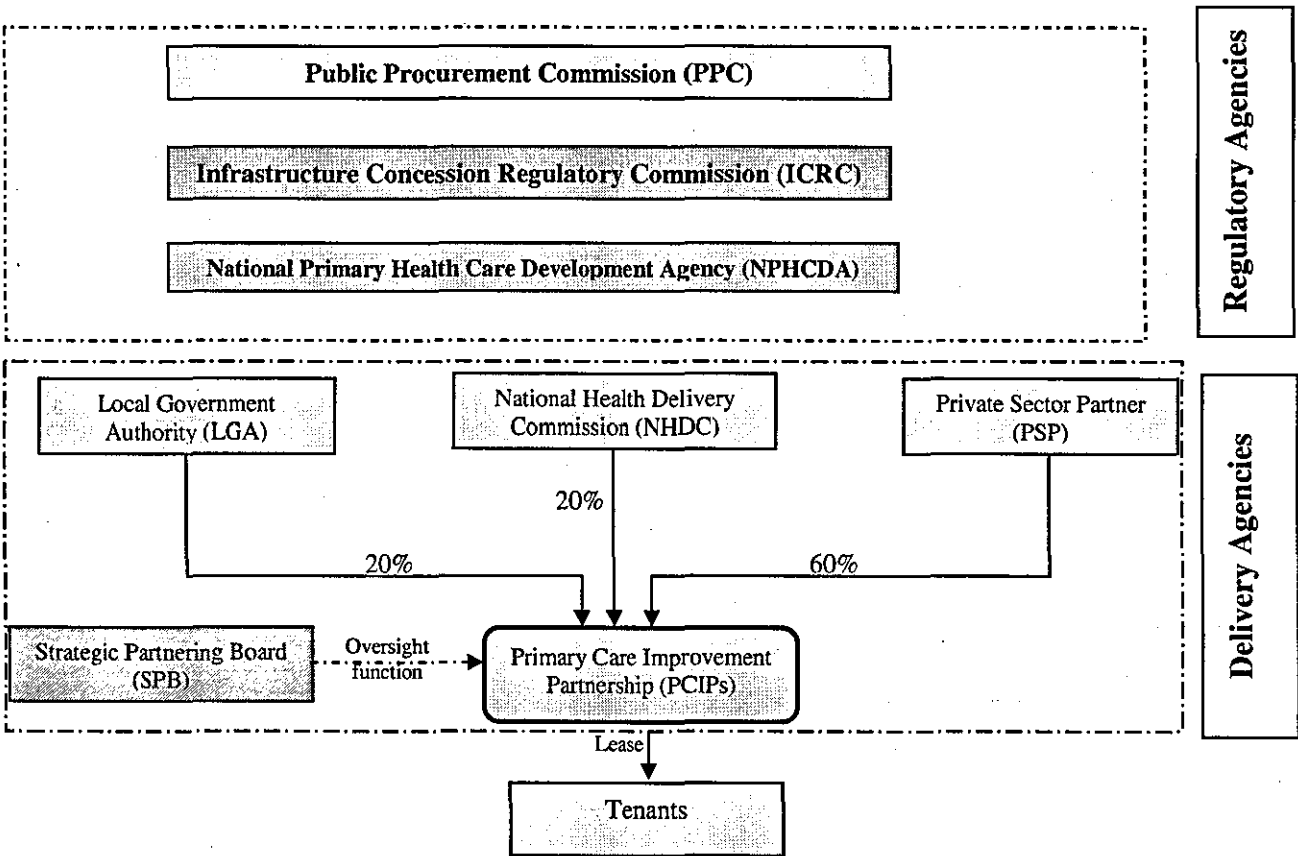


Figure 9.5: Revised IPT structure

The highlights of the revision are as follows:

- The strong emphasis by the discussants for a simplified structure has led to the discounting of the national joint ventures from the structure and restriction of local

stakeholder to LGAs whilst recommending that the organised community groups to serve on the SPBs.

- The importance given to the roles of well-organised public regulatory agencies to strengthen accountability mechanisms in Nigeria from the results of the questionnaire survey (reported in Chapter Eight) and the focus groups has led to the following revision:
  - The replacement of HRP with NHDC to provide the regulatory role for all the PCIPs across the country, in line with the overall PPP regulatory framework that will be developed by the ICRC. Because of their proposed involvement in all the schemes across the country, other roles that can be effectively discharged by the NHDC is facilitating utilisation of lessons learnt from previous projects in future schemes, sharing of experiences and good practice across schemes and standardisation of procedures, processes and documentation.
  - The recognition of the PPC to provide overall procurement policy development and direction in Nigeria.
  - The redefinition of roles of the NPHCDA as provision of health-related regulations to PHC implementation and as the procuring authority across Nigeria.

## **9.7 Chapter summary**

This chapter has presented the results of the two focus group discussions in Nigeria aimed at assessing the appropriateness of the procurement strategy proposed in Chapter Seven in the light of on-going procurement and healthcare reforms, recent legislative developments and the results of the questionnaire survey presented in Chapter Eight.

This strengths and weaknesses of the proposed strategy, the adequacy and relevance of the model components; the underlying logic between the model components; and the efficacy of the model in facilitating the objectives of the WHS procurement in Nigeria were assessed during the validation workshops.

On the basis of the largely positive feedback obtained from the focus discussion, a more simplified version of the proposed integrated project team was undertaken (see Figure 9.6).

## CHAPTER TEN

### RESEARCH CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

#### 10.1 Chapter introduction

This chapter presents a summary of the research and demonstrates how the research aim and objectives were achieved. The main conclusions are also highlighted in terms of contributions to theory and practice. Finally, the chapter presents the main limitations of the research and concludes with some recommendations for further research.

#### 10.2 Summary of research

The aim of this research, as identified in Section 1.4, was to learn lessons from UK best practices to *develop a sustainable procurement strategy that will facilitate the achievement of community co-ownership or co-management of PHC facilities in Nigeria*. This aim was developed to provide answers to the following research questions identified in Section 1.3.

1. What are the challenges from the recent trends and developments in the procurement of public construction works in Nigeria and the UK?
2. What are the key contemporary issues in the procurement of PHC facilities in Nigeria and the UK?
3. What are the value-adding activities that host communities can contribute to promote effective co-ownership or co-management of PHC facilities in Nigeria?

4. What lessons can be learnt from practices in more developed countries, particularly the local improvement finance trust (LIFT) initiative in the United Kingdom (UK), that can promote sustained improvements in the procurement of PHC facilities in Nigeria?
5. How can the host communities and private sector be involved to facilitate community co-management of PHC facilities in Nigeria?
6. What are the key issues associated with the involvement of private sectors in the procurement of public facilities in Nigeria?

Subsequently, the following specific objectives were identified to achieve the aim:

1. review of construction procurement concept, practices and developments in Nigeria and the UK;
2. identification of the key contemporary issues related to the procurement of PHC facilities in Nigeria and the UK;
3. evaluation of the planning and implementation of the WHS scheme in Nigeria;
4. investigation of key implementation issues under the LIFT procurement initiative that can be used to promote sustained improvements in the Nigerian context; and
5. development of a procurement strategy that will facilitate the achievement of community co-ownership or co-management of PHC facilities in Nigeria.

A summary of the specific tasks carried out in achieving the research activities have been discussed below.

**Objective 1: Review of construction 'procurement' concept, practices and developments in Nigeria and the UK.**

This objective was achieved through the review of past literature from academic and government sources. The scope of the review covered construction procurement concept, practices and recent developments in both Nigeria and the UK; the involvement of communities and private sector in the procurement of public sector construction facilities; and the need for collaboration/partnerships between the parties.

Firstly, the review provided an overview of procurement and funding of public construction in Nigeria and identified the recent institutional developments. The review also highlighted the size and characteristics of the Nigerian construction industry as well as the various procurement methods commonly used, the consequences of the various abuses of procurement procedures and the successive efforts aimed at mitigating them.

Secondly, an overview of procurement and funding of public construction in the UK was conducted to identify trends and recent developments. The review discussed the size and importance of the UK construction industry to the economy and highlighted the successive reviews of the industry performance in the last two decades aimed at tackling the adversarial and inefficient working practices. The recommended procurement routes and other initiatives aimed at improving the delivery capability of UK government departments or for achieving important agendas such as sustainability were also briefly discussed.

Finally, the review thoroughly discussed the involvement of private sector in the provision of public sector facilities and services as well as the risks and success factors of PPPs, and the importance of partnership and collaborative working between the different sectors, professionals and participants as necessary prerequisites for successful implementation.

## **Objective 2: Review of PHC concept, healthcare systems and procurement of PHC facilities in Nigeria and the UK**

This objective was also achieved through the review of literature from academic and government sources, on the 'primary health care' concept, the healthcare systems and recent organisational developments within the Nigerian and UK healthcare sectors, and the contemporary issues in the procurement of PHC facilities in Nigeria and the UK.

Firstly, various definitions of PHC that reflect different ambitions about the possibility and desirability of changing the focus of health care were highlighted. The spectrum of definitions ranges from consideration of PHC as a level of care, in terms of the specific services provided, to the services provided by specific professional groups. Importantly, the review established the PHC philosophy's emphasis in moving care out of large institutions into



community-based settings, thereby bringing care closer to the people and making it more responsive to their needs.

Secondly, the review discussed the healthcare system and the procurement of PHC facilities in Nigeria and highlighted the key contemporary issues arising from the on-going procurement and health sector reforms. The review also discussed the philosophy of Nigeria's national health system, based in equity and social justice and PHC principles, and highlighted the shortcomings of the operative constitution in clearly delineating the specific roles and responsibilities in addition to unbalanced distribution of national wealth between the three tiers of government. The review also discussed the developments in the WHS scheme that was established in 2001 to facilitate the concept of community co-ownership and co-management of completed PHC facilities, and outlined the shortcomings of the past and current strategies. The review stressed the importance of systematic involvement of diverse stakeholder groups within the communities in order to effectively capture the customs, beliefs and unique values of the host communities.

Finally, the review of literature on the healthcare system and the procurement of PHC facilities in the UK were also carried out and the key contemporary issues were highlighted. The review discussed the UK healthcare system that is based on the principles of social contract between government and the people on the explicit values of universality and equity, and the challenges arising from the on-going structural and policy reforms as well as the renewed vigour in capital investments aimed at improving the quality of healthcare facilities, particularly at PHC level. In particular, the attainment of 'patient-centred' service and continuous improvement in the PHC sector were explored in terms of greater stakeholder engagement and development of learning culture aimed at improving performance.

### **Objective 3: Evaluation of the planning and implementation of the WHS scheme in Nigeria**

This objective was achieved through semi-structured exploratory interviews and supplementary questionnaire survey with experts in the Nigerian healthcare and construction sectors. The interviews indicated that the planning and implementation of on-going strategies lack focus, impact and sustainability. More specifically, it was established that the current

implementation of the WHS is ineffective and unsustainable but that the concept offers a viable platform for achieving the primary objectives of PHC. The constraints observed in the planning and implementation of the scheme includes structural (in terms of weakened referral system) and legislative problems as well as lack of institutional capacities. It was revealed that the involvement of diverse stakeholders was *ad-hoc*, grossly inadequate and unsystematic. Though emphasis is currently on PHC services, the scheme can facilitate the provision of integrated services from the same facility as it has the potential to accommodate social and other community services. In addition, the evaluation revealed ineffective involvement of the diverse stakeholder groups that would have enabled robust elicitation and understanding of their requirements, strengthening of accountability framework and effective harnessing of private sectors' managerial and property management expertise to provide quality and sustainable PHC facilities.

Consequently, a supplementary questionnaire survey was carried out in Nigeria to investigate the perceptions of professionals on the success and risk factors associated with the use of Public-Private Partnerships (PPPs) for infrastructural developments in Nigeria. The results of the survey revealed high degree of importance attached to favourable legal/administrative framework, a well-organised public sector regulatory agency and a strong private consortium to deliver quality and cost-effective facilities and services under PPP arrangements.

#### **Objective 4: Investigation of key implementation issues under LIFT initiative**

This objective was achieved through semi-structured interviews with ten senior managers from six organisations working across three LIFT schemes to investigate some key implementation issues and lessons learnt on NHS LIFT schemes. The investigation revealed significant differences in the maturity levels of the schemes evaluated in terms of availability of appropriate systems, processes and structures in the planning and implementation of the schemes. The pattern of progress made in the various schemes generally confirmed an evolving system that has considerable scope for improvement. The schemes also indicated high potential to deliver the expected economies of scale and increased performance to meet the requirement for continuous improvement from both the demand and supply sides. The best practices identified to be capable of facilitating sustained improvements in the procurement of PHC facilities in Nigeria were related to: stakeholder identification, analysis,

engagement and alignment; definition of processes, roles, responsibilities and accountabilities; some new project roles and tasks; and periodic reviews throughout the whole-life cycle of each project. However, the investigations highlighted the need for developing a comprehensive framework for achieving continuous improvement in the procurement of PHC facilities such that learning followed-through from planning, design and construction into occupancy, and post occupancy can become a natural part of the process of procuring PHC facilities.

**Objective 5: Development of a procurement strategy that facilitates community co-ownership or co-management of PHC facilities in Nigeria**

Following the results of the exploratory interviews and questionnaire survey reported under Objectives 3 and 4, a procurement strategy based on PPP principles that will be responsive to the peculiar needs of the host community and have adequate accountability structure for sustaining PHC facilities in Nigeria, was proposed to satisfy Objective 5 of this research. This proposal falls in line with the new macro-economic strategy adopted for growth and the health reform agenda of the present government, which have variously emphasised the liberalisation of the approach to improving healthcare delivery through increased private sector participation, whenever feasible. One of the key objectives of the method is the idea of bringing together the various local stakeholders, interests and users that comprise the local health economy. This way, it is expected that the active community participation will offer considerable social and economic benefits such as social inclusion, employment and training opportunities for the members of the host communities in addition to the attainment of other fundamental philosophies of PHC provisioning.

Finally, focus groups were held to assess the appropriateness of the proposed procurement strategy in the light of on-going procurement and healthcare reforms and recent legislative developments, following which a modified procurement strategy was put forward.

## **10.3 Contributions of this research**

Overall, the major achievements of this research in terms of contribution to knowledge can be summarised in the following points:

- understanding of the challenges arising from the recent trends and developments in public construction procurement in Nigeria and the UK;
- understanding of the key contemporary issues in the current strategies used for procuring PHC facilities in Nigeria and the UK;
- identification of the value-adding activities that host communities can contribute to promote co-ownership of PHC facilities in Nigeria;
- the exploration of some key implementation issues in LIFT projects that can facilitate sustained improvements in the procurement of PHC facilities in Nigeria;
- the development of a procurement strategy that can facilitate community co-management of PHC facilities in Nigeria;
- understanding of the key issues associated with private sector involvement in the procurement of public facilities and services under PPP arrangements in Nigeria; and
- the identification of tools, enablers, drivers, and barriers to achieving continuous improvement in the procurement of PHC facilities.

The following Sections present the implications of these contributions to theory and practice.

### **10.3.1 Contributions to theory**

The review of literature in Chapter Three emphasised the importance of sustainable and synergistic procurement strategies evolving from the people for which a project is intended and the negative outcomes resulting from superimposing procurement strategies or mechanisms used in the developed countries on developing economies. This research identified the strong influence on, and diversity of, cultural values and attitudes of the different cultural groupings in Nigeria. This research identified the benefits of involving members of the communities to include:

- development and strengthening of community voice in participating in decision-making processes and in demanding accountability from service providers;
- empowering communities in building a common vision, a sense of belonging, positive identity where diversity is valued, and enhanced knowledge and awareness of personal obligation to better health as well as providing them with quality information on health;
- ensuring that local communities are in a position to influence the 'what' and 'how' questions related to service delivery and, where appropriate, participate in service delivery; and
- increased confidence and capacity of individuals and small groups to get involved in activities and build mutually supportive networks that hold communities together.

In addition, although the interviewees in Nigeria questioned the applicability of the concept of community co-ownership or co-management of public facilities, they affirmed the importance of engaging with wide groups of stakeholders to achieve the objectives of PHC philosophy. The research subsequently identified the essential areas in which communities can add value and facilitate the satisfaction of the unique requirements of the diverse members of host communities thereby encouraging their effective participation in the management of the completed PHC facilities. These areas include:

- undertaking of research to investigate and understand the dominant preferences, customs, beliefs and values of the communities;
- effective communication through traditional institutions to promote community education on both health and non-health related aspects of PHC philosophy;
- increased capacity of communities to nurture the skills and talents required in making meaningful contribution;
- transparent and clear allocation of roles, responsibilities and accountabilities;
- collaborative and partnership working between local organisations from public, private and not-for-profit sectors to aggregate competences and resources; and
- joint identification of risks associated with each project and the potential mitigation measures.

The comparison of the perceptions of Nigerian practitioners on PPP success factors with a similar previous UK studies (Li *et al.*, 2005b) shows significant isomorphism (similar in form but different in specific contexts), thus suggesting considerable potential for useful cross-country learning. However, previous studies (Eaton *et al.*, 2007) found incongruence between the cross-cultural features of PPPs that suggested inapplicability of the UK PFI model in Ireland, Turkey, Portugal, The Czech Republic and Palestine. Therefore, despite the evidence of similarity in PPP success factors, it is essential that adequate attention is given to identification, understanding and management of the specific drivers at national and sectoral levels.

### **10.3.2 Contributions to industry and practice**

The results of the interviews in Nigeria revealed the strong influence on, and diversity of, cultural values and attitudes of the different cultural groupings in Nigeria. A carefully planned engagement process should facilitate the process of building consensus between different stakeholder groups, which should enable the development of a common vision, a sense of belonging, positive identity where diversity is valued, and enhanced knowledge and awareness of personal obligation to better health as well as providing them with quality information on health. The 'national-outlook' with 'local-control' strategy advocated in the proposed procurement strategy will ensure consistency, services that are responsive to actual needs and increased accountability structure for sustaining PHC facilities in Nigeria. Furthermore, although PPP procurement implementation can be said to be in its formative stages of development in Nigeria, the results of the questionnaire revealed the need for the public sector to equip itself appropriately in adopting the role of consumer of services and the regulator of the PPP implementation through effective policy development and deployment. For example, the findings highlighted the need for the Nigerian government to create an enabling and secure investment environment for both local and foreign investors and to establish mechanisms for selecting the private sector partner with the necessary skills, experience and resources to deliver cost-effective facilities and services of high quality. The findings thus serve as a good baseline for policy development on PPPs in Nigeria.

In addition, the interviews conducted in the UK on some LIFT schemes revealed significant differences in the maturity levels of the schemes in terms of availability of appropriate systems, processes and structures in the planning and implementation. While the schemes generally indicated high potential to deliver the expected economies of scale and increased performance to meet the requirement for continuous improvement from both the demand and supply sides, the findings outlined some best practice tools, techniques and processes that could facilitate sustained improvements in the procurement of PHC facilities in Nigeria.

#### **10.4 Limitations of this research**

This research, like any other, has limitations in terms of its conduct, scope and generalisability of findings. The key limitations of this research are briefly outlined below:

- the current skill base of personnel responsible for public procurement is insufficient to champion and facilitate the proposed strategy, which creates the need for recruiting suitably qualified employees for successful implementation;
- the inherent culture of resisting change would require continuous training and coaching of procurement personnel;
- the number of respondents to the questionnaire survey in Nigeria was relatively small, which calls for cautious interpretation of the statistical analysis;
- the procurement strategy is applicable only to the PHC sector and necessary caution should be taken to understand specific sectoral circumstances when attempting to apply the strategy to other sectors; and
- the research was also limited to project management perspectives related to the built environment component of PHC and did not delve into clinical and other aspects of PHC.

#### **10.5 Recommendations for further studies**

Based on the limitations of this research outlined in Section 10.4 above and other related issues identified from literature, some of the key pertinent issues that require further research

are recommended below. These issues are pertinent given the huge investments in public construction programmes across many sectors, including PHC, that have impact on future generations.

1. Assessing the effectiveness and appropriateness of the commonly used procurement strategies in facilitating collaborative working and efficient delivery process in an environment that was (and is still likely to be) largely characterised with attitudes and culture that are individualistic and often adversarial. It is also pertinent to explore ways by which long-term (whole-life) value for money can be facilitated, measured and enhanced through these procurement methods.
2. Investigating the drivers, stimulants and barriers to innovation in the implementation of the commonly used procurement routes for the benefits of the projects and all the participants, and identifying effective mitigating strategies. Examples of potential stimulants could be in the form of payment and incentivisation mechanisms. It is also important to explore how to mitigate the barriers to both effective learning from project-to-project and sharing of best practices from scheme-to-scheme.
3. Developing effective methodological framework for capturing, quantifying, integrating, and aligning the diverse values and requirements of the different stakeholders at various procurement stages that will result in PHC facilities that can adapt to future changes in clinical procedures. This will, however, amongst other things require a good understanding of the dynamics in clinical innovations and the resulting care pathways.
4. Using the continuous improvement values identified in this research to develop a comprehensive framework that will make learning followed-through from planning, design and construction into occupancy, and post occupancy to become a natural part of the process of procuring PHC facilities. However, further perspectives at both strategic and operational levels would be required, and these should enable the use of grounded theory method to generate relevant theories from the data. The framework should also incorporate consistent performance measurement arrangements.
5. Using the results of the questionnaire survey conducted in this research as the baseline, it is pertinent to develop specific guidelines for effective PPP procurement in Nigeria. This would, however, require follow-up qualitative research with the



..... identified practitioners of PPPs in Nigeria to provide in-depth insights into the lessons learnt and other implementation issues encountered thus far.

6. Using technology-based solutions for capturing, validating and storing knowledge generated during the procurement of PHC facilities for possible re-use on other projects or schemes. The knowledge can cover process, cost, performance, lessons, legal and statutory requirements, suppliers, skills, experience and expertise.

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## APPENDIX A: LIST OF PUBLICATIONS

The outcomes of this research are being disseminated to the construction industry and academic peers through a number of presentations at seminars, workshops and conferences and in reputable journal publications; some of which are enumerated below:

### 1. Seminar presentation:

- a. "Continuous Improvement within the UK Healthcare Sector" workshop on "*Identifying Value and Social Dimensions within Sustainable Construction*" held at Civil and Building Engineering Department, Loughborough University, on 14 April 2005.

### 2. Peer reviewed conference proceedings:

- a. Ibrahim, A.D. and Price, A.D.F. (2005) Impact of Social and Environmental Factors in the Procurement of Healthcare Infrastructures, In Egbu, C. and Tong, M. (Eds), *2<sup>nd</sup> Scottish Postgraduate Researchers of the Built and Natural Environment (PROBE) Conference*, Glasgow Caledonian University, Glasgow, Scotland, 16 – 17 November, 2005, pp. 217-228, ISBN 1 903661 82 X.
- b. Ibrahim, A.D. and Price, A.D.F. (2005) Conceptualising a Continuous Improvement Framework for Long-Term Contracts: A Case Study of NHS LIFT, In Egbu, C. and Tong, M. (Eds), *2<sup>nd</sup> Scottish Postgraduate Researchers of the Built and Natural Environment (PROBE) Conference*, Glasgow Caledonian University, Glasgow, Scotland, 16 – 17 November, 2005, pp. 229-241, ISBN 1-903661-82-X.
- c. Ibrahim, A.D. and Price, A.D.F. (2006) Public Private Partnership and Sustainable Primary Health Care Facilities in Nigeria, In Okewole, I.A., Daramola, A., Ajayi, A., Odusami, K, and Ogunba, O. (Eds), *International Conference on the Built Environment: Innovation, Policy and Sustainable Development*, Covenant University, Nigeria, January 24 – 26, 2006, pp. 221-227, ISBN 978-37963-0-5.
- d. Ibrahim, A.D. and Price, A.D.F. (2006) The Development of Continuous Improvement Framework for Long-term Partnering Relationships", In Dilanthi, A., Haigh, R., Vrijhoef, R., Hamblett, M. and van den Broek, C. (Eds), *6<sup>th</sup> International Postgraduate Research Conference*, Technical University, Delft, The Netherlands, April 6 – 7, 2006, Volume 2, pp. 597-607, ISBN 0 902896 97 0.
- e. Ibrahim, A.D., Price, A.D.F. and Dainty, A.R.J. (2006) Risks associated with Public-Private Partnerships in Developing Countries: Case Study of Nigeria, In Inyang, H., Mendez, G., Braden, C., and Fodeke, B. (Eds.), *International Conference on Infrastructure Development and the Environment*, Sheraton Hotels, Abuja Nigeria, September 10 – 15, 2006.
- f. Ibrahim, A.D., Price, A.D.F. and Dainty, A.R.J. (2006) Success Factors for Public-Private Partnerships in Developing Countries: Case Study of Nigeria, In Inyang, H., Mendez, G., Braden, C., and Fodeke, B. (Eds.), *International Conference on Infrastructure Development and the Environment*, Sheraton Hotels, Abuja Nigeria, September 10 – 15, 2006.
- g. Ibrahim, A.D., Price, A.D.F. and Dainty, A.R.J., (2006) An Evaluation of the Practices of, and Barriers to, Continuous Improvement through Learning on NHS LIFT Projects, In McDermott, P. and Khalfan, M.M.A., *CIB W92 Conference on*

3. Peer reviewed Journals:

- a. Ibrahim, A.D., Price, A.D.F. and Dainty, A.R.J. (2006) The analysis and Allocation of Risks in Pubic-Private Partnerships in Infrastructure Projects in Nigeria, *Journal of Financial Management of Property and Construction*, Vol. 11 No. 3, pp. 149 - 163.
  - b. Ibrahim, A.D., Price, A.D.F. and Dainty, A.R.J. (2007) An analysis of Success Factors for Pubic-Private Partnerships in Infrastructure Projects in Nigeria, *Journal of Construction Procurement*, Vol. 12 No. 1 (in press).
  - c. Price, A.D.F., Ibrahim, A.D. and Dainty, A.R.J. (2007) Emerging issues in the procurement of healthcare facilities in the UK, *Journal of Construction Procurement*, Vol. 13 No. 1 (in press).
  - d. Price, A.D.F., Ibrahim, A.D. and Mathur, V.N., "A review of applications of 'stakeholders' concept in healthcare sector", submitted to the *Journal of Health Organisation and Management* (under review).
  - e. Evaluation of key practices under the local improvement finance trust (LIFT) procurement strategy (under preparation).
  - f. The development of a continuous improvement framework for the local improvement finance trust (LIFT) procurement strategy(under preparation).
4. An industrial report on the "Key Implementation issues and Lessons Learned on NHS LIFT Projects" from the interviews with stakeholders.

## APPENDIX B1: GUIDE FOR INTERVIEWS IN NIGERIA

### Introduction

The primary objective of this interview is to investigate the perceptions of stakeholders on the planning and implementation of the Ward Health System (WHS) of procuring Primary Health Care (PHC) facilities.

Your participation is very vital to the success of this study. All the information collected from the interview will be accorded the utmost level of confidentiality and no personal or individual information about you or your organisation will be disclosed in the final report.

### General Information and Previous Experience

#### 1 Personal Information

1a	Respondent's Name:	1b	Email and Phone No.:
1c	Contact Address:		

#### 2 What sector do you represent?

Client	Consultant	Contractor	Voluntary Organisation	Local community member	others, specify
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#### 3 What is your background profession?

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#### 4 What is your rank/position in your organisation?

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#### 5 What is the extent of your involvement during each the following phases in the procurement of the model healthcare facility?

	Phase	0 – 25%	25 – 50%	50 – 75%	75 – 100%
1	Planning				
2	Design				
3	Tendering				
4	Construction				
5	Supervision				
6	Operation				
7	Monitoring and evaluation				

#### 6 Please evaluate the planning and implementation of the model healthcare facilities under the Ward Health System using the Table below as a guide:

Planning stages of the WHS Procurement	Community Involvement
Healthcare system	

Strengths	Weaknesses	Strengths	Weaknesses
Opportunities	Threats	Opportunities	Threats
Others			
<b>Project Design</b>			
Strengths	Weaknesses	Opportunities	Threats
Others			

<b>Bidding and Contracting under the WHS Procurement</b>			
<b>Tendering and Contractor Selection process</b>		<b>Contract Strategy</b>	
Strengths	Weaknesses	Strengths	Weaknesses
Opportunities	Threats	Opportunities	Threats
Others			
<b>Project Monitoring and Governance process</b>			
Strengths	Weaknesses	Opportunities	Threats
Others			

7	<b>Please provide any further comments or suggestions on this research in the space below</b>
<div></div>	

## APPENDIX B2: GUIDE FOR UK INTERVIEWS

This interview is aimed at investigating the current practices to enable us understand the specific context of your LIFT scheme and the key processes involved, identifying the mechanisms used in the development of organisational structure and the definition of roles and responsibilities between and amongst the participating organisations. The goal is to identify how lessons learnt so far can promote the attainment of best value and continuous improvement in future developments.

The themes under which the interview questions will cover include:

### **i. Part I - General:**

#### *a. what the LIFT scheme covers:*

- i. how would you describe your current role under this LIFT scheme
- ii. who are the key partners in your LIFT
- iii. what are the unique features of your LIFT
- iv. what geographic areas are covered in your LIFT
- v. describe the model of healthcare delivery service system adopted
- vi. what are your (organisation's) key drivers and the enablers on LIFT scheme

#### *b. definition and mechanisms for capturing requirements:*

- i. what are the business objectives of your parent organisation under this LIFT scheme
- ii. what is the main vision of this LIFT scheme
- iii. what mechanisms have been used to capture stakeholders' requirements – consultations with relevant stakeholders during planning
- iv. what are the mechanisms used for transforming the requirements to design solutions
- v. what are the mechanisms for communicating strategies to stakeholders during implementation

#### *c. definition of key processes and their inter-relationships:*

- i. describe the key processes developed for attaining the individual and collective objectives of participants
- ii. describe the project management structures to link the LIFT vision to operational activities

#### *d. mechanisms for developing relationships between partners:*

- i. what mechanisms were used in the development of partnership between the key stakeholders in order to satisfy individual and corporate objectives
- ii. describe the adequacy, allocation and sharing of resources between the stakeholders

#### *e. mechanisms for defining roles and responsibilities amongst partners:*

- i. describe the mechanisms for defining roles and responsibilities
- ii. describe the mechanisms for allocating/assigning roles and responsibilities to individuals or organisations

*f. mechanisms for alignment of the aims/objectives of individual organisations:*

- i. what are the mechanisms for aligning stakeholder objectives under the LIFT scheme
- ii. how are stakeholder objectives managed

**ii. Part II - Continuous improvement:**

*a. aims and objectives under the LIFT scheme:*

- i. what does continuous improvement mean to you (and organisation) under this LIFT scheme
- ii. what is the aim/objectives of your continuous improvement strategy under this LIFT scheme

*b. requirements and implications at various organisational levels:*

- i. what are the requirements for performance management under this LIFT scheme
- ii. what are the requirements for continuous improvement (contractual and non-contractual) under this LIFT scheme
- iii. what are implications for performance management and continuous improvement at various organisational levels – top, middle, and operational

*c. strategy, perspectives and philosophy:*

- i. what is the strategy adopted to meet the performance and improvement requirements at various stages
  - a. Future-proofing (flexibility and adaptability)
  - b. Lessons learnt
  - c. Innovation
  - d. Stakeholder (partnership) management
  - e. Demonstrating VFM in future schemes
- ii. what is the philosophy of your performance management and continuous improvement initiatives (process or result oriented)
- iii. what are the perspectives of your performance management and continuous improvement initiatives

*d. how are they measured and the key measures:*

- i. how do you assess the attainment of the performance requirements
- ii. what are the key performance measures
- iii. how do you assess the attainment of the improvement requirements
- iv. what are the key measures used

*e. processes and tools:*

- i. describe your performance management process
- ii. what tools do you use for performance management
- iii. describe your continuous improvement process
- iv. what tools do you use for continuous improvement

- v. to what degree does your organisation follow established routines/procedures for managing and improving performance and value to stakeholders
  - vi. are there any routines in place to capture knowledge or lessons for re-use
  - vii. how do you ensure learning within and between projects
  - viii. what are the procedures for adopting lessons learnt in future schemes
- f. *the driving and enabling values:*
- i. what are your major driving values for continuous improvement
  - ii. what are the enabling values for continuous improvement implementation
  - iii. from where does the impetus for performance management and continuous improvement come from – top managers, line managers, shop floor
- g. *the barriers to the successful implementation:*
- i. what are the internal barriers to the successful implementation of your performance management and continuous improvement
  - ii. what are the external barriers to the successful implementation of your performance management and continuous improvement
  - iii. what do you consider the impact of the exclusivity provision
- h. *how the framework could be improved:*
- i. what are ways for overcoming these barriers.



## APPENDIX B3: GUIDE FOR QUESTIONNAIRE SURVEY IN NIGERIA

### INTRODUCTION

*This survey is aimed at investigating the success and risk factors that can impact the realisation of the objectives of Public-Private Partnerships (PPPs) in Nigeria, and the risk allocation preferences. For the purpose of this study, a PPP is defined as "contractual arrangements in which public and private sectors work together for mutual benefits by aggregating their competencies and resources in order to increase the efficiency, effectiveness and quality of public facilities and/or services through optimal sharing of risks and rewards. In these relationships, the private sectors could be involved in the financing, design, construction and operation of the facilities and/or services".*

*This questionnaire is divided into three parts; general information, PPP success factors and PPP risk factors. Your opinion is very valuable to the success of the study.*

*Thank you very much for your precious time in filling out the questionnaire.*

### SECTION A: GENERAL INFORMATION AND PREVIOUS EXPERIENCE

*For each of the following questions, please tick (✓) against the option that is most applicable. Additional spaces are provided for options that are not included.*

<b>1</b> What is your role in the construction industry?						
Public client	Private client	Consultant	Contractor	Educator/Researcher		
Others, please state						
<b>2</b> How many years have you been involved in the construction sector?						
Less than 5	6 – 10	11 – 15	16 – 20	21 – 25	More than 25	
<b>3</b> What is your rank/position in your organisation?						
Top Management Level		Middle Management Level		Low Management Level		Operative
<b>4</b> In which sector have you been mostly involved?						
Housing & Office	Civil Engineering – Roads, bridges, etc	Healthcare	Utility – water, power, etc.	Oil and Gas	Educational	IT & Communication
Others, please indicate						
<b>5</b> Based on the definition given above, how would you rate your knowledge/experience of PPP?						
Practically involved as a partner		Involved as an adviser		I have knowledge/interest in PPP but not involved practically		None of these

*Provide information on the most recent project in the following question if you have been/currently involved in a PPP projects, otherwise proceed to section B.*

<b>6</b> In which sector was (is) the PPP involvement?							
Housing & Office	Civil Engineering – Roads, bridges, etc	Healthcare	Utility – water, power, etc.	Oil and Gas	Educational	IT & Communication	
Others, please indicate							
<b>7</b> What procurement method was (is being) used in the project?							
Design & Build	Turnkey	Package deal	BOT	Build Own Operate Transfer (BOOT)	Design Build Finance Operate (DBFO)	Joint Venture (JV)	Lease develop operate (LDO)
<b>8</b> What are the construction and operation (expressed in terms of Net Present Value (NPV) costs?							
Construction Cost	Less than ₦50M	₦50M – ₦100M	₦100M – ₦500M	Above ₦500M	NA		
Operation Cost	Less than ₦50M	₦50M – ₦100M	₦100M – ₦500M	Above ₦500M	NA		

## SECTION B: PPP SUCCESS FACTORS

- The following are some factors that facilitate success of PPP projects,
- By inserting a tick (✓) below the appropriate number and using a scale of 0 to 5, where 0 represents **Not important** and 5 represents **Very important**; please rank the level of importance of each factor in ensuring the success of PPP implementation in the Nigerian construction sector. Please include additional factors that are not listed in the spaces provided at the end and rank.

	PPP SUCCESS FACTORS	LEVEL OF IMPORTANCE					
		Low		Moderate		High	
		0	1	2	3	4	5
1	Favourable legal and administrative framework						
2	Political support						
3	Strong private consortium						
4	Competitive procurement process						
5	Transparency in the procurement process						
6	Good governance						
7	Appropriate risk allocation and risk sharing						
8	Commitment and responsibility of public and private sectors						
9	Multi-benefit objectives						
10	Available financial market						
11	Sound economic policy						
12	Stable micro-economic environment						
13	Well-organised public agency to negotiate on behalf of public sector						
14	Technology transfer						
15	Social support based on public acceptance						
16	Shared authority between public and private sectors						
17	Project technical feasibility						
18	Thorough and realistic cost/benefit assessment						
19	Government involvement by providing guarantees						
20							
21							
22							
23							
24							
25							

## SECTION C: PPP RISK FACTORS

For each of the following risk factor and by inserting a tick (✓) below the appropriate number, please rank the level of importance using a scale of 0 to 5, where 0 represents *Not important* and 5 represents *Very important*; and indicate from whom you consider the best to be allocated the risk. Please include additional factors that are not listed in the spaces provided at the end of category, rank and indicate allocation preference.

	PPP RISK FACTORS	LEVEL OF IMPORTANCE						PREFERRED ALLOCATION		
		Low		Moderate		High		PUBLIC	PRIVATE	SHARED
		0	1	2	3	4	5			
	<b>Political and government policy</b>									
	Unstable government									
	Possible expropriation/nationalisation of assets									
	Poor public decision making process									
	Strong political opposition/hostility									
	Inconsistencies in government policies									
	<b>Macroeconomic factors</b>									
	Poor financial market									
	Inflation rate volatility									
	Interest rate volatility									
	Unstable value of local currency									
	Influential economic event (boom/recession)									
	<b>Legal and Legislative factors</b>									
	Legislation change/inconsistencies									
	Change in tax regulation									
	Corruption and lack of respect for law									
	Import/Export restrictions									
	Rate of returns restrictions									
	Industrial regulatory change									
	<b>Social factors</b>									
	Lack of tradition of private provision of public services									
	Public opposition to projects									
	Non-involvement of host-community in projects									
	Cultural differences between main stakeholders									
	<b>Natural factors</b>									
	Force majeure									
	Geotechnical conditions									
	Weather									
	Environment									
	<b>Project selection</b>									
	Land acquisition/site availability									
	Level of demand for the project									
	Prolonged negotiation period prior to initiation									
	Competition risk									

PPP RISK FACTORS		LEVEL OF IMPORTANCE						PREFERRED ALLOCATION		
		Low		Moderate		High		PUBLIC	PRIVATE	SHARED
		0	1	2	3	4	5			
<b>Project Finance</b>										
	Availability of finance									
	High finance costs									
	Lack of creditworthiness									
	High bidding costs									
	Inability to service debt									
	Lack of government guarantees									
	Bankruptcy of concessionaire									
	Financial attraction of project to investors									
<b>Residual risk</b>										
	Residual value (after concession period)									
<b>Design factors</b>										
	Delay in project approvals and permits									
	Design deficiency									
	Unproven engineering techniques									
<b>Construction risks</b>										
	Construction cost overrun									
	Construction time delay									
	Availability of appropriate labour/material									
	Late design changes									
	Poor quality of workmanship									
	Excessive contract variation									
	Insolvency of subcontractors/suppliers									
<b>Operation risks</b>										
	Risk regarding pricing of product/service									
	Operational revenue below projection									
	Operation cost overrun									
	Low operating productivity									
	Maintenance more frequent than expected									
	Maintenance cost higher than expected									
<b>Relationship risks</b>										
	Inadequate experience in PPP									
	Inadequate distribution of responsibilities and risks									
	Lack of commitment from public/private partner									
	Inadequate distribution of authority between partners									
	Organisation and coordination risk									
	Different working methods/know-how between partners									
<b>Third party risks</b>										
	Staff crises									
	Third party tort liability									

## APPENDIX B4: GUIDE FOR VALIDATION WORKSHOP IN NIGERIA

1. What are your perceived *strengths* and *weaknesses* of the proposed procurement strategy?
2. Assess the *adequacy* and *relevance* of the various components of the proposed model for ensuring sustainable procurement of primary health care facilities through private sector participation in Nigeria? Please add any other component you consider necessary and rate their adequacy and relevance.

	Components	Adequacy			Relevance		
		Low	Moderate	High	Low	Moderate	High
1	National Planning Commission (NEEDS)						
2	Private Sector Management Consultants						
3	PPP Development Venture						
4	National PHC Development Agency						
5	Health Reform Partnership						
6	Local Stakeholders						
7	Private Sector Partner						
8	Health Development Company						
9	Strategic Partnering Board						
10	Tenants						

3. Evaluate the *underlying logic* in the causal relations between the different components of the structure, and the recommended shareholding limits? Also, please add any other relations you consider necessary and rate their necessity and relevance.

	Causal Relationships	Necessity			Relevance		
		Low	Moderate	High	Low	Moderate	High
1	a (49% shareholding)						
2	b (51% shareholding)						
3	c (50% shareholding)						
4	d (50% shareholding)						
5	e (20% shareholding)						
6	f (20% shareholding)						
7	g (60% shareholding)						
8	h (oversight function)						
9	i (Tenancy agreement)						

4. Evaluate the *usefulness*, *practicality* and *applicability* of the model in Nigeria and provide any additional comments you have for improving its effectiveness.

	Functions of Components	Necessity			Relevance		
		Low	Moderate	High	Low	Moderate	High
1	Usefulness of the structure						

2	Practicality of the structure											
3	Applicability of the structure											

## APPENDIX C1: ACHIEVING EXCELLENCE DESIGN EVALUATION TOOLKIT (AEDET) EVOLUTION

S/No	Main sections	Sub-sections
1	<b>Impact</b> – deals with the way people in a healthcare building are able to control their privacy and their interaction with others. It focuses on the way people can best maintain their dignity while under conditions that necessarily may not be found in ordinary life.	<p><b>a. Character and Innovation</b> – deals with overall feeling of the building. It asks whether the building has clarity of design intention, and whether this is appropriate to its purpose. A building that scores well under this heading is likely to lift the spirits and to be seen as an exemplar of good architecture of its kind.</p> <ul style="list-style-type: none"> <li>i. There are clear ideas behind the design of building.</li> <li>ii. The building is interesting to look at and move around in.</li> <li>iii. The building projects a caring and reassuring atmosphere.</li> <li>iv. The building appropriately expresses the values of the NHS.</li> <li>v. The building is likely to influence future healthcare designs.</li> </ul> <p><b>b. Form and Materials</b> – deals with the nature of the building in terms of its overall form and materials. It is primarily concerned with how the building presents itself to the outside world in terms of its appearance and organisation. Although it deals with the materials from which the building is constructed, it is not concerned with these in a technical sense but rather the way they will appear and feel throughout the life of the building.</p> <ul style="list-style-type: none"> <li>i. The building has human scale and feels welcoming.</li> <li>ii. The building is well orientated on the site.</li> <li>iii. Entrances are obvious and logically positioned in relation to likely points of arrival on site (double weighting).</li> <li>iv. The external materials and detailing appear to be of high quality.</li> <li>v. The external colours and textures seem appropriate and attractive.</li> </ul> <p><b>c. Staff and Patient environment</b> – deals with how well an environment complies with best practice as indicated by the research evidence. The statements in this section correspond to the sections in ASPECT.</p> <ul style="list-style-type: none"> <li>i. The building respects the dignity of patients and allows for appropriate levels of privacy and company (double weighting).</li> <li>ii. There are good views inside and out of the building (double weighting).</li> <li>iii. Patients and staff have good easy access to outdoors.</li> <li>iv. There are high levels of comfort and control of comfort (double weighting).</li> <li>v. The building is clearly understandable (double weighting).</li> <li>vi. The interior of the building is attractive in appearance.</li> <li>vii. There are good bath/toilet and other facilities for patients.</li> <li>viii. There are good facilities for staff including convenient places to work and relax without being on demand.</li> </ul> <p><b>d. Urban and Social Integration</b> – deals with the way the building relates to its surroundings. It asks whether the building plays a positive role in the neighbourhood whether that is urban, suburban or rural. A building that scores well under this section is likely to improve its neighbourhood rather than detract from it.</p> <ul style="list-style-type: none"> <li>i. The height, volume and skyline of the building relate well to the</li> </ul>

		<p>surrounding environment (double weighting).</p> <ul style="list-style-type: none"> <li>ii. The building contributes positively to its locality.</li> <li>iii. The hard and soft landscapes around the building contribute positively to the locality.</li> <li>iv. The building is sensitive to neighbours and passers-by (double weighting).</li> </ul>
2	<p><b>Build quality</b> – is concerned with the technical performance of the building during its lifetime. It asks whether the components of the building are of high quality and fit for their purpose. However, we are not concerned here with how well the building functions in relation to the human use of it.</p>	<ul style="list-style-type: none"> <li>e. <b>Performance</b> – is concerned with the technical performance of the building during its lifetime. It asks whether the components of the building are of high quality and fit for their purpose. However, this section is not concerned with how well the building functions in relation to the human use of it. <ul style="list-style-type: none"> <li>i. The building is easy to operate.</li> <li>ii. The building is easy to clean.</li> <li>iii. The building has appropriately durable finishes.</li> <li>iv. The building will weather and age well.</li> </ul> </li> <li>f. <b>Engineering</b> – is concerned with those parts of the building that are engineering systems as opposed to the main architectural features. It asks whether the engineering systems are of high quality and fit for their purpose, will be easy to operate and if they are efficient and sustainable. <ul style="list-style-type: none"> <li>i. The engineering systems are well designed, flexible and effective.</li> <li>ii. The engineering systems exploit any benefits from standardisation and prefabrication where relevant.</li> <li>iii. The engineering systems are energy efficient.</li> <li>iv. There are emergency backup systems that are designed to minimise disruption.</li> <li>v. During construction, disruption to essential services is minimised.</li> </ul> </li> <li>g. <b>Construction</b> – is concerned with the technical issues of actually constructing the building and with the performance of the main components. A building that scores well under this heading is likely to be constructed as quickly and easily as possible under the circumstances of the site and to offer a robust and easily maintained solution. <ul style="list-style-type: none"> <li>i. If phased planning and construction are necessary, the various stages are well organised (double weighting).</li> <li>ii. Temporary construction is minimised.</li> <li>iii. The impact of the construction process on continuing healthcare provision is minimised.</li> <li>iv. The building can be readily maintained.</li> <li>v. The construction is robust.</li> <li>vi. The construction allows easy access to engineering systems for maintenance, replacement and expansion.</li> <li>vii. The construction exploits any benefits from standardisation and prefabrication where relevant.</li> </ul> </li> </ul>
3	<p><b>Functionality</b> – deals with all those issues to do with the primary purpose of the building. It deals with how well the building serves these primary purposes and the extent to which it facilitates or inhibits the activities of</p>	<ul style="list-style-type: none"> <li>h. <b>Use</b> – is concerned with the way the building enables the users to perform their duties and operate the healthcare systems and facilities housed in the building. To get a good score, under this heading the building will be highly functional and efficient, enabling people to have enough space for their activities and to move around economically and easily in a way that relates well to the policies and objectives of the Trust. A high scoring building is also likely to have some flexibility in use.</li> </ul>



<p>the people who carry out the functions inside and around the building.</p>	<ul style="list-style-type: none"> <li>i. The prime functional requirements of the brief are satisfied.</li> <li>ii. The design facilitates the care model of the Trust.</li> <li>iii. Overall, the building is capable of handling the projected throughput.</li> <li>iv. Workflows and logistics are arranged optimally.</li> <li>v. The building is sufficiently adaptable to respond to change and to enable expansion (double weighting).</li> <li>vi. Where possible, spaces are standardised and flexible in use patterns.</li> <li>vii. The layout facilitates both security and supervision (double weighting).</li> </ul> <p>i. <i>Access</i> – focuses on the way the users of the building can come and go. It asks whether people can easily and efficiently get onto and off the site using a variety of means of transport and whether they can logically, easily and safely get into and out of the building.</p> <ul style="list-style-type: none"> <li>i. There is good access from available public transport including any on-site roads.</li> <li>ii. There is adequate parking for visitors and staff cars with appropriate provision for disabled people.</li> <li>iii. The approach and access for ambulances is appropriately provided.</li> <li>iv. Goods and waste disposal vehicle circulation is good and segregated from public and staff access where appropriate.</li> <li>v. Pedestrian access routes are obvious, pleasant and suitable for wheelchair users and people with other disabilities/impaired sight.</li> <li>vi. Outdoor spaces are provided with appropriate and safe lighting indicating paths, ramps and steps.</li> <li>vii. The fire planning strategy allows for ready access and egress.</li> </ul> <p>j. <i>Space</i> – concentrates on the amount of space in the building in relation to its purpose. It asks if this space is well located and efficient and whether people can move around in it efficiently and with dignity.</p> <ul style="list-style-type: none"> <li>i. The design achieves appropriate space standards.</li> <li>ii. The ratio of usable space to the total area is good.</li> <li>iii. The circulation distances travelled by staff, patients and visitors are minimised by the layout (double weighting).</li> <li>iv. Any necessary isolation and segregation of spaces is achieved.</li> <li>v. The design makes appropriate provision for gender segregation (double weighting).</li> <li>vi. There is adequate storage space.</li> </ul>
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## APPENDIX C2: A STAFF PATIENT ENVIRONMENT CALIBRATION TOOL (ASPECT)

S/No	Main sections	Sub-sections
1	<b>Privacy, Company and Dignity</b> – deals with the way people in a healthcare building are able to control their privacy and their interaction with others. It focuses on the way people can best maintain their dignity while under conditions that necessarily may not be found in ordinary life.	<ul style="list-style-type: none"> <li>i. Patients can choose to have visual privacy.</li> <li>ii. Patients can have private conversation.</li> <li>iii. Patients can be alone.</li> <li>iv. Patients have places where they can be with others (double weighting).</li> <li>v. Toilets/bathrooms are located logically, conveniently and discretely.</li> </ul>
2	<b>Views</b> – deals with the extent to which both staff and patients can see out of and around the building. It asks what they can see and relates this to their current activity and condition.	<ul style="list-style-type: none"> <li>i. Spaces where staff and patients spend time have windows (double weighting).</li> <li>ii. Patients and staff can easily see the sky.</li> <li>iii. Patients and staff can easily see the ground.</li> <li>iv. The view outside is calming (double weighting).</li> <li>v. The view outside is interesting (double weighting).</li> </ul>
3	<b>Nature and Outdoors</b> – deals with the extent to which patients in particular have contact with the natural world. It asks whether they can see and access nature both around and inside the building.	<ul style="list-style-type: none"> <li>i. Patients can go outside (double weighting).</li> <li>ii. Patients and staff have access to usable landscaped areas.</li> <li>iii. Patients and staff can easily see plants, vegetation and future (double weighting).</li> </ul>
4	<b>Comfort and Control</b> – deals with the comfort levels of the staff and patients in healthcare buildings and the extent to which they can control those levels. Research shows that not only comfortable conditions but also the ability to control levels of comfort for yourself may be very important in reducing stress. Allowing patients control over their environment is thus important and may also reduce demands on staff, particularly nurses.	<ul style="list-style-type: none"> <li>i. There is a variety of artificial lighting patterns appropriate for day and night and for summer and winter.</li> <li>ii. Patients and staff can easily control the artificial lighting (double weighting).</li> <li>iii. Patients and staff can easily exclude sun light and day light (double weighting).</li> <li>iv. Patients and staff can easily control the temperature.</li> <li>v. Patients and staff can easily open windows/doors.</li> <li>vi. The design layout minimises unwanted noise in staff and patient areas (double weighting).</li> </ul>
5	<b>Legibility of Place</b> – deals with how understandable healthcare buildings are to the staff, patients and visitors who use them. Towns, areas, buildings departments and rooms should have clear identities and to be differentiated and have a hierarchy of structure. People generally like places that are not uniform and homogenous but have variety and variation of scale. Generally, layouts should be clear and understandable so that way finding is easy and have to depend only minimally on signage or maps.	<ul style="list-style-type: none"> <li>i. When you arrive at the building, the entrance is obvious.</li> <li>ii. It is easy to understand the way the building is laid out.</li> <li>iii. There is a logical hierarchy of places in the building.</li> <li>iv. When you leave the building, the way out is obvious.</li> <li>v. It is obvious where to go to find a member of staff.</li> <li>vi. Different parts of the building have different characters.</li> </ul>

6	<p><b>Interior Appearance</b> – deals specifically with the interior of healthcare buildings and in particular what they look like.</p>	<ul style="list-style-type: none"> <li>i. Patients' spaces feel homely (double weighting).</li> <li>ii. The interior feels light and airy.</li> <li>iii. The interior has a variety of colours, textures and views.</li> <li>iv. The interior looks clean, tidy and care for.</li> <li>v. The interior has provision for art, plants and flowers.</li> <li>vi. Ceilings are designed to look interesting (double weighting).</li> <li>vii. People can have and display personal items in their own space (double weighting).</li> <li>viii. Floors are covered with suitable material (double weighting).</li> </ul>
7	<p><b>Facilities</b> – deals with a number of facilities that have been found to be important for the users of healthcare buildings, particularly patients.</p>	<ul style="list-style-type: none"> <li>i. Bathrooms are provided with seats, handrails, non-slip flooring, a shelf for toiletries and somewhere to hang clothes within easy reach.</li> <li>ii. Patients can have a choice of bath/shower and assisted/unassisted bathrooms.</li> <li>iii. There is a space where religious observances can take place.</li> <li>iv. There is a place where live performances can take place (double weighting).</li> <li>v. There are easy chairs, tables and desks in the patients' spaces.</li> <li>vi. Patients have facilities to make own drinks.</li> <li>vii. There are easily accessible vending machines for snacks.</li> <li>viii. There are facilities for patients' relatives or friends to stay overnight (double weighting).</li> </ul>
8	<p><b>Staff</b> – is concerned with those aspects of healthcare building provision that relate specifically to staff. To score highly under this heading, a healthcare building would make good provision for staff to lead their personal lives as well as perform their professional duties.</p>	<ul style="list-style-type: none"> <li>i. Staff have a convenient place to change and securely store belongings and clothes.</li> <li>ii. Staff have convenient places to concentrate on work without being on demand.</li> <li>iii. There are convenient places where staff can speedily get snacks and meals.</li> <li>iv. Staff can rest and relax in places segregated from patient and visitor areas.</li> <li>v. All staff have easy and convenient access to IT.</li> <li>vi. Staff have convenient access to basic banking facilities and can shop for essentials.</li> </ul>

## APPENDIX C3:NHS ENVIRONMENTAL ASSESSMENT TOOLKIT (NEAT)

S/No	Main sections	Sub-sections
1	<b>Management</b>	<ul style="list-style-type: none"> <li>i. Commissioning.</li> <li>ii. Environmental management systems.</li> <li>iii. Education and training.</li> <li>iv. Purchasing policy.</li> </ul>
2	<b>Energy</b>	<ul style="list-style-type: none"> <li>i. Carbon emissions.</li> <li>ii. Heating and lighting control.</li> <li>iii. Energy monitoring.</li> <li>iv. Use of daylight.</li> <li>v. Alternative electricity tariffs.</li> </ul>
3	<b>Transport</b>	<ul style="list-style-type: none"> <li>i. Car parking provision.</li> <li>ii. Cyclists facilities.</li> <li>iii. Public transport nodes.</li> <li>iv. Distance to local amenities.</li> <li>v. Green transport plan</li> <li>vi. Compliance with controls assurance.</li> </ul>
4	<b>Water</b>	<ul style="list-style-type: none"> <li>i. Leak detection.</li> <li>ii. Water meters.</li> <li>iii. Low flush toilets.</li> <li>iv. Grey water reuse.</li> </ul>
5	<b>Materials</b>	<ul style="list-style-type: none"> <li>i. Specification of materials.</li> <li>ii. Prohibition of hazardous substance.</li> <li>iii. Asbestos survey.</li> <li>iv. Removal of asbestos.</li> </ul>
6	<b>Land use and ecology</b>	<ul style="list-style-type: none"> <li>i. Protection of ecological features.</li> <li>ii. Introduction of natural habitats.</li> <li>iii. Use of contaminated land.</li> <li>iv. Change in ecological value.</li> </ul>
7	<b>Pollution</b>	<ul style="list-style-type: none"> <li>i. Pollution monitoring.</li> <li>ii. Ozone depleting substances.</li> <li>iii. NO<sub>x</sub> emission rates.</li> <li>iv. Noise pollution.</li> <li>v. Incineration practices.</li> </ul>
8	<b>Internal environment</b>	<ul style="list-style-type: none"> <li>i. Budget for living plants.</li> <li>ii. Views out.</li> <li>iii. High frequency ballasts.</li> <li>iv. Signage.</li> <li>v. Décor and art.</li> </ul>
9	<b>Social</b>	<ul style="list-style-type: none"> <li>i. Links with community.</li> <li>ii. Links to local Agenda 21.</li> <li>iii. Sharing of facilities.</li> <li>iv. Staff and patient empowerment.</li> </ul>

10	<i>Operational waste</i>	<ul style="list-style-type: none"> <li>i. Provision of recycling facilities.</li> <li>ii. Waste stream analysis.</li> <li>iii. Staff waste interviews.</li> <li>iv. Storage for recycling.</li> <li>v. Compliance with HTM 2065.</li> </ul>
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